

 CSN Procedure	Facilities Management
Category: Environmental Health and Safety	Effective Date: 01/22/2024
Fall Protection Safety Program	

I. PURPOSE

The purpose of the College of Southern Nevada (CSN) Fall Protection Safety Program is to outline applicable fall protection requirements for CSN management and staff. Personnel who are tasked with using and/or maintaining fall protection equipment will be trained on all appropriate procedures for such duties.

II. SCOPE

This program applies to all CSN employees who perform any duties on elevated work surfaces greater than four (4) feet above grade in general operation workspaces and six (6) feet above grade in construction related projects. Employees and contractors using devices to access elevated work areas are required to be trained and use safe work practices.

NOTE: Exceptions to the scope of this program where employees may work without fall prevention:

- At the working sides of loading docks.
- At the exposed perimeters of theater stages.
- When climbing portable ladders up to 60 feet in length.
- When working on scaffolds up to 6 feet in height.
- When working on the edge of an excavation up to 6 feet in depth.
- When an employee is on a low slope roof (slope less than 3:12 pitch or 14 degrees) for inspection or observation purposes only.

III. PROGRAM SUMMARY

A. Responsibilities:

1. CSN Environmental Health and Safety (EHS)
 - Ensure administration of this program; conduct a minimum of annual reviews and periodic updates as required to meet program changes.
 - Ensure compliance with applicable environmental, health and safety regulations (OSHA) through implementation of this procedure.
 - Verify that all applicable supervisors and affected employees are trained in accordance with this program.
2. Managers and Supervisors
 - Ensure the application of proper work procedures and required training in accordance with this program.
 - Provide applicable employees with the proper type(s) of fall protection equipment needed to complete assigned work.
 - Ensure that a trained competent person conducts annual documented inspections of all fall protection equipment in their area of responsibility using the Fall Protection Equipment Inspection Checklist (Appendix A). Any equipment found defective is to be tagged as unusable and removed from use.
 - Verify that the worksite where fall protection tasks are planned to occur is inspected by

the employee performing the task utilizing the Pre-Task Activities Checklist outlined in the Work Order system and/or the CSN Fall Protection Worksite Checklist (Appendix B). CSN EHS must review and approve the Worksite Checklist prior to any elevated work performed within 15 feet of an unprotected side or edge (note the exceptions outlined in the program scope).

- Ensure that affected employees inspect and maintain fall protection systems used utilizing the Fall Protection Equipment Inspection Checklist (Appendix A) as a guide.
- Maintain copies of completed annual equipment inspection checklists on file for three years.

3. Affected Employees

- Comply with the program methods described in this procedure and any subsequently developed program(s) and procedure(s).
- Participate in fall protection safety training.
- Conduct all required user inspections on fall protection systems utilizing the Fall Protection Equipment Inspection Checklist (Appendix A) as a guide, before and after their use to identify potential problems. Any defective fall protection equipment is to be tagged as unserviceable and taken out of service.
- Inspect elevated worksites by utilizing the Pre-Task Checklist outlined in the Work Order system and/or the CSN Fall Protection Worksite Checklist (Appendix B). For work that is being performed within 15 feet of an unprotected side or edge (e.g., no protective barriers, guardrail, or other safety measures), the Worksite Checklist (Appendix B) must be filled out by the employee and signed off by EHS prior to the start of work (note the exceptions outlined in the program scope).
- Notify their immediate supervisor of any potential fall protection hazards that are identified during the performance of these related tasks or their regular duties.

4. Contractors

- All outside contractors working in or on the premises of CSN will be required to follow the guidelines set forth in this Fall Protection Program and any other applicable CSN and OSHA safety programs. Contractors are responsible for providing and inspecting their own fall protection equipment.
- Contractors in the pre-job planning and subsequent meetings will be informed about these requirements, as well as the on-site construction rules that apply.
- Provide to their CSN point of contact a copy of their company's Fall Protection Program documents for review prior to performing work.

B. Employee Training

1. Training in fall protection safety procedures will be conducted prior to allowing any employee to perform work at elevated heights or use the related equipment on CSN property. Initial fall protection safety training will occur in person/classroom. Annual refresher training is available via CSN's CAPE online training platform (contact CSN EHS for details on these courses).
2. Fall protection training will focus on all the applicable regulatory requirements and industry best safety management practices for this topic. These will include the following: fall protection equipment selection, use, inspection, storage, and care; identification and control of fall hazards; rescue procedures; and maintaining employee awareness.
3. Individuals trained to directly use and care for fall protection equipment are to be considered "authorized employees" for this purpose.

C. Definitions

Anchorage - Secure point of attachment for lifelines, lanyards, restraint systems, or deceleration (grabbing) devices.

Body Harness (or Full-Body Harness) - Interconnected set of straps that can be secured on a person to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching the harness to other components of a personal fall arrest system.

Competent Person - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Fall Arrest System - System used to minimize the effect of a fall from a working level. Consists of an anchorage, connectors, and full-body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. Fall arrest systems are usually not necessary when proper fall restraint systems are in place.

Fall Prevention - Fall prevention systems are designed to "prevent" against the possibility of falling. For example, guardrails around the platform of a scissor lift aerial work platform constitute "prevention" according to ANSI standards.

Fall Restraint - The fall restraint system consists of a full-body harness and an appropriate lanyard. When used properly, restraint systems are designed to physically prevent the employee from walking or falling off an elevated surface.

Guardrail - Physical barrier, 42 inches high with a mid-rail 21 inches high, erected to prevent personnel from falling from working levels more than 30 inches above the floor, ground, or other working areas of a building.

Lanyard - Flexible line of rope or strap that generally has a connector at each end for connecting the body harness to a deceleration device, lifeline, or anchorage.

Lifeline - A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline). This serves as a means for connecting other components of a personal fall arrest system to anchorage.

Roof - Exterior surface on the top of a building.

Roof Tie-Backs - Eyebolts or other permanent devices installed at the roof level for the purpose of securing or tying back suspended scaffold hooks or clamps and safety lines.

Rope Grab (grabbing device) - A deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest a fall.

Self-Retracting Lifeline/Lanyard - A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under minimal tension during normal movement and which, after the onset of a fall, automatically locks the drum and arrests the fall (usually within two feet or less).

Standard Railing - A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons.

Snap Hook - A connector consisting of a hook-shaped member with a normally closed keeper or similar arrangement which may be opened to permit the hook to receive an object and automatically closes to retain the object when released. *Note:* Only locking snap hooks are permitted at CSN.

Toe Board - A low protective barrier that prevents material and equipment from falling to lower levels and which protects personnel from falling.

Tie-Off - A procedure of connecting directly or indirectly to an anchorage.

Unprotected Sides and Edges - Any side or edge (except at entrances to points of access) of a

walking/working surface, e.g., floor, roof, ramp, or runway which is 6 feet (1.8 m) or more above a lower level where there is no wall or guardrail system at least 42 inches high, safety net system, or personal fall arrest system.

Vertical Lifeline - A vertically hanging flexible line that serves as a means for connecting other components of a personal fall arrest system to an anchorage.

Walking/Working Surface - Any surface, whether horizontal or vertical, on which an employee walks or works including, but not limited to floors, roofs, ramps, bridges, and runways.

D. Fall Protection Guidelines

These Fall Protection Program Guidelines have been prepared to provide required safety measures and best management practices.

1. Engineering Controls

Engineering controls should always be the first option for fall protection safety measure selection whenever possible and feasible.

2. Guardrails

On projects where guardrails are required, only guardrails made from steel, wood, or wire cable will be acceptable. All guardrail systems will comply with the current Occupational Safety and Health Administration (OSHA) standards (i.e., 42" – 45" high top-rail, mid-rail halfway between top-rail and floor, 4" high toe board, vertical posts, and able to withstand at least 200 pounds of force applied horizontally and vertically in any direction). Guardrails will be placed in the following areas if necessary or feasible based on job location or the related task requirements: 1) On all open-sided floors; 2) Around all open excavations or pits; 3) On unprotected edges of roofs or mezzanines.

3. Personal Fall Protection Systems

All personnel on any project who will require personal fall arrest or restraint systems must follow these guidelines:

- a. A full-body harness will always be used.
- b. Only shock-absorbing lanyards or self-retracting lanyards will be used to keep impact forces on the body at a minimum.
- c. Only nylon ropes or nylon straps with locking snap hooks will be used for personal fall restraints.
- d. All lanyards will have self-locking snap hooks.
- e. The employee or contractor will inspect all personal fall arrest equipment before each use. Any deteriorated, bent, damaged, and/or impacted harness, lanyard, rope, or strap showing excessive wear will be immediately removed from service.
- f. A trained Competent Person will complete a formal inspection of all fall protection systems at least once a year (or more frequently if required by the manufacturer). The inspection will include all fall protection equipment including Full Body Harness, Shock Absorbing Lanyards, Snap Hooks/Carabiners, and Self Retracting Lanyards. The inspection shall be documented and shall include (but not limited to):
 - Absence or illegibility of markings or tags.
 - Absence of any elements affecting the equipment's form, fit or function.
 - Evidence of defects in or damage to hardware elements including cracks, sharp edges, deformation, corrosion, chemical attack, excessive heating, alteration, or excessive wear.
 - Evidence of defects in, or damage to, straps or ropes (fraying, unsplicing, enlacing, kinking, knotting, roping, broken or pulled stitches, soiling, abrasion, alteration, needed or excessive lubrication, excessive aging, or excessive wear).

- Alteration, absence of parts, or evidence of defects in, damage to, or improper function of, mechanical devices and connectors.
- Any other condition that calls to question the suitability of the equipment for its intended purpose.

4. Calculating Total Fall Distance

The maximum free fall distance must not exceed 6 feet. Consideration must be given to the total fall distance. The following factors can affect total fall distance:

- a. Length of connecting means (i.e., lanyard length, use of Carabiners, snap hooks, etc.).
- b. Position and height of anchorage point relative to work platform/area (always attach to anchorage point above the head whenever possible). An offset of more than 15 degrees may cause a pendulum effect swinging the worker.
- c. Position of attachment and D-ring slide on the full body harness.
- d. Deceleration (stretching) distance of shock absorber (maximum 42").
- e. Movement in the lifeline.
- f. Initial position of the worker before free fall occurs (i.e., sitting, standing, etc.).

Total fall distance is determined by combining the total length of shock absorbing lanyard + height of the person + distance of the D-ring from the work surface or platform. Always allow a minimum of 6 feet (72") of clearance above the ground and equipment, at the end of the fall from the fall arrest stopping point. Supplement your calculations by using the Miller Fall Clearance Calculator.

Engineered lifeline systems must be designed and approved by a Licensed Professional Engineer (PE). Lifeline systems must be engineered to have appropriate anchorage points, adequate strength of line designed to hold the number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold a fallen person(s) suspended until a rescue can occur.

E. Emergencies/Rescue Methods/Options of Fallen Personnel

Prior to any non-routine, high-hazard onsite task where the use of fall protection is to be involved, CSN EHS is to be notified in advance (minimum of 24 hours); especially if the work requires the worker to leave the guarded area and move to another area with a fall hazard, working on an unprotected edge, or for suspended maintenance operations. CSN EHS can assist with the determination of the task hazard level and the selection of appropriate control measures.

Part of that notice is to include confirmation that the CSN rescue plan for a fall arrest incident will be followed. That formal plan for managing response to a fall arrest incident is to be developed and confirmed with CSN EHS, for any work performed onsite by CSN employees or contractors.

If a fall arrest incident occurs, CSN personnel will immediately assess the safety of the worker and call University Police Services (UPD) at (702) 895-3669 / ext. 7-911. The caller should inform the dispatcher that a fall has occurred, and a rescue team is required. UPD will notify and coordinate external emergency services, such as the local Fire Department, which will serve as the fall arrest incident rescue service to CSN. CSN employees are not permitted to perform high-angle rescue.

Concurrently, in the event of any type of injury occurring where medical attention is required, whether from a fall incident or other situation, CSN EHS is to be notified immediately. For any life-threatening medical incidents, call UPD so that the local Fire Department can be notified and respond.

In case of emergencies in the event of a fall, the following people will be notified as soon as possible:

1. University Police Services at (702) 895-3669 / ext. 7-911, who will coordinate with the local Fire Department and Emergency Medical Services if necessary.
2. Manager/Supervisor.

3. CSN EHS Department.

F. Storage and Maintenance of Fall Protection Equipment

1. Never store personal fall arrest equipment in the bottom of a toolbox, on the ground, or outdoors exposed to the elements (i.e., sun, rain, etc.).
2. Hang equipment in a cool, dry location in a manner that retains its shape.
3. Always follow the manufacturer's recommendations for storage and inspection.
4. Avoid marking directly on the web, marking products can cause a loss of strength in webbing.
5. Clean equipment with mild, nonabrasive soap and hang to dry.
6. Never force dry equipment or use strong detergents in cleaning.
7. Never store equipment near excessive heat, chemicals, moisture, or sunlight.
8. Never store equipment in an area with exposure to fumes or corrosive chemicals.
9. Avoid dirt or other types of contaminant build-up on equipment.
10. Never use equipment for any purpose other than personal fall arrest.
11. Once exposed to a fall, remove equipment from service immediately.

IV. AUTHORITY AND CROSS REFERENCE LINKS

[OSHA 1910.28](#): Walking-Working Surfaces

[OSHA 1910.140](#): Personal Fall Protection Systems

[NAC 618.507](#): Elevator or Personnel Hoist Required for Construction of Certain Structures, Approval of Alternative Means of Access

[NAC 618.538](#): Establishment of Written Safety Programs

[NAC 618.540](#): Requirements of Written Safety Programs

[NAC 618.542](#): Records of Written Safety Programs

V. APPENDICES

Appendix A - Fall Protection Equipment Inspection Checklist (General)

Appendix B - Fall Protection Worksite Inspection Checklist

Appendix C – Fall Arrest Incident Rescue Plan

Appendix D – Document Revision History

Appendix A – Fall Protection Equipment Inspection Checklist (General)

Fall Protection Equipment Checklist - General				
Department:		Campus & Bldg.:		
Location of the equipment:				
Equipment User(s) (if assigned):				
Inspector:		Date:		
<p><i>For each item check OK, Defective, or N/A. Be sure to retain all documentation regarding inspections for a minimum of 3 years.</i></p>				
Types of Equipment Inspected	Yes	No	N/A	Comments
1. Harness				
2. Lanyards				
3. Tripod				
4. Hoist				
5. Cables				
6. Hooks				
7. Anchors				
8. Lifelines (Self Retracting or other)				
9. Other:				
Equipment Condition - Harness	OK	Defective	N/A	Comments
10. Harness - straps (shoulder, chest, legs, back)				
11. Harness – excessive wear, paint/oil damage				
12. Harness – cuts, burns, holes, or UV damage				
13. Hardware – shoulder adjustment buckles				
14. Hardware – Leg & waist buckles; other hardware				
15. Hardware – “D” rings (Dorsal, side, shoulder, sternal)				
16. Hardware – Corrosion, pitting, nicks, cracks				
17. Labels/markings – manufacturer info. (Name, contact)				
18. Labels/markings – ANSI, OSHA, CSA info.				
19. Labels/markings – inspection tag (current/up to date)				
Other Equipment				
20. Lanyards				
21. Tripod & Hoist				
22. Cables, Hooks, Anchors				
23. Lifelines				
24. Other:				
Actions	OK	Defective	Comments	
Equipment tagged as damaged and is removed from use				
Equipment in good condition included on campus inventory				
Inspector’s Signature:		Date:		



Additional comments may be attached or documented on the reverse side of the page.

Appendix B – Fall Protection Worksite Inspection Checklist

Fall Protection Worksite Checklist					
Department:		Campus/Bldg.:			
Location of worksite:					
Project/Task/Job:					
Inspector:		Date:			
<i>For projects, tasks, or jobs where Fall Protection (FP) has been identified as potentially needed, this form serves as an initial review to confirm existing or required safety controls</i>					
Stairs and Steps (All Locations)		OK	Defective	N/A	Comments
1. Stairs with 4 or more steps have handrails					
2. Stairs and steps are uniform top to bottom					
3. Stairs and steps are slip resistant					
Fixed Ladders					
1. Good condition, no defects, loose mounting bolts, or sharp surfaces					
2. Clear of electrical or other hazards					
3. Indoor or outdoor lighting sufficient					
4. If over 24', ladder has a safety cage					
Extension Ladders (Portable)		OK	Defective	N/A	Comments
1. Good condition, no defects, extends easily					
2. Fiberglass material used (non-conductive)					
3. Placement surface is stable					
4. Manufacturer safety info labels are legible					
Guardrails		OK	Defective	N/A	Comments
1. Good condition, no defects or damage					
2. 42" above working surface, w/21" mid-rail					
3. If wire rope, flagged for visibility (6 ft. intervals)					
4. If open sides >10', have 4" toe board					
Scaffolds		OK	Defective	N/A	Comments
1. Erected by trained/competent person					
2. Good condition, no defects, stable location					
3. Last Inspection date:					
4. Secured to adjacent structure					
5. Guardrails are 42" w/21" mid-rail					
Aerial Lifts (Platform/Bucket) and Scissor Lifts		OK	Defective	N/A	Comments
1. Lifts in good condition, formal inspection done					
2. Operated only by trained/qualified/authorized persons					
3. Fall protection utilized for lifts					
4. Lifts operated on stable, level surfaces					
Fall Restraint/Arrest Systems		OK	Defective	Comments	
1. Appropriate systems available, good condition					
2. Used only by trained/qualified persons					
3. Used for any unguarded surface >4'					



Appendix B – Fall Protection Worksite Inspection Checklist

4.Lifelines, lanyards, snap hooks inspected			
Control of Work Zone Safety	OK	Defective	Comments
1.Area for fall protection tasks cordoned off			
2.No solo work allowed – Spotter identified			
3. 2-way communication established for tasks			
4.Fall arrest rescue plan confirmed, understood			
Low Slope Roofs (If Applicable)	OK	Defective	Comments
1. Priority FP Safety controls deemed not feasible by Qualified Person			
2.Trained/Qualified/Person establishes alternate Fall Protection safety control plan			
3.Monitoring of alternate safety plan established			
Other Actions/Notes (As Applicable)			
Inspector’s Signature:	Date:		
EHS Signature (required for work within 15’ of unprotected side or edge):	Date:		

Appendix C – Fall Arrest Incident Rescue Plan

CSN EHS is to be notified in advance (minimum of 24 hours) prior to any non-routine, high-hazard onsite task where the use of fall protection is to be involved; especially if the work requires the worker to leave the guarded area and move to another area with a fall hazard, working on an unprotected edge, or for suspended maintenance operations.

Part of that notice is to include confirmation that the CSN rescue plan for a fall arrest incident will be followed. That formal plan for managing response to a fall arrest incident is to be developed and confirmed with CSN EHS, for any work performed onsite by CSN employees or contractors.

At a minimum consider the following when developing a fall arrest incident rescue plan:

- Verify that rescue services have been contacted prior to starting work.
- Ensure that workers keep their cell phone/radio above their waist for easy access.
- Verify that the worksite has reliable cell phone or radio coverage.
- Document the location of the worksite, address and specific location. Include directions.
- Document the nearest emergency facility and address.

Appendix D – Document Revision History

Date of Review: 11/20/2023	
Section	Change
All	New Document
Date of Review: 01/22/2024	
Section	Change
III.PROGRAM SUMMARY A. Responsibilities	Updated list items 2. Managers and Supervisors, 4. Contractors
III.PROGRAM SUMMARY D. Fall Protection Guidelines	Updated list items 3. Personal Fall Protection Systems, 4. Calculating Total Fall Distance
III.PROGRAM SUMMARY F. Storage and Maintenance of Fall Protection Equipment	Updated list items
Appendix C	Added appendix with Fall Arrest Incident Rescue Plan
Appendix D	Added Appendix with Document Revision History
Date of Review:	
Section	Change