FALL PROTECTION PROGRAM

Community Colleges of Spokane

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FALL PROTECTION WRITTEN PROGRAM

PLAN OBJECTIVE

The State of Washington, Department of Labor and Industries, has adopted the fall restraint and fall arrest standard, WAC 296-245. Its objective is to ensure that all fall restraint and fall arrest working requirements are identified and that the employers of Washington State develop and implement a written fall protection work plan including each area of the work place where employees are assigned and where fall hazards of 10 feet or more exist.

The objective of the Community Colleges of Spokane (CCS) in regard to the fall restraint and fall arrest standard is to continue in our efforts to provide a safe work environment for our employees. Our efforts are directed toward providing and enforcing the use of fall protection equipment and systems for employees involved in workplace construction, alteration, repair, maintenance, demolition, and/or material handling where a fall hazard of 10 feet or more exists.

PLAN SCOPE AND APPLICATION

This plan sets forth requirements for provisions and enforcement of the use of fall protection for CCS employees involved in construction, alteration, repair, maintenance (including painting and decorating), demolition workplaces, and material handling covered in WAC 296-155.

Copies of this written plan will be maintained in the CCS Environmental Health and Safety Office.

EXCEPTIONS TO FALL RESTRAINT AND FALL ARREST

- On low-pitched roof perimeters (slope equal to or less than 4 in 12), this fall protection work plan does not apply to points of access such as stairways, ladders, and ramps, or when employees are on the roof only to inspect, investigate, or estimate roof level conditions.
- On the usage of portable ladders less than 24 feet in height (note: ladder standard must be followed as outlined in WAC 296-480(1)(s)).
- On the usage of fixed ladders less than 24 feet in height. When the length of climb equals or exceeds 24 feet, fixed ladders shall be equipped with one of the following: 1) Ladder safety devices; 2) self retracting life lines; 3) A cage or well, and multiple ladder sections.

POLICY

It is the policy of the Community Colleges of Spokane to provide a safe working and learning environment for employees and students and to comply with the statutory regulations of the Department of Labor and Industries, Sate of Washington. Because employees incur risk of injury or death from accidental falls, all CCS employees who have exposure where fall hazards of 10 feet or more exist are required to follow the CCS written fall protection work plan.

TRAINING

Every CCS employee required to work above 10 feet in height (except for the use of portable ladders under 24 feet in height and general inspections of roof conditions when slope is equal to or less than 4 in 12) shall receive initial fall protection training prior to receiving a work assignment involving elevated work. This training shall be provided by:

- CCS Environmental Health and Safety Professionals

OR

- Other qualified individuals (supervisors, managers, etc. who have received training; have the competency to provide training; and have been designated to do so by the Environmental Health and Safety Department).

The training will consist of the following fall protection work plan elements, as appropriate:

- Identification of all fall hazards in the work area.
- Description of the method of fall restraint and assembly to be provided.
- Description of the method of fall arrest and assembly to be provided.

- Description of special job site systems.
- Description of the correct procedures for the maintenance, inspection, and disassembly of the fall protection system to be used.
- Description of the correct procedures for the handling, storage, and securing of tools and materials.
- Description of the method of providing overhead protection for workers who may be in, or pass through the area below the work site.
- Description of emergency procedures for prompt, safe removal of injured workers.

Training of employees as required by this section shall be documented and will be available for review in the CCS Environmental Health and Safety Office and in the CCS Human Resource Department.

FALL PROTECTION WORK PLAN

FALL HAZARD IDENTIFICATION

Per WAC 296-155-24505, CCS is required to identify each area of the workplace where fall hazards of 10 feet or more exist where employees are assigned to work. The following are examples of regular job duties with the potential for fall hazards in which CCS employees are regularly involved.

Job Duties

1. Window washing
2. Cleaning saw dust collectors
3. Changing filter systems (HVAC & dust collection on campus roofs)
4. Electrical work
5. Changing light bulbs
6. Painting
7. Roof work & repair (e.g. cleaning gutters, painting roof trim, snow & ice removal, etc.)
8. Gardening work (e.g. tree trimming)
9. Construction work (e.g. carpentry class building houses)
10. Logging program (e.g. climbing vertical poles)

Fall hazards may also be recognized by the type of equipment used. For example, the following is a list of equipment select CCS employees regularly use to complete assigned job duties of 10 feet or more in height:

Equipment

1. Boom-truck
2. Top-horse
3. Scaffolding
4. Platforms

FALL RESTRAINT SYSTEMS AND METHODS OF ASSEMBLY

The intent of a fall restraint system is to restrain an employee in a manner which prevents them from falling to a lower level. When CCS employees are exposed to fall hazards from a location of 10 feet or more, the Community Colleges of Spokane shall ensure that fall restraint systems are provided, installed and implemented according to the following methods:

1. **STANDARD GUARDRAILS** described in WAC 296-155-505(5).
   "Standard guardrail" is a horizontal barrier at the perimeter of any surface edge presenting a potential fall hazard constructed to provide a smooth surface top rail a distance of not more than 42 inches or less than 36 inches above the walking surface. A standard guardrail shall be constructed to consist of top rail, intermediate rail, toe board, and posts, and shall have a vertical minimum height of 36 inches to 42 inches from upper surface of top rail to floor, platform, runway, or ramp level. An intermediate rail shall be installed halfway between the walking surface and the tope of the top rail. The anchoring of posts and framing members for railings of all types shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail with minimum deflection. For specifications and information on assembly and construction refer to WAC 296-155-505(5).

2. **FULL BODY HARNESS, OR SAFETY BELTS WITH ATTACHED LANYARD**. "Full body harness is a configuration of connected straps to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device." All safety harnesses and safety belts shall be assembled, maintained, inspected, and disassembled according to the manufacture's recommendations for each item. Each piece of equipment will require different procedures and have different recommendations associated with it depending on the type and use of the safety harness or safety belt.
   a. Full body harness and belts shall conform to ANSI standard:
   i. Class I – body belt
   ii. Class II – chest harness
   iii. Class III – Full body harness
   iv. Class IV – suspension/position belt
   b. All safety belt and lanyard hardware assemblies shall be capable of withstanding a tensile load of 4,000 pounds without cracking, breaking or taking a permanent deformation.
   c. Rope grab devices are prohibited for fall restraint applications unless they are part of a fall restraint system designed specifically by the manufacturer and used in strict accordance with the manufacturer's recommendations and instructions.
   d. CCS shall insure component compatibility.
   e. Components of fall restraint systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration, and defective components shall be removed from service if their function or strength have been adversely affected.
   f. Anchorage points used for fall restraint shall be capable of supporting 4 times the intended load.
   g. Restraint protection shall be rigged to allow the movement of employees only as far as the sides and edges of the walking/working surface.

3. WARNING LINE SYSTEM

Warning line systems are an option. If used, they shall meet all the requirements listed in WAC 296-155-245.

FALL ARREST SYSTEMS AND METHODS FOR ASSEMBLY

The intent of a fall arrest system is to protect a person when falling to a lower level. The Community Colleges of Spokane shall ensure that fall arrest systems are provided, installed and implemented according to the following methods:

1. FULL BODY HARNESS. Fall arrest protection shall consist of the following items when utilizing a full body harness:
   a. An approved Class III full body harness shall be used.
   b. Body harness system or components subject to impact loading shall be immediately removed from service and shall not be used again for any employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.
   c. All safety lines and lanyards shall be protected against being cut or abraded.
   d. Body harness system shall be rigged to minimize free fall distance with a maximum free fall distance allowed of 6 feet, and such that the employee will not contact any lower level.
   e. Hardware shall be drop forged, pressed or formed steel, or made of materials equivalent in strength.
   f. Hardware shall have a corrosion resistant finish, and all surfaces and edges shall be smooth to prevent damage to the attached body harness or lanyard.
   g. When vertical drop lines/lifelines are used, not more than one employee shall be attached to any one lifeline.
   h. Full body harness systems shall be secured to anchorages capable of supporting 5,000 pounds per employee except when self-retracting lifelines or other deceleration devices are used which limit free fall to two feet (anchorages shall be capable of withstanding 3,000 pounds).
   i. Vertical lifelines shall have a minimum tensile strength of 5,000 pounds, except that self-retracting lifelines and lanyards which automatically limit free fall distance to two feet or less shall have a minimum tensile strength of 3,000 pounds.
   j. Horizontal lifelines shall have a tensile strength capable of supporting a fall impact load of at least 5,000 pounds per employee using the lifeline, applied anywhere along the lifeline.
   k. Lanyards shall have a minimum tensile strength of 5,000 pounds.

l. All components of body harness systems whose strength is not otherwise specified in this plan, shall be capable of supporting a minimum fall impact load of 5,000 pounds applied at the lanyard point of connection.
m. Snap hooks shall not be connected to loops made in webbing-type lanyards.
n. Snap hooks shall not be connected to each other.
o. Not more than one snap hook shall be connected to any one D-ring unless they are double locking type.
p. Full body harness systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration, and defective components shall be removed from service if their function or strength have been adversely affected.
q. Drop lines or lifelines used on rock scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of ¾-inch manila or equivalent, with a minimum breaking strength of 5,000 pounds, shall be used.

2. SAFETY NETS

Safety nets are an option. If used, they shall meet all the requirements as listed in WAC 296-155-24510(3)(b). Under existing work conditions, it is unlikely that this option will be utilized in fall restraint or fall arrest at CCS.

3. CATCH PLATFORMS

Catch platforms are an option. If used, they shall meet all the requirements as listed in WAC 296-155-24510(3)(c). Under existing work conditions, it is unlikely that this option will be utilized in fall restraint or fall arrest at CCS.

SPECIAL IMPLEMENTATION OF FALL ARREST & FALL RESTRAINT SYSTEMS

1. **LEADING EDGE CONTROL ZONE WORK.** "Leading edge" means the advancing edge of a floor, roof, or formwork which changes location as additional floor, roof or formwork sections are placed, formed or constructed. Leading edges not actively under construction are considered to be 'unprotected sides and edges," and positive methods of fall arrest or fall restraint shall be required to protect exposed workers. When performing leading edge work, CCS shall ensure that a control zone be constructed and established according to the following requirements:
   a. The control zone shall begin a minimum of 6 feet back from the leading edge to prevent exposure by employees who are not protected by fall restraint systems.
   b. The control zone shall be separated from other areas of the low-pitched roof or walking/working surface by the erection of a warning system.
   c. The warning line system shall consist of wire, rope, or chain supported of stanchions, or a method which provides equivalent protection.
   d. The spacing of the stanchions and support of the line shall be such that the lowest point of the line (including sag) is not less than 39 inches from the walking/working surface, and its highest point is not more than 45 inches from the working/walking surface.
   e. Each line shall have a minimum tensile strength of 500 pounds.
   f. Each line shall be flagged or clearly marked with high visibility materials at intervals not to exceed 6 feet.
   g. After being erected with the rope, or chain attached, stanchions shall be capable of resisting without tipping over, a force of at least 16 pounds applied horizontally against the stanchions 30 inches above the roof surface, perpendicular to the warning line and in the direction of the roof edge.
   h. Control zone workers shall be distinguished from other members of the crew by wearing a high visibility vest only while in the control zone. To assemble, construct the same as the warning line system and include the safety monitor system.
2. **GUARDING OF LOW-PITCHED ROOF PERIMETER – ROOF SLOPE EQUAL TO OR LESS THAN 4 in 12**. During the performance of work on low-pitched roof perimeters with a ground to eave height greater than 10 feet, CCS shall ensure that employees engaged in such work be protected from falling from all unprotected sides and edges of the roof as follows:
   a. By the use of fall restraint system, as defined in WAC 296-155-24510.
   b. By the use of a warning line system erected and maintained as described on page 9 of this section and supplemented for employees working between the warning line and the edge of the roof including the use of a safety monitor system. Refer to appendix B.
   c. Mechanical equipment shall be used or stored only in areas where employees are protected by a warning line system, fall restraint, or fall arrest systems as described in this plan. Mechanical

equipment may not be used or stored where the only protection is provided by the use of a safety monitor system.

3. **ROOF EDGE MATERIALS HANDLING AREAS AND MATERIALS STORAGE**. Employees working in a roof edge materials handling or materials storage are allocation on a low-pitched roof with ground to eave height greater than 10 feet shall be protected from falling along all unprotected sides and edges of the area.
   a. When guardrails are used at hoisting areas, a minimum of four feet of guardrail shall be erected on each side of the access point through which materials are hoisted.
   b. A chain gate shall be placed across the opening between the guardrail sections when hoisting operations are not taking place.
   c. When guardrails are used at bitumen pipe outlets, a minimum of 4 feet of guardrail shall be erected on each side of the pipe.
   d. When safety belt/harness systems are used, they shall not be attached to the hoist.
   e. When fall restraint systems are used, they shall be rigged to allow the movement of employees only as far as the roof edge.
   f. Materials shall not be stored within six feet of the roof edge unless guardrails are erected at the roof edge.

PROCEDURES FOR MAINTENANCE, INSPECTION AND DISASSEMBLY OF FALL PROTECTION SYSTEMS

1. **MAINTENANCE.** All components of fall restraint systems shall be maintained as outlined in the manufacture's recommendations for each specific piece of equipment or machinery. If no recommendation exists, contact the CCS Environmental Health and Safety Coordinator at 8623.
2. **INSPECTION.** All components of fall restraint systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration, and defective components shall be removed from service if their function or strength have been adversely affected.
3. **DISASSEMBLY.** When working with equipment (i.e. boom-truck, top-horse), disassembly shall occur on the ground level to prevent the possibility of disassembly accidents. When working on roofs of buildings, care shall be exercised not to create an unprotected fall hazard during the disassembly procedure. Where feasible, full body harnesses and attached fall protection equipment shall be the last item removed when disassembling on open, unprotected sides of roofs or walkways, or while disassembling items within 6 feet of a flat or low-pitched roof perimeter.

PROCEDURES FOR HANDLING, STORING AND SECURING TOOLS AND MATERIALS

The procedures for handling, storing and securing tools and materials will include the following options:

1. All tools and equipment will be raised and lowered in the safest possible manner (e.g. tool belts or tool bucket on rope).
2. The use of toe boards, or other devices to prevent the falling of tools and equipment will be used when applicable.
3. Materials and equipment will be secured when necessary to prevent injury to workers or persons below.
4. Safety nets are an option when no other options are used.
5. All projects shall have barricading or be roped off when there is a safety hazard.
6. No work shall commence when there is the possibility of problems with gravity, wind, snow or rain.

OVERHEAD PROTECTION FOR PERSONS WHO MAY BE IN OR PASS BELOW THE WORK SITE

The specific individual who is assigned to work overhead shall plan, evaluate, coordinate, and implement specific overhead protection measures. As a minimum, preplanning is to include each of the following:

1. Inspect work site for potential material and equipment falling hazards.
2. All areas with the potential of falling materials, equipment, or other items such as tree branches, light fixtures, etc., shall warn persons in the area by roping off the area with “DANGER” or “CAUTION” tape.

3. Persons who must work directly under the overhead persons shall wear a hard hat and be in constant visual sight of the person doing the overhead work.
4. If work being completed is directly over a building entry or exit, proper measures shall be taken to eliminate the possibility of falling objects into such area (e.g. reroute traffic, use safety catch nets, tie off tools, etc.).

EMERGENCY PROCEDURES FOR PROMPT, SAFE REMOVAL OF INJURED WORKERS

Trained rescue personnel must have proper rescue and removal equipment before attempting to remove an injured worker from an elevated job site. If neither trained personnel nor equipment is available, the following procedures should be followed.

1. Never attempt to move an injured worker if no immediate danger exists.
2. Immediately call 911 emergency services as appropriate to the situation.
3. Provide First-Aid/CPR as necessary.
4. Inform CCS Facilities (533-8630) of the situation.

Note: Proper equipment and personnel would include stretcher, rope, tie down straps, trained rescue personnel, hydraulic lifting equipment suitable for rescue operations, ladders, etc.