

In-house Emergency Response: Post-Fall Rescue and Retrieval

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Although the American workplace has progressed dramatically in terms of providing safeguards against fatal falls, the fact of the matter is that falls from height still occur on a daily basis, some more adequately protected than others. A well-planned fall protection program includes provisions for prompt rescue.

This paper will explore post-fall rescue team development and rescue/retrieval systems appropriate for use in the workplace. Case studies of rescue in industrial facilities, utilities service providers, construction, and other workplace environments will be used to provide a basis for discussion.

Guidelines will be discussed for evaluating the urgency of a response, exploring the use of various “entry” and “non-entry” retrieval methods, discussing anchorage considerations, and insights will be gained into how to maintain effective team-capability with minimal impact to resources and cost, all with an eye toward both *safety* and *compliance*.

Sticking one’s proverbial head in the sand is not adequate protection when it comes to rescue after a fall. Although OSHA has clearly stated that it will not issue a citation to an employer for any spontaneous rescue activity, this does not relieve the employer from the obligation to prepare for rescue in the event of a fall.

1910.66 App C Sec 1 (e) 8 The employer shall provide for prompt rescue of employees in the event of a fall or shall assure the self-rescue capability of employees.

1926.502 (d) (20) 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.

Figure 1. OSHA Sections for Prompt Rescue in the Event of a Fall

PROFESSIONAL RESCUE

While coordinating with local rescue agencies is important, don't overlook making provision for self-rescue and assisted-rescue and expect advanced/professional rescuers to make up for the deficit. This is a grave mistake and has caused many a simple fall to become a more serious predicament, due to delayed/inadequate response.

Advanced/professional rescue care is usually not provided by the employer, but is the role of privatized and/or municipal rescue agencies. At this level of response, rescuers are generally capable of rendering more advanced medical care and a broader spectrum of technical rescue capability. What cannot necessarily be guaranteed at this level of care is rescuer's familiarity with a specific worksite, or their technical capacity to adequately resolve an incident.

While advanced/professional rescue should be activated any time assisted rescue is called into action, the pre-plan should clearly explore what this truly brings to the table, including anticipated response times (best/worst case scenarios), technical capabilities, medical care, and so forth.

PLANNING

While OSHA fall protection guidelines do not specifically require that a fall rescue preplan be *written*, a written plan is the best way to develop and monitor procedures, to ensure that appropriate equipment is available, and to provide consistent training to affected and involved personnel. Employers must also take appropriate precautions to assure that the rescuers themselves do not become victims.

Consider OSHA regulations that address rescue-related activities. In addition to being specifically mentioned in construction fall protection regulations, and in the scaffolds and powered platforms section of general industry regulations, rescue-related verbiage can be found in OSHA regulations relating to process safety management (29 CFR 1910.119(n)); hazardous waste operations (29 CFR 1910.120(1), (p) and (q)); confined spaces in general industry (29 CFR 1910.146); confined spaces in grain handling (1910.272(d)(e), and (g)); and construction work near or over water, and excavation (29 CFR 1926.106, 1926.651(g)).

Chapter 2 of the new ANSI Z359 Fall Protection standard also provides some useful rescue planning guidelines. Although ANSI standards are not regulation, they can provide guidance from their originating organizations related to worker protection. This document does recommend written procedures. Written procedures should include self rescue by the fallen person (if possible), as well as a plan for contact by other rescuers within six minutes.

Sample Questions Emergency Response Agency	
1.	Is response agency familiar with worksite?
2.	Has Response agency reviewed Fall Hazard Survey?
3.	Is Response agency capable of responding to all potential falls covered by the Fall Hazard Survey?
4.	What is Response agency's maximum response time to areas covered by the Managed Fall Protection Plan: _____ minutes.
5.	Is Response agency familiar with all fall protection equipment used on worksite?
6.	Must Response agency be notified in advance when certain types of work activities are planned?
7.	What method(s) will response agency use to rescue suspended workers? Acceptable to employer?
8.	How will response agency maintain this capability on an ongoing basis?

Figure 2. Sample Questions for an Emergency Response Agency

A key aspect of determining what capabilities must be developed internally is to evaluate what capabilities are available externally. Contacting local emergency response agencies to arrange for a meeting is a simple matter and will pay dividends in the long run.

For all aspects of rescue where the external agency is not able to respond in a sufficient time (six minutes), or where the external agency is incapable of effecting an appropriate rescue, the employer should “fill the gap” with in-house capabilities. But how does one develop an in-house rescue team?

A successful rescue begins long before the incident itself. It is often (erringly) assumed that OSHA will not cite employers for incidents incurred during rescues. This is not necessarily accurate. Although OSHA is usually quite forgiving when it comes to spontaneous rescue efforts, and often does not cite for accidents incurred by a co-worker trying to spontaneously rescue a fellow employee, they *may* cite the employer for failing to have preplanned and prepared for adequate response to a foreseeable incident in the first place.

Assisted rescue involves using limited techniques to remove a subject from harm quickly by personnel with limited training but who can make contact with the fallen subject within a short period of time. This differs from advanced rescue techniques in that the responders may simply be fellow employees trained to employ certain procedures.

Assisted rescue is intended as an intermediary step, just between “self-rescue” and “professional rescue;” any time assisted rescue is called into action, the next level of response capability identified in the preplan should be notified and initiated.

Notification of assisted rescue responders should be addressed in the preplan. Assuming that no employee at height is working alone, notification might take the form of a verbal or radio call from a co-worker or other similar method.

SELECT PERSONNEL

Any employee working at height should be given the consideration of being equipped and prepared to extricate him or herself in the event that he or she falls and is caught by the safety system. Self rescue is the first and best line of response for any person working at height. Knowing and practicing appropriate self-rescue techniques in advance, using equipment at hand, is essential. In order to be proficient at such skills during a true emergency, a worker must be very familiar with those skills in non-emergent conditions.

Beyond self rescue, an adequate contingent of workers should be trained to respond to a co-worker fall. Personnel assigned to such a response team should be selected carefully in terms of both technical ability and psychological resistance. Responders should be selected from those in proximity to a potential subject, and should receive special training, as well as frequent opportunity to practice their assisted rescue skills.

DEVELOP PROCEDURES

Procedures for self rescue, as well as for assisted rescue, should be clearly outlined in the preplan. Developing and evaluating a rescue service for post-fall rescue can be a daunting task, but should include detailed information on equipment, anchorages, techniques, and expectations for the extent of medical intervention. Notification of the rescue personnel should also be considered.

Assisted rescue may be as simple as turning a crank or pulling on a rope, or as complicated as providing advanced extrication and medical care to the subject. Rescue of a subject who fell while using fall arrest equipment differs from a rescue of a subject who was using rope access techniques, in that the rope-access technician will likely be hanging directly off a rope, whereas a person who falls while using fall arrest equipment and techniques will likely be hanging from a lanyard, fall arrest block or some other device designed to lock off in the event of a fall. In any case, procedures and preparation should be documented.

Describe self-rescue equipment and procedures for a suspended worker:

<diagram as necessary>

- Initial training to be provided by: _____
- Frequency of practice (circle one) Monthly / Semi-Annually / Annually by all affected workers
- Re-Training to be provided by: _____ Every _____ Months

Describe co-worker rescue equipment and procedures for a suspended worker:

<diagram as necessary>

- Initial training to be provided by: _____
- Frequency of practice (circle one) Monthly / Semi-Annually / Annually by all affected workers
- Re-Training to be provided by: _____ Every _____ Months

Describe professional rescue equipment and procedures for a suspended worker:

<diagram as necessary>

- Initial training to be provided by: _____
- Frequency of practice (circle one) Monthly / Semi-Annually / Annually by all affected workers
- Re-Training to be provided by: _____ Every _____ Months

Figure 3 Rescue Procedures and Equipment Checklist

SOURCE EQUIPMENT

Because an onsite/coworker rescue contingent will usually not consist of professional rescuers, simplification of equipment, systems, and techniques will help ensure a successful outcome. Procedures should be developed that are as versatile as possible while still maintaining a “plug and play” (i.e., simple) philosophy.

Any employee who may be designated to rescue another must be provided with protection equivalent to the protection provided to the working employee, including personal protective equipment (PPE), communications, and any other appropriate safety equipment. In most cases, PPE should meet applicable laws and regulatory requirements. Selecting equipment that is compliant with ANSI Z359 and/or A10 fall protection standards is a good practice to follow.

Rescue equipment differs from fall protection equipment, and will probably not meet the same standards. Rescue equipment for coworker rescue is addressed in ANSI Z359.4, but this is a

relatively new document and not all types of equipment or needs may be addressed. Professional rescue equipment is addressed by ASTM F32 standards, as well as NFPA documents; however, professional rescue equipment is generally not of the “plug and play” variety and may not be appropriate for this type of use.

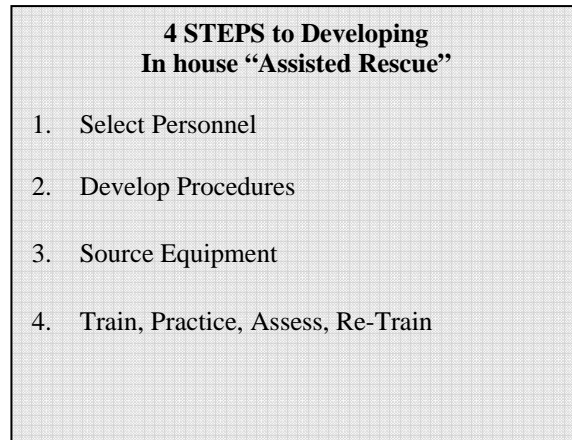


Figure 4, Four Steps to Developing a In0hous Assisted Rescue

MAINTAIN COMPETENCY

Developing true teamwork within the context of a rescue team involves a combination of appropriate equipment for the intended task, proper training of personnel in skills and systems, and appropriate incident management. The appropriate level of training for assisted rescue responders to receive is up to the “authority having jurisdiction,” in this case the employer, and will be determined based on anticipated need, and the amount of time it will take to connect a subject with more advanced care capabilities.

Training is an ongoing need, and involves more than just the initial introduction. Initial training generally takes an initial commitment of at least 40 hours for each individual who has a role, and at least another 8-16 hours quarterly to maintain those skills. Training and re-training should include a review of relevant concepts, skills reviews, practical sessions including ‘mock’ scenarios, and an evaluation. It is prudent to document not only the training itself, but who attends each training session, and the results of skills evaluations for each person. Contracting with an outside rescue training organization to help you develop your plan, determine your response protocols, and maintain personnel skills is an excellent way to maintain perspective and avoid a myopic view. Don’t change external resources too often, however, as different rescuers have different preferences, and this can lead to inconsistency and potential confusion.

Be sure your training includes all aspects of rescue response, including management protocols, technical skills, medical considerations, and psychological preparation.

SUMMARY

Organizations that employ workers at height have an obligation to prepare effectively for rescue in the event that one of those workers should fall into their safety system or become somehow incapacitated. These simple, effective guidelines can help employers to analyze the unique concerns related to a given environment and establish a process for an appropriate response.

The importance of re-training cannot be over emphasized. Some research suggests that as much of 70% of a person's knowledge is lost within 2-3 weeks of acquiring that knowledge *if it is not used*. Put another way, the average level of retention for a given topic is approximately 30 percent as little as one month after training!

Appropriate procedures should be pre-planned and documented. The level of care rendered should be based on what assisted rescue responders are properly equipped and trained to do. Responders should never render care beyond their level of training.

An outside expert who specializes in industrial rescue can be instrumental in evaluating the capability of both a plan and personnel to perform to the necessary levels in the event of a real emergency. All rescue plans should be tested through mock exercises and drills that emulate realistic conditions.