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Technical Procedure

PRC-PRO-SH-095

Scaffolding

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CHANGE SUMMARY

Description of Change

Changed procedure to reflect language in OSHA regulation for falling object protection.

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1.0 INTRODUCTION

1.1 Purpose

This procedure establishes the basic safety requirements and practices for the design, construction, maintenance, inspection, use, and dismantling of supported scaffolds including mobile scaffolds.

By definition, supported scaffold includes: Frame/Fabricated, Mobile, Tube and Coupler, Pump Jack, Ladder Jack, Pole, and Specialty type. Supported scaffold not used frequently by CH2M HILL Plateau Remediation Company (CHPRC) employees and contractors under CHPRC work scope may require additional training and time to ensure “competent persons” are provided for erection, inspection, and dismantling of scaffold. Mobile scaffold means a powered or unpowered, portable, caster or wheel-mounted supported scaffold.

1.2 Scope

This procedure is used in support of CHPRC scope of work subject to the occupational safety and health requirements enforceable under 29 CFR 1910.28, *Safety Requirements For Scaffolding*, and 29 CFR 1926, Subpart L, *Scaffolds*.

This procedure does not cover crane/derrick suspended personnel platforms (refer to 29 CFR 1926.550, *Cranes, Derricks and Hoists*, and DOE-RL-92-36, *Hanford Site Hoisting and Rigging Manual - Personnel Lifting*, Chapter 15), aerial lifts (refer to 29 CFR 1926.453, *Aerial Lifts*, 29 CFR 1910.67, *Vehicle-Mounted Elevating and Rotating Work Platforms*, and PRC-RD-SH-10972, *Elevating Work Platforms*), or manually propelled mobile ladder stands/platforms (refer to 29 CFR 1910.29, *Manually Propelled Mobile Ladder Stands and Scaffolds [towers]*, and PRC-RD-SH-10321, *Walking/Working Surfaces*).

Additional information and guidance relating to scaffold safety can be found in American National Standards Institute (ANSI) Code A10.8, *Safety Requirements For Scaffolding*, and Occupational Safety and Health Administration Compliance Instruction (OSHA CPL) No. 2-1.23, *Inspection Procedures for Enforcing Subpart L, Scaffolds Used in Construction*. For design and construction requirements applicable to specific types of scaffolding, refer to 29 CFR 1926.452, *Additional Requirements Applicable to Specific Types of Scaffolds*.

1.3 Applicability

This Level 2 procedure is applicable to CHPRC Team employees and other contractors performing scaffold-related activity under CHPRC work scope.

1.4 Implementation

This procedure will be effective 60 days from the published date to allow use of current stock of scaffold inspection tags.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Warnings and Cautions

2.1.1 Contact Electrical Utilities Operations central dispatch if scaffold erection, use, or dismantling activity work is scheduled to be performed within 20 feet of the centerline of the nearest utility power line to establish specific work requirements.

2.1.2 Ensure the appropriate controls are in place for personnel walking or working beneath the erection, use, or dismantling activity from being exposed to the potential hazard of falling tools, materials, or other potential overhead hazards and provide precautionary posting(s) or barriers. This also includes exposure to motorized equipment/vehicles.

2.1.3 Leather gloves are required to be worn when handling wooden materials and recommended when handling scaffolding pieces.

2.1.4 Removal or proper placement/securing of tools, materials, and equipment is to be practiced to control the potential for creating a slipping or tripping hazard, and further reduce the potential of falling tools, materials, or equipment.

2.1.5 Keep objects from the edge such that they cannot go over the edge if accidentally displaced.

2.1.6 Avoid leaning over scaffold hand/guard railing.

2.1.7 When working/using scaffold at elevations above six feet, users shall have fall protection through the use of a guardrail, personal fall restraint system, or personal fall arrest system.

2.1.8 Completion of a Fall Protection Work Permit (FPWP) is not required for users working from approved scaffolding unless there is an unprotected fall hazard.

2.1.9 When fall protection is required for scaffold users, ensure the “users” are briefed on the fall protection requirements and instructed on the use of fall protection anchor point(s).

2.1.10 Monitor weather forecast and conditions for warnings of severe weather.

2.2 Limitations

2.2.1 Tube and coupler and tubular welded frame scaffolds over 125 feet in height, pole scaffolds over 60 feet in height, and all outrigger beam scaffolds and their components shall be designed by a registered professional engineer.

2.2.2 Scaffolds are to be assembled as “complete”, with prescribed component parts in place. Deviation is permitted only in cases of infeasibility (e.g., building structural barriers, interference, or obstacle limitation exists), when accompanied by implementation of equivalent safety measures as approved by a Qualified Person.

2.2.3 Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.

2.2.4 Scaffolds shall be moved only under the supervision and direction of a competent person qualified in moving the scaffold.

2.2.5 Moving the scaffold shall be performed only by experienced and trained employees selected for such work by the competent person.

3.0 PREREQUISITES

3.1 Tools, Equipment, and Materials

- *Scaffold Plan/Checklist* (Site Form A-6005-756)
- Scaffold Inspection Tag(s)
- Scaffold Status Tag(s)

3.2 Special Personnel Requirements

The personnel identified in the following sub-sections have overall responsibilities related to the scaffolding process. Responsibilities related to specific performance steps are identified in Section 4.0, *Performance*.

NOTE: *The term "Erector or erection" includes "Dismantler or dismantling." The term "Field Work Supervisor" includes "Construction Foreman or Superintendent, and other first line supervision titles". The abbreviation "EO" means Erecting Organization; the abbreviation "RO" means Requesting Organization.*

3.2.1 **Competent Person**

a. A Competent Person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees; has demonstrated ability to recognize and resolve noncompliance with regulations and procedures; and who has authorization to take prompt corrective measures to eliminate them. Competency is established by an employee's manager using each of the following criteria:

- Completion of the following training courses:

  a) Scaffold Safety for Inspectors, Course Nos. 044372 (Initial),

  b) Scaffold Safety for Erectors/Dismantlers, Course Nos. 044373 (Initial), and

  c) Users Scaffold Safety, Course No. 044371 (Initial only).

- An understanding of the requirements of this procedure in combination with experience referenced in Course No. 600062.

Table 1 - Competent Person Experience Requirements

Personnel Type	Experience Requirement
Scaffold Erectors	Six months of documented experience specific to the scaffolding type.
Safety Professional or Structural Engineer for second competent person signature *	Five documented field inspections specific to each scaffolding type under the direction of a competent person inspector.

NOTE: *Documentation of this experience for the second competent person will be retained by the employee's manager and recorded in ITEM using site forms A-6005-501,* Training Completion Record -Competent Person - Scaffolds*, and A-6004-624,* Scaffold Checklist - Inspection*. Though a Safety Professional or Structural Engineer are preferred candidates for this second Competent Person assignment, the RO may assign a non-craft representative from within their entity who meets the pre-requisite qualifications.*

A Competent Person for Erection - EO is required to supervise and direct scaffold work relating to selecting, erecting, dismantling, maintaining, and repairing.

The Competent Persons for Erection are required to determine the feasibility, safety, and appropriate method of providing safe means of access and fall protection for the Scaffold Erector during each stage of scaffold erection, based on specific site conditions.

NOTE: *Refer to mandatory Appendix A. This function is performed by two competent persons – one assigned by the Requesting Organization and one assigned by the Erecting Organization.*

3.2.2 Qualified Person

a. A Qualified Person is one who possesses a recognized degree, certificate, or professional standing; or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project. As this relates to "design," the Qualified Person is one who has the ability to determine the type of scaffold needed for a particular job, to include safe loading of the scaffold system in accordance with the design requirements of OSHA and the manufacturer.

- Scaffold erection is intended to include activities involving construction, modification within existing approved design, repair, and disassembly of an existing scaffold.
- The Scaffold System consists of the component parts of a scaffold unit that are designed by a Qualified Person (e.g., manufacturer).

3.2.3 **Field Work Supervisor**

a. The Field Work Supervisor's eligibility status to oversee scaffold erection is established and determined by an employee's manager using each of the following criteria:

- Completion of the following training courses:

  a) Users Scaffold Safety, Course No. 044371 and

  b) Scaffold Safety for Inspectors, Course No. 044372.

- An understanding of the requirements of this procedure, in combination with experience in supervisory oversight of scaffold erection/dismantling activities, and referenced in Course No. 600049.

b. The Field Work Supervisor (FWS) is responsible for:

- Verifying competency of the contractor Scaffold Erectors and Inspectors.

- Discussing during the pre-job meeting the expectation that a scaffold status update is required from the Competent Person for Erection - EO to the FWS when:

  a) Unsafe scaffolding configurations are left unattended or

  b) When any significant structural changes occur to the scaffolding.

- Updating the work authorization document when unsafe configurations, unusual conditions, or significant structural changes are communicated by the Competent Person for Erection - EO.

- Ensuring the Competent Persons carry out functions specifically assigned and delegated.

3.2.4 **Requesting Organization (RO)**

a. The CHPRC RO completes Site Form A-6005-756, with input from the Competent Persons for Erection – EO and RO.

b. Facilitate the identification of special job needs, with input from the EO.

3.2.5 **Scaffold User**

a. Completion of the following training course:

- Users Scaffold Safety, Course No. 044371 (CBT)

3.3 Performance Documents

Scaffold Plan/Checklist (Site Form A-6005-756)

3.4 Pre-Start Items

None

4.0 PERFORMANCE

4.1 Scaffold Preparation and Planning

4.1.1 Requesting Organization

a. FACILITATE the identification of special job needs, with input from the EO.

b. With input from the assigned Safety professional and affected workers, DETERMINE the practicality and safety of scaffolding alternatives.

c. WHEN scaffolding is selected as the method of choice, THEN COMMUNICATE the special job needs to the EO, using Site Form A-6005-756.

CAUTION:

Tube and coupler and tubular welded frame scaffolds over 125 feet in height, pole scaffolds over 60 feet in height, and all outrigger beam scaffolds and their components shall be designed by a registered professional engineer.

d. FACILITATE the assignment of two Competent Persons (one from the EO and one from the RO) to determine Scaffold Erector safety, to include:

- The feasibility of providing fall protection during erection and dismantling evolutions without creating a greater hazard.
- The feasibility of providing safe means of access without creating a greater hazard.
- Proper scaffold assembly.

e. OBTAIN the identity of the Competent Person(s) for Erection and Inspection from the EO.

f. USING Appendix A criteria ENSURE the feasibility determination results are entered in the work authorization document, by way of completing Site Form A-6005-756.

4.1.2 **Field Work Supervisor**

a. ASSIGN the Qualified Person(s) for scaffold design, as needed for the scope of work;
OR otherwise ESTABLISH/DETERMINE that such Qualified Person has been assigned by the EO.

4.1.3 **Qualified Person**

a. As applicable (e.g., special configuration), carry out the following duties relating to scaffold design and erection:

- DETERMINE the type of scaffold necessary for the job
- DESIGN scaffold systems
- APPROVE variations to original scaffold design
- ASSURE that a good foundation exists upon which the scaffold will rest
- PROVIDE training of Scaffold Users as required (see sub Section 4.5)
- APPROVE the use of components for the scaffold system that are not pre-designed.

4.1.4 **Competent Person for Erection - EO**

a. CARRY OUT the following applicable duties relating to scaffold erection:

- SELECT trained personnel to erect scaffold
- REVIEW the work scope safety requirements with the Scaffold Erectors
- BE knowledgeable of the Scaffold Users intended work scope.
- APPROVE the intermixing and use of scaffold components manufactured by different manufacturers or made of dissimilar metals.
- ENSURE each scaffold and scaffold component is capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.

NOTE: *Knowledge of this maximum intended load is needed in preparing for design, construction and modification or alteration.*

4.1.5 **Competent Person for Erection – RO**

a. PROVIDE a secondary determination of feasibility, safety, and appropriate method of providing safe means of access and fall protection for the Scaffold Erector, based on specific site conditions (refer to Appendix A), AND SIGN Site Form A-6005-756.

4.2 Scaffold Erection

4.2.1 Competent Person for Erection – EO

a. SUPERVISE and DIRECT the scaffold erection activity.

b. INSPECT the work area prior to scaffold erection to determine the site's ability to support the structure; for location of electric power lines, overhead obstructions, wind conditions, and the need for overhead protection or weather protection coverings; and for other related hazards.

c. DETERMINE the need for and size of mud sills based upon stability of foundation and scaffold load capacity.

4.2.2 Scaffold Erector(s)

a. Keep affected employees on the ground clear of the erection work activities by use of barricades where needed.

b. Use appropriate setbacks. As a guide, recommend minimum of 1:1 setback ratio (e.g. height distance is equal to setback distance).

c. SELECT the scaffold equipment/material needed, inspecting it to ensure good condition.

d. ENSURE scaffold components are compatible and free of damage or defect.

NOTE: *Minimum and maximum permissible spans for 2 inch by 10 inch or wider wood planks, as identified in Table 1, shall be followed.*

e. For wood scaffold planking, SELECT scaffold grade lumber or equivalent (as recognized by approved grading rules for the species of wood).

Table 2 - Material

	Full Thickness Undressed Lumber			Nominal Thickness Lumber		
Working Load (p.s.f.)	25	50	75	25	50	N/A
Permissible Span (ft.)	10	8	6	8	6	N/A

NOTE: *Nominal thickness lumber is not recommended for heavy duty use.*

Table 3 - Insulated Lines

Voltage	Minimum Distance	Alternatives
Less than 300 volts	3 feet	N/A
300 volts to 50 kv	10 feet	N/A
More than 50 kv	10 feet plus 0.4 inches for ea. 1 kv over 50 kv	2 times the length of the Line Insulator, but never less than 10 feet

Table 4 - Un-insulated Lines

Voltage	Minimum Distance	Alternatives
Less than 50 kv.	10 feet	N/A
More than 50 kv.	10 feet plus 0.4 inches for ea. 1 kv over 50 kv	2 times the length of the Line Insulator, but never less than 10 feet

f. PREPARE a firm and stable foundation to provide support and proper load distribution for the scaffold.

g. ENSURE scaffold materials or tools are not used in such a manner to create a possibility of contact with energized electrical conductors or utility power lines.

NOTE: *The application of mud sills of adequate size/dimension and secured to each base plate may be necessary, in addition to the base plates, to distribute a scaffold's load and prevent foundation failure.*

h. ENSURE scaffolds stand plumb and level, and rest upon base plates (stationary scaffold) on a firm foundation, or as otherwise recommended by the scaffold component manufacturer.

i. USE screw jacks or other equivalent stable means where leveling of a scaffold is deemed necessary.

j. ENSURE scaffolds are placed as close to the work as possible.

- If fall protection is provided by the structure on which the work is being performed (e.g., building or wall), no more than 14 inches between the scaffold platform and the structure is allowed.

k. ENSURE scaffold platform spaces are limited to one inch or less between adjacent units and the uprights.

- Spaces up to 9 1/2 inches wide are permitted around uprights.

NOTE: *Where fabricated scaffold planks are secured to end supports to prevent uplift, such means of attachment shall be affixed in such a manner so as not to expose sharp edges/ends (e.g., laceration hazards).*

l. ENSURE each platform is secured, with platform ends extending 6-12 inches over the centerline of their supports (unless restrained by hooks, cleats, or other means).

m. EVALUATE scaffolds for the potential of shifting or movement,
AND ANCHOR
OR otherwise SECURE where deemed necessary.

n. ENSURE scaffolds are guyed, tied, or otherwise braced at the closest horizontal member to a 4:1 height when the scaffold's height exceeds 4 times its smallest base dimension.

- Such means of securing is to be repeated every 26 feet vertically (20 feet for those units less than or equal to 3 feet in width) and 30 feet horizontally.

o. PROVIDE a ladder, stairway, ramp or walkway to access a scaffold platform more than 2 feet above or below a point of access.

p. INSTALL protection (e.g., toe boarding, paneling/screening, canopy/catch platform or debris net) where the potential for materials/objects falling from overhead to a lower level exists.

q. MARK scaffold areas or otherwise post with signs, warning flags or tape, flashing lights, dedicated signal person(s), or barriers where motorized equipment or vehicular traffic is present.

r. ATTACH a Status Tag near the access point of any scaffold being used, erected, modified, or dismantled, which is equivalent in color and verbiage to the following:

- RED Status Tag - KEEP OFF/DO NOT USE - prohibits use of the scaffold, as the unit is undergoing erection, alteration, or dismantling, or is otherwise unsafe for use.

- YELLOW Status Tag - SPECIAL CONDITIONS/ADDITIONAL CONTROLS - indicates that the scaffold cannot physically be erected as “complete” or to Code, the scaffold has been modified to meet unique work requirements which may present a hazard to the user, or other special safety measures for use of the scaffold apply; the special condition(s) shall be marked on the tag (e.g., midrail missing at deck level).

- The additional controls (e.g., fall protection, Personal Protective Equipment [PPE], etc.) must be developed by the “user” organization

(e.g., person of contact (POC), FWS using a work control method such as a job hazard analysis or discussed in a pre-job meeting.

- It shall be the responsibility of the user's organization to mitigate and communicate these hazards to the scaffold user.
- GREEN Status Tag - SCAFFOLD IS COMPLETE AND ERECTED TO CODE/APPROVED FOR USE - indicates that the scaffold is complete, was constructed to Approved erection standards, and was deemed safe for use following post-construction inspection.

NOTE:
- *Use of a YELLOW Status Tag does not permit intentional erection of incomplete scaffolds. In no case shall a scaffold that is missing components required for structural stability (e.g., bearers, runners, posts, ties, or braces) be tagged with a YELLOW or GREEN Status Tag.*
- *Only the Competent Person for Erection is permitted to affix a Scaffold Status Tag.*

s. ATTACH a RED Status Tag to the scaffold at the onset of scaffold erection, alteration, dismantling activity or when an issue is identified during an inspection.

t. SELECT pre-designed scaffolding attachment components specific to the scaffolds that are used for all scaffold attachment applications.

- Pre-designed scaffolding attachment components specific to the scaffold shall be used for all scaffold attachment applications.
- Scaffolding attachment components that are not pre-designed for the system must be approved prior to use by a qualified person (e.g., manufacturer or structural engineer) on a case-by-case basis.

u. Where determined to be feasible, UTILIZE safe means of access and fall protection during scaffold erection activity.

v. CONSTRUCT the scaffold in accordance with the established design criteria and manufacturer specifications
<u>AND</u> LOCK all components together by pinning or other approved means.

NOTE: *A "complete guard railing system" means that no entrance opening (e.g., ladderway access) onto the scaffold platform is permitted unless it can be closed by way of a gate, approved safety chain/cable assembly, or equivalent guarding protection*.

w. INSTALL fall protection guard railing system with the top rail positioned between 38 and 45 inches in height
OR INSTALL a personal fall arrest system on scaffolds with a working platform six feet or more above a lower level, for protection of the Scaffold User.

x. IF a personal fall protection system is needed for the Scaffold Users, THEN NOTIFY the Requesting Organization.

- The additional controls (e.g., fall protection, PPE, etc.) must be developed by the "user" organization (e.g., POC, FWS) using a hazard control process such as a job hazard analysis or discussed in a pre-job meeting.

4.2.3 **Requesting Organization**

a. Where a fall protection system for Scaffold Users is required, FACILITATE its design and installation with a qualified person.

4.2.4 **Competent Person for Erection – EO**

NOTE:
- *Inventory and control of tags is the responsibility of the Crane & Rigging Services organization, for the purpose of maintaining standardization. Scaffold tag requests can be processed by calling 373-2277 or 373-2094.*
- *The Scaffold Inspection and Status Tags are intended for one-time usage, and are not to be retained for reuse after removal from a scaffold unit.*

a. DETERMINE scaffold inspection frequency with the input from User Organization, and mark as appropriate on the Scaffold Inspection Tag.

b. INDICATE on the Scaffold Inspection Tag the duty rating for the scaffold.

c. At erection completion, PERFORM an initial scaffold inspection
AND ATTACH a signed and dated Scaffold Inspection Tag, and YELLOW or GREEN Status Tag near the access point following completion of scaffold erection.

d. REMOVE any Scaffold User(s) from the scaffold platform prior to performing scaffold assembly, modifications, or disassembly
AND AFFIX a RED Status Tag.

e. AFFIX an updated (i.e., newly signed) Status Tag to any scaffold in which a Competent Person for Erection – EO assignment changes for the purpose of completing a scaffold modification/alteration.

f. Following completion of step 4.2.5.c, PERFORM a scaffold inspection AND SIGN the Scaffold Inspection Tag.

4.3 Scaffold Use

4.3.1 Competent Person for Erection – EO

a. INSPECT the scaffold to ensure safe condition for use.

b. INSPECT scaffold before the start of work at a frequency of once each shift, where such work from the scaffold platform involves construction or demolition. Scaffold built for maintenance/operations and surveillance shall be inspected at the frequency determined by the Competent Person and the User Organization and which will be marked on the Scaffold Status Tag.

c. INSPECT the scaffold and its components following an occurrence that may have affected the scaffold's structural integrity.

d. INSPECT the scaffold before start of work, and prohibit use during storms or high winds. (Reference PRC-PRO-SH-28034, *Adverse Weather.*)

e. For general industry scaffolding applications per 29 CFR 1910.28, inspect at a frequency determined and justified by the project or facility operations manager (in consultation with the Competent Person for Erection - EO).

- Such tasks may include shift routines, inspections, surveillances, small valve/control operation, breakers, switches, small component alignments, or use of the platform as a means of access or egress that is not construction based.

f. Legibly ENTER your signature and date on the attached Scaffold Inspection Tag.

- IF the inspection reveals one or more safety deficiencies,
  THEN ATTACH a RED *Status Tag* to the scaffolding
  AND REMOVE the GREEN or YELLOW *Status Tag*,
  AND immediately NOTIFY the user's organization individual listed as "P.O.C." on the *Status Tag* being replaced.

4.3.2 Scaffold User(s)

NOTE: *If special conditions are posted on the Tag, but are not legible, contact the Facility POC for assistance.*

a. CHECK for the presence of a Status Tag and Scaffold Inspection Tag; NOTE any special conditions
AND COMPLY with additional controls developed by the user's organization before accessing the scaffold.

b. WORK only from a GREEN or YELLOW tagged scaffold.

c. ASCEND/DESCEND a scaffold only with the knowledge and expertise to do so safely, using approved access provided.

NOTE: *Refer to CHPRC Scaffold Checklist – User (Site Form A-6004-689) for basic use instructions.*

d. USE the scaffold only for its intended purpose, and within its designed capacity.

e. USE supplemental fall protection if upper body leaning over handrails is required, such that one's center of gravity is beyond the guardrail system.

f. AVOID USE of unstable objects or makeshift devices to increase the working height of a scaffold platform.

g. AVOID straddling, standing and leaning (i.e., extending upper body beyond one's center of gravity) outside guard railing unless appropriate supplemental fall protection is approved and used.

h. USE mobile scaffolds on firm level surfaces, with casters or wheels locked before using.

i. USE mobile scaffolds in accordance with the manufacturer's instruction manual.

j. ENSURE manual movement of mobile scaffolds is accomplished by applying force as close to the base as practical, but not more than five feet above the supporting surface.

NOTE: *An employee shall be permitted to remain positioned on a non-mobile supported scaffold while it is being moved horizontally only when such scaffold has been specifically designed for such movement by a Registered Professional Engineer.*

k. STABILIZE scaffolds to prevent tipping during movement.

l. PERMIT to "RIDE" on a mobile scaffold while it is being moved only under the following circumstances:

- The surface upon which the scaffold is being moved is within 3 degrees of level, and free of pits, holes, and obstructions.
- The height-to-base width ratio of the scaffold during movement is 2 to 1, or less (unless specifically designed and constructed to meet nationally recognized stability test requirements).
- Outrigger frames (when used) are installed on both sides of the scaffold.

- When power systems are used, the propelling force is applied directly to the wheels, and does not produce a speed in excess of 1 foot per second.
- No employee is on any part of the scaffold that extends outward beyond the wheels, casters, or other supports.
- The worker(s) on the platform are advised and aware of the movement, in advance.

m. USE only approved access means to ascend and descend scaffolds (e.g., stairs, attached ladder, or specially designed end frame).

- Cross-bracing or unauthorized structural components are not permitted to be used for access.

n. Prefabricated scaffold access frames shall be DESIGNED AND CONSTRUCTED for use as ladder rungs and be uniformly spaced within each frame.

o. MINIMIZE the quantity of tools and materials on the scaffold platform to those necessary to perform the task.

p. Only USE scaffolding that has been GREEN-tagged or YELLOW-tagged.

- Special conditions noted on the *Status Tag* are to be followed.
- It is the user's organization responsibility to mitigate and communicate these hazards or special safety measures to the scaffold user.
- DO NOT modify or remove a scaffold system component, or *Status Tag.* This is prohibited.
- Immediately NOTIFY the Field Work Supervisor or assigned Competent Person for Erection – EO, if the scaffold needs to be modified or if there is evidence of damage, weakness, or other deficiency.

q. NOTIFY the Field Work Supervisor or Competent Person for Erection - EO if the scaffold needs to be modified to support work scope, or if there is evidence of damage, weakness, or other deficiency. (This includes notification following any event that could affect the unit's structural integrity.)

r. PROTECT personnel working below from the potential of falling tools, materials, equipment, or other overhead hazards, while working from a scaffold, through the use of postings, barricades, and PPE.

4.3.3 Field Work Supervisor

a. NOTIFY the Competent Person for Erection - EO when the work requiring a need for the scaffold is complete.

4.4 Scaffold Dismantling

4.4.1 Competent Person for Erection – EO

a. WHEN directed,
THEN safely DISMANTLE the scaffold:

- AFFIX a RED Status Tag at/near the access point during dismantling.
- KEEP affected employees on the ground clear of the dismantling work zone by use of barricades where needed.
- USE appropriate setbacks. As a guide, recommend minimum of a 1:1 setback ratio (e.g. height distance is equal to setback distance).
- REVIEW safety instructions with the dismantling work crew.
- APPLY the applicable controls for provision of safe means of access and fall protection, using Personal Fall Restraint/Arrest equipment as needed.
- AVOID accumulation of excess tools, equipment and components on the level being dismantled.
- UTILIZE mechanical assists to reduce manual handling of material whenever possible (e.g. pallet lifts, fork trucks, conveyors, etc.).
- RETURN scaffold components to a safe storage condition.

4.5 Scaffold Training and Qualification

4.5.1 Requesting Organization

a. ENSURE appropriate training and qualification is complete for affected Field Work Supervisors.

4.5.2 Field Work Supervisor

a. ENSURE appropriate training is complete for Scaffold Erectors, Scaffold Inspectors, Competent Persons, and Scaffold Users.

4.5.3 Training Organization

a. Training shall be PROVIDED by a person qualified in the subject matter per the following requirements.

b. TRAIN those employees who will erect, dismantle, maintain, repair, and inspect scaffolding by completion of the following training courses:

- Course 044373, Scaffold Safety for Erector/Dismantlers.
- Course 044372, Scaffolding Safety for Inspectors.

- TRAIN those employees who will perform work from a scaffold platform by completion of Course 044371, Users Scaffold Safety.

c. TRAIN those employees who will serve in the capacity of Competent Person by completion of the following training courses:

- Course 044373, Scaffold Safety for Erectors/Dismantlers (initial),
- Course 044372, Scaffolding Safety for Inspectors (initially),
- Course 044371, Users Scaffold Safety (initial).

d. TRAIN those employees who will provide supervisory oversight of scaffolding activity by completion of the following training courses:

- Course 044371, Users Scaffold Safety.
- Course 044372, Scaffolding Safety for Inspectors.

e. STRUCTURE the training to address the hazard recognition and control measures associated with the type of work being performed, AND INCLUDE as a minimum the following subject areas as they apply:

- Training of Scaffold User
  - Electrical hazards, fall hazards, and falling object hazards and weather considerations in the work area.
  - Procedures for addressing electrical hazards.
  - Fall Protection Systems during scaffold use. Proper use of scaffolds and proper handling of materials.
  - Maximum intended load and load-carrying capacity of scaffolds.
  - Other pertinent requirements of 29 CFR 1926, Subpart L, and 29 CFR 1910.28.
- Training of Scaffold Erector, Inspector, and Competent Person.
  - General scaffold hazards.
  - Procedures for erecting, disassembling, moving, repairing, maintaining, and inspecting scaffolds.
  - Design criteria, maximum intended load-carrying capacity and intended use of scaffolds.
  - Other pertinent requirements of 29 CFR 1926, Subpart L, and 29 CRF 1910.28.

f. Scaffold Erectors, Inspectors, Users, FWS, and Competent Persons shall be RETRAINED when deemed necessary to restore their proficiency, and to provide new information on hazards or changes in requirements.

g. PREPARE
AND MAINTAIN training documentation in accordance with training record requirements.

4.5.4 **Erecting Organization**

a. COMPLETE a minimum of six months of OJT per type of scaffolding prior to being eligible to attain Competent Person designation.

NOTE: *Such documentation should identify the skills and authorities of the named individuals which are necessary to cover the designation.*

b. A documented and current listing of Qualified Person and Competent Person designations for scaffold design and erection shall be RETAINED by the organization(s) responsible for providing erection services.

4.5.1 **Field Work Supervisor**

NOTE: *FWS evaluation is documented via Site Form A-6005-539 (Course 600049).*

a. OBTAIN a minimum of 3 months scaffold erection/dismantling supervisory oversight experience or otherwise demonstrate a 3-month equivalency based upon prior experience.

4.5.1 **Competent Person**

NOTE: *Competent Person evaluation is documented via Site Form A-6005-501 (Course 600062).*

a. DEMONSTRATE
OR OBTAIN experience specific to each type of supported scaffold that applies.

5.0 FORMS

Scaffold Checklist - User, A-6004-689
Scaffold Checklist – Inspection, A-6004-624
Scaffold Plan/Checklist, A-6005-756
Training Completion Record -Competent Person – Scaffold, A-6005-501
Training Completion Record - Field Work Supervisor - Scaffolds, A-6005-539
Training Completion Record – Qualified Person – Scaffolds, A-6005-492

6.0 RECORD IDENTIFICATION

All records are required to be managed in accordance with PRC-PRO-IRM-10588, *Records Management Processes*. OCRWM records are also managed in accordance with PRC-PRO-QA-19579, *OCRWM Records Management*.

Records Capture Table

Name of Record	Submittal Responsibility	Retention Responsibility
Training Record for Scaffold Erector, User, and Inspector	Training Organization	Training Organization
Scaffold Checklist – Inspection, A-6004-624	Competent Person Inspector	Training Organization and Employee's Manager (second competent person documentation)
Scaffold Plan/Checklist, A-6005-756	Work Control	Work Control (work package)

7.0 SOURCES

7.1 Requirements

10 CFR 830.122, DOE, Nuclear Safety Management, *Quality Assurance Criteria*
10 CFR 851, *Worker Safety and Health Program, 10 CFR 851*
29 CFR 1926, Subpart L, *Scaffolds*
29 CFR 1926, Subpart G, *Signs, Signals, and Barricades (Accident Prevention Signs and Tags)*
29 CFR 1910.28, *Safety Requirements for Scaffolding*
DOE-0346, *Hanford Site Fall Protection Program (HSFPP)*
CRD O 433.1A, *Maintenance Management Program For DOE Nuclear Facilities*

7.2 References

PRC-PRO-IRM-10588, *Records Management Processes*
PRC-PRO-QA-19579, *OCRWM Records Management*
DOE-RL-92-36, *Hanford Site Hoisting and Rigging Manual - Personnel Lifting*, Chapter 15
29 CFR 1926.550, *Cranes, Derricks and Hoist Safety*
29 CFR 1926.453, *Aerial Lifts*
29 CFR 1910.67, *Vehicle-Mounted Elevating and Rotating Work Platforms*
PRC-STD-SH-52718, *Elevating Work Platforms*
PRC-PRO-IRM-10588, *Records Management Processes*
PRC-PRO-SH-28034, *Adverse Weather*
Course 044373, *Scaffold Safety for Erector/Dismantlers*
Course 044372, *Scaffold Safety for Inspectors*
Course 044371, *User Scaffold Safety*

8.0 APPENDIXES

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Feasibility Criteria for Providing Safe Means of Access and Fall Protection During Supported Scaffold Erection Operation

1.0 GENERAL

Appendix A -

This appendix is provided for the Competent Persons for Erection to use in evaluating the feasibility of providing safe means of access and fall protection for employees engaged in scaffold erection.

The Competent Persons for Erection, as part of the work planning process, participates in the completion of site form A-6005-756. In addition, a more detailed scaffold erection/dismantling plan that includes an assessment of fall protection and access needs may be necessary. Such plan should address where safe means of access is available or can be provided and where fall protection is necessary. The plan should be based on a review of site conditions to identify potential fall hazards.

Scaffold erectors and dismantlers working at elevations above 10 feet (vertical distance measured from the bottom of one's feet) shall have fall protection as described in 29 CFR 1926, Subpart L and shall be documented on the Fall Protection Work Permit (FPWP).

2.0 ACCESS

1. Safe means of access to supported scaffolds being erected or dismantled should be provided when feasible. The following are examples of situations that should be considered:

   a. <u>Situations where safe means of access can be provided from another structure.</u> These may include access from the structure being worked on, the use of stair towers, or other similar types of equipment, depending on site conditions - with consideration being given to any impacts on this other structure.

      The Competent Persons for Erection should determine that any structure used to provide access is stable and capable of withstanding the additional loads placed on it when used as access. The use of stair towers or other similar types of equipment will require the Competent Persons for Erection to determine that the ground or foundation supporting the stair tower is capable of providing the firm footing needed to safely use this type of equipment.

   b. <u>Frames designed for climbing can be used to provide safe access.</u> The Competent Persons for Erection should determine if the scaffold being erected/dismantled using these frames is sufficiently stable to allow a Scaffold Erector to climb the scaffold structure without tipping the whole unit. Factors that need to be considered include the need for ties, guys and braces to ensure stability as a result of added weights imposed.

   c. <u>Hook-on or attachable ladders may be used as a means of access during erecting and dismantling operations at the discretion of the Competent Persons for Erection.</u>
      A Scaffold Erector may climb the scaffold structure itself during scaffold erection activity. Hook-on or attachable ladders must be in place before the scaffold is released for use.

2. The following criteria provide the Competent Persons for Erection with assistance in making safe means of access feasibility determinations. This Competent Persons should look at:
   - The conventional means of access (e.g., ladders, stairs), and how their use could prevent performance of work or create a greater hazard for employees (for example, at what point is the scaffold capable of supporting a ladder or other access device)
   - The use of outriggers, braces, ties, guys, or similar equipment that could be used to secure, stabilize, or reinforce the structure and the scaffold in order to provide adequate support for access equipment
   - The use of a work procedure that ensures that materials including scaffold components are not loaded on the scaffold in a manner which would hinder access
   - The use of elevating work platforms and similar equipment, while possibly feasible, has the potential of creating a greater hazard; a small miscalculation when raising or lowering the equipment could result in the equipment contacting the partially erected scaffold causing it to collapse; poor ground conditions could result in the scaffold foundation being displaced when an elevating work platform is too close to the scaffold.

3.0 FALL PROTECTION

1. Fall protection is to be provided for employees erecting or dismantling supported scaffolds, whenever feasible and where it does not create a greater hazard. The feasibility for Scaffold Erector use of fall protection is dependent upon several items including, but not limited to:
   - Availability of a suitable attachment point (accessible or adjacent to the work location)
   - Location of attachment point to limit fall potential to no greater than six feet
   - Ability to install a fall protection system which will not create a greater hazard for the worker(s) installing it, or the Scaffold Erector accessing it (e.g., exposure time, poor body positioning)
   - Ability to keep life lines untangled during erection or dismantling activity
   - Ability to keep life lines from becoming a tripping hazard
   - Potential for "pendulum swing" of a Scaffold Erector during a fall event is limited or nonexistent.
2. The following criteria is intended to provide the Competent Persons for Erection with assistance in making fall protection feasibility determinations:

NOTE: *The Competent Persons for Erection should consult with safety or engineering professionals or the manufacturer to provide information that will assist them when determining fall protection feasibility.*

   - Existence of a structure capable of providing and supporting an adequate personal fall arrest system; such anchorage must be capable of supporting 5,000 lbs per attached worker, or be a pre-engineered system

- Use of outriggers, braces, ties, guys, and similar equipment to secure, stabilize, or reinforce the scaffold or the structure so that an adequate anchor can be provided
- Increase in employee exposure time with the provision of outriggers, braces, ties, guys, additional scaffold or stairway(s), or installation of fall arrest equipment
- Existence of safe access to the position of an anchor point
- Development of effective work procedures to minimize the likelihood of entanglement of lifelines, tripping hazards, or other hazards which may create a fall potential
- Erection of scaffold sections at ground level, and the hoisting of such units for final assembly, to reduce Scaffold Erector exposure time.

Scaffold Plan/Checklist (refer to site form A-6005-756)

Appendix B -

Intentionally Blank

Scaffold Inspection Tag – sample

Front View of Tag

Appendix C -

Scaffold Inspection Tag

Use Sharpie pen to fill out tag

Date of Inspection	Shift/Time	Inspectors Signature

☐ **Construction**

A designated competent person performs the inspection prior to use each shift

☐ **Maintenance/Operations/Surveillance/ Modification**

User organization, with concurrence from competent person, determines inspection frequency; check the inspection frequency box that is applicable:

Prior to Use	1 wk.	2 wks.	Other (specify)
☐	☐	☐	☐

Scaffold built to (check one):

☐ **Light Duty 25psf** ☐ **Medium Duty 50psf** ☐ **Heavy Duty 75psf**

(Duty Rating x Scaffold Area=MIL dispersed load)

Comments: _____

_____

Back View of Tag

Use Sharpie pen to fill out tag

Inspection Items
Completed scaffold status tag attached near the access point
Ladder, Stairway, or special-design framing installed for access
Scaffold unit plum and level, resting on stable footing and firm foundation (including base plate)
Diagonal cross-bracing in place to support legs
Guying, Tying or bracing installed to maintain scaffold unit stability where height to base size exceeds 4:1 ratio
Scaffold unit is stable for the work to be performed where the height to base size ≤ 4:1 ratio
Visual inspection completed for presence of loose, damaged or missing components (e.g., locking pins, planking, access framing, bracing)
Working level platform(s) fully planked between guardrails and secured to prevent movement
Platform free of debris and slipping/tripping hazards
Platform guardrails firmly in place on all open sides/ends, where required
Falling object protection provided by installed toe-boards or screening at the working platform level(s), or use of area barricades or canopy

Green Status Tag (example)

Appendix D -

Yellow Status Tag (example)

Appendix E -

Use Sharpie pen No. 13801/Black to fill out tag

SCAFFOLD

CAUTION

THIS SCAFFOLD
DOES NOT MEET CODE

SPECIAL CONDITIONS – Shall be entered on the Tag by the competent person.
ADDITIONAL CONTROLS – Must be developed and communicated by the user organization (P.O.C, FWS) using a work control method such as an AJHA, JHA, or be discussed in the pre-job briefing. Questions concerning additional controls will be addressed through the user organization.

_____

_____

_____

Facility P.O.C. & PHONE #

COMPENTENT PERSON -ERECTION
SIGNATURE AND DATE

_____

Reorder No. G303401

Red Status Tag (example)

Appendix F -