University of South Carolina Aiken
Fall Protection Plan

Purpose: This document is the basic plan from which all University of South Carolina Aiken (USCA) safety training is derived from. This document does not replace federal, state, or local laws, safety rules or requirements.

Scope: This document implements the USCA Chancellor's safety policy. This plan is to serve as the basis for workplace safety plans and campus-wide safety training documents. When there is a conflict between the requirements of this plan and federal, state, or local safety rules the most stringent guidance will be applied providing it meets or exceeds federal, state, and local requirements.

Applicability: This document applies to all full-time, part-time, temporary and student employees on or off-campus while conducting official business on behalf of the University of South Carolina Aiken.

Environmental Health and Safety Office
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University of South Carolina Aiken
Fall Protection Plan

General Information:

Approximately 300,000 disabling injuries occur in work-related falls each year. 85% of workers surviving falls lose time from their jobs. This poses a serious problem for exposed workers and their employer. The OSHA Safety Standards establish uniform requirements to make sure that the hazards elevated falls in U.S. workplaces are evaluated, and that this hazard information is transmitted to all affected workers. The University will ensure that the hazards of all elevated falls over 4 feet in length, within our facilities are evaluated, and that information concerning their hazards is transmitted to all employees. This standard practice instruction is intended to address comprehensively the issues of evaluating potential fall hazards, communicating information concerning these hazards, and establishing appropriate protective measures for employees. The hazards of potential falls at heights of 4 feet and above will be addressed in this document. This instruction describes a systematic approach that must be used to protect and prevent people from falling. This instruction also lists some of the most common fall hazards and provides recommendations and guidelines for selecting fall arrest systems.

Written Program

The USCA EHS manager, will review and evaluate this standard practice instruction:

- On an annual basis
- When changes occur to 29 CFR, that prompt revision of this document
- When facility operational changes occur that require a revision of this document
- When there is an accident or close call that relates to this area of safety
- Review the program any time fall protection procedures fail

Effective implementation of this program requires support from all levels of management within USCA. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers or the number of work shifts. It is designed to establish clear goals, and objectives.

Facility/Department Evaluation

The workplace will be assessed before each assigned job for potential fall hazards. Proper fall arrest equipment will be used for jobs requiring fall protection when elimination of the hazard(s) is not possible. Supervisors will evaluate the work areas to determine fall hazards. This preliminary evaluation will detail the required steps for protecting employees from fall hazards. A fall hazards assessment worksheet (see appendix) will be used to document fall hazard assessments. A complete list of fall hazard locations and protective measures procedures will be maintained.

Training

A training program will be provided for all employees who will be exposed to fall hazards in the work area and will be conducted by competent personnel. The program will include but will not be limited to:

- A description of fall hazards in the work area
- Procedures for using fall prevention and protection systems
- Equipment limitations
- The elements encompassed in total fall distance
- Prevention, control and fall arrest systems
- Inspection and storage procedures for the equipment

Generally, workers will be trained to recognize the hazards of falling from elevations and to avoid falls from grade level to lower levels through holes or openings in walking/working surfaces. Training programs will include prevention, control, and fall arrest systems. It must be ensured that appropriate fall arrest systems are installed, and that employees know how to use them before beginning any work that requires fall protection. Note that the B&E Gym has a job specific procedure that requires fall protection.

Training will be conducted prior to job assignment. Supervisors will provide training to ensure that the purpose, function, and proper use of fall protection is understood by employees and that the knowledge and skills required for the safe application, and usage is acquired by employees. This standard practice instruction will be provided to and read by all employees receiving training. The training will include, as a minimum the following:

- Types of fall protection equipment appropriate for use.
- Recognition of applicable fall hazards associated with the work to be completed and the locations of such.
- Load determination and balancing requirements.
- Procedures for removal of protection devices from service for repair or replacement.
- All other employees whose work operations are or may be in an area where fall protection devices may be utilized, will be instructed to an awareness level concerning hazards associated with fall protection operations.
- Fall protection equipment identification. Fall protection equipment having identification numbers will be checked for legibility. Fall protection equipment having illegible identification markings will be turned in to the supervisor for maintenance.
- Equipment maintenance and inspection requirements.
- Equipment donning and doffing procedures.
- Equipment strengths and limitations.

This standard practice instruction will be provided to and read by all employees receiving refresher training. The training content will be identical to initial training. Refresher training will be conducted on an annual basis or when the following conditions are met, whichever event occurs sooner.

Retraining will be provided for all authorized and affected employees whenever (and prior to) a change in their job assignments, a change in the type of fall protection equipment used, or when a known hazard is added to the work environment which affects the fall protection program. Additional retraining will also be conducted whenever a periodic inspection reveals, or whenever USCA has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of fall protection equipment or procedures.

- Whenever a fall protection procedure fails.
- The retraining will reestablish employee proficiency and introduce new or revised methods and procedures, as necessary.

USCA will certify that employee training has been accomplished and is being kept up to date. The certification will contain each employee's name and dates of training. Training will be accomplished by competent personnel.

Fall Hazard Control Procedures (Fall Prevention)

Once an area or building evaluation has been accomplished, procedures will be developed, documented, and utilized for the control of potential fall hazards i.e., B&E Gym. Competent personnel will be provided with any required specialized training to recognize fall hazards, to understand and address fall prevention techniques, and to become familiar with fall arrest equipment and procedures. It is critical that they consider fall protection design for the safety of operations where employees must work at elevated heights. Safety during access and egress from elevated work sites will also be considered. The following guidelines will be used when planning work at elevated heights:

- Involve USCA EHS Manager, early in the project planning/job planning so that he can recommend appropriate fall-protection measures and equipment.
- Involve qualified Engineers when load rating of anchorage points must be determined or is in doubt. Required training will be provided as necessary.
- Involve Maintenance when anchorage points must be installed.

Most Common and Most Dangerous Fall Hazards

The tasks and situations listed below present inherent fall hazards. Give special attention to providing fall prevention and/or fall control for them, remembering that this attention is necessary in the design, engineering, planning, and execution stages of work. Supervisors will give special consideration to fall protection for the following tasks:

- Working from crane booms and tower cranes.
- Working on top of machinery and equipment, such as overhead cranes, furnaces, conveyors, and presses.
- Other work that involves fall hazards, such as ‘off-chutes’ from main piping in duct work or boilers.
- Working on roofs, with deteriorating or unsupported sections and framing.
- Working over chemical tanks or open pits.
- Working from a fixed or portable ladders or climbing systems.
- Performing work on water towers, product tanks, silos, pipe racks, presses, and floor

University of South Carolina Aiken
Fall Protection Plan

Appendix A: Fall Hazard Assessment Worksheet

WO# _____

DATE:_____

BUILDING: _____

CREW:_____

Narrative Description and Scope of Work to be Performed:_____

_____

_____

_____

_____

INSTRUCTIONS

Falls from elevation are a major cause of injuries in the construction industry. Regulations require you to evaluate your worksite to identify fall hazards. You must then eliminate or control the fall hazards you identify. The fall protection work plan and documentation of training must be available on the work site for review. If fall hazards of 6 feet or more exist, you must provide a written plan which identifies:

- All fall hazards in the work area
- The methods you and your employees will use to eliminate and control them.
- Correct procedures for assembly, maintenance, inspection, and disassembly of fall protection systems used.
- Correct procedures for handling, storage, and securing of tools and materials.
- The method of providing overhead protection.
- The method for prompt, safe removal of injured workers.
- Training methods for the employees working on the jobsite. The fall protection work plan must be specific to the work site.
- Have a "competent employee" complete the template to make it work site specific.
- Customize the template as needed by adding missing information and/or deleting
- unnecessary information:

NOTE: The plan form and individual site plans must accurately describe the conditions at your worksite and the methods you will use.

University of South Carolina Aiken
Fall Protection Plan

Fall Hazard Identification and Fall Protection Selection

On the table below, identify each fall hazard of 6 feet or more that exists or will exist during this project and then select the protection method from the options identified below the table.

Hazard Type	General Location	Workers Affected	Fall Protection Method	Overhead Protection
Roof>4 ½ Pitch				
Roof>4 ½ Pitch				
Skylight Openings				
Roof Openings				
Floor Openings				
Window Openings				
Open-Sided Floors				
Decks				
Balconies				
Pits				
Unprotected/Leading Edge Work				
Scaffold Work				
Mobile Lift Work				
Ladder Work				
Excavation Edges				
Grade Drop-Offs				
Other:				

Fall Protection Methods

Select a fall protection method from the list below for each hazard identified above. Assembly and implementation instructions for the method(s) used are located elsewhere in this document

- Standard Guardrails Fall Arrest Harness
- Fall Restraint Harness/Belt
- Warning Line System
- SafetyNet
- Cover or Hatch
- Warning Line or Safety Monitor
- Positioning Belt Other:

University of South Carolina Aiken
Fall Protection Plan

Overhead Hazard Protection Methods

For each overhead hazard identified, specify the method(s) of protection for workers below. Refer to the "Overhead Protection" Section of this plan for any special installation instructions.

- Hard Hats
- Required Screens on Guardrails
- Overhead Hazard Signs
- Barricade to Control Access to Area
- Debris Nets
- Toe Boards on Guardrails

Fall Protection System Assembly and Maintenance

Fall protection systems will be assembled and maintained according to manufacturer's instructions when using a manufactured system. A copy of those instructions is available on-site for reference. Any fall protection system used will meet OSHA regulations. Assembly and maintenance instructions unique to this worksite such as components, placement of systems, anchor points, areas where systems are particularly subject to damage are specified below.

Standard Guardrails must:

- be 39" to 45" above the work surface at top rail with midrail and toe board.
- be able to withstand 200 pounds of pressure on the top rail in any direction.
- not have significant deflection.
- be inspected regularly for damaged or missing components.

Note: A guardrail does not protect a person standing on a ladder, box, or other surface above the work surface.

Post Material:_____

Rail Material:_____

Post Spacing (8' max):_____

Anchor Method:_____

Other
Instructions:_____

_____

_____

_____

University of South Carolina Aiken
Fall Protection Plan

Fall Arrest Harness:

• Must have anchor points capable of withstanding a 5000-pound shock unless a deceleration device in use limits fall to 2 feet, in which case a 3000-pound anchor point maybe used.

- Free fall may not exceed 6'.
- A lower level may not be contacted during a fall
- Lifelines must be placed or protected to prevent abrasion damage.
- Snap hooks may not be connected to each other, or to loops in webbing.
- Inspect components for deformation, wear, and mildew.

System Component List:_____

_____

Anchor Point at this worksite:_____

Configuration and placement sketch attached?

Yes_____No_____

Other Instructions:_____

_____

_____

_____

_____

Positioning Belt:

- Employees must not be able to fall more than 2 feet.
- The anchorage must be able to sustain 4 times the intended load.
- Snap hooks must not be connected to each other, or to loops in webbing.

System Component List:_____

Anchor Point at this worksite:_____

Other Instructions:_____

_____

_____

University of South Carolina Aiken
Fall Protection Plan

Fall Restraint Harness/Belt:

Anchor points:

- Must withstand 4 times the intended load.
- Must always prevent a free fall from the work surface. (Several alternate anchor points may be necessary to achieve this requirement.)
- Inspect components for deformation, wear, and mildew.

System Component List:_____

Anchor Point at this worksite:_____

Configuration and placement sketch attached?

Yes_____No_____

Other
Instructions:_____
_____
_____
_____
_____

Safety Nets must:

- Be installed within 30 feet vertically of the work surface.
- Extend out from the outermost projection of the work surface as specified below.
- Must be tested or certified to withstand a 400-pound object dropped from the highest work surface.
- Mesh at any point must not exceed 36 square inches with the largest opening being 6
- inches side to side.
- Inspect weekly for mildew, wear or damage and remove any objects in net as soon as possible.
- A person falling into the net cannot contact any object below the net.
- System Component List:

Anchor Point at this worksite:_____

Maximum Fall Distance from Work Surface to Net: _____

Vertical distance from working levels to horizontal plane of net:

Up to Five-Feet_____Greater than 5 Ft Less than 10 Ft_____Greater than Ten-Feet_____

University of South Carolina Aiken
Fall Protection Plan

Minimum required horizontal distance of outer edge of the net from the edge of the working surface:

08 Feet
10 Feet
13 Feet

Configuration and placement sketch attached?

Yes_____No_____

Other
Instructions:_____

_____

_____

Covers or Hatches Must:

- Be able to support twice the weight of employees and equipment that would be on it at
- the same time or twice the maximum axle load of the largest vehicle that would cross it.
- Be secured to prevent accidental displacement. Be marked with the word " Cover" or
- "Hole".

Material to Use:_____

Other
Instructions:_____

_____

_____

_____

_____

THE FOLLOWING THREE SYSTEMS CAN ONLY BE USED WHEN ONE OR MORE OF THE PRIOR DESCRIBED SYSTEMS ARE UNFEASIBLE. A NARRATIVE OF THE RATIONALE USED TO DECIDE UPON THE USE OF ONE OR BOTH OF THE FOLLOWING SYSTEMS MUST BE WRITTEN HERE:

_____

_____

_____

_____

_____

University of South Carolina Aiken
Fall Protection Plan

Warning Line Systems Must:

- Block access to all &11 hazards in the work area.
- Be placed 6 feet back from the edge.
- Be made of rope wire or chain between 39" and 45" above the surface height.
- Be flagged at 6-foot intervals.
- Be attached to stanchions such that pulling on one section of chain will not take up slack
- in the other sections.
- Have stanchions that are able to withstand a 16-pound force applied horizontally at 30"
- high.

System Component List:_____

Configuration and placement sketch attached?

Yes_____No_____

Other
Instructions:_____
_____
_____
_____
_____

Controlled Access Zones Must:

Meet the "Warning Line System" requirements described above, 6' to 25' back from the edge plus the following when employees work between the fall hazard and the warning line (control zone').

Have a competent person designated as "monitor" who:

- Wears a high-visibility vest marked "Monitor".
- Is in visual and voice range of employees in the control z.one.
- Is on the same working surface.
- Has no other duties except watching/warning and directing employees regarding fall hazards.
- Has a maximum of eight employees working in the control zone (all of whom must also wear high-visibility vests and are easily distinguishable from the Monitor).

This system is not to be used in adverse weather conditions such as snow, rain, or high wind, or after dark.

Monitor(s):_____
_____

University of South Carolina Aiken
Fall Protection Plan

Control Zone
Employees:_____

_____

_____

_____

_____

_____

_____

_____

Safety Monitor Systems Must:

Have a competent person designated as "Monitor" who:

- Wears a high-visibility vest marked '"monitor".
- Is in visual and voice range of employees in the control zone.
- Is on the same working surface.
- Has no other duties except watching, warning, and directing employees regarding
- Fall hazards.
- Has a maximum of eight employees working in the control z.one (all of whom must also wear high-visibility vests and are easily distinguishable from the monitor).

This system is not to be used in adverse weather conditions such as snow, rain, or high wind, or after dark.

Safety
Monitor(s):_____

_____

Working
Employees:_____

_____

_____

_____

_____

_____

_____

_____

University of South Carolina Aiken
Fall Protection Plan

Other Fall Protection System:

Provide a description of how the system is to be assembled, disassembled, operated, inspected, and maintained, including specifications for materials to be used in its construction:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Emergencies and Injuries:

First Aid Trained Employee(s) On Site:_____

_____

_____

_____

Location of First Aid Kit_____

Closest Medical Facility_____

Emergency Services Phone Numbers: _____

Medical:_____

Fire:_____

Police:_____

If a crew member is injured at elevation, the supervisor will evaluate the employee's condition and administer first aid. Emergency services will be called as needed. If an injured employee can't return to ground level, the employee will be brought down to a lower level by emergency services. The following equipment is available on site to facilitate lowering the injured worker:_____

_____

_____

University of South Carolina Aiken
Fall Protection Plan

Employee Training:

All employees have been instructed on the provisions of this plan and have been trained in the proper use of the fall protection equipment involved. By signing this document, the employees acknowledge that they understand the plan and have been trained in the use of the equipment.

The competent person's signature verifies that the hazard analysis has been done, the employees informed of the plan's provisions and that employees have received training in the mil protection systems in use:

Name:_____

Signature:_____

Date:_____