1.0 PURPOSE

The Fall Protection Program identifies the minimum requirements for ongoing safety of HES employees exposed to fall hazards while working where the potential for falling exists. This program has been developed in an effort to comply with 29 CFR Part 1926 Subpart M and to prevent employees from falls.

2.0 SCOPE

The Fall Protection Program applies to all HES employees potentially exposed to fall hazards during construction or demolition work activities. Fall protection requirements for the following work activities are referenced accordingly:

- Requirements relating to fall protection for employees working on **scaffolds** are provided in Part 1926 *Subpart L*.
- Requirements relating to fall protection for employees working on certain **cranes** and **derricks** are provided in Part 1926 *Subpart N*.
- Requirements relating to fall protection for employees performing **steel erection** are provided in Part 1926.105 and Part 1926 *Subpart R*.
- Requirements relating to fall protection for employees working on certain types of equipment used in **tunneling operations** are provided in Part 1926 *Subpart S*.
- Requirements relating to fall protection for employees engaged in the construction of **electric transmission** and **distribution lines** and equipment are provided in Part 1926 *Subpart V*.
- Requirements relating to fall protection for employees working on **stairways** and **ladders** are provided in Part 1926 *Subpart X*.

3.0 PROGRAM MAINTENANCE

This program will be revised as needed by the Health & Safety Manager and approved by the Director, Environmental services. This program will be reevaluated on an annual basis or as needed.

4.0 DEFINITIONS

- *Anchorage* – A secure point of attachment for lifelines, lanyards, or deceleration devices.
- *Body Harness* – A strap which may be secured about the employee in a manner that will distribute a fall arrest force over at least the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a personal fall arrest system.

- *Connector* – A device, which is used to connect parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabiner, or it may be an integral component of the system (such as a buckle or deering sewn into a body belt or body harness).

- *Deceleration Device* – Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards which serves to dissipate a substantial amount of energy imposed on an employee during fall arrest.

- *Guardrail System* – A barrier erected to prevent employees from falling to lower levels.

- *Hole* – A gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.

- *Lanyard* – A flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body belt or 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), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

- *Low-slope roof* – A roof having a slope less than or equal to 4 feet vertical rise for every 12 feet horizontal rise (15˚).

- *Personal Fall Arrest System* – A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness and many include a lanyard, deceleration device, lifeline, or suitable combinations.

- *Safety-Monitoring System* – A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

- *Self-Retracting Lifelines/Lanyard* – A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

- *Snaphook (Locking-type)* – A self-closing, self-locking connector which remains normally closed, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object.

- *Warning Line System* – A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail or safety net systems to protect employees in the area.

5.0 RESPONSIBILITIES

The *Project Manager* or *Site Supervisor* will be responsible for ensuring that the following items are completed:

1. Each worksite is surveyed and all activities are reviewed to identify the hazards of personnel falling from above.

2. The hazards and control measures are addressed in a site-specific health and safety plan. Methods to address fall hazards are considered in the following order prior to beginning work:

    a. Eliminate or reduce the need for elevated work.

    b. Provide fall engineering controls or administrative controls to minimize the risk of a fall.

    c. Provide fall protection (i.e. PPE) to reduce the risk of a fall.

    d. Audits will be periodically performed at the worksite by the SHSO or designated representative to ensure compliance with the program.

    e. Appropriate inspections are completed on fall protection equipment and systems.

    f. All employees using fall protection equipment have the knowledge and skills to use the equipment properly and understand the program.

    g. Emergency services are clearly identified and within communication in the event of a fall requiring rescue or medical support.

    h. A competent person is available to monitor the safety of other employees complying with proper requirements.

The *Employees* will be responsible for understanding and recognizing the following items prior to beginning work:

1. Eliminate or reduce the need for elevated work.

2. Provide fall engineering controls or administrative controls to minimize the risk of a fall.

3. Provide fall protection (i.e. PPE) to reduce the risk of a fall.

4. Weather is a safety issue that must be addressed whenever outdoor-elevated work is anticipated.

5. If and when fall protection is required, a personal fall arrest system that complies with 29 CFR 1926.502 (d) will be used.

6. Knowing and understanding the proper use and limitations of the fall protection equipment so as not to exceed the limitations.

7. Inspection of fall protection equipment prior to each use and to put out-of-service damaged equipment.

8. Verification that the combined length of the fall protection system (maximum length) is at least 2 feet shorter than the distance to the next level or ground.

6.0 CONTRACTORS AND SUBCONTRACTORS

Whenever HES contractors or subcontractors are exposed to falling hazards requiring fall protection, they will be provided with pertinent information available to HES concerning the fall hazards. Contractors and subcontractors will be required to submit to the information required by this program.

7.0 REQUIREMENTS FOR UNPROTECTED SIDES AND EDGES

The following requirements will apply to unprotected sides and edges:

1. All employees on a *walking/working surface* 6 feet or more above a lower level will be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

2. All employees on walking/working surfaces will be protected from falling through *holes* more than 6 feet above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.

3. *Excavations* 6 feet or more in depth will be protected from falling by fences, barricades, barrier tape, or covers accordingly.

4. All employees above dangerous equipment will be protected from falling into or onto the dangerous equipment by guardrail systems, equipment guarding, personal fall arrest systems, or safety net systems.

5. All employees on a walking/working surface (horizontal and vertical surface) with and *unprotected side or edge* (*roof*) which is 6 feet or more above a lower level will be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

6. All employees on a *steep roof* with unprotected sides and edges 6 feet or more above lower levels will be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.

7. All employees engaged in *leading edge work, precast concrete erection work, or residential construction work* activities 6 feet or more above a lower level will be protected by guardrail systems, safety net system, or personal fall arrest system unless these systems are determined infeasible or creates a greater hazard to use the systems, a fall protection plan will be designed and implemented which meets the requirements of 29 CFR 1926.502 (k).

8.0 REQUIREMENTS FOR PROTECTION FROM FALLING OBJECTS

When an employee is or may be exposed to falling objects, the employee will wear a hard hat and one of the following measures will be implemented:

1. Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels.

2. Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced.

3. Barricade the area to which objects could fall, prohibit employee from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

9.0 SAFETY MONITORING SYSTEMS

HES will designate a competent person to monitor the safety of other employees and ensure that the safety monitor complies with the following requirements:

1. The safety monitor will be competent to recognize fall hazards.

2. The safety monitor will warn the employees when it appears that they unaware of a fall hazard or are acting in an unsafe manner.

3. The safety monitor will be on the same walking/working surface and within visual sighting distance of the employees being monitored.

4. The safety monitor will be close enough to communicate orally with the employee.

5. The safety monitor will be designated by the Project Manager or Health & Safety Manager.

10.0 INSPECTIONS

Employees will inspect their fall protection equipment visually before each use. The SHSO and/or supervisor will also inspect this equipment on a routine basis. The frequency of these checks will be contingent upon the conditions where used. If defective conditions are found, the items will be removed from service immediately, tagged to prevent further use, and be properly repaired or destroyed.

11.0 TRAINING

This program will enable employees to recognize the hazards of falling and train each employee in the procedures to be followed in order to minimize the hazards. HES will assure that a competent person has trained employees, as necessary in accordance with 29 CFR 1926.503. Training records will be maintained at the main office.

When HES has reason to believe that any affected employee who has already been trained does not have the understanding and skill required for safe fall protection practices, the employee will be retrained.

Anchorage for Elevated Work Safety

Anchorage Points Selection

An anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. This point must be carefully planned into the job in order to provide continuous protection during the work task. Selection of an anchor point should minimally include:

1. The anchor point must be independent of the work surface.

2. Minimum clearance requirements above grade or obstructions must be established when selecting anchorage points.

3. Horizontal lifelines are used for laterally protected mobility to reduce a dangerous pendulum-type swing fall. Horizontal lifelines are designed to enable the device or attachment part to remain overhead so that a fall arrest occurs within a vertical plane.

4. Anchorage points as distinguished by OSHA for construction and general industrial activities:

Construction – *29 CFR 1926.104 (b)*:

Anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds.

General – *29 CFR 1910.66 (Appendix C)*:

(I)(c)(10): Anchorages to which personal fall arrest equipment is attached shall be capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two, under the supervision of a qualified person.

(I)(d)(1): Personal fall arrest systems shall, when stopping a fall: (ii) Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness; (iii) Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.25 feet; (iv) Shall have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six feet, or free fall distance permitted by the system, whichever is less.

Pipe

The span (between pipe supports) must not be greater than 20 feet for any size pipe. The pipe length should be continuous for at least two supports on either side of the attachment to ensure firm attachment and prevent pipe slippage from supports. Securement of pipe support is necessary when two supports are not available on both sides.

- ✶ Four-inch diameter or greater of any metal pipe (excluding aluminum) may be used only if in good condition. (Professional Engineer must authorize)

- ✶ Pipe connected with couplings will not be used as anchor points.

- ✶ Do not tie off to electrical conduit, aluminum pipe, or plastic pipe of any size.

Structural steel

- ✶ Minimum 4-inch by 4-inch by ½-inch angle. Span of 20 feet or less.

Harnesses and Lanyards Inspection

Inspect all equipment visually before each use and periodically thereafter. The frequency of subsequent checks should be contingent upon the conditions where used. If defective conditions are found as described below, remove the item from service immediately, and get it properly repaired or destroyed. If conditions are found that are not included below, remove the item from service and contact the safety officer, distributor, or manufacturer for advice.

- ❑ *Webbing* – Beginning at one end, bend a portion of the harness (6 to 8 inches) into a U-shape between your hands to reveal worn, cut, frayed, burnt, or damaged fibers. Check both sides of the harness and all straps along the entire length.
- ❑ *Buckle and D-ring attachment* – Carefully check the buckles and D-rings attached to the webbing for stress cracks, excessive wear, cut, or torn fibers.
- ❑ *D-rings* – Check for rough or sharp edges, corrosion, burrs, cracks, dents, or distortion.
- ❑ *Tongue buckle* – Check for rough or sharp edges, corrosion, burrs, cracks, dents, or distortion. Buckle tongues should be free of distortion, move easily back and forth, and overlap the buckle frame, The frame roller should rotate freely.
- ❑ *Friction buckle* – Check for rough or sharp edges, corrosion, burrs, cracks, dents, or distortion. All portions of the buckle should be straight.
- ❑ *Sliding bar buckle* – Check for rough or sharp edges, corrosion, burrs, cracks, dents, or distortion. Sliding bar should move freely within the frame; ridges should be complete and not smooth. Carefully check the ends of the bar for distortion.
- ❑ *Grommets* – Check for rough or sharp edges, corrosion, burrs, cracks, dents, or distortion. Grommets must be tight.
- ❑ *Labels* – The manufacturer's labels should be on each piece of equipment and easily read. If missing, remove from service and contact purchasing, or distribution.
- ❑ *Rope* – Rope lanyards should be inspected by bending the rope into a U-shape between the hands and untwisting the rope slightly to check the inside fibers as well. This helps to reveal frayed, worn, cut, broken, burnt, or damaged fibers. Check all sides of each strand along the entire length of the lanyard.
- ❑ *Locking-type snap hooks* – All snap hooks must operate smoothly, and open and close completely. Check snap hooks body for sharp edges, burrs, distortion, cracks, corroded or pitted surfaces. Rivets should be checked for cracks, broken, or bent conditions. Gate and double-locking gate keepers should be free from distortion, bending, and seat properly against the snap hook nose body. The gate keeper spring should be sufficient to completely and firmly close the snap hooks and should freely rotate into the locked position when released.
- ❑ *Lanyard* – If any part of the danger label is showing of if there is any broken stitching, remove from service.
- ❑ *Anchorage points inspection* – Check all identified anchorage points for corrosion and adherence to minimum sizes and conditions.

Maintenance and Cleaning

- ❑ *Cleaning* – Nylon or polyester; if lanyards or harnesses need to be cleaned, they may be wiped down with a wet sponge, then washed with a soapy sponge using a brisk back-and-forth motion. Rinse completely with clear water and hang up to air dry away from exposure to high heat, steam, or long duration's of sunlight.
- ❑ *Storage* – Lanyards or harnesses should be hung up or placed loosely (in a container) in a clean, dry area free from exposure to harmful fumes or corrosive agents.

Inspected By:_____ **Date:**_____

Fall Protection Program		
Document No.: 8.5	**Employee/ Contractor Consent Form**	**Revision:** 0

"I have reviewed the Fall Protection Program for Hallen Environmental Services, LLC. I have discussed any questions that I have regarding this Program with the Health & Safety Manager and/or Director, Environmental services. I understand the intent of this policy, and I consent to be subject to its provisions."

Print	Signature	Date