Using Personal Fall Arrest Systems and Tie-Off Points

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Discussion Date: _____

Employee Participants:

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TOPIC: Using personal fall arrest systems and tie-off points correctly

"Tie-off' means the act of an employee, wearing personal fall protection equipment, connecting directly or indirectly to an anchorage. It also means the condition of an employee being connected to an anchorage. Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds. Never use hoists or guardrails as anchors; they are not built to withstand the forces generated by a fall.

Determining Where to Tie-Off

- Personal fall arrest systems shall be rigged such that an employee can neither free fall more than six feet (1.8 m), nor contact any lower level.
- Be able to bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m); and have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six feet (1.8 m), or the free fall distance permitted by the system, whichever is less. (Cited from 29CFR1910.66)
- Be sure to read and understand the applicable standard from your local government

Using Personal Fall Arrest Systems

- Always inspect lanyards, lifelines, and harnesses before using them
- Plan where you are going to anchor before work begins
- Avoid tying knots in lanyards and lifelines
  - Knots can reduce lifeline or lanyard strength by 50% or more.
  - Never use knots for tying of to the anchor; use a locking snap hook that is designed for tying off.
- Be cautious with eyebolt connections
  - The strength of the eyebolt is greatly reduced when force is applied at an angle to the lengthwise axis of the eyebolt.
- Avoid falls that cause you to swing
  - Always work directly under the anchor point; you can potentially hit something at the lower level while you are swinging.
- Always avoid tying lifelines or lanyards directly to an I-beam or guardrails
  - I-beams can reduce the rope strength by 70% due to the sharp edges.
  - Guardrails are not built to withstand the forces generated by a fall.

Anchor Point

- The anchor provides a secure point of attachment for the lifeline, lanyard, or deceleration device
- Anchor points must support a minimum of 5400 pounds

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