U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

ORDER JO 3900.63

Effective Date:
04/06/2011

SUBJ: Air Traffic Organization (ATO) Fall Protection Program

1. This order seeks to prevent accidents in the workplace by developing employee awareness and training related to workplace hazards. The order is designed to provide guidance to employees, including managers and supervisors, who are directly involved with work at elevated areas.

2. This order identifies the minimum requirements for the ATO Fall Protection Program; however, site-specific requirements may be more stringent based upon local risk assessments. The order applies to ATO personnel performing work at all elevated work areas, where hazards may exist on walking/working surfaces and areas used for access to elevated work areas.

3. The order also establishes roles and responsibilities for the implementation, management and accomplishment of the ATO Fall Protection Program.

4. Compliance with this order enforces the Occupational Safety and Health Administration's General Industry and Construction Standards and applicable Consensus Standards published by Consensus Organizations related to the ATO Fall Protection Program.

5. Due to the urgency to comply with the two-person rule to protect the safety of ATO employees, the Vice President, Technical Operations, issued interim guidance on December 30, 2009, establishing the following requirements for fall protection:

a. Employees working at heights where medical emergency response is not readily available must be trained in First Aid and Cardiopulmonary Resuscitation (CPR).

b. In addition, two persons are required for all climbs requiring fall protection and both must be trained in First Aid and CPR.

c. This training must be completed within 18 months of the publication of the ATO Fall Protection Program Order.

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Distribution: Selected Air Traffic Organization Offices; A-FAF-0 (MAX)

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Chapter 1. General Information

1. Purpose of This Order. The Federal Aviation Administration (FAA) Air Traffic Organization (ATO) seeks to prevent accidents in the workplace by developing employee awareness and training related to workplace hazards. The ATO Fall Protection Program (FPP) is designed to provide guidance to employees, including managers and supervisors, who are directly and/or indirectly involved with work at elevated areas.

2. Audience. All ATO employees involved with work that takes place in elevated areas.

3. Where Can I Find This Order? You can find an electronic copy of this order on My FAA employee website. Select "Tools & Resources" then select "Orders & Notices."

4. Policy. It is the ATO policy that employees comply with the ATO FPP as part of an accident prevention program. This guidance represents the minimum requirements for the FPP. Site-specific requirements may be more stringent based upon local risk assessments.

5. Scope and Application. This FPP applies to FAA ATO personnel performing work at all elevated work areas, where hazards may exist on walking/working surfaces and areas used for access to elevated work areas.

Chapter 2. Roles and Responsibilities

1. Vice President, Technical Operations must ensure that the overall implementation of the Program is accomplished and managed for the ATO.

2. Director, Air Traffic Control (ATC) Facilities must ensure that the overall implementation of the Program is accomplished and managed for each Service Area within the ATO.

3. Manager, Fall Protection Program (EOSH Services, Headquarters) must provide technical requirements and resources to ensure the overall implementation of the Program is accomplished and managed for the ATO.

4. Directors, Service Area (SA), Technical Operations must ensure that the overall implementation of the Program is accomplished and managed for the Service Area within the ATO.

5. Service Center (SC) Planning and Requirements (P&R) Group Managers must provide oversight of the P&R teams to ensure support to the Directors with regard to the Program.

6. SC Program Implementation Team Managers must ensure that implementation of the Program is managed and accomplished.

7. SC Requirements Team Managers must ensure that all fall protection needs are appropriately identified, evaluated for validation, prioritized and submitted to Service Units for funding.

8. SC Program Implementation Managers for Safety (PIM/OSH) must:

a. Ensure that sufficient resources are requested to continually support the effectiveness of the FPP.

b. Advise management of issues or concerns related to the implementation of the FPP.

c. Serve as, or designate, Fall Protection Program Administrators to manage and ensure implementation of the FPP.

9. SC Planning and Requirements Occupational Safety and Health (OSH) Requirements Specialists must:

a. Oversee the technical requirements of the FPP to ensure it remains updated with the most current FAA requirements, OSHA standards and industry standards.

b. Serve as subject matter experts to Directors of Operations regarding the technical requirements of the FPP.

c. Assist the Service Area/Center Environmental and Occupational Safety and Health (EOSH) Professionals in establishing technical requirements for training required by the FPP.

d. Analyze, evaluate and resolve fall hazards and unsafe condition complaints regarding fall protection that were not resolved at the field and District levels.

e. Maintain state-of-the-art knowledge on available fall protection equipment to facilitate related evaluations and provide recommendations for equipment selection.

f. Coordinate and evaluate appropriate training materials and courses.

g. Facilitate periodic program evaluations and audits of the FPP; maintain all program evaluations for five years from the date of the evaluation.

h. Ensure accident investigations are conducted by a Competent Person in accordance with FAA Order 3900.19, Chapter 7, Mishap Reporting and Investigation.

i. As requested, review design drawings to ensure fall protection compliance.

10. District Managers (Technical Operations) must:

a. Ensure implementation, and maintain compliance, of the FPP throughout the District.

b. Ensure that two trained persons are available for every climb in accordance with Section 3-11(b)(1).

c. Ensure all project design documents are reviewed for fall protection issues.

d. Ensure that personal protective equipment (PPE) and other fall protection equipment are available at District/System Support Center work locations, where required.

e. Ensure that all personnel are trained to the appropriate level for assigned tasking, and that all training is recorded in the appropriate system of record.

f. Ensure routine maintenance is performed on elevated work areas as outlined in applicable FAA maintenance orders.

g. Ensure required information, as described in Appendix I, related to elevated work areas is updated and maintained in the appropriate database.

11. Safety and Environmental Compliance Managers (SECMs)/Environmental Protection Specialists (EPSs), and Engineering Services Environmental and Occupational Safety and Health (EOSH) Coordinators must:

a. Serve as designated point of contact and provide oversight for fall protection activities in their areas of responsibility.

b. Assist in coordinating appropriate fall protection training for employees that are expected to perform maintenance or work activities at elevated work areas.

c. Select and validate the purchase of all fall protection equipment.

d. Assist with the development of local procedures and rescue plans in accordance with this FPP.

e. Assist in the resolution of unsafe condition complaints regarding fall protection and elevate those that cannot be resolved at the field level to the Requirements OSH Specialist.

f. Assist in the completion of facility fall hazard checklists for all elevated work platforms, ladders and towers that require climbing, when requested. (See Appendix I).

g. Maintain proficiency in the overall FPP and all its elements, and receive formal training as a Competent Person.

h. As requested, review design drawings to ensure fall protection compliance.

i. As requested, perform review of contractors' FPPs to ensure fall protection compliance when contractors are working at FAA facilities.

12. System Support Center (SSC) Managers must:

a. Implement the FPP at all facilities occupied and/or maintained by Technical Operations employees where fall protection considerations have been identified or assumed.

b. Ensure that two trained persons are available for every climb in accordance with Section 3-11(b)(1).

c. Ensure that facility fall hazard checklists are completed for all elevated work platforms, ladders and towers that require climbing, with assistance from the SECM, where needed.

d. Ensure the facility fall hazard checklist information is entered into the Tower Inspection database maintained by the Unstaffed Infrastructure Sustainment (UIS) Tower and Platform Database Group.

e. Ensure all information related to fall protection installation upgrades, modifications and renovations are updated in the UIS Tower Inspection database.

f. Ensure rescue plans are developed, are current and have been reviewed by a Competent Person.

g. As applicable, ensure that a Competent Person reviews the written procedures and strategies submitted from a responding emergency rescue services organization and ensure they are capable to perform rescue at the applicable facilities.

h. Ensure employees who climb and utilize fall protection equipment have received the appropriate level of training.

i. Ensure that fall protection equipment is provided, properly used, maintained, and inspected at least annually by a Competent Person or an Authorized Inspector (other than the user).

j. Ensure annual inspections are documented and maintained for the life of the equipment.

k. Ensure that defective or impacted fall protection equipment that has been identified by trained FAA personnel is removed from service, rendered unusable, disposed of as solid waste, and replaced. If needed, the manager may consult a Competent Person or Authorized Inspector regarding the equipment's integrity.

l. Prohibit climbing on any structures deemed unsafe by a Competent Person where appropriate signage is posted.

m. Ensure routine maintenance is performed on elevated work areas outlined in applicable FAA maintenance orders, including annual inspections by people trained to conduct those inspections.

n. Report any falls or near misses in accordance with accident reporting requirements in FAA Order 3900.19, and report via FAA Form 3900-6.

o. Ensure that contractors working at FAA sites for which the SSC has oversight responsibilities have independent FPPs and comply with all applicable federal and state OSHA requirements.

p. Ensure fall rescue equipment is inspected at least annually by a Competent Person or Authorized Rescuer. Inspection information must be documented locally (e.g., SSC, District, etc.).

13. Field Maintenance Program (FMP) Managers/Technical Support Center (TSC) Managers must:

a. Ensure all fall protection installations, upgrades, modifications and renovations are reported to the SSC Manager.

b. Ensure that two trained persons are available for every climb in accordance with Section 3-11(b)(1).

c. Ensure compliance with the rescue requirements detailed in this FPP.

d. Ensure all information related to fall protection installation upgrades, modifications and renovations are updated in the UIS Tower Inspection database.

e. Ensure employees who climb and utilize fall protection equipment have received the appropriate level of training.

f. Ensure that fall protection equipment is provided, properly used, and maintained.

g. Ensure that defective or impacted fall protection equipment that has been identified by trained FAA personnel is removed from service, rendered unusable, disposed of as solid waste, and replaced. If needed, the manager may consult a Competent Person or Authorized Inspector regarding the equipment's integrity.

h. As requested, ensure routine maintenance is performed on elevated workplaces

i. Report any falls or near misses in accordance with accident reporting requirements in FAA Order 3900.19, and report via FAA Form 3900-6.

j. Ensure annual inspections are conducted on fall protection equipment by a Competent Person or an Authorized Inspector (other than the user).

k. Ensure annual inspections are documented and maintained for the life of the equipment.

l. Ensure fall rescue equipment is inspected at least annually by a Competent Person or Authorized Rescuer. Inspection information must be documented locally (e.g., SSC, District, etc.).

14. Engineering Services (ES) Managers must:

a. Ensure all fall protection installations, upgrades, modifications and renovations are reported to the SSC Manager.

b. Ensure that two trained persons are available for every climb in accordance with Section 3-11(b)(1).

c. Ensure that when a project involves an elevated work area, rescue plans are developed in compliance with the rescue requirements detailed within this FPP.

d. Ensure all information related to fall protection installation upgrades, modifications and renovations are updated in the UIS Tower Inspection database.

e. Ensure employees who climb and utilize fall protection equipment have received the appropriate level of training.

f. Ensure that fall protection equipment is provided, properly used, maintained, and inspected annually by a Competent Person or an Authorized Inspector (other than the user).

g. Ensure annual inspections are documented and maintained for the life of the equipment.

h. Ensure that defective or impacted fall protection equipment that has been identified by properly trained FAA personnel is removed from service, rendered unusable, disposed of as solid waste, and replaced. If needed, the manager may consult a Competent Person or Authorized Inspector regarding the equipment's integrity.

i. Report any falls or near misses in accordance with accident reporting requirements in FAA Order 3900.19, and report via FAA Form 3900-6.

j. Submit project design documents that require work or maintenance activities at elevated work areas above four feet to the EOSH Coordinator for review.

k. Ensure, with the assistance of the EOSH Coordinator, that all projects meet OSHA 29 CFR 1910 Subpart D and 1926 Subpart M.

l. Prior to any new construction projects, ensure the construction requirements of the FPP are incorporated into the design and acquisition phases.

m. Identify and resolve non-compliant fall protection issues of renovation projects prior to project execution.

n. Ensure that specifications, solicitations, requests for proposal and contract documents contain clauses requiring contractor fall protection programs for applicable projects.

o. Ensure that contractors working at FAA sites for which ES has oversight responsibilities have independent FPPs and comply with all applicable federal and state OSHA requirements.

p. Ensure fall rescue equipment is inspected at least annually by a Competent Person or Authorized Rescuer. Inspection information must be documented locally (e.g., SSC, District, etc.).

15. Fall Protection Program Administrators must assist the SA field offices and work units with managing and implementing the FPP.

16. Employees must:

a. Notify manager/supervisor prior to conducting work activities that involve tasks on elevated work platforms, ladders or scaffolds to ensure climbs are planned and all hazards are addressed.

b. Notify manager/supervisor of any observed safety deficiencies. If any safety deficiencies are identified prior to or during a climbing operation, suspend any further activity and notify the manager/supervisor immediately. If the manager/supervisor is not immediately available, cease any further activity until contact is made.

c. Attend proper level of training prior to working at elevated work areas in accordance with the FPP.

d. Properly wear, maintain, store, and use the appropriate fall protection equipment.

e. Inspect fall protection equipment prior to each use, and verify inspection is performed annually by a Competent Person or by an Authorized Inspector (other than the user).

f. Identify defective equipment and equipment that has been impacted by a fall, and return it to his or her supervisor and request a replacement.

g. Be familiar, and comply with, site-specific rescue plans, including available means of communication.

h. Assess their ability to safely climb the day of the task per Section 3-5.

i. Return personally-issued fall protection equipment to the appropriate Front Line Manager upon leaving the Agency.

Chapter 3. Fall Protection Program Requirements

1. Hierarchy of Fall Protection Controls. Personnel will consider the following controls, in order, when selecting fall protection.

a. Hazard Elimination. The hazard or process is redesigned to eliminate the worker's exposure to the hazard. Special training is not required, and the worker does not actively have to apply fall protection. Examples of hazard elimination include installing a tilt-down tower, relocating junction boxes to a height lower than 4 feet from the ground or installing a telescoping support pole that allows work on mounted equipment to be performed at ground level.

b. Fall Hazard Prevention. The hazard is mitigated by a barricade preventing workers from reaching the fall hazard; this method is considered a Passive Fall Protection System (passive systems). Fall hazard prevention is the most versatile hazard resolution method since specialized training is not required, no equipment is required and the worker does not actively have to apply fall protection. Examples of fall hazard prevention are guardrails on rooftops or work platforms, hole/well covers and roof edge parapet walls, providing they meet the OSHA setback and construction requirements.

c. Fall Restraint. A fall protection system that is utilized to restrain the worker's movement to a point where they cannot access the fall hazard. Fall restraint systems are considered the most preferred of the Active Fall Protection Systems (active systems). Training is required to recognize the hazard and correctly utilize the system. All of these systems require the worker to don a full body harness while using the system. Examples of fall restraint are a restraint system that includes an anchor point and a fixed-length lanyard which keep a worker from the roof edge, or a fixed-length lanyard that is attached to a worker inside the bucket of an aerial lift.

d. Fall Arrest. A secondary system that is used to stop a fall after it has started. These systems allow workers to traverse vertical and horizontal work areas to perform work safely at most locations. Training is required to recognize the hazard, correctly use the system and to develop and/or review a rescue plan. Examples of fall arrest systems include ladder climbing devices, energy absorbing lanyards, 100% tie-off/Y-lanyard, self-retracting lanyards/lifelines, vertical lifelines and rope grabs. All fall arrest systems require the worker to don a full body harness while using the system.

e. Administrative Controls. Procedures implemented when the risk of a fall hazard cannot be mitigated. These are typically used on rooftops with unprotected sides and edges where there is no means to affix a fall restraint system. Examples of administrative controls/techniques are specific Standard Operating Procedures (SOPs) and warning line systems.

2. Employee Training. The training curriculum must comply with the current national EOSH training standards. Periodic assessments of the effectiveness of user training must be conducted at least annually by a Competent Person to assist the FPP Administrator in determining whether additional employee training and retraining is necessary. Training and refresher courses may be combined as long as the course content requirements are met. Climber categories, duties, prerequisites, and refresher training are listed in Table 3-1, Climber Description Requirements.

Table 3-1: Climber Description Requirements

CATEGORY	DUTIES	PREREQUISITES AND REFRESHER TRAINING
Authorized Person Level I (Equivalent to Authorized Climber and Qualified Climber): A person who performs any of the duties specified for this category. Then after meeting the prerequisite, has successfully completed the Authorized Person Level I training.	Climbs standard structures equipped with compliant ladder safety systems (LSSs) mounted onto fixed ladders. Performs maintenance tasks that require access to rooftops and elevated work platforms with fall protection systems (e.g., guardrail). Uses fall restraint.	Has successfully completed First Aid/CPR training. * Level I refresher training is required every 2 years, minimum.
Authorized Person Level II (Equivalent to Expert Climber): A person who performs any of the duties specified for this category. Then, after meeting the prerequisite, has successfully completed Authorized Person Level II training.	Performs duties as Authorized Person Level I. Performs maintenance and construction work. Uses work positioning. Sets up and uses fall restraint systems. May climb structures using 100% tie-off lanyard when structure is not equipped with compliant fall protection systems or when climbing off ladder.	Has successfully completed First Aid/CPR training.* Level II refresher training is required every 2 years, minimum.
Authorized Inspector: A person who performs any of the duties specified for this category. Then, after meeting the prerequisites, has successfully completed the Authorized Inspector training.	Performs inspection of individually-issued personal fall protection equipment. Identifies deficiencies in specific equipment during annual inspections, properly documents the inspection findings and prevents the use of defective, damaged or improperly maintained equipment.	Has successfully completed Authorized Climber Level II. Has successfully completed First Aid/CPR training. *
Competent Person: A person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Competent Person training.	Identifies, evaluates and addresses existing and potential fall hazards. Provides program oversight and selects personal protective equipment, rescue, and fall protection systems, including pre-designed anchorages and fall restraint systems. Inspects fall protection equipment and systems, if job duties require.	Has successfully completed Authorized Person Level II training. Competent Person refresher training is required every 2 years.

Table 3-1 Continued

CATEGORY	DUTIES	PREREQUISITES AND REFRESHER TRAINING
Qualified Person: A person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Qualified Person training.	Designs, analyzes, evaluates and specifies anchorages, fall protection systems and rescue systems.	Recognized degree or professional certificate and extensive knowledge and experience in the fall protection and rescue field.
Authorized Rescuer: A person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Authorized Rescuer training.	Performs rescue at elevated work areas.	Physically capable. Has successfully completed Authorized Person Level II training and has climbing experience. Authorized Rescuer formal refresher training every two (2) years. Competency demonstrated at least annually

* First Aid/CPR refresher training frequency must meet the requirements of the provider (American Red Cross, American Heart Association, etc.) or a minimum of every 2 years.

a. Qualified Persons must:

(1) Oversee and approve the installation and use of horizontal lifelines and anchorages utilized by FAA personnel.

(2) Develop or design administrative techniques (e.g., SOPs) and/or plans when other options are not feasible.

(3) Participate in the investigation of incidents related to falls from elevated work areas.

b. Authorized Inspectors must inspect individually-issued personal fall protection equipment and ensure inspections are documented.

c. Competent Persons must:

(1) Select all fall protection equipment in area of responsibility.

(2) Advise and approve the use of self-retracting lanyard/lifelines and vertical lifelines for specific applications.

(3) Develop or design administrative techniques (e.g., SOPs) and/or plans when other options are not feasible.

(4) Assist in the investigation of incidents related to falls from elevated work areas.

(5) Inspect individually-issued personal fall protection equipment and ensure inspections are documented.

(6) Perform a workplace assessment of hazards and conditions to determine configuration of fall protection systems such as fall arrest, climbing protection, rescue, and evacuation.

(7) Identify existing and potential hazards associated with elevated work areas.

(8) Identify fall protection procedures for elevated work areas.

(9) Assist in conducting an inventory of all elevated work areas.

(10) Assist in development of written site specific fall protection procedures and rescue plans based on the findings from the completed facility fall hazard checklist.

(11) Utilize the hierarchy of fall protection controls to minimize hazards associated with elevated work areas.

d. Authorized

(1) Ensure rescue equipment is available and ready for immediate use at the facility when climbing activities are being performed.

(2) Remain on the ground, while another employee is working at an elevated work area, until called upon to perform a rescue.

(3) Remain in visual and audible range of the climber at all times.

3. Refresher Training.

a. Authorized Person Level I and Authorized Person Level II refresher training, during which the climber will demonstrate the proper use of equipment and perform a climb, is required every (2) years or whenever:

(1) Job duties change,

(2) Changes in the workplace or changes in the types of fall protection systems or equipment used render the previous training obsolete, or

(3) Site observations or evaluation determines inadequacies in the employee's subject matter knowledge.

b. Competent Person refresher training will be required every two (2) years.

c. Qualified Person does not require refresher training at established intervals; however, he/she must stay current with fall protection and rescue knowledge through continuing education.

d. Authorized Rescuers must attend formal refresher training every two (2) years. They must also demonstrate rescue competency at least annually as evaluated by another authorized rescuer. (To demonstrate competency, authorized rescuers must complete a written examination and a mock rescue using each rescue system they are authorized to operate.)

4. Trainer Qualifications. Trainers must meet the requirements as outlined in Table 3-2 on the next page. Contact the P&R OSH Specialist for additional information on applicable training standards.

Table 3-2: Climbing Trainer Requirements

COURSE TITLE	TRAINING REQUIREMENTS	COURSE PREREQUISITES	TRAINING METHOD
Authorized Person Level I and Authorized Person Level II	• Instructor must have current First Aid/CPR certification. • Instructor must be trained as a Competent Person. • FAA employees should complete Facility Instructor Training (FIT) FAA Course 10501, or as approved by the Service Center OSH Requirements Manager or designee. (Contact the local training manager for information on FIT training requirements.)	• FAA68000138 (2 year certification) or FAA68000139 (3 year certification), First Aid. • FAA68000140 (annual certification) or FAA68000141 (2 year certification), CPR.	• Qualified vendor or State/Federal training class. • Instructor-led training class.
Authorized Inspector and Competent Person	• Instructor must have current First Aid/CPR certification. • Instructor must be trained as a Competent Person. • FAA employees should complete Facility Instructor Training (FIT) FAA Course 10501, or as approved by the Service Center OSH Requirements Manager or designee. (Contact the local training manager for information on FIT training requirements.)	• FAA68000144 (Initial) or FAA68000145 (Refresher), Fall Protection – Authorized Person Level II and has climbing experience.	• Qualified vendor or State/Federal training class. • Instructor-led training class.
Qualified Person	• Instructor must have current First Aid/CPR certification. • Instructor must be trained as a Qualified Person. • FAA employees should complete Facility Instructor Training (FIT) FAA Course 10501, or as approved by the Service Center OSH Requirements Manager or designee. (Contact the local training manager for information on FIT training requirements.)	• Engineering degree or extensive knowledge.	• Qualified vendor or State/Federal training class. • Instructor-led training class.
Authorized Rescuer	• Authorized instructor, supervisor or manager trained as a Competent Person with experience in OSH and training. Instructor must have completed Facility Instructor Training (FIT) FAA Course 10501, or as approved by the FPP Administrator. The instructor must also: • Be an Authorized Rescuer on appropriate equipment. • Be familiar with rescue equipment. • Possess current First Aid/CPR certification (Note: At a minimum, at least one trainer per class must be First Aid/CPR trained with current certification.)	• FAA68000133 (Initial) or FAA68000145 (Refresher) Fall Protection – Authorized Person Level II. • FAA68000138 (2 year certification) or FAA68000139 (3 year certification), First Aid. • FAA68000140 (annual certification), or FAA68000141 (2 year certification), CPR.	• Qualified vendor or State/Federal training class. • Instructor-led training class.

5. Physical Capabilities.

a. Prior to each climb, climbers must conduct a self-assessment as to their fitness to climb.

b. Climbers may refuse to climb for any physical, psychological or medical reasons.

6. First Aid/Cardiopulmonary Resuscitation (CPR).

a. Employees that perform climbing activities must have current First Aid/CPR certification as required by 29 CFR 1910.151 and 29 CFR 1910.268.

b. First Aid/CPR refresher training must meet the requirements of the provider (American Red Cross, American Heart Association, etc.) or a minimum of every two (2) years.

c. All fall protection trainers (FAA or Contractor) must be First Aid/CPR trained.

7. Environmental Conditions.

a. Evaluate weather conditions the day of the climb. If inclement weather is expected, consideration should be given to postponing climbing until the weather has improved to a point that the climber feels secure to climb.

b. Do not climb during lightning, icy conditions, high winds, extreme temperatures or any other atmospheric conditions that may be dangerous to life or health.

c. Climbers must assess wind conditions and postpone climbing activities if the following conditions exist:

(1) The climbers would be exposed to winds that may blow them from elevated locations, or

(2) The climbers could lose control of equipment or materials.

8. Fall Protection Systems and Equipment.

a. Personal fall protection equipment will be provided for each affected FAA employee at no cost to the employee. Employees are not permitted to use personally procured fall protection equipment.

b. All personal fall arrest equipment must meet the current American National Standards Institute (ANSI) standard Z359.

c. All Ladder Safety Systems (LSS) must meet the current requirements of ANSI standard A14.3. Tubular notched rails are prohibited, must not be used, and must be replaced with an approved LSS as soon as practicable.

d. All equipment used for work positioning must meet ANSI Z359, A10.32 or equivalent standards unless approved by a Competent Person.

e. FAA contractors must provide their own fall protection equipment which meets ANSI Z359 requirements.

f. Aluminum carabiners, snaphooks, lanyards, etc., and full body harnesses with aluminum hardware are prohibited, unless the components are stamped ANSI-Z359.1 and 3,600 pound gate-load rating. If a component does not have the appropriate ANSI rating and 3,600 pound gate-load rating stamped into the aluminum, the equipment containing that component will be removed from service. Replacements will be provided as soon as practicable.

g. Equipment provided is based on training and anticipated work tasks and must consist of the following:

(1) Full Body Harness.

a) A standard body harness and lanyard is designed to support a maximum combined weight (person and equipment) of up to 310 pounds, and

b) A minimum combined weight of 130 pounds.

(2) Climbing Helmet with Chinstrap.

a) At a minimum, a Type I climbing helmet with a three-point chinstrap that meets current ANSI Z89.1 standard is required.

b) The ANSI Z89.1 Type II helmet provides additional protection against side impact and is strongly encouraged.

c) For activities involving potential exposure to electrical hazards, Class E (up to 20,000V) or G (up to 2,200V) helmets must be worn.

(3) Energy Absorbing Lanyard

(4) Anchor Strap (also known as tie-off adapter or connector)

(5) Work Positioning Lanyard

(6) 100% Tie-Off Lanyard (also known as a Y-lanyard)

(7) Connectors and/or Carabiners

Note: If combined weight exceeds 310 pounds or is less than 130 pounds, contact the FPP Administrator for guidance on selection of appropriate PFAS. This also applies when wearing bulky winter and cold weather clothing under a PFAS.

h. Body Belts and Lineman's Belts are prohibited for use as fall protection devices.

i. Equipment Inspections and Maintenance.

(1) ATO policy is to replace all synthetic fall protection equipment such as full body harnesses, lanyards, etc., ten (10) years from the date of manufacture, as indicated on the equipment label, or sooner, if determined during inspection.

(2) Fall protection equipment that was used to arrest a fall or fails inspection must be destroyed and discarded. Exception: If a self-retracting lanyard/lifeline was used to arrest a fall or fails inspection, return it to the manufacturer for inspection and re-certification.

(3) All equipment must be inspected by the climber before each use for wear, damage, and other deterioration.

(4) Alterations (e.g., permanent markings, removal of straps and labels, etc.) to PFAS are prohibited.

(5) All personal fall arrest systems and climbing equipment must be inspected annually by a Competent Person or by an Authorized Inspector. Persons performing annual inspections cannot inspect his/her own equipment. This inspection data must be documented and maintained at a location determined by the employee's manager for the life of the equipment. It is recommended that the annual inspection be tracked along with other preventative maintenance tasks.

(6) All fall rescue equipment must be inspected annually by a Competent Person or Authorized Rescuer.

(7) All personal fall arrest systems and ladder safety systems (LSSs) must be maintained in good operating condition in accordance with manufacturers' specifications and applicable preventative maintenance tasks (e.g., Maintenance Management Systems (MMS), Simplified Automated Logging (SAL), etc.).

(8) Defective personal fall protection equipment must be rendered unusable, destroyed, and replaced prior to use for climbing activities.

j. Modifications and Usage.

(1) No modifications can be made to fall protection systems and elevated work areas without technical direction from a Qualified Person.

(2) Installation of unique fall protection systems (e.g., horizontal lifelines) must be approved by a Qualified Person.

k. Ladder cages are prohibited for fixed ladders that are 20 feet in height or greater unless approved by the Fall Protection Program Administrator.

9. Fall Protection Program Implementation.

a. General Requirements.

(1) The FAA policy for performing work at an elevated work area at or above four feet above the next lower level requires fall protection procedures, approved training and PPE.

(2) All structures that require the use of fall protection equipment must be inspected according to FAA Order 6930.25, Maintenance of Structure and Buildings, procedures indicated in this order (including Appendix I), and FAA Order 6950.18, Maintenance of Electrical Distribution Systems.

(3) To ensure program integrity and implementation, periodic program evaluations must be conducted at the discretion of the FPP Administrator. Evaluations and/or findings must be maintained with other pertinent FPP recordkeeping data.

(4) SSCs/FMP/Engineering Services must work with a Competent Person to facilitate the following:

a) Identify existing and potential hazards associated with elevated work areas.

b) Develop written site-specific fall protection procedures and rescue plans based on data compiled from the facility fall hazard checklists.

c) Utilize the hierarchy of fall protection controls to minimize hazards associated with elevated work areas.

(5) SSCs/FMP/Engineering Service Centers must work with a Qualified Person for design of specialized fall protection systems.

(6) SSCs/FMP/Engineering Service Centers must ensure that surveys of all elevated work areas are conducted (see Appendix I).

b. Incident Investigations.

(1) All fall-related incidents must be reported to the FPP Administrator and SECM.

(2) Ensure accident investigations are conducted by a Competent Person in accordance with FAA Order 3900.19, Chapter 7, Mishap Reporting and Investigation.

(3) All incidents must be investigated promptly and must consider all factors that contributed to the event, including but not limited to:

a) a review of policies, procedures and training,

b) available fall hazard surveys,

c) equipment and related systems, and

d) general communication.

(4) All activities affecting the site or equipment involved in the incident must cease until the incident investigator permits activities to resume.

(5) Site and equipment must be secured until the investigator permits activities to resume.

c. Facilities, Systems and Equipment Acquisitions.

(1) Fall protection requirements must be incorporated as early as possible in all design, acquisition, construction, renovation, maintenance, and other projects and programs.

(2) New facilities or existing facilities that receive upgrades must have fall protection equipment built into the systems that meet or exceed OSHA and ANSI requirements. Examples include installing:

a) Permanent compliant anchor points and/or ladder safety systems prior to commissioning; and

b) OSHA-compliant parapets or guardrails on rooftops or elevated work platforms where employees must approach the perimeter.

(3) A Qualified Person or a Competent Person and, as appropriate, planners and engineers must ensure that designs and plans indicate locations and types of fall protection systems to be installed, and that approved fall protection systems and/or components are permanently identified prior to 100% design.

10. Emergency Rescue.

a. OSHA requires that "The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves" (29 CFR 1926.502 (d)(20)).

b. ATO Rescue Plans.

(1) A formal rescue plan is required for all facilities where there is elevated work and a climber may need rescue. Self-rescue is the primary option, but the rescue plan must outline all of the rescue procedures for that facility.

(2) A sample rescue plan is available in Appendix D, Site Rescue Plan - EXAMPLE.

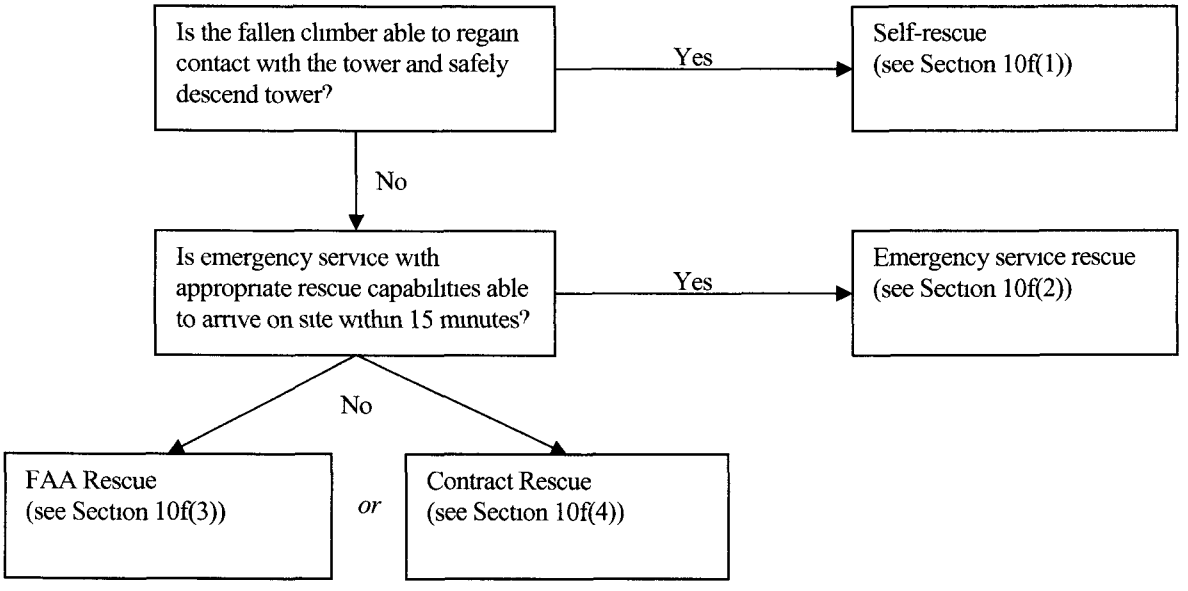
c. Prior to issuing the formal, site-specific rescue plans, each SSC Supervisor must validate the plans by receiving local authorities' written confirmation of their response capabilities. (See Appendix B)

d. The Engineering Services Manager must ensure that a rescue plan, when applicable, is in place for his/her personnel at construction and renovation projects and available for review by employees at a known location. (See Appendix D)

e. All equipment used for rescue must meet applicable consensus standards and the approval of the FPP Administrator.

f. ATO Rescue Hierarchy. There are four rescue options in the ATO. Choosing which option to use depends on the condition of the fallen climber and the availability of rescue services. Figure 3-1, ATO Rescue Decision Tree, is a simplified decision-making tool. Each of the rescue options are more fully described in the text below Figure 3-1.

Figure 3-1: ATO Rescue Decision Tree



(1) Self-Rescue.

a) Self-rescue is the primary method for a fallen climber to descend a structure. If the work activity or the structure allows the climber to maintain hand or foot contact, and he/she is physically able, then self-rescue is the recommended option.

b) Self-rescue may be performed using the following methods:

1) Grabbing onto any part of the tower, repositioning, and then climbing down while remaining attached to the structure using a fall protection system.

2) Utilizing a rescue system that allows for self-rescue, provided the climber has received previous training and demonstrated proficiency (validated by the instructor) on the self-rescue procedure.

(2) Emergency Service Rescue.

a) Emergency Service Rescue is summoning emergency services (911 if available, fire department number, etc.) to rescue a climber.

b) In all instances of Emergency Service Rescue, the rescue option must be coordinated with the entity utilized prior to being selected to ensure the entity's capabilities meet the rescue requirements and is properly trained in high angle rescue, or equivalent, indicated within this FPP. Appendix B is a sample emergency services letter; Appendix D is a sample rescue plan.

c) When self-rescue is not an option for a fallen climber, summon emergency services, where available.

d) If an FAA-trained Authorized Rescuer is on site with rescue equipment, and the site-specific rescue plan identifies Emergency Service Rescue as the selected option, the FAA rescuer may perform an FAA Rescue (see below) instead of the Emergency Service Rescue, as long as emergency services is contacted prior to initiating the rescue. FAA Rescue will only be exercised if the rescuer deems the situation warrants immediate rescue.

(3) FAA Rescue.

a) FAA Rescue is required when emergency services cannot arrive on site within 15 minutes.

b) Rescues are to be performed only by FAA employees trained as Authorized Rescuers.

c) A site-specific rescue plan must be developed for, and implemented at, each affected site and must include procedures for trained FAA Authorized Rescuers using pre-packaged rescue systems in accordance with Appendix D.

d) Rescue equipment will be made available for all Authorized Rescuers.

e) Emergency services (e.g., ambulance) contact information is required in the site rescue plan.

(4) Contract Rescue. Rescue services provided onsite via contract.

a) Contract rescue is needed if self-rescue is not feasible, and emergency services and FAA rescue are not available. A site-specific rescue plan must be developed for, and implemented at, each affected site.

b) The site-specific rescue plan must include procedures for rescue services in accordance with Appendices B and D.

c) Emergency Services (e.g., ambulance) contact information is required in the site rescue plan.

11. Fall Protection Procedures.

a. Fall protection must be provided when accessing any elevated work area that has an exposed edge or floor opening 4 feet or more higher than the adjacent floor or ground level. Fall protection must also be provided to any employee who climbs towers or structures, as identified within this FPP document.

b. Climbing Requirements. (Also see Table 3-1)

(1) All climbs require a second person on site with current First Aid/CPR certification and climbing training.

(2) The site-specific rescue plan must be reviewed by all climbers prior to climbing.

(3) Both climbers must have proper fall protection equipment and the appropriate level of training.

(4) Positive communication must be established between the climber and the second person.

(5) The second person must be able to perform rescue or summon rescue and/or medical services.

(6) Second Person (Ground Person) Requirements. The second person must be:

a) An Authorized Person Level I or II for the following climbs:

1) The climber will be utilizing a functional LSS; or

2) The climber will be utilizing a functional LSS and transitioning into a platform with a compliant guardrail system.

b) An Authorized Rescuer for the following climbs:

1) The climber utilizes a LSS to access and work on a platform with non-compliant guardrails, when the function of the guardrails is compromised (leaning over or through the guardrail), or the condition of the guardrails is unknown;

2) The climber utilizes a 100% tie-off lanyard;

3) The climber climbs off of the ladder or detaches from the LSS;

4) The climber climbs a structure without a ladder or functional LSS; or

5) The climber works on an elevated platform without guardrails.

(7) The second person may be trained as an Authorized Person Level II for climbs listed in (6b) above if professional emergency rescue services can be on site in less than 15 minutes.

Table 3-3: Fall Protection Climbing Capabilities

Activity	Climber Training Level	Second (Ground) Person Training Level
Climbing a structure with a functional LSS to a protected platform with compliant guardrails.	Authorized Person Level I or II.	Authorized Person Level I or II.
Climbing a structure with a functional LSS to a platform with non-compliant guardrails, the function of the guardrails is compromised (leaning over or through the guardrail), or the condition of the guardrails is unknown.	Authorized Person Level II.	Authorized Rescuer.*
Climbers utilize 100% tie-off lanyards. Climbers climb off of the ladder or detach from the LSS. Climbers work on an elevated platform without guardrails. Climbing a structure without a ladder or functional LSS.	Authorized Person Level II	Authorized Rescuer.*
*The second person may be a trained as an Authorized Person Level II instead of an Authorized Rescuer if professional emergency rescue services are available within 15 minutes.		

c. Elevated Platforms.

(1) Employees must establish fall restraint systems for any work involving leaning over or through the guardrails as the first option for fall protection.

(2) If fall restraint is not possible, utilize fall arrest with an energy-absorbing lanyard.

(3) Poles. Work on poles must be performed utilizing the following hierarchy:

(a) Where accessible, aerial lifts must be utilized for all work at elevated work areas on poles.

(b) Where not accessible with aerial lifts, OSHA-compliant fixed ladders must be installed. An LSS is required for fixed ladders over 20 feet.

(c) FAA personnel must not climb poles unless the poles are equipped with OSHA-compliant fixed ladders.

(d) When a pole requires replacement, it must be replaced with a tilt-down type tower.

(4) Roof Work. Employees must follow related service area policies when working on rooftops or unprotected elevated work platforms.

d. Hatches and Other Openings at Elevated Walking/Working Areas.

(1) Employees must be protected from falling through floor holes, floor/hatch openings, manholes, vaults, skylights and pits by use of:

(a) OSHA-compliant permanent or portable guardrail systems with compliant toeboards; or

(b) Floor hole covers of standard strength and construction, which will support twice their expected loads.

(2) When floor/roof/platform hatches are left open and other employees are working in the area, there must be:

(a) An OSHA-compliant guardrail installed around each open hatch or a barrier system that protects the opening; or

(b) A monitor watching each hatch to warn people of the hazards. This monitor must not have any other duties which will interfere with his or her responsibility to alert people in the area of the hazards.

(c) When hatches are associated with elevated platforms or rooftops, they must be secured against accidental displacement.

(3) Hoist Area.

(a) If guardrail systems, or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), or an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee must be protected from fall hazards by a personal fall arrest system.

(b) Provide barricades to prevent employees from working under a suspended load.

e. Climbing Non-FAA Owned Structures. Site-specific assessments must be performed for towers and/or elevated walking/working areas that are not FAA-owned, and on which FAA personnel climb. These inspections must be performed by a Fall Protection Competent Person or Qualified Person and the findings entered into a facility fall hazard checklist. Site-specific fall protection and emergency response procedures (i.e., rescue plans) will be implemented as required by this FPP.

f. Fixed Ladders.

(1) Fixed ladders must comply with OSHA Standard 29 CFR 1910, Subpart D.

(2) Fixed ladders over 20 feet in height must have an LSS installed that complies with ANSI A14.3.

(3) The top rung of fixed ladders must extend 36 inches above the elevated surface being accessed.

(4) Side rails of fixed ladders must extend 42 inches above the elevated surface being accessed.

(5) Ladder safety systems on fixed ladders must be installed per manufacturers' specifications.

(6) Fixed ladders must be inspected prior to use and maintained in a safe condition.

(7) All personnel must use a fixed ladder if one is present on the structure.

(8) An LSS, or the use of a PFAS, is required for fixed ladders more than twenty feet long.

(9) Ladder cages are prohibited for fixed ladders that are more than 20 feet in height unless approved by the Fall Protection Program Administrator.

g. Portable Ladders.

(1) All portable ladders must be inspected as per manufacturers' recommendations prior to use.

(2) Portable ladders (i.e., extension ladders, stepladders, fixed length ladders, etc.) do not require the use of fall protection, provided the worker uses proper safety procedures as outlined in this order, including Appendix G (Portable Ladders).

(3) Portable ladders are prohibited from being used on elevated platforms since it increases the fall hazard and compromises the protection afforded by the guardrails. If it is required to elevate the worker higher than the platform, a Competent Person must be consulted for an alternative fall protection method.

(4) Stepladders must be of A-frame construction (i.e., four legs). See Appendix G, Portable Ladders.

(5) All portable wooden ladders must be rendered unusable and removed from service.

(6) All new portable ladders must be ANSI compliant, be a minimum of Type 1A capacity rating, and be made of fiberglass to reduce electrical hazards.

(7) See Appendix G for additional guidance on portable ladders.

h. Aerial Lift and Bucket Truck Standard Operating Procedures – See Appendix E.

i. Manbasket Personnel Lifts Standard Operating Procedures – See Appendix F.

j. Scaffolding Standard Operating Procedures – See Appendix H.

k. Work on Elevated Platforms - See Appendix J.

Chapter 4. Administrative Information

1. Distribution. This order is distributed to the applicable ATO service units in headquarters; to the ATO Service Areas and Service Centers; and to all Technical Operations Field Offices with a maximum distribution.

2. Definitions.

a. Active Fall Protection System. A fall protection system that requires the use of fall protection equipment and fall protection training.

b. Anchorage. The terminating component of a fall protection system or rescue system that is intended to support any forces applied to the system.

c. Authorized Inspector. A person trained and authorized to perform annual inspections of individually-issued personal fall protection equipment.

d. Authorized Person Level I. (formerly Authorized Climber). A person who performs any of the duties specified for this category and has successfully completed the Authorized Person Level I training. (Refer to Table 3-1).

e. Authorized Person Level II. (formerly Expert Climber). A person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Authorized Person Level II training. Note: He/she may also be assigned duties specified for the Authorized Person Level I. (Refer to Table 3-1).

f. Authorized Rescuer. A person assigned and trained to perform rescue from fall protection that has also successfully completed First Aid/CPR training. (Refer to Table 3-1).

g. Body Belt (safety belt). A strap with means both for securing it about the waist, and for attaching it to a lanyard, lifeline, or deceleration device. The body belt is no longer acceptable as a fall protection device by the FAA.

h. Belt (Lineman's Belt). A belt, similar to a body belt, except that its attachment points have two D-Rings on either side of the belt so that a lineman's belt can be attached to them. The lineman's belt is usually placed around a structure (pole) to position the worker around the structure (pole) or assist during the climb. The belt (Lineman's Belt) is no longer acceptable as a fall protection device by the FAA.

i. Buckle. Any approved device utilized to close, secure and tightly fasten the full body harness to the employee wearing the harness, for the purpose of conducting work at elevated work areas.

j. Carabiner. A connector generally comprised of a trapezoidal or oval shaped body with a closed, self-locking gate or similar arrangement that may be opened to attach another object and, when released, automatically closes to retain the object.

k. Competent Person. An individual designated to be responsible for the immediate supervision, implementation, and monitoring of the employer's managed fall protection program who, by completing Competent Person training and having technical knowledge, is capable of identifying, evaluating, and addressing existing and potential fall hazards, and who has the authority to take prompt corrective action with regard to such hazards. (Refer to Table 3-1).

l. Competent Person Trainer. An individual who by training, knowledge and experience, is capable of conducting Competent Person training.

m. Connector. A device that is used to couple (connect) parts of the personal fall arrest system, or positioning device system 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 D-ring sewn into a full body harness, or a snap-hook spliced or sewn into a lanyard or self-retracting lanyard/lifeline).

n. Deceleration Device. Any mechanism which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

o. Deceleration Distance. The additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's full body harness attachment point at the moment of activation (at the onset of fall arresting forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

p. Elevated Work Area. Any walking/working surface 4 feet or more above the next lower level.

q. Equivalent. Alternative designs, materials, or methods to protect against a hazard, which the employer can demonstrate, will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

r. Extension Ladder. An extension ladder is a non-self supporting portable ladder adjustable in length. Its size is designated by the sum of the lengths of the sections measured along the side rails, even though overlapping of the sections is required by design.

s. Fall Arrest System. A system used to stop an employee after a fall is incurred, so that the worker does not fall to the ground. It may consist of a personal fall arrest system or a lifeline system.

t. Fall Hazard Checklist. A written document that contains information about existing or potential fall hazards and a method or methods for eliminating or controlling those hazards.

u. Fall Protection Procedure. A written series of logical steps that describes in detail the specific practices, equipment and methods to be used to protect authorized persons from falling when exposed to fall hazards.

v. Fall Restraint System. A system used to restrain an employee from incurring a fall from a working level. It may consist of an anchorage, connectors, and a full body harness and may include a lanyard, lifeline, or suitable combinations of these.

w. Fixed Ladder. A fixed ladder is a ladder permanently attached to a structure, building, or equipment

x. Floor Hole. An opening measuring less than 12 inches but more than 1 inch in its least dimension in any floor, platform or pavement through which materials, but not persons, may fall.

y. Floor Opening. An opening measuring 12 inches or more in its least dimension in any floor, platform or pavement through which persons may fall.

z. Free-Fall. The act of falling before a personal fall arrest system begins to arrest the fall.

aa. Free Fall Distance. The vertical displacement of the fall arrest attachment point on the employee's full body harness between onset of the fall and just before the system begins to apply force to arrest the fall. The distance excludes deceleration distance and lifeline/lanyard elongation but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

bb. Full Body Harness. A single unit of straps that are woven into a specific design, that must be attached to fall arrest systems, and is worn by a climber to distribute and control the fall arrest forces to the body of the climber (i.e., thighs, pelvis, waist, chest, and shoulder) in the event of a fall.

cc. Gate. The element of a connector that opens to receive an object and closes when released to retain the object.

dd. Guardrail System. A physical barrier comprising a top rail, mid-rail(s), and toe board, erected to protect employees and prevent materials from falling to lower levels.

ee. Ladder Safety System (LSS). An assembly of components whose function is to arrest the fall of a user, including the carrier and its associated attachment elements (brackets, fasteners, etc.), safety sleeve, body support and connectors, wherein the carrier is permanently attached to the climbing face of the ladder or immediately adjacent to the structure.

ff. Lanyard. A flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the full body harness to a deceleration device, lifeline, or anchorage.

gg. Lanyard, positioning. A lanyard designed for worker to work hands free but is not to be used for fall arrest.

hh. Lanyard, energy absorbing (also known as shock-absorbing or Y-lanyard). A lanyard with a deceleration device integrated to reduce the force on the climber in the event of a fall, and allows for off-ladder climbing by employees trained as an Authorized Person Level II.

ii. 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.

jj. Lower Levels. Those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavation pits, tanks, material, water, equipment, structures, or portions thereof.

kk. Mid–Rail. A fixed rail located approximately midway between the top rail of a guardrail system and the deck of a walking, working surface. Mid-rails must be positioned in a way that the maximum opening at any point is no greater than 19 inches.

ll. Passive Fall Protection System. Fall protection that does not require the use of personal fall protection equipment.

mm. Personal Fall Arrest System (PFAS). A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, and a full body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. Rescue procedures must also be included.

nn. Portable Ladders. Two styles of portable ladders can be used, extension ladders and stepladders. Each style can be broken down into 'types', and each type must meet certain load limits and working specifications.

oo. Positioning Device System. A full body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free.

pp. Positive Communication. Communication procedures that have been tested and verified as operational at the site where the activity is performed.

qq. Qualified Person. A person with a recognized degree or professional certification and extensive knowledge, training and experience in the fall protection and rescue field who is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems.
(Refer to Table 3-1).

rr. Rescue.

(1) Self Rescue. The act of freeing oneself and descending safely to the ground following a slip or a fall from a ladder or an elevated work area.

(2) Emergency Service Rescue. Rescue service provided on an emergency basis by local first responders.

(3) Contract Rescue. Rescue services provided onsite via contract.

(4) FAA Rescue. A designated FAA employee or employees qualified through training as a Rescuer and authorized to perform rescue of person(s) at elevated work areas.

ss. Rescue Plan. A written process that describes in a general manner how rescue is to be approached under the specified parameters, such as location or circumstances.

tt. Rescue Procedure. A written series of logical steps that describe the specific manner in which rescue is to be accomplished.

uu. Rope Grab. A device which travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/lever locking, or both.

vv. Safety Monitoring System. A safety system where a Competent Person performs the duties of recognizing and warning employees of fall hazards. This is an administrative control and should only be used if fall restraint or fall arrest systems are not feasible or possible.

ww. Self-Retracting Lanyard/Lifeline (SRL). 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 lanyard/lifeline and arrests the fall.

xx. Snaphook. A connector comprised 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, when released, automatically closes to retain the object. Snaphooks are generally one of two types:

(1) The locking type with a self-closing self-locking keeper which remains closed until unlocked and pressed open for connection or disconnection; or

(2) The non-locking type with a self-closing keeper that remains closed until pressed open for connection or disconnection. The use of non-locking snaphooks as part of personal fall arrest systems, fall restraint systems, and positioning device systems is prohibited.

yy. Step Ladder. A stepladder is a self-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designated by the overall length of the side rails.

zz. Toeboard. A low protective barrier at an elevated work area that helps prevent the fall of materials and equipment to lower levels.

aaa. Top Rail. The highest rail of a guardrail system associated with an elevated work platform with a minimum height of 42 inches nominal from upper surface of top rail to floor, platform, landing, etc. and capable of withstanding 200 pounds of top rail pressure. (Guardrails higher than 42 inches may require additional mid-rails).

bbb. 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, runways,

formwork and concrete reinforcing steel but not including ladders, vehicles or trailers on which employees must be located in order to perform their job duties.

ccc. Warning Line System. A visual warning/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 a guardrail, fall restraint, fall arrest or safety net systems to protect employees in the area.

ddd. Work Area. That portion of a walking/working surface where job duties are being performed.

eee. Walking Height. The distance from the walking/working surface to a lower level.

Appendix A. Regulatory and Consensus Standards

Fall protection standards are outlined in the Occupational Safety and Health Administration's (OSHA's) General Industry and Construction Standards. The applicable Federal regulations and standards governing fall protection are outlined below. Additional fall protection guidance is found in the following Consensus Standards and in FAA Order 3900.19, FAA Occupational Safety and Health Program:

1. **General Industry** requirements for fall protection include:

   29 CFR 1910.23, Guarding Floor and Wall Openings and Holes

   29 CFR 1910.25, Portable Wood Ladders

   29 CFR 1910.26, Portable Metal Ladders

   29 CFR 1910.27, Fixed Ladders

   29 CFR 1910.67, Vehicle-mounted Elevating and Rotating Work Platforms

   29 CFR 1910.268, Telecommunications

   29 CFR 1910.151, Medical Services and First Aid

2. **Construction Industry** requirements for fall protection include:

   29 CFR 1926.502, Fall Protection Systems Criteria and Practices

3. **The Consensus Standards** for fall protection include:

   ANSI/ASSE Z359.6-2009 - Specifications and Design Requirements for Active Fall Protection Systems

   ANSI/ASSE Z359.12-2009 - Connecting Components for Personal Fall Arrest Systems

   ANSI/ASSE Z359.13-2009 - Personal Energy Absorbers and Energy Absorbing Lanyards

   ANSI A10.32-2004 - Fall Protection Systems for Construction and Demolitions

   ANSI A14.3-2008 - Ladders-Fixed-Safety Requirements

   ANSI A1264.1-2007 - Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace, Floor, Wall and Roof Openings; Stairs and Guardrails Systems

Appendix B. Sample Letter to Emergency Rescue Services

(Name of) Fire and Rescue Service (Date)
(Address)

Squad Leader:

The Federal Aviation Administration (FAA) has facilities in your jurisdiction that require FAA personnel to climb to elevated work areas with fall protection systems. In order to pre-plan rescue situations in our area, we need input from emergency services. Please answer the questions below and return in the enclosed postage-paid envelope.

Facility Information:
Facility address: (Fill in exact physical address)_____
Number of towers: (Fill in)_____
Height of each tower (Be specific)_____
The FAA climbs these towers approximately _____ times a year. (Fill in frequency for all towers, either combined or individual (e.g., 5 times a year total or 2 per/year for tower 1 and 1 per/year for towers 2, 3, and 4)
A fire truck can access the area. (Select correct option) Yes No

Questions for Emergency Services:
Can your facility perform a rescue from a communication type tower? Yes No
Does your facility have a ladder truck? Yes No
If yes, what is the maximum height of the ladder? _____ feet
Expected response time for emergency services to reach this facility: _____

Comments:

Do you wish to view the facility with FAA personnel to assess rescue procedures? Yes No
If yes, please list name and number to set up a meeting.
Name: _____

If you have any questions please call (Insert name and phone number of point of contact).

Thank you for your time.

FAA

(NOTE to signatory: Be sure to enclose postage-paid self-addressed envelope for return of letter.)

Appendix C. Guidance for FAA Rescue Activities

1. Overview

Federal Aviation Administration (FAA) (in-house) rescue must be managed and implemented with the utmost understanding of the hazards and knowledge of the limitations of the equipment and training. It must be overseen by a Fall Protection Competent Person. Training is required for any FAA personnel who will be performing rescue utilizing the rescue systems.

2. Rescue Systems

The various rescue systems used in ATO include a bag, rope, pulley (or other type of device that provides a mechanical advantage for the rescue system), and a braking and/or lowering system. The length of the rope must always be appropriately longer than the total tower height at which the rescue system will be used, in accordance with applicable supplier/manufacturer system criteria.

Rescue systems must be kept in a ready-to-use state and no one except a trained rescuer must use the system. It is recommended that rescue systems be stored in locations not accessible to anyone other than trained rescuers and affected managers.

3. Training

Due to the complexities of rescue activities, all rescuers must maintain proficiency by participating in regular mock rescues. Trained rescuers must participate in formal refresher training every two years. They must also be assessed at least annually by another Authorized Rescuer-trained person by performing mock rescues with each rescue system they are authorized to operate and completing a written examination.

4. Rescue Requirements

The following requirements must be followed for FAA rescue activities (FAA or contract rescue is required when emergency services cannot arrive on site within 15 minutes):

- Rescuer techniques must include:
    - Climbing above the victim and setting the rescue device anchor, attaching the rescue rope to the victim's PFAS, lifting the victim up enough to take the weight off his/her system, disconnecting his/her system, and lowering him/her down.
    - Using a rescue system with at least a 3 to 1 pulley system mechanical advantage.
    - Rescuer techniques must not include cutting the victim's PFAS to drop him/her to the ground.
- Rescuers must be trained in First Aid/Cardiopulmonary Resuscitation (CPR) with current certifications.

Appendix D. Site Rescue Plan – EXAMPLE

IN THE EVENT A CLIMBER HAS FALLEN OR IS IN DISTRESS:

Emergency Rescue Options

☒ SELF-RESCUE (always the first option if the climber is able to regain contact with the tower and safely descend the tower)

☐ *EMERGENCY SERVICE RESCUE* ☐ *FAA RESCUE* ☐ *CONTRACT RESCUE*

Tower Location:	Number of Tower(s):	Height(s):
Facility ID:	Facility Type:	
Longitude:	Latitude:	
Description:		

Communication Means (radio, cell phone, etc.) : _____ *(radio, cell phones, landline)* for communication with office/duty station and observer.

_____ *(radio, cellular phones, landline)* for emergency service contact.

Means of communication are positive and are checked prior to each climb.

Facility's nearest major intersection:

Directions to facility from major intersection (above):

Approximate Emergency Medical Service (EMS) arrival time (in minutes) in good weather:

Does the EMS need to be informed prior to each climbing event? ☐ Yes ☐ No

EMS non-emergency phone number (if applicable):

Describe EMS availability and capabilities.

Rescue Response:

1. Talk to the climber. If he/she is conscious, ask them if they will be able to self-rescue.

2. If the climber is conscious and needs help getting back on the structure to self-rescue, help them get back on the structure. This may include putting a portable ladder under them to use to right themselves, climbing up and pulling them to the tower, or other means

3. If the climber is unconscious, needs EMS or medical attention beyond first aid, IMMEDIATELY CALL:_____.

Provide the EMS with the following information:

a. Your name,

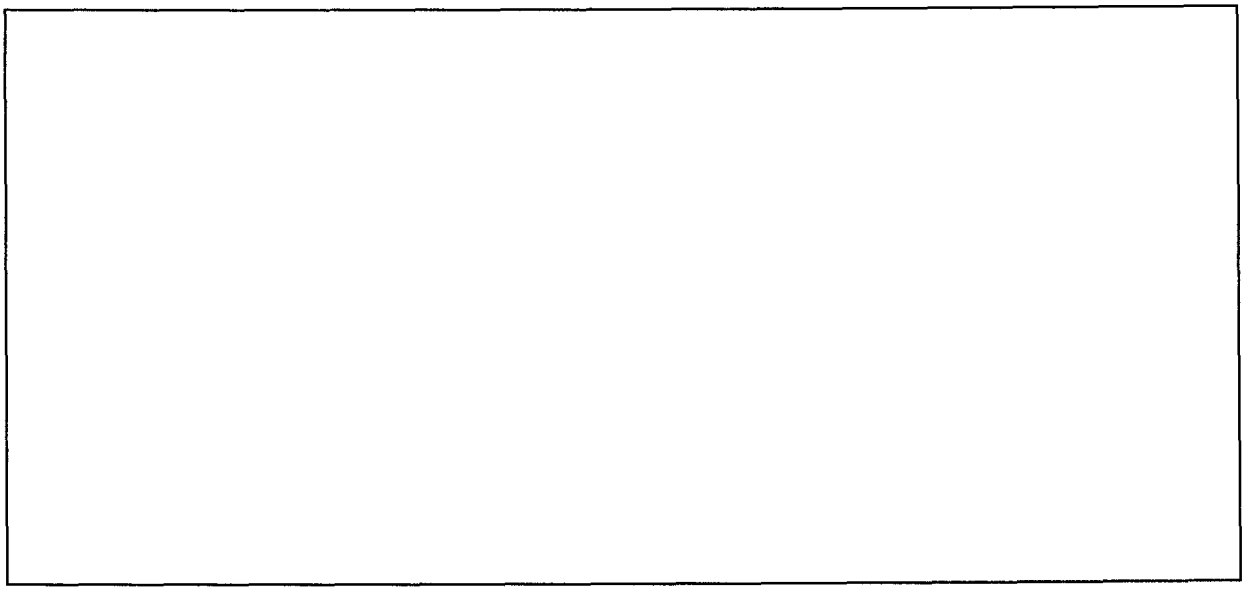
b. Your phone number,

c. The location information as listed in this Rescue Plan, and

d. Information about the climber's condition.

Prepared by: **Date prepared:**

Insert Map of Site:



Appendix E. Standard Operating Procedures for Aerial Lifts and Bucket Trucks

An aerial lift device is defined as any vehicle-mounted elevating or rotating work platform. The equipment types covered by this appendix and as defined in 29 CFR 1910.67, 1926.453 - 454 and ANSI A92.2 include:

- Extensible Boom Platforms
- Aerial Ladders
- Articulating Boom Platforms ("Cherry Pickers")
- Vertical Ladders/Towers
- Any combination of the above

This appendix provides guidance for the safe operation of aerial lifts, bucket trucks and other personnel lifts described above. These procedures should be followed whenever operating these types of equipment.

This appendix does not include scissor lifts or manbaskets (personnel baskets or crane suspended personnel platforms). Manbaskets and scissor lifts are addressed in separate appendices.

The following procedures are divided according to pre-operation inspection, worksite evaluation, and safe work practices. To operate this equipment, the worker must be trained as an Authorized Person Level I, or trained in Aerial Lift Safety, AND must also have equipment-specific training on the lift being operated (usually provided by the rental company or manufacturer).

Operations involving aerial lifts also require a second person as a "ground watch" who is responsible for ensuring that the lift does not encounter overhead obstructions such as power lines, etc. The second person (ground watch) is responsible for summoning emergency assistance, if needed. The second person does not require formal Fall Protection, First Aid or CPR training. Positive, two-way communications must be maintained between the lift occupant and the second person (ground watch) at all times.

EQUIPMENT: Aerial Lifts and Bucket Trucks

Personal Protective Equipment (PPE) based on task:

1. Fall protection system, including full body harness, with appropriately sized lanyard configured for restraint. (Note: If a worker's center of gravity is above the top guardrail, a personal fall arrest system must be utilized).
2. Eye protection – Goggles or other appropriate eye protection must be worn when conditions exist for falling or blowing debris.
3. Hand protection – Gloves should be worn for cold weather work or as needed based on the activity.
4. Safety shoes – as required.
5. Head Protection – Head protection must be worn when the possibility exists for falling debris. For activities involving potential exposure to electrical hazards, Class E (up to 20,000V) or G (up to 2,200V) helmets must be worn.

6. Hearing protection – Hearing protection must be used as needed based on noise levels.
7. Other PPE – as required.

Tools and Supplies that are recommended:

1. Chocks (required where applicable per equipment design)
2. Tire gauge
3. Materials to cordon off area (e.g., caution tape, safety cones, work zone signs, etc.)
4. Positive 2-way communication if immediate verbal communication is not possible because of distance or elevated noise levels
5. Pulley system for raising and lowering tools
6. Mechanical fluids
7. Tools specific to the job
8. Vehicle's operator manual (Mandatory on lift equipment)
9. Tool bag/tool bucket
10. Insect spray, sunscreen, etc.

WARNINGS:

1. Always have a second person as a ground watch. The ground person cannot have any other duties while the operator is in the lift.
2. The second person will help to ensure the lift does not encounter overhead obstructions such as power lines, etc.
    - The second person (ground watch) is responsible for calling for emergency assistance, if needed.
    - Positive, 2-way communications must be maintained between the lift occupant and the ground watch at all times.
3. Ensure adequate ventilation when operating fossil fuel powered lifts indoors.
4. Proper PPE must be worn when inspecting and maintaining battery systems associated with aerial lift devices (i.e., acid resistant gloves, eye and face protection, long sleeves, etc.)
5. Set brakes and use wheel chocks where applicable.
6. Do not climb on, over, or through the guardrails and/or boom.
7. Do not use additional ladders, planks, or other materials within the platform to achieve additional height.
8. Do not operate any part of the lift within 24 feet of an exposed moveable conductor (e.g., overhead power lines).
9. Do not put any part of the body outside the platform while raising and lowering the platform.

10. Do not operate lift until outriggers, when present, are extended properly on pads or a solid surface.
11. Do not operate in inclement weather, such as high winds, lightning, ice, snow, etc.
12. Do not override hydraulic, mechanical or electrical safety devices.
13. Do not operate a damaged unit.
14. Do not travel with boom elevated unless the equipment is designed for this procedure and personnel are trained to use the equipment in this mode.
15. Do not exceed the manufacturer's rated load capacity limits for the lift (this includes weight of worker(s), tools and material). Signs with the maximum rated load limits must be located on the equipment in obvious places where workers can easily see them.
16. Do not exceed the manufacturer's occupancy limit for the equipment.
17. Avoid unnecessary travel with the lift in an extended position.
18. Do not drive the lift unless the worker is facing in the direction of travel.
19. Do not throw objects to or from the platform. Use a pulley and rope to raise and lower objects.
20. Do not work in any aerial lift without proper fall protection equipment.
21. Do not secure a fall restraint system to an adjacent pole or structure while working from the aerial platform. Always secure the fall restraint system to the manufacturer's recommended attachment point.
22. Do not use an aerial lift as a material handling device unless it is approved for material handling.
23. Do not raise the platform on a slope or drive onto a slope when the platform is elevated.
24. Ensure the boom is properly cradled and the outriggers are in the stowed position before moving the aerial lift.

METHODOLOGY: The following procedures must be followed prior to, and during, aerial lift and bucket truck use:

Pre-Operation Inspection:

1. Follow the manufacturer's recommendation for maintenance and pre-use inspections. The equipment operator's manual MUST remain on the aerial lift at all times.
2. Check all tires for leaks, correct pressure, wear and "dry rot".
3. Check fuel, coolant, hydraulic fluid, and battery levels. Ensure proper PPE is ALWAYS worn when checking these fluids.
4. Inspect battery cables for wear and cracked or damaged insulation.
5. Inspect batteries for cracks/holes, leaking cells, and loose or clogged vent caps.
6. Inspect all connections for rust, leaks, corrosion, tightness and fit.
7. Inspect hydraulic lines and connections for leaking valves/connections, cracks, and fluid odors.
8. Ensure and observe the proper operation of all safety switches and interlocks.

9. Inspect pivot pins for signs of wear or damage and for security of the locking device.
10. Inspect weld seams for cracks and abnormalities, including attachment welds between the activating cylinders and the boom or pedestal.
11. Check guardrails for signs of wear or damage.
12. Inspect fall protection anchor point for cracks or abnormalities in the welds or bolts.
13. Inspect fall protection full body harness and restraint lanyard before each use.
14. Inspect and operate the secondary controls (at base) at ground level and observe normal functionality.
15. Conduct trial lifts with the platform empty and check for fluid leaks, abnormal operation, and unusual noises.

NOTE: Do not use the lift if any part is defective.

Worksite Evaluation:

1. Identify overhead lines and verify that a safe approach distance can be maintained.
2. Evaluate terrain and slope for area where lift will be located.
3. Check surfaces for hazards such as buried utilities, excavations, trenches, and susceptible collapses.
4. Evaluate the work area for interference from vehicular and pedestrian traffic.

Safe Work Practices:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. Do not operate any part of the lift within 24 feet of an exposed moveable conductor (e.g., overhead power lines). If operations inside 24 feet are required, consult NFPA 70E, Table 130.2(C) for compliant approach distances and PPE.
3. Verify that the main unit is level and the outriggers will be on stable ground.
4. Conduct another trial lift with the platform empty.
5. In accordance with the facility's Lockout/Tagout Program, de-energize and lockout any equipment that will be worked on during the lift.
6. Properly don required fall protection equipment (full body harness, with appropriately sized lanyard configured for restraint) prior to operating the lift. Maintain attachment the entire time the lift is at height. Verify that the fall protection system will not allow the worker's hips to get above the top rail/side of the bucket. If a worker's center of gravity is above the top guardrail, a personal fall arrest system must be utilized.
7. Maintain good housekeeping practices on the platform to prevent falls and tripping hazards.
8. Prior to repositioning the vehicle, always lower the lift.
9. Verify that any workers in the vicinity of the lift don a hardhat.
10. Conduct the annual safety inspection according to the manufacturer's recommendations.

Appendix F. Standard Operating Procedures for Manbaskets

This Standard Operating Procedure (SOP) provides guidance for the safe operation of manbasket/ personnel lifts and these procedures should be followed whenever operating these types of equipment. The procedures are divided according to pre-operation inspection, worksite evaluation, and safe work practices. The minimum training required prior to operating the equipment in this SOP is Authorized Person Level II and appropriate training on the operation of the equipment.

EQUIPMENT: Manbasket and Crane

Personal Protective Equipment (PPE) based on task:

1. Fall Restraint System with appropriately sized lanyard.
2. Eye protection – safety glasses, if there are any impact hazards, such as flying debris.
3. Hand protection – gloves specific to job task.
4. Safety shoes.
5. Head Protection – Climbing Helmet.
6. Hearing protection – as required.
7. Other PPE – as required.

Tools and Supplies that are recommended:

1. Materials to cordon off area (e.g., caution tape, safety cones, work zone signs, etc.).
2. Pulley system.
3. Mechanical fluids.
4. Tools needed for task.
5. Positive communication means: operational communication that has been tested and verified at the site.
6. Tool bag / tool bucket.
7. Wasp spray, sunscreen, etc.

WARNINGS:

1. Do not use additional ladders, planks, or other materials within the platform to achieve additional height.
2. Do not put any part of the body outside the manbasket while raising and lowering the basket.
3. Do not operate the lift unless the crane outriggers are properly deployed.
4. Do not climb on the guardrails, if present.
5. Do not operate any part of the lift within 24 feet of an exposed moveable conductor (e.g., overhead power lines). If operations inside 24 feet are required, consult NFPA 70E, Table 130.2(C) for compliant approach distances.
6. Do not operate in inclement weather.

7. Do not operate a damaged unit.

8. Do not exceed maximum weight capacities for the crane or for the manbasket. Signs with the maximum rated weight limits must be located on the equipment.

9. Do not exceed the manufacturer's occupancy limit for the basket or platform.

10. Do not throw objects to or from the platform. Use a pulley and rope to raise and lower objects.

11. Do not perform work at elevated work areas without properly attaching a fall restraint system to an anchor point.

12. Do not tie the fall restraint system onto an adjacent pole when working.

13. Do not use a fall restraint lanyard that is longer than the length needed to maneuver within the platform.

14. Do not use a lanyard other than the one specifically designed for use with the systems.

15. Do not hoist employees while the crane is traveling.

16. Do not use the crane's other loadlines while personnel are suspended in manbasket.

METHODOLOGY: The following procedures must be followed, as listed, prior to and during manbasket use:

General Preparation:

1. Meet with crane operator and verify inspection reports, including wire ropes, crane arm, hook, load tests, and the pre-operation maintenance tasks are current.

2. Verify the crane operator understands the job task.

3. Verify crane operator has been properly trained.

4. Verify signals and communication issues or concerns with crane operator.

5. Verify that, if the operator has connected the personnel platform to the load line using a wire rope bridle, each bridle leg is connected to a master link or shackle in such a manner to ensure that the load is evenly divided among bridle legs.

6. Verify that the manbasket weight and rated capacities are not exceeded.

7. Visually inspect the manbasket for signs of wear and damage.

8. Verify that the manbasket provides adequate protection such as guardrails or complete enclosure.

9. Verify that the location of the anchor point is on the lower load block, overhaul ball, or is on a structural member within the platform that is capable of supporting a fall impact for employees.

10. Verify that hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies are of a type that can be closed and locked. An alloy anchor type shackle with a bolt, nut, and retaining pin can be used as the only alternative to the above setup. The bolt, nut, and retaining pin with a shackle must be purchased as an assembly.

11. Inspect the fall restraint anchor point for cracks or abnormalities in the welds or bolts.

12. Inspect the fall restraint harness and lanyard according to fall protection program and training.

13. Conduct a trial lift with the unoccupied personnel platform loaded at least to the anticipated lift weight from ground level. This must be performed prior to placing personnel on the platform. Any time the crane is moved and reset, another trial lift must be performed. Check for fluid leaks, abnormal operation, and unusual noises during the trial lifts.

NOTE: Do not use unit if any part is defective.

Worksite Evaluation:

1. Identify overhead lines and verify that a safe approach distance can be maintained.
2. Evaluate terrain and slope in the area where the manlift will be located.
3. Check surfaces for hazards such as buried utilities, excavations, trenches, and susceptible collapses.
4. Evaluate the work area for interference from vehicular and pedestrian traffic.

Safe Work Practices:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. In accordance with the facility's Lockout/Tagout Program, de-energize and lockout any equipment that will be worked on during the lift.
3. Verify that the unit has a safe approach distance from electrical lines. Keep a minimum distance of 24 feet from energized parts, with 35 feet distance recommended.
4. Verify that the outriggers will be on stable ground.
5. Maintain good housekeeping practices on the platform to prevent falls and tripping hazards.
6. Secure materials and tools for use during the lift to prevent displacement.
7. Properly don a fall restraint system and attach the lanyard to the identified anchor point. Maintain the attachment the entire time the manbasket is at height.
8. Always enter the manbasket while it is on the ground.
9. The crane operator must remain in the cab whenever a worker in the manbasket is at height.
10. The crane operator must maintain a clear line of sight to the worker in the manbasket. If this cannot be accomplished, another worker must be utilized to provide signals from ground.
11. Verify that any workers in the vicinity of the crane or manbasket wear hardhats.
12. Ensure that the hook safety hasp is present and in operating condition.

Appendix G. Portable Ladders

THE USE OF WOODEN PORTABLE LADDERS IS PROHIBITED IN THE FAA. ALL PORTABLE WOODEN LADDERS MUST BE RENDERED UNUSABLE AND REMOVED FROM SERVICE.

This Standard Operating Procedure (SOP) provides guidance for portable ladders. Portable ladders are classified in two categories:

1. Stepladders, and
2. Extension ladders.

Requirements for Stepladders:

Stepladders may not be greater than 20 feet in height. They must have a metal spreader that locks into position. Stepladders must have uniform rung spacing, not greater than a distance of 12 inches, and be on A-frame construction (i.e., must have 4 legs).

Stepladder Procedures to Follow:

- Inspect stepladders prior to each use.
- Stepladders must be positioned for use so that the ladder rungs are parallel with the ground.
- Stepladders must be placed in a manner so that the feet are firmly secure on a permanent, non-moveable surface.
- Always use three points of contact when climbing the stepladder. Three points of contact is defined as two hands and a foot, or two feet and a hand in contact with the ladder at all times.
- Never stand, sit or step on the top two steps of the stepladder.
- Do not place the stepladder in front of doors or walkways, unless the door or walkway is blocked or guarded.
- Never load stepladders beyond the maximum intended load for which they were built, or beyond the manufacturer's rated capacity.
- Only fiberglass stepladders may be used for electrical work. These ladders cannot be equipped with metal reinforcement rods along the rail.
- Stepladders must be maintained in good condition.

Extension Ladder Requirements:

There are requirements for extension ladders based upon the number of spans (i.e., ladder sections), the overlap and the maximum height. The requirements are represented in the following table.

Table G-1

Number of Spans	Overlap	Maximum Height
1	N/A	30 Feet
2	3 Feet	36 Feet
2	4 Feet	48 Feet
2	5 Feet	60 Feet

Procedures to Follow When Using Extension Ladders

- Inspect extension ladders prior to each use.
- Use extension ladders at a slope of 4 vertical feet to 1 horizontal foot. A good way to approximate this slope is to stand straight with your toes touching the bottom of the ladder and extend your arms directly in front of you. If you can grasp the ladder with your hands without leaning or bending forward, the ladder is at the correct angle.
- If the top of the extension ladder is not secured, the bottom of the ladder must be held by a second person.
- The extension ladder must be positioned for use so that the ladder rungs are parallel with the ground. Do not use extension ladders in the horizontal position.
- Extension ladders must be placed so that the ladder feet are firmly secured on a permanent, non-moveable surface.
- Always use three points of contact when climbing the extension ladder. Three points of contact is defined as two hands and a foot, or two feet and a hand in contact with the ladder at all times.
- When using an extension ladder to access a platform, the top of the extension ladder must extend 3 feet beyond the level of the platform.
- When using an extension ladder to access pits and excavation work areas, the top of the ladder must extend 3 feet above the top of the pit or excavation.
- Do not place the extension ladder in front of doors or walkways, unless the door or walkway is blocked or guarded.
- Never load extension ladders beyond the maximum intended load for which they were built, or beyond the manufacturer's rated capacity.
- Only fiberglass extension ladders may be used for electrical work. These ladders cannot be equipped with metal reinforcement rods along the rail.
- Extension ladders must be maintained in good condition.

Maintenance and Inspection Procedures for Portable Ladders:

- Portable ladder rungs must be maintained on a regular basis.

- Ladders must be inspected prior to each use to ensure that:

  - Connections are tight and the ladder won't wobble
  - Rungs / steps are free of grease, oil, built-up debris, etc.
  - The ladder has no loose steps or rungs
  - The ladder is free of loose nails, screws, bolts, or other metal parts
  - The ladder is free of cracked, split or broken uprights, braces, steps or rungs
  - The ladder is free of damaged or worn non-slip bases
  - The ladder is free of loose, bent, or broken hinge spreaders (i.e., for stepladders)
  - The ladder has no loose hinges (i.e., for stepladders)
  - The ladder is free of loose, broken, defective or missing extension locks (i.e., for extension ladders)
  - The ladder is free of worn or rotted rope

- Defective ladders must be properly tagged and immediately removed from service.

- Fiberglass ladders may not be painted so that damage or flaws that will render them unsafe can be observed when inspected.

Training Requirements for Using Portable Ladders:

Formal training to use portable ladders is not required; however, the user must be familiar with all manufacturer requirements and the information contained in this Order, including this appendix.

Additional Information on Portable Ladders:

Additional information about portable ladders can be found in OSHA regulations (www.osha.gov) under 29 CFR 1926, Subpart X, *Ladders*.

Appendix H. Standard Operating Procedures for Scaffolding

This Standard Operating Procedure (SOP) provides guidance for the safe installation and operation of scaffolding. This SOP is for basic scaffolding, such as tube and coupler scaffolds, and tubular welded frame scaffolds. The procedures are divided according to scaffold erection requirements, worksite evaluation, and safe work practices.

The minimum training required to erect and use scaffolding is Authorized Person Level II; however, erection of scaffolding must be overseen and certified by a Scaffolding Competent Person.

EQUIPMENT: Scaffolding

Personal Protective Equipment (PPE) based on task:

1. Fall Restraint System or Fall Arrest System with appropriately sized lanyard.
2. Eye protection – safety glasses, if there are any impact hazards, such as flying debris.
3. Hand protection – gloves specific to job task.
4. Safety shoes.
5. Head Protection – Climbing Helmet.
6. Hearing protection – as required.

Tools and Supplies that are normally required:

1. Materials to cordon off area (e.g., caution tape, safety cones, work zone signs, etc.).
2. Pulley system.
3. Tools needed for task.
4. Positive communication means: operational communication that has been tested and verified at the site.
5. Tool bag / tool bucket.
6. Wasp spray, sunscreen, etc.

WARNINGS:

1. Do not use unstable objects such as barrels, boxes, loose brick, or concrete blocks to support scaffolds or planks.
2. Do not use additional ladders, planks, or other materials, within the platform, to achieve additional height.
3. Scaffolds are to be assembled, inspected daily, and disassembled by a competently trained person. Based on the type of scaffold and the method of assembly / disassembly, fall protection requirements may differ.
4. Do not load the scaffold in excess of the working load for which it was intended.
5. Do not put outrigger scaffolds more than a distance of 3 inches from the face of the work.
6. Do not use any scaffolds that have been damaged or weakened.

7. Do not climb on guardrails.
8. Do not work on scaffolds in inclement weather, such as high winds, lightning, ice, snow, etc.
9. Do not throw objects to or from the platform. Use a rope and pulley to raise or lower objects to and from the ground.
10. Do not allow tools, materials and debris to accumulate in quantities to cause a hazard.
11. Do not use a lanyard other than the one specifically designed for use with the systems when personal fall arrest system is necessary.

METHODOLOGY:

The following procedures must be followed, as listed, prior to and during scaffolding use:

Scaffold Erection Requirements:

1. Verify toeboards are a minimum of 4 inches in height.
2. Provide a screen with ½ inch or less openings between toeboard and guardrail, extending along entire opening, where persons are required to work or pass under the scaffold.
3. Ensure guardrails are not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high with a mid-rail, when required, of 1 x 4-inch lumber or equivalent. Ensure toeboards are installed at all open sides on all scaffolds more than 10 feet above the ground or floor.
4. Verify diagonal bracing is provided to prevent the poles from moving in a direction parallel with the wall of the building or from buckling.
5. Ensure poles, legs, or uprights of scaffolds are plumb, and securely and rigidly braced to prevent swaying and displacement.
6. Ensure the scaffold is secured to permanent structures, through use of anchor bolts, reveal bolts, or other equivalent means. Do not use window cleaners' anchor bolts.
7. Verify that cross bracing is provided between the inner and outer set of poles in independent pole scaffolds. The free ends of pole scaffolds must be cross-braced.
8. Check guardrails, planks, and other parts of scaffolding for signs of wear or damage.
9. Verify that all planking or platforms are overlapped, minimum of 12 inches, or secured from movement.
10. Verify that platform planks are laid with their edges close together (within 1 inch) so the platform will be tight with no spaces through which tools or fragments of materials can fall.
11. Verify that all planking is Scaffold Grade as recognized by grading rules for the type/species of wood used. See table in 29 CFR 1910.28(a)(9).
12. Verify that scaffold planks extend over their end supports not less than 6 inches and not more than 18 inches.

13. Verify that nails or bolts used in the construction of scaffolds are of adequate size and in sufficient quantity at each connection to result in designed strength of the scaffold.
14. When fall restraint harness and lanyard are needed, inspect them according to fall protection program and training.

NOTE: Do not use any part if it is defective.

Worksite Evaluation:

1. Identify overhead lines and verify that a safe approach distance can be maintained. Ensure that the metal scaffolding will not come near any electrical source.
2. Evaluate the terrain and slope in the area where the scaffold will be located.
3. Check surfaces for hazards such as buried utilities, excavations, trenches, and susceptible collapses.
4. Evaluate the work area for interference from vehicular and pedestrian traffic.

Safe Work Practices:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. Ensure the footing or anchorage for the scaffolding is sound and capable of carrying the maximum intended load without settling or displacement.
3. Don appropriate PPE.
4. Verify outriggers will be on stable ground.
5. Maintain good housekeeping practices on the platform to prevent falls and tripping hazards.
6. During all phases of the work, continually monitor and ensure all requirements in this SOP are met.

Appendix I. Facility Fall Hazard Checklist

Facility Information									
FAC ID		**FAC Type**		Fire #		Surveyor			
SSC		CCC		Ambulance #		# Towers at Site			
Latitude		Longitude		Police #		FAA Standard Fence			
FAC Phone #		Date							

Photo Log

Site Sketch (Reverse or separate paper - ID North and Towers/Station Numbers)

Tower Information						
1. What is the tower ID/station number?						
2. What is the tower height?						
3. What is the tower type?	Self Support		Guyed	Monopole	Other	If other, describe:
4. What is the tower shape (mast)?	Single	Dual		Other	Note:	
5. What is the tower cross section?	Triangular		Square	Round	Other	
6. Is the foundation cracked or spalled?	Yes	No	Note:			
7. Are there bent structural members?	Yes	No	Note:			
8. If present, what is the obstruction light type?	Steady State		Strobe			
9. How many obstruction light sets are there?						
10. What are the obstruction light bulb types?	Incandescent		LED		N/A	
11. What is the obstruction light configuration?	Single		Dual			
12. How do you access the obstruction light?	Platform		Ladder		Off Ladder	
13. If present, where is the conduit located on the tower?	Inside		Outside			

Guy Wires					
Guy Set	**Guy Diameter**	**Damaged (Y/N)**	**Excessive Sag (Y/N)**	**Anchor Diameter**	**Tree Obstructions**
Level 1					
Level 2					
Level 3					
Level 4					
Level 5					
* Add additional levels in note section if needed					

Ladder Information				
14. Is there a ladder present?	Yes	No		
15. Is the ladder sound? Judgment	Yes	No	If no, describe:	
16. What is the ladder location?	Inside Tower			Outside Tower

17. What is the construction of the ladder?	Galvanized	Aluminum		Stainless	Wood	Fiberglass	
18. Is the ladder pitch between 75 & 90 degrees from horizontal? (estimation)		Yes	No	If no, describe:			
19. What is the total ladder height (feet)? From grade or elevated surface to end; add tiers if applicable							
20. What is the first rung height (inches)? From grade or elevated surface							
21. Are the rungs at least 16" wide? Measured from inside of one side rail to another. Provide range for varying widths.		Yes	No	If no, describe:			
22. Is the rung spacing not more then 12" and uniform throughout? Measured from rung top to rung top. Provide range for varying heights. Pay attention to spacing between ladder sections.		Yes	No	If no, describe:			
23. What is the rung shape?		Solid Round		Tubular Round	Angle	Structural Lumber	
24. What is the side rail shape?		Round		Flat	Angle	3 sided angle	NA
25. Is there a 7" backside clearance throughout the ladder length?		Yes	No	If no, describe:			
26. What is the ladder frontside clearance (inches)?				**Note:** List any obstructions at end of report			
27. Does the top rung of ladder extend ≥3' beyond the platform?		Yes	No	N/A	If no, describe:		
28. Is the ladder free of splinters, sharp edges, burrs, or projections?		Yes	No	If no, describe:			
29. Are dissimilar metals protected from electrolytic action where they join?		Yes	No	If no, describe:			
30. Is a ladder cage present?		Yes	No	**Note:** The FAA does not allow use of a cage in lieu of a ladder safety system.			
If any question 21 through 29 is answered No, the ladder is not OSHA-compliant.							
Ladder Safety System (LSS)							
31. Is there a LSS present?		Yes	No				
32. Who is the manufacturer, if identifiable? Manufacturer markings are sometimes found on the back side of the center safety rail. The manufacturer may also be identified on the safety sleeve. Enter unknown if not identifiable.							
33. What type of LSS rail is present?							
a. Round Tubular (Antenna Products, North)		Yes	No	If yes, it must be replaced.			
b. T Rail (Radian, Antenna Products, etc.)		Yes	No				
c. Channel Notched (MSA/Rose, etc.)		Yes	No				
d. Cable (LadSafe, Latchways, Other)		Yes	No				
e. Other		Yes	No	If yes, describe:			
34. Does the LSS function properly?		Yes	No				
a. Loose/Missing Hardware		Yes	No	If **yes,** describe:			
b. Broken/Bent Sections		Yes	No	If **yes,** describe:			
c. Rust/Corrosion		Yes	No	If **yes,** describe:			
d. Faulty Safety Sleeve/Slider		Yes	No	If **yes,** describe:			
e. Other:		Yes	No	If **yes,** describe:			

35. What is the LSS starting height from grade or lower working surface (inches)?				
36. Does the LSS extend at least 42" above platform?	Yes	No	If no, describe:	
37. If the LSS is a vertical cable, is its diameter at least 3/8"	Yes	No	N/A	If no, describe:
38. If the LSS is a vertical cable, are cable guides used every 25'?	Yes	No	N/A	If no, describe:
39. If the LSS is a rigid rail, does the rail have a top and bottom stop (prevents sleeve from coming off inadvertently)	Yes	No	N/A	If no, describe:

Tubular notched rails are prohibited, must not be used, and must be replaced with an approved LSS as soon as practical. If the answer to 31, 34, or 36 through 39 is 'No', it is non-functional LSS.
If the answer to any question between 34.a. through e is 'Yes', a SECM should be consulted to determine functionality.

Platform Access

40. Platform Present?	Yes	No				
41. How is the platform accessed?	Swing Gate	Offset Opening	1x Door Hatch	2x Door Hatch	None	

42. Is the step across distance from the ladder to the platform between 2.5" and 12"?	Yes	No	If no, provide distance				
43. Is there a ladder rung located at the platform level?	Yes	No	If no, describe:				
44. Does the ladder extend at least 42" above platform?	Yes	No	If no, provide height				
45. Do vertical grab bars, if needed, have the same spacing as the ladder side rails and at least the equivalent of the round-rung diameters?	Yes	No	If no, describe:				
46. The platform access opening is protected by?	Single Door Hatch	Double Door Hatch	Swing Gate	Other:			
	Single Door Hatch with Counterweight	Offset Opening with Standard Handrail	Self Closing Swing Gate				
47. Is the platform hatch or swing gate sound? Look for heavy corrosion; poorly functioning hinges	Yes	No	If no, describe:				
48. Is the platform hatch of standard OSHA construction? Construction can be of any material that has the same strength as the platform; covers are not to project more then 1"; all hinges, handles, bolts, or other parts must set flush with the floor or cover surface.	Yes	No	If no, describe:				
49. What is the angle at which the hatch cover(s) rest when open? Measured from horizontal. If dual hatch, provide worse case.							

Platform

50. What is the platform height from grade? Measured from grade (base of ladder to bottom of platform)			
51. Is a standard guardrail provided for platforms 4' or more above grade? Reference 29 CFR 1910.23. A standard railing has a top rail 42" high from platform, intermediate rail approximately 19" high from platform, posts, and toeboards. A standard wood handrail uses at least 2x4 for the rails and posts (posts spacing not to exceed 6'). A standard pipe handrail uses at least 1.5" diameter stock for rails and posts (posts spaced not to exceed 8'). A structural steel handrail use 2x2x3/8" angle for rails and posts (posts spaced not to exceed 8'). A standard toeboard is 4" high from the platform with not more than a 1/4" clearance above the platform, and is securely fastened in place.	Yes	No	If no, describe:
52. Is the platform grating adequately secured from movement?	Yes	No	If no, describe:
53. Are there any openings greater than 2" in any one direction on the walking surface?	Yes	No	If no, describe:
54. Is the handrail sound? This is a judgment call. They are to be of such construction that the completed structure must be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail. Rationale for not being sound may include rusted or missing mounting hardware; bend or broken rails; use of substandard materials, etc.	Yes	No	If no, describe:

Fixed Stairways

55. Is there stairway present?	Yes	No	
56. Is the stairway sound? Group all stairways.	Yes	No	If no, describe (include level):

57. Is the stairway at least 22" wide? Use shortest measurement if variable between levels.	Yes	No	If no, describe:
58. Are riser heights from 6-1/2" to 9-1/2" and uniform throughout? Use shortest measurement if variable.	Yes	No	If no, describe:
59. Is tread depth at least 8" for stairs with closed risers or 6" for stairs with open risers? Use shortest measurement if variable.	Yes	No	If no, describe:
60. Is the approximate stairway rise between 30 and 50 degrees? Estimate.	Yes	No	If no, describe:
61. Are stair treads slip resistant?	Yes	No	If no, describe:
62. If stairway platforms are present, are they of standard OSHA design? Stairway landings and platforms measured in the direction of travel must be at least 22 inches wide, and not less than 30 inches in length with standard guardrail systems (see #51).	Yes	No	If no, describe:
63. Is a vertical clearance of at least 7' maintained throughout the stairway?	Yes	No	If no, describe:
64. Is there a handrail present?	Yes	No	
65. Is it a standard OSHA stair handrail? Stair handrails are to be 34 inches nor less than 30 inches from upper surface of handrail to surface of tread in line with face of riser or to surface of ramp. The size of handrails are to be: When of hardwood, at least 2 inches in diameter; when of metal pipe, at least 1-1/2 inches in diameter. The length of brackets are to be such as will give a clearance between handrail and wall or any projection thereon of at least 3 inches. The spacing of brackets must not exceed 8 feet.	Yes	No	If no, describe (include measurements):
66. Is the stair handrail sound?	Yes	No	If no, describe:
Notes/Etc.			
Other Notes (Use additional pages if needed):			

Appendix J. Work on Elevated Platforms

This guidance is for employees who work on elevated platforms that are at, or greater than, 4 feet above the next lower level. Some examples include communication-type towers, roofs and catwalks.

Employees must use one or more of the following fall protection systems when working on an elevated work platform:

- Guardrails or Parapets (in conjunction with hatches or covers, where required).
- Fall restraint systems.
- Personal fall arrest systems.

All systems listed above must meet criteria provided in 29 CFR 1926.502, *Fall Protection Systems Criteria and Practices*. Guardrails must also meet criteria provided in 29 CFR 1910.23(e), *Railing, Toe Boards, and Cover Specifications.*

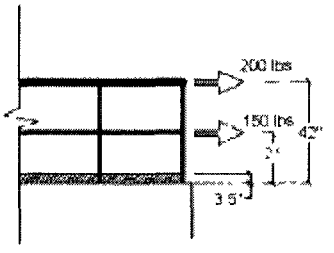
Major requirements are summarized below; the systems are listed in the order of preference for use.

1. **Guardrail Systems** – These systems must meet the following criteria:
   - Systems must be 42 inches nominal, in height, with a maximum opening of 19 inches between any midrails associated with the railing system.
     - New facilities – Guardrails installed to 42" (inches) in height.
     - Existing facilities – Guardrails may be 42"±3" in height. If the guardrails are less than 42" in height, they must be upgraded to 42" when the facility is renovated.

       NOTE: If the guardrails are less than 39" in height and employees are working within 6 feet of the guardrails, then they must use secondary fall protection.
   - Toeboards must be solid and a minimum of four (4) inches high and not have more than ¼" clearance above the walking/working surface.
   - It is not permitted for tools, equipment or materials to be piled higher than the height of the toeboards without protective screening installed between the toeboard and rails.
   - The system must have a capability of withstanding 200 pounds of horizontal force at the top rail, 150 pounds of horizontal force at the midrail and 50 pounds of horizontal force at the toeboard.
   - If a guardrail system is used, the ladderway or stairway opening must also be guarded or so offset that a person cannot walk directly into the opening.
   - Openings at the work platform floor used for access from an internal ladder must be equipped with a hatch that can be fully closed after entry into the work platform, and the closed hatch must be capable of supporting 250 pounds or the maximum intended load, whichever is greater.

- When hatches are associated with elevated platforms or rooftops, they must be secured against accidental displacement.
- If a worker must lean over the top rail to position for the performance of a work task, a fall arrest system must be utilized.

Figure J-1: Guardrail Requirements



2. **Parapet Systems** – These systems must meet the following criteria:
   - The height and strength design requirements are the same as those indicated for guardrails. (See Section 1 above).
3. **Fall Restraint Systems** – These systems must meet the following criteria:
   - An ANSI/ASSE Z359.1-2007 rated full body harness must be worn by the employee, and must be capable of withstanding twice the maximum expected force. Only a competent person can authorize non-ANSI/ASSE Z359-compliant equipment.
   - The employee's center of gravity cannot reach any fall hazard.
   - Adjustable systems, such as adjustable lanyard or lifeline/rope grab systems, make a restraint system much more flexible. In these cases, extra care must be taken to ensure it is impossible to reach the edge of the platform, though a fixed length lanyard or other restraint system for this purpose is recommended.
4. **Personal Fall Arrest Systems (PFAS)** – These systems must meet the following criteria
   - An ANSI/ASSE Z359.1-2007 rated full body harness must be used. Only a competent person can authorize non ANSI/ASSE Z359-compliant equipment.
   - The system must limit free fall to 6 feet or less.
   - The system must limit the arresting force on the body to 1800 pounds or less to meet OSHA requirements, or 900 pounds or less (preferred) to meet ANSI/ASSE Z359.1-2007.
   - If the system limits the free fall to 2 feet or less, it must be anchored to an anchor point capable of supporting 3,000 pounds. If the system permits a free fall between 2 and 6 feet, it must be anchored to an anchor point capable of supporting 5,000 pounds.
   - The system must consider the rescue of a fallen worker.

5. **Warning Line Systems** – These systems must meet the following criteria:
   - The system must consist of ropes, wires, chains and supporting stanchions, and flagged at not more than 6 foot intervals with high visibility material.
   - The system must be rigged and supported so that the lowest point (including sag) is no less than 34 inches from the work surface, and the highest point is no more than 39 inches from the work surface.
   - The system must be capable of resisting a horizontal force of 16 pounds without tipping over.
   - The rope, wire or chain must have a minimum tensile strength of 500 pounds, and must be attached at each stanchion so that pulling on one section doesn't result in slack being taken up in adjacent sections before the stanchion tips over.