Ex. 16
ACCSH1998-3

DRAFT APPENDIX B TO SUBPART L
October 6, 1998

This Appendix B is provided to serve as a guide for evaluating the feasibility of providing safe access and fall protection for employees erecting or dismantling supported scaffolds.

For the purpose of this subpart, scaffold erectors/dismantlers are employees specifically designated by a competent person to erect or dismantle a supported scaffold. These employees should have training related to the proper erection/dismantling techniques, the hazards of working on a partially completed scaffold and the work processes necessary to safely accomplish this task. Non-mandatory Appendix D to Subpart L provides guidance as to the types of training appropriate for employees erecting or dismantling supported scaffolds.

Although not required, the Agency recommends that the employer designate a competent person to develop, as part of the preplanning, an erection/dismantling plan which includes an assessment of fall protection and access needs. This plan should assess whether or not safe access is available or can be provided, and whether fall protection is necessary, and where necessary, whether it is feasible. The plan should be based on a review of site conditions to identify potential fall hazards.

ACCESS

Safe access to supported scaffolds being erected or dismantled should be provided when feasible. The following are examples of situations in which the agency feels that safe access can be provided:

1. Situations where safe access can be provided from another structure. These may include access from the structure being worked on, the use of stair towers, or other similar types of equipment, depending on site conditions.

A competent person should determine that any structure used to provide access is stable and capable of withstanding the additional loads placed on it when used as access and insure that the scaffold will not move relative to the structure. The use of stair towers or other similar types of equipment will require the competent person to determine that the ground or foundation supporting the stair tower is capable of providing the firm footing needed to safely use this type of equipment.

2. Frames designed for climbing can be used to provide safe access.

A competent person should determine if the scaffold being erected/dismantled using these frames is sufficiently stable to allow erectors and dismantlers to climb the scaffold structure without tipping the whole unit. Factors that need to be considered include the need for ties, guys and braces to ensure stability.

3. Hook on or attachable ladders may be used as means of access during erecting and dismantling operations at the discretion of the competent person.

Erectors may climb the scaffold structure itself during erection or dismantling operations. Hook on or attachable ladders must be put in place before the scaffold is released for use. Users must use hook on or attachable ladders or the other means identified in 1926.451 (e).

Since there are many variables which could affect the feasibility of providing safe access for access for scaffold erectors and dismantlers at any given work site, the Agency has decided to provide the employer/competent person with the following criteria to consider when making this determination:

(1) The conventional means of access prescribed in 1926.451 (e), and how their use could prevent performance of work or create a greater hazard for employees;

(2) The use of outriggers, braces, ties, guys, or similar equipment that could be used to secure, stabilize, or reinforce the structure and the scaffold in order to provide adequate support for access equipment;

(3) The use of work procedures that ensure that materials including scaffold components are not loaded on the scaffold in a manner which would hinder access; and

(4) The use of man lifts and similar equipment, while possibly feasible, has the potential of creating a greater hazard. A small miscalculation when raising or lowering the equipment could result in the equipment contacting the partially erected scaffold causing it to collapse. Similarly, poor ground conditions could result in the scaffold foundation being displaced when a manlift is too close to the scaffold or the manlift settling and contacting the scaffold.

FALL PROTECTION

Fall protection should be provided for employees erecting or dismantling supported scaffolds whenever feasible. The feasibility of using fall protection by employees erecting or dismantling supported scaffolds is dependent upon a number of items including, but not limited to, the following: the availability of a suitable anchor point, the ability to keep life lines untangled during the erection/dismantling process, and the ability to keep life lines from being a tripping hazard.

For example, although it may be impossible to provide a personal fall arrest system while building a scaffold that is one bay long by four bays high and which is erected in an open field, such protection may be possible when the same scaffold is erected along side a structure where the system can be rigged from above. However, as the scaffold increases in length, the same personal fall arrest system may not be feasible because of its fixed anchorage and the need for employees to traverse the entire length of the scaffold. Additionally, fall protection may not be feasible due to the potential for lifelines becoming entangled or creating a tripping hazard for erectors or dismantlers as they traverse the scaffold.

Since there are a very large number of variable conditions which could affect the feasibility of providing fall protection for scaffold erectors and dismantlers at any given work site, the Agency has decided to provide the employer/competent person with the following criteria to consider when making this determination (the competent person may have to consult with a qualified person i.e. professional engineer, manufacturer, etc. in order to obtain the information necessary for items 1,thru 4 below):

1. Whether there is a structure capable of providing an adequate personal fall arrest system anchor (5000 lbs capacity or be designed, installed and used in accordance with the following:

> Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds, (22.2 kN) per employee attached, or shall be designed, installed, and used as follows: (I) as part of a complete personal fall arrest system which maintains a safety factor of at least two; and (ii) under the supervision of a qualified person. Personal fall arrest systems, when stopping a fall, shall: (I) limit maximum arresting force on an employee to 900 pounds (4 kN) when used as a body belt; (ii) limit maximum arresting force on an employee to 1,800 pounds (8 kN) when used with a body harness; be rigged such that an employee can neither free fall more than 6 feet (1.8), nor contact any lower level; (iv) bring a employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m); and, (v) have sufficient strength to withstand twice

the potential impact energy of an employee free falling a distance of 6 feet (1.8 m), or the free fall distance permitted by the system, whichever is less.

2. When suitable anchorages are not available for personal fall arrest systems, alternative fall protection should be provided where feasible. When the alternates are not feasible specific erection and dismantling procedures and training should be provided.

3. Whether the use of outriggers, braces, ties, guys, and similar equipment can be used to secure, stabilize, or reinforce the scaffold or the structure so that an adequate anchor can be provided;

WARNING: Scaffold systems should not be used as an anchorage for personal fall arrest systems unless a registered professional engineer competent in this field has evaluated and approved the design and erection procedure, has determined the scaffold can accept the loads imposed on it, and the anchorage is installed in accordance with such approval.

4. Whether or not the addition of outriggers, braces, ties, guys, additional scaffold, additional stairways, installation of fall arrest equipment, would increase the exposure time for erectors/dismantlers to situations where fall protection/fall arrest means cannot be provided.

5. Ascertain that there is safe access to the anchor point.

6. The pendulum effect of life lines.

7. Determine and implement work procedures that reduce entanglement of lifelines, tripping hazards, or other hazards when the use of personal fall arrest systems is feasible.

8. Whether work procedures can be developed to minimize the likelihood of falls.

9. The use of man lifts and similar equipment,has the potential of creating a hazard. A small miscalculation when raising or lowering the equipment could result in the equipment contacting the partially erected scaffold causing it to collapse. Similarly, poor ground conditions could result in the scaffold foundation being displaced when a manlift is too close to the scaffold.

GENERAL WORK PRACTICES

1. Restrict access to leading edge locations to only trained and

experienced employees.

2. Erectors and dismantlers should have no other duties during erection and dismantling processes.

3. All scaffolds should be adequately braced before being used.

4. Erectors/dismantlers should remain on structurally sound and stable portions of the scaffold while erecting or dismantling other portions of the scaffold.

5. Employees not involved in erection or dismantling should be kept clear of the area where scaffolds are being erected or dismantled.

6. Materials should be staged to minimize fall hazards and to permit safe access.

7. Determine whether erection/dismantling operations should be suspended during strong winds or inclement weather.