

1. PURPOSE

- 1.1 To provide written procedures and guidelines governing the requirements for fall protection.
- 1.2 To ensure that each employee on, near or under a walking/working surface or dangerous equipment or process (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level shall be protected from falling off, onto, or through working levels; and to protect employees from falling objects by the use of guardrail systems, safety net systems, or personal fall arrest systems.
- 1.3 To comply with the regulations outlined in the Occupational Safety and Health Administration's (OSHA) Part 29 Code of Federal Regulations (CFR) 1926.500.
 - 1.3.1 To ensure that fall protection equipment meets American National Standards (ANSI) Z359.1 "Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components".
- 1.4 To ensure that untested fall protection system is prohibited for use at Albany NanoTech

2. SCOPE

- 2.1 This program establishes the minimum requirements for using fall protection at the Albany NanoTech facility. Tenant employees, contractors and sub-contractors may comply with their own organization's program provided that it meets and/or exceeds the minimum requirements set forth in this procedure.
- 2.2 This program applies to Albany NanoTech employees, tenant employees, contractors and sub-contractor who may be involved in activities that require the use of fall protection within the facility.
- 2.3 Albany NanoTech employees, tenant employees, contractors and sub-contractors will be notified of the requirement to follow this program and are required to comply with the restrictions and limitations imposed upon them by Albany NanoTech during fall protection activities.
- 2.4 Facility Engineering and departmental supervisors are responsible for supporting and enforcing this program to ensure compliance by all personnel.

3. RESPONSIBILITIES

3.1 Environmental, Health and Safety (EH&S) Department

3.1.1 The EH&S Department is responsible for the implementation, enforcement and maintenance of the provisions outlined in this program and as specified below:

- Oversee the policies and procedures of the program,
- Provide guidance on the requirements of the program,
- Perform fall hazard assessments,
- Perform fall protection evaluations,
- Select and establish standard operating procedures for fall protection controls,
- Assist in the design and selection of fall protection controls,
- Coordinate activities where fall hazards are present,
- Understand the fall hazards and fall protection controls,
- Provide fall protection safety training,
- Notify contractors of activities that involve fall hazards, and
- Evaluate the effectiveness of the program on an annual basis.

3.2 Facility Engineering and departmental supervisors are responsible for supporting and enforcing this program to ensure compliance by all personnel.

3.2.1 Employees are responsible for understanding the fall hazards associated with their job task and following established fall protection policies and procedures.

4. DEFINITIONS

4.1 Anchorage point: Point of attachment used for security lifelines, lanyards, or deceleration devices.

4.2 Body harness: Harness that consists of straps worn around parts other than the soft tissue areas of the body. It is a configuration that may be secured on the person in a manner that distributes the fall-arrest forces

over at least the thighs, pelvis, waist, chest, and shoulders. The harness is equipped with a means for attaching to other components of a personal fall arrest system.

- 4.3 Guardrail system: Barrier constructed to prevent employees from falling to different levels.
- 4.4 Lanyards: Short piece of flexible line, wire rope, or strap with a connector at each end allowing connection of a body harness to a deceleration device, lifeline, or anchorage point.
- 4.5 Lifeline: Rope system that provides flexibility and freedom of movement, and can arrest a fall and help absorb the shock. In addition, it is a system that consists of a flexible line for connecting to an anchorage point at one end so as to hang vertically, or for connecting to anchorage points at both ends so as to stretch horizontally. The lifeline should also serve as a means for connecting other components of a personal fall arrest system to an anchorage point.
- 4.6 Personal fall arrest system: System that includes, but is not limited to, an anchorage point, connectors, and body harness used to arrest an employee in a fall.
- 4.7 Positioning device: Body harness system rigged to allow a person to be supported on an elevated vertical surface and work with both hands free while leaning backwards.
- 4.8 Rope grab: Deceleration device used on a lifeline to automatically engage and lock the lifeline during a fall.
- 4.9 Safety monitoring system: System whereby a competent person is responsible for recognizing and warning employees of potential fall hazards.
- 4.10 Self-retracting lifeline/lanyard: Deceleration device containing a drum-wound line that can be slowly extracted from, or retracted into, during normal movement; and during a fall automatically locks and arrest the fall.
- 4.11 Snaphook: Connector that consists of a hook-shaped member with a normally closed keeper that may be opened to permit a hook to receive an object and, when released, automatically closes to retain the object.
- 4.12 Toe board: Low vertical barrier that prevents material and equipment from falling.
- 4.13 Walking/working surface: Any surface on which an employee walks or works. It does not include ladders, vehicles, or trailers on which employees must be located to perform their work duties.

5. DETERMINATION OF THE NEED FOR FALL PROTECTION

Fall protection is required when work is conducted at unprotected heights at or exceeding 6 feet above the lower level or above dangerous equipment or processes, a fall hazard is present that must be addressed through either elimination or fall protection. No employee or work operation is exempt from the fall protection requirement. The following are examples where fall protection shall be utilized at the Albany NanoTech facility.

- 5.1 When employees are working in a hoist area they shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems or personal fall arrest systems.
- 5.2 When employees are working on walking/working surfaces they shall be protected from tripping in or stepping into or through holes (including skylights) more than 6 feet (1.8 m) above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.
- 5.3 When employees are working at the edge of a well, pit, shaft or excavation 6 feet (1.8 m) or more in depth they shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier;
- 5.4 When employees are working less than 6 feet (1.8 m) above dangerous equipment they shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards.
- 5.5 When employees are working 6 feet (1.8 m) or more above dangerous equipment they shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.
- 5.6 When employees are performing overhand bricklaying and related work 6 feet (1.8 m) or more above lower levels, they shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or shall work in a controlled access zone.
- 5.7 When employees are reaching more than 10 inches (25 cm) below the level of the walking/working surface on which they are working, they shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.
- 5.8 When employees are engaged in roofing activities on low-slope roofs, with unprotected sides and edges 6 feet (1.8 m) or more above lower levels they shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system,

or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or, on roofs 50-feet (15.25 m) or less in width, the use of a safety monitoring system alone [i.e. without the warning line system] is permitted.

- 5.9 When employees are working on a steep roof with unprotected sides and edges 6 feet (1.8 m) or more above lower levels they shall be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.
- 5.10 When employees are working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 m) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 m) above the walking/working surface, they shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.
- 5.11 When employees are exposed to falling objects, they shall wear a hard hat and implement one of the following measures:
- 5.11.1 Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels; or,
- 5.11.2 Erect a canopy structure and tether potential fall objects so that those objects would not fall to the ground if they were accidentally displaced; or,
- 5.11.3 Barricade the area to which objects could fall, prohibit employees from entering the barricaded area.
- 5.12 When not protected by any other means of fall protection, such as safety nets or proper guardrails, employees shall use a personal fall arrest system (PFAS) which shall consist of a full body harnesses, lanyards with double locking snap hooks, and an anchor. To achieve the necessary fall protection, employees may need to use a double lanyard system and/or vertical or horizontal lifelines, retractable lifelines or other such approved devices.
- 5.12.1 Employees shall setup fall arrest equipment so that they can neither free fall more than 6 feet nor contact any lower object. Anchorage points for fall arrest equipment shall be capable of supporting a shock load and located above the employee's body harness attachment point where practicable.
- 5.12.2 When vertical lifelines are used, each employee shall be protected by a separate lifeline. The lifeline shall be properly weighted at the bottom and terminated to preclude a device such as a rope grab from falling off the line.

- 5.12.3 Horizontal lifelines should be limited to two persons at one time between supports.
- 5.12.4 Prior to each use, employees shall visually inspect all fall arrest equipment for cuts, cracks, tears or abrasions, undue stretching, overall deterioration, mildew, operational defects, heat damage, or acid or other corrosion. Equipment showing any defect shall be withdrawn from service.
- 5.12.5 All fall arrest equipment subjected to impacts caused by a free fall or by testing shall be removed from service.
- 5.12.6 Employees should store all fall arrest equipment in a cool dry place not subjected to direct sunlight.
- 5.12.7 Employees shall not use fall arrest equipment until they have been properly trained in its use.
- 5.12.8 Supervisors shall ensure fall protection is available and used as required for all employees they are responsible for.
- 5.12.9 Fall arrest equipment shall not be used for any other purpose such as tow ropes or hoist lines.
- 5.13 Employees working on wall forms or rebar shall wear a body harness lanyard and/or positioning device when exposed to a fall in excess of 6 feet. Position devices shall be rigged to prevent a free fall greater than 2 feet.
- 5.14 Stairs, ladders, or ramps shall be provided for all access ways where there is a change in elevation greater than 19 inches.
- 5.15 When guardrails are used for fall protection they shall consist of a top railing intermediate rail and toe board. The top rail shall have a vertical height of 42 inches. The midrail shall be at 21 inches, and the toe board 4 inches.

6. FALL PROTECTION SELECTION

- 6.1 General
- 6.1.1 Fall protection must be selected and provided on the basis of the hazards to which the employees are exposed and before that employee begins the work that necessitates use of fall protection.
- 6.1.2 The development of a functional fall protection program shall contain at least the following elements:

- Identification and evaluation of fall hazards.
- Selection and use of fall hazard controls.
- Established equipment use, inspection and maintenance guidelines.
- Employee training.

6.1.3 The EH&S department should be consulted and approve all temporary fall protection measure selections prior to implementation.

6.2 Personal Fall Arrest System

A personal fall arrest system consists of a full body harness and a motion slowing lanyard. These will be used with a variety of specialty fall devices for protection in vertical, horizontal, and sloped roof applications. All personal fall arrest systems must be ANSI approved.

6.2.1 Vertical

Vertical lifelines with rope grab hardware are used to provide fall protection on swing stage scaffolds, boatswain's chairs steel or tower work, and in elevator shafts, to name only a few applications. Matching the harness, lanyard, and rope hardware to each particular application is best accomplished with the end user's input. There are a great many variations to vertical protection, including self-retracting lifelines, so each location requires coordination between all parties.

6.2.2 Horizontal

Tie-offs to walk lines (attaching a lanyard to a static attach point such as a structural member or to a retractable reel) have an inherent hazard that training and supervision can eliminate. Horizontal work attachments can create fall exposures well in excess of 6 ft (1.8 m) if the worker(s) do not keep the point of attachment at shoulder height or above, or use an attach point which would cause the lanyard to fall below the worker's shoulder height.

6.2.3 Sloped Roof

When a personal fall arrest system is selected, then the fall exposure is not necessarily a direct fall, but rather a slip down a slope to the edge. Using static lines or an attach point at the peak of a roof will provide fall protection as long as the employee prevented from falling more than six feet or contacting any object during a fall. Again, there are a variety of devices available and many types of lifelines. Coordination between all

parties is necessary to avoid a system which appears adequate but may create exposures greater than six feet if misunderstood.

6.3 Guardrail Systems

6.3.1 Elevated work platforms must include a guardrail system around the entire periphery. If the guardrail system is removable or can be lowered, the means used to secure it in the normal operating position shall be readily accessible for inspection and maintenance.

6.3.2 The guardrail system must include a top-rail around the upper periphery. The height of the top-rail above the platform must be 42 inches +/- 3 inches (1.07m +/- 0.08m). The guardrail must include a mid-rail approximately midway between the top-rail and the platform surface. Each top-rail, mid-rail or equivalent vertical barrier must withstand a concentrated test load of 200 pounds applied at any point in all directions. Equivalent structure may be used in place of top-rails provided they meet the strength requirements.

6.3.3 Flexible materials such as cables, chains, and ropes may not be used in the guardrail system, except they may be used as a mid-rail at access openings 30 inches (0.76m) wide, or less.

6.3.4 The platform must include toe-boards on all sides. The minimum toe-board height is four 4 inches. Toe-boards may be omitted at the access opening(s).

6.3.5 When wood railings are used, the post shall be of at least 2 inches by 4 inches stock spaced not to exceed 8 feet, the top rail shall be of at least 2 inches by 4 inches stock, and the intermediate rail shall be of at least 1 inch by 6 inches stock. If pipe is used, it shall be at least 1½ inch nominal diameter. If structural steel is used, it shall be of 2 inches by 2 inches by 3/8 inch angles or equivalent. If wire rope is used for railings, it shall have a diameter of at least inch and shall be stretched taut to allow no more than a 3 inch deflection.

6.3.6 Manila or synthetic rope shall not be used as guardrails.

6.3.7 Employees shall not stand or sit on guardrails.

6.4 Safety Nets

6.4.1 Safety nets should be chosen when large open web steel structures, external building protection, large span structures, require continuous protection for extended periods of time. Safety nets, when installed, tested, and maintained properly can provide total protection. As stated previously and repeated here, selecting nets must be a coordinated effort

between the user and the EH&S Department with all hazards understood and the limitations weighed against other fall protection choices.

6.5 Warning Lines

6.5.1 A warning line system is restricted to low slope or flat roof work only. If personal fall arrest, rails, or nets are not used, then a warning line can be used alone or in conjunction with any of the above.

6.5.2 Warning lines, to protect employees from working within 6 feet (1.8m) of a roof edge or while working within the 6-ft area between the warning line and the roof edge, creates a zone for higher awareness of the fall hazard of the roof edge. The construction of the line must be so that foundations keep the line between 34 and 39 in. high (86 to 10 cm), resist a 16-lb force (7.3 kg), be flagged at least every 6 feet and be of a material with a breaking strength of at least 500 lb (227 kg). These requirements are put into the standards to assure that a warning line, if chosen, will at least hold up to the daily wear and tear of construction projects.

6.6 Positioning Device Systems

6.6.1 The positioning fall protection system is designed to hold or support the user at an elevated surface, typically in an activity where both hands need to be free to perform work. The positioning system is an active system, which is engaged each time the user leans back or rests on the support system.

6.6.2 The system should be set up to allow for a maximum of two (2) feet of free fall and be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds (13.3 kN), whichever is greater.

6.6.3 The system shall be drop forged, pressed or formed steel, or made of equivalent materials and have a corrosion-resistant finish, with all surfaces and edges smooth to prevent damage to interfacing parts of this system.

6.6.4 The system shall have connecting assemblies that have a minimum tensile strength of 5,000 pounds (22.2 kN) and shall have dee-rings and snaphooks that shall be proof-tested to a minimum tensile load of 3,600 pounds (16 kN) without cracking, breaking, or taking permanent deformation.

6.6.5 Snaphooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member. Only locking type snaphooks shall be used.

6.6.6 Unless the snaphook is a locking type and designed for the following connections, snaphooks shall not be engaged:

- directly to webbing, rope or wire rope;
- to each other;
- to a dee-ring to which another snaphook or other connector is attached;
- to a horizontal lifeline; or
- to any object which is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself.

6.6.7 The system shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.

6.6.8 Body belts, harnesses, and components shall be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

7. ELEVATED WORK PLATFORMS

7.1 Elevated work platforms present a fall hazard if the platform contains unguarded edges, floor or wall openings, or openings for ladders.

7.2 The best control on elevated work platforms is to eliminate the fall hazard. In most cases, the installation of guardrails is the most feasible and practical control. When guardrails can not be installed or during the process of being installed on a work platform, fall protection or other protective means must be utilized to control the fall hazard.

7.3 Those that use or plan to use elevated work platforms must following permitting guidelines set forth in the EHS-00040 Elevated Work Permit procedure.

7.4 Self-Propelled Elevated Work Platforms

7.4.1 Self-propelled elevated working platforms, such as scissor lifts, pose similar hazards to fixed platforms with the additional characteristic of being mobile. They are power operated with primary functions (including drive controls) located on the platform. These platforms use guardrail systems,

including top-rail, mid-rail, and toe-boards are the primary engineering control for the protection of workers from falls.

- 7.4.2 The platform must include a guardrail system around its periphery. The requirements for these guardrails are the same as those presented for fixed elevated working platforms.
- 7.4.3 Where such guardrail systems exist, the use of personal fall protection systems is not a regulatory requirement for employees while operating or utilizing self-propelled elevating work platforms.
- 7.4.4 Albany NanoTech has implemented a requirement for employees to wear personal fall protection systems utilizing full body harnesses, anchor devices and lanyards while working on unguarded platforms. Those working inside an elevated platform shall utilize the anchor points located inside the platform to tie-off. If anchor points are not present employees shall ensure that all each component of the guardrail system are present and in place.
- 7.4.5 Personnel shall maintain a firm footing on the platform floor while working thereon. Climbing by occupants on the mid-rail or top-rail of the aerial platform is prohibited. The use of planks, ladders, or any other devices on the platform is prohibited.
- 7.5 Vehicle-Mounted Elevating and Rotating Aerial Devices
- 7.5.1 A vehicle-mounted elevating and rotating aerial device is any vehicle-mounted device, telescoping or articulating, or both, which is used to position personnel. The following is a list of the types of vehicle-mounted aerial devices:
- Extensible boom aerial device,
 - Aerial ladder,
 - Articulating boom aerial device,
 - Vertical tower, and/or
 - A combination of any of the above.
- 7.5.2 Aerial equipment may be made of metal, wood, fiberglass reinforced plastic, or other material; may be powered or manually operated; and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.
- 7.5.3 Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition. Only trained persons shall operate

an aerial lift. During operation of the aerial device the operator must wear a body belt or harness and be connected to the aerial device with a lanyard at the platform position.

7.5.4 If a body belt is used the lanyard must be short enough to prevent the employees from climbing the sides of the platform or bouncing out of the basket. This would be considered a restraint device and would not permit a fall.

7.5.5 A body harness must be used with a fall arrest system. The aerial lift must be able to withstand the vertical and lateral loads caused by an arrested fall.

7.5.6 Employees must always stand firmly on the floor of the basket and must not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

7.6 Boom-Supported Elevating Work Platforms

7.6.1 Self-propelled, boom-supported elevating work platform means a self-propelled elevating work platform which has its platform supported by an elevating means that both elevates and rotates relative to the machine base and which is not mounted on a separate self-propelled vehicle. These platforms are used to position personnel, along with their necessary tools and materials at work locations. Primary functions (including drive controls) are located on the platform.

7.6.2 Guardrail systems, inclusive of top-rail, mid-rail, and toe-boards are the primary engineering control for the protection of workers from falls while utilizing boom-supported elevating work platforms.

7.6.3 Employees while operating or utilizing boom-supported self-propelled elevating work platforms must use personal fall protection systems.

7.6.4 The occupants of the boom-supported elevating work platform must secure their personal fall protection systems to an anchorage point provided by the manufacturer and designed to withstand a static force of 5,000 pounds.

7.6.5 Employees may not utilize the top-rail or the mid-rail of the guardrail system as the anchorage point for the personal fall protection. The guardrail system is not designed for or structurally adequate to be used as a personal fall protection anchorage point. The same requirements and warnings regarding the installation of anchorage points on self-propelled aerial lift platforms apply to boom-supported elevated work platforms.

7.6.6 Personnel shall maintain a firm footing on the platform floor while working on boom-supported aerial lift platforms. Climbing on the mid-rail or top-rail

of the aerial platform is prohibited. The use of planks, ladders, or any other devices on the elevated platform for achieving height or reach is prohibited.

7.7 Ladders

There are two basic types of ladders, portable and fixed. Each type presents a different hazard to the employee and different means to control. Portable ladders present fall hazard typically controlled through good employee work practices and ladder use fundamentals. Portable ladders do not use fall protection as described in this document. Fixed ladders, however, are controlled similar to the other fall hazards by the use of proper ladder design and use of fall protection.

7.7.1 Portable Ladders

Portable ladders rely almost exclusively on good employee work practices and ladder use fundamentals to minimize fall hazards. Two types of portable ladders are:

- Extension ladders and step ladders.
- **4-to-1 Rule:** Follow the “4-to-1” use rule to determine the proper ladder angle. This general rule states that for every four (4) feet the ladder extends vertically from the ground to the support point, the ladder base should be one (1) foot out horizontally from and directly below the support point.

7.7.2 Fixed Ladders

Fixed ladders present a fall protection issue when the ladder extends to distances exceeding twenty 20 feet in elevation. When this height is exceeded, special fall protection provisions or equipment must be designed into the construction of the fixed ladder, such as cages or wells for ladders of more than 20 feet and landing platforms for each 30 feet of height. Ladder safety devices such as lifelabels, friction brakes, and sliding attachments must also be used, if available.

8. PROCEDURE

8.1 Fall Protection Plan

- 8.1.1 A site-specific fall protection plan (FPP) is required when either controlled access zones (CAZ) or a safety monitor system (SMS) is selected. Choosing either can only be implemented when all other fall protection systems have been deemed infeasible.

- 8.1.2 The formulated FPP must be written to justify why and explain the hazards associated with each operation. Within the FPP, the reasons for choosing either CAZ or a monitor system, and why using conventional fall protection would create a greater hazard, must be explained thoroughly and submitted to the EH&S Department for approval, prior to implementation.
- 8.2 Controlled Access Zones
- 8.2.1 Controlled access zones must be demarcated with a line, rope, chain, or warning tape (minimum breaking strength of 200 lb or 91 kg) where access is restricted. The different distances for each zone during each operation are as follows:
- 8.2.2 Leading Edge: Between 6 ft and 25 ft (1.8-7.6 m) from work area
- 8.2.3 Pre-cast Erection: Between 6 ft and 60 ft (1.8-18 m) from erection operations
- 8.2.4 Overhand Brick Work: Between 10 ft and 15 ft (3-4.6 m) from working masons
- 8.2.5 Each zone should be erected so the entire operation is enclosed and access is restricted so only the employees identified in the FPP and who are engaged in the operation are exposed to the fall hazard.
- 8.3 Safe Monitor System
- 8.4 A system where a competent person in fall hazards is chosen to monitor employees who are exposed to fall hazards and who are not protected by conventional fall protection measures or a CAZ.
- 8.5 The working of a safety monitor system and why conventional fall protection cannot be used or would create a greater hazard if used must be detailed in the FPP and submitted to the EH&S Department for approval, prior to implementation. The monitor basically stays within oral communication range of workers and warns them when they come close to an edge where the fall is 6 ft (1.8 m) or greater. A chosen safety monitor cannot have any other duty which would interfere with the hazard warning duties.

9. INSPECTION, MAINTENANCE AND CARE

- 9.1 As with all protective equipment, the equipment is only protective when it is functioning properly. The same holds true for fall protection equipment. Fall protection equipment must be visually inspected by the user prior to each use and periodically by a competent person to ensure the equipment is in good working order and ready for use.

- 9.2 Fall protection equipment must be inspected to ensure the equipment is properly functioning. Manufacturer's recommendations must be followed for inspection, maintenance and storage of fall protection equipment.
- 9.3 Fall protection equipment found to be defective must be removed from service immediately until properly repaired or replaced. Equipment must only be repaired by a qualified person familiar with the fall protection equipment.
- 9.4 If a fall arrest system is used to control a fall, affected components of the system must be taken out of service and inspected to ensure they are in functional condition. Some components, such as the shock absorbing lanyard or retractable lifeline, must be returned to the manufacturer for recertification following their use in a fall situation.
- 9.5 Soiled or contaminated body wear (harnesses) can be cleaned in warm water using a mild soap and scrub cloth. The equipment must be thoroughly rinsed with fresh water following any detergent cleaning. Other fall protection equipment can be surface cleaned with water. Harsh chemicals should never be used to clean the fall protection equipment. Upon the completion of cleaning, the equipment must be allowed to dry thoroughly and placed in a clean and dry location to allow for proper storage.

10. EMPLOYEE TRAINING

- 10.1 Employee fall hazard training is critical to ensuring a complete fall protection program. As with all training, the employee must first be instructed on the proper identification of fall hazards prior to first use and before they are able to protect themselves from the hazard. The Albany NanoTech fall protection training shall include the following elements:
- 10.1.1 Types of general fall hazards,
 - 10.1.2 Identification of site-specific fall hazards,
 - 10.1.3 Means to eliminate or minimize fall hazards,
 - 10.1.4 Types of fall protection used at the site,
 - 10.1.5 Limitations of fall protection,
 - 10.1.6 Use and care of fall protection, and
 - 10.1.7 Inspection of fall protection.

- 10.2 Fall protection training should be a combination of classroom and hands-on training. The classroom training should cover the fall protection fundamentals, while hands-on training is based upon site-specific fall protection applications. Since the misuse of this equipment can result in serious injury or even death, it is extremely important that employees are able to physically demonstrate their ability to properly use the equipment. Each employee must be able to demonstrate this understanding prior to any unsupervised exposure to fall hazards and use of fall protection equipment.
- 10.3 Upon completion of the required training a written certification record is prepared, which contains the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer.
- 10.4 Retraining shall be conducted when the supervisor/department manager has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by this program. Circumstances where retraining is required include, but are not limited to, situations where:
- 10.4.1 Changes in the workplace render previous training obsolete; or
- 10.4.2 Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- 10.4.3 Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

11. RECORDKEEPING REQUIREMENTS

- 11.1 The Albany NanoTech facility maintains the following Fall Protection Plan files in the EH&S Departmental office:
- List of Fall Protection Equipment Types,
 - Fall Protection Evaluations,
 - Maintenance Records,
 - Documented Annual Inspections, and
 - Training Records.
- 11.2 Records that are maintained pursuant to this section must be kept for a minimum of three years unless otherwise indicated.

12. POSTING SHEETS/FORMS/APPENDIX

12.1 Appendix A - Examples Of Common Fall Hazards and Control Measures

APPENDIX A
EXAMPLES OF COMMON FALL HAZARDS AND CONTROL MEASURES

FALL HAZARD	CONTROL MEASURE
Elevated Work Surfaces	Designated Permitted area (<i>See EHS-00040 Elevated Work Permit procedure for further details</i>) Guardrails Personal Fall Arrest System (PFAS) Hard Hats within Work Area
Ladders	Consider Personal Fall Arrest System (PFAS) system for climbing fixed ladders and stepladders
Fixed Ladders (>20') located on roofs as well as fixed ladders located in NFN	Wells or cages Personal Fall Arrest System (PFAS) system in anchor point available
Catwalks	Guardrails Personal Fall Arrest System (PFAS) for horizontal and vertical travel
Roofs	Warning lines six feet from edge Work in warning zone requires fall protection usually guardrails or Personal Fall Arrest System (PFAS) EH&S Department must Authorize other Fall Protection Measures. Exits & No Exits must be Clearly Labeled.
Tanks in CUB	Guardrails, if not available Personal Fall Arrest System (PFAS)
Mezzanines	Guardrails
Trusses	Personal Fall Arrest System (PFAS) system
Scaffolds	Guardrails or Personal Fall Arrest System (PFAS) system
Window cleaning	Personal Fall Arrest System (PFAS) system
General Activities	Maintenance activities, such as climbing or working on towers or tanks and /or working within confined spaces may pose additional fall hazards which meet 4.1.1 requirements for fall protection.
Waffle Slab Floor Openings	Area Barricaded Consider Covering Opening with Steel Diamond Plate Tools/equipment Used Must be Tethered Personal Fall Arrest System (PFAS) system for horizontal and vertical travel
Working under Waffle Slab Floor Openings	Area Barricaded Hard Hat Area

Document History Page

Rev.	Description of Change	Release Date	DCN NO.	DCN Initiator	Document Owner
1	Initial documentation.	1/24/05	DCN0081	J. Trodden	R. Segura