1. Purpose

University of Alaska Anchorage (UAA) employees who perform work on UAA property may be required to erect or use scaffolding for specific tasks. Scaffolding is designed to provide a safe working platform at higher elevations. This Scaffolding Program is intended to ensure workers are knowledgeable in the hazards when working with scaffolding to protect themselves and others.

2. Objective

UAA, in its continuing effort to provide employees with safe, healthful working conditions, and to comply with the Occupational Safety and Health Act is implementing the following program for scaffolding to protect people working at the University, by helping employees, student workers, faculty, staff, and outside contractors better understand the equipment available to better protect themselves.

3. Scope

This program applies to UAA employees, student employees, faculty, staff, and outside contractors working on UAA equipment who build inspect or work from scaffolding.

4. Definitions

Brace - A tie that holds one scaffold member in a fixed position with respect to another member. Brace also means a rigid type of connection holding a scaffold to a building or structure.

Competent Person - A person who can identify existing and predictable hazards and has the authority to take prompt corrective measures to eliminate the hazards. Each department that owns or uses scaffolding must designate a competent person. The competent person is responsible for:

- Directing employees, who erect, dismantle, move or alter scaffolding;
- Determining if it is safe for employees to work from a scaffold during storms or high winds, and ensure that a personal fall arrest system is in place;
- Training employees involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolding to recognize associated work hazards;
- Inspecting scaffolds and scaffold components for visible defects before each work shift, and after any occurrence which could affect the structural integrity, and to authorize prompt corrective action;
- For erectors and dismantler's, determining the feasibility and safety of providing fall protection and access; and

- For scaffold components:
  - Determining if a scaffold will be structurally sound when intermixing components from different manufacturer's; and
  - Determining if galvanic action has affected the load capacity when using components of dissimilar metals.

Coupler - A device for locking together the component tubes of a tube and coupler scaffold.

Harness - A design of straps which is secured about a person in a manner to distribute the arresting forces over at least the thighs, shoulders, and pelvis with provisions for attaching a lanyard, lifeline, or deceleration device.

Hoist - A mechanical device to raise or lower a suspended scaffold. It can be mechanically powered or manually operated.

Maximum Intended Load - The total load of all employee, equipment, tool, materials, wind and other load reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Mechanically Powered Hoist - A hoist which is powered by other than human energy.

Outriggers - The structural member of a supported scaffold used to increase the base width of a scaffold in order to provide greater stability for the scaffold.

Platform - The horizontal working surface of a scaffold.

Qualified Person - Scaffolds must be designed by a qualified person and be constructed and loaded in accordance with that design. UAA may designate an outside contractor to provide training and oversight in this role. The qualified person is responsible for:

- Designing and loading scaffolds in accordance with design specifications; and
- Training employees who will serve as competent persons working on the scaffolds to recognize the associated hazards and understand procedures to control or minimize those hazards.

Scaffold - Any temporary elevated or suspended platform and its supporting structure used for supporting employees or materials or both. T this term does not include crane or derrick suspended personnel platforms.

5. Authority and Responsibilities

In addition to the roles and responsibilities outlined in the UAA Training Program, the following apply to the Scaffolding Safety Program.

EHS/RM

- Develop and periodically review the scaffolding program
- Provide assistance to departments for scaffolding assessments and selection
- Assist with the determination of qualified persons
- Provide assistance with training content or providers

Supervisor

- Determine if scaffolding use is required and feasible in their department
- Ensure employee who will erect or use scaffolding receive the required training
- Ensure the proper equipment and PPE is available for scaffold use
- Periodically inspect scaffolding used in their departments to ensure proper erection and use
- Identify when new hazards are introduced which may require a change in scaffolding requirements

Department Safety Coordinator

- Assist in department scaffolding assessment
- Conduct periodic inspections of scaffolding erection, use and effectiveness in their departments
- Notify supervisor when it is noted that scaffolding is insufficient and assist in correction

Employees

- Inform supervisor of any deficiencies in scaffold construction or use
- Ensure scaffolding is inspected prior to use
- Ensure proper PPE is worn while working on scaffolding

Outside Contractors

- Perform all work in compliance with their company's scaffolding program, which will be reviewed and approved by the EHS/RM department
- If the company does not have a program, they must comply with this program

6. Hazards Associated with Scaffold Use

The following hazards exist while erecting and using scaffolding:

- Falls from heights

- Injuries resulting from faulty scaffold components
- Falling tools and equipment
- Scaffold instability due to weather and environmental conditions

7. Engineering Controls

Engineering controls are design plans or changes to the working environment to prevent or reduce employee exposure to hazards. The following example of engineering controls should be considered prior to scaffolding use:

- Installation of stairways, walkways, platforms, catwalks or other means to reach work locations
- Use of tools to assist in reaching high areas
- Use of an aerial lift or boom to reach work area
- Design structures with high maintenance items are accessible without the use of scaffolding

8. Administrative Controls

Administrative controls are safe work practices and procedures designed to reduce the risks associated with workplace hazards. PPE will be implemented as an additional means for protection or only when engineering and administrative controls are not feasible. Examples of administrative controls include the following:

- Train all employees on scaffolding use prior to work assignments that require work on scaffolding
- Ensure scaffolding is inspected prior to each use
- Develop procedures for scaffold use and erection where scaffolding is used frequently

9. Procedures

The following procedures will be followed regarding scaffolding erection and use at UAA

General requirements for scaffolds

- All scaffolding and scaffold components must be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
- Scaffolds shall be designed by a qualified person.
- Stationary scaffolds over 125 feet in height and rolling scaffolds over 60 feet in height shall be designed by a professional engineer.

- Before any scaffolding is erected, the area must be inspected for the following:
  - The ground is stable and capable of supporting the planned scaffolding
  - The location of any power lines
  - Overhead obstructions
  - Weather conditions
- Scaffolds shall be erected, moved, or disassembled only under the supervision of competent persons.
- UAA personnel may not work on scaffolds covered with snow, ice or other slippery materials or when the working surface is cluttered with materials.
- Personnel may not work on scaffolding during inclement weather, and high winds unless approved by a competent person.
- Scaffolding and components must be inspected by a competent person and documented each shift before personnel are allowed to work on the structure.
- Any damaged or suspect equipment must be fixed prior to personnel using the scaffolding, or the scaffold must be taken out of service until repairs can be made.
- Scaffolds cannot be repositioned while personnel are working on them, unless the scaffolding is specifically designed to be moved.
- Clearance Distances between Scaffolds and Power lines. Appendix A provides the clearance distances between scaffolds and power lines, or any other conductive material, while being erected, used, dismantled, altered or moved.

Erecting and Dismantling Scaffolding

Scaffolding must be designed by a qualified person. All personnel who erect and dismantle scaffolding must be trained by a competent person.

Platforms

Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows:

- Platforms shall be entirely planked and decked with space not more than one inch wide between the platforms and uprights;
- The platform shall not deflect more than 1/60 of the span when loaded;
- All platforms shall be kept clear of debris or other obstructions that may hinder the working clearance on the platform;

- Wood planks shall be inspected to see that they are graded for scaffold use, are sound and in good condition, straight grained, free from saw cuts, splits and holes;
- Platforms and walkways shall be at least 18 inches in width. When the work area is less than 18 inches wide, guardrails and/or personal fall arrest systems shall be used;
- Where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches unless the platforms are nailed together;
- The front edge of all platforms shall not be more than 14 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used;
- Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches unless the platform is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end;
- A platform greater than 10 feet in length shall not extend over its support more than 18 inches, unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end;
- Wood surface shall not be covered with opaque finishes, other than the edges for making identification;
- Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes. The coating shall not obscure the top or bottom wood surfaces;
- Each end of the platform, unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches; and
- Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components made of dissimilar metals shall not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component.

Requirements for Support Scaffolds

Supported scaffolds are platforms supported by legs, outriggers beams, brackets, poles, uprights, posts, frames, or similar rigid support. The structural members, poles, legs, posts, frames, and uprights must be plumb and braced to prevent swaying and displacement.

- Supported scaffolds with a height to base width ratio of more than 4:1 must be restrained by guying, tying, bracing or an equivalent means

- The following placements must be used for guys, ties, and braces
  - Install guys, ties, or braces at the closest horizontal member to the 4:1 height and repeat vertically with the top restraint no further than 4:1 height from the top
  - Vertically - every 20 feet or less for scaffolds less than three feet wide and every 26 feet or less for scaffolds more than three feet wide
  - Horizontally - at each end; at intervals not to exceed 30 feet from one end
  - Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation and shall include the following
  - Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement
  - Unstable objects shall not be used to support working platforms
  - Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use
  - Fork-lifts shall not be used to support scaffold platforms unless the entire platform is attached to the fork and the fork-lift is not moved horizontally while the platform is occupied.

Requirements for Mobile Scaffolds

Scaffolds must be plumb level and squared.

To prevent collapse of the scaffold, to secure vertical members together laterally and to automatically square and align vertical members, scaffolds must be braced by one of the following:

- Cross-braces
- Horizontal braces
- Diagonal braces
- Combination of the above

All brace connections must be secured.

To prevent movement of the scaffold while it is being used in stationary position, scaffold casters and wheels must be locked with one of the following:

- Positive wheel locks
- Wheel and swivel locks
- Equivalent of the above

Caster stems and wheel stems in scaffold legs or adjustment screws must be either pinned or otherwise secured.

Platforms must not extend beyond the base supports of the scaffold unless stability is ensured by outrigger frames or equivalent means.

Leveling of the mobile scaffold when necessary must be achieved by the use of screw jacks or equivalent.

When a mobile scaffold must be moved, the following requirements apply:

- Scaffolds shall be stabilized to prevent tipping during movement.
- Manual force used to move the scaffold must be applied as close to the base as practicable, but not more than 5 feet above the supporting surface
- Power systems used to propel mobile scaffolds must be designed for that purpose. Forklifts, trucks, motor vehicles, or add-on motors must not be used to propel scaffolds unless the scaffold is designed for them.
- Employees are not allowed to ride on scaffolds unless the following conditions exist
    - The surface on 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 2:1 or less, unless the scaffold is designed and constructed to meet or exceed nationally recognized stability test requirements (such as ANSI/SIA A92.5 and 92.6).
    - 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 personnel are on any part of the scaffold that extends beyond the wheels, casters, or other supports.
- All personnel on the scaffold must be informed of the move before it occurs.

Access Requirements

Access shall be provided when scaffold platforms are more than 24 inches above or below the point of access. Direct access is acceptable when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surfaces. Cross braces shall not be used as a means of access.

Type of accesses which are permitted:

- Portable ladders tied off to the structure

- Hook-on ladders
- Attachable ladders
- Stairways
- Stair towers
- Ramps and walkways
- Integral prefabricated frames

When erecting or dismantling supported scaffolds, a safe means of access shall be provided when a competent person has determined the feasibility and analyzed the site conditions.

Fall Protection

Anytime personnel are working on a scaffold 10 ft. or higher above the ground/floor level, fall protection procedures per the UAA Fall Protection Program is required.

Guardrails

- All scaffolds more than six feet above the lower level shall protect personnel with guardrails on each open side of the scaffold.
- Guardrails shall be installed along the open sides and ends before releasing the scaffold for use by UAA personnel.
- Materials such as steel or plastic banding shall not be used for top rails or midrails.

Guardrails are not required when:

- When personnel are actively erecting or dismantling scaffolding.
- The front end of all platforms are less than 14 inches from the face of the work.
- When personnel are plastering and lathing 18 inches or less from the front edge.

Falling Objects

To protect personnel from falling hand tools, debris, and other small objects, personnel should install toe boards, screens, guardrail systems, debris nets, catch platforms, canopy structures, or barricades.

If there is a risk of falling objects or over-head hazards, hardhats must be worn in the immediate area.

10. Inspections

A competent person will complete the following inspections:

- Prior to every shift scaffolding will be inspected for visible defects before it is used.
- After any event that might affect the structural integrity of the scaffolding.
- UAA personnel who are not sure of the status of scaffolding inspections should contact the competent person for confirmation prior to scaffold use.

11. Training

All personnel who perform work on scaffolding shall be trained by a person qualified to recognize the hazards associated with the type of scaffold being used and the procedures to control or minimize those hazards. The training shall include the following areas, as applicable:

- The nature of electrical hazards, fall hazards, and falling object hazards in the work area.
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection system and falling object protection system being used.
- The proper use of the scaffold.
- The proper handling of materials on the scaffold.
- The maximum intended load and the load-carrying capacities of the scaffolds used.

Employees who are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold shall be trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable.

- The nature of scaffold hazards.
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.
- The design criteria, maximum intended load-carrying capacity and intended use of the scaffold.

Retraining is required in at least the following situations:

- When there are changes to the worksite that creates new hazards.
- When changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a new hazard trained.
- When an employee’s work involving scaffolds indicate the employee has not retained the

required skills presented in their training.

12. Program Evaluation

The scaffolding program shall be evaluated on a periodic basis utilizing the protocols set forth by EHS/RM. The evaluation team will consistent of affected department safety coordinators and a representative from EHS/RM. EHS/RM will define the scope of the evaluation. The final report developed by EHS/RM utilizing the information received during the evaluation. The deficiencies determined in the report will be documented and corrective action plans will be developed.

13. References

OSHA regulations that apply to scaffolding are included below.

- 29 CFR 1926 Subpart L
- 29 CFR 1926.451 General Requirements for Scaffolding
- 29 CFR 1926.452 Additional Requirements Applicable to Specific Types of Scaffolds
- 29 CFR 1926.454 Training Requirements
- 29 CFR 1910.28 General Requirements for Scaffolding

14. Revision History

Revision Number	Date Revised	Description of Change	Revised By	Approved By
0	10/25/2018	Initial Issue		VC Shuford
1				
2				
3				

Appendix A – Clearance Between Scaffold and Powerlines

Insulated Lines Voltage	Minimum Distance	Alternatives
Less than 300 volts	3 feet	
300 volts to 50 kV	10 feet	
More than 50 kV	10 feet plus 0.4 inches for each 1 kV over 50 kV	Two times the length of the line insulator, but never less than 10 feet