TRENCH RESCUE

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Approved:	Chief Mike Kennedy

I. SCOPE

The purpose of this procedure is to set forth safe and proper actions pertaining to the response to a trench or excavation emergency.

II. OPERATIONS

SLFD does not provide trench rescue services nor maintain a trench rescue team. All members who may encounter trench rescue activities shall be trained to an awareness level.

Upon dispatch to a reported trench rescue, SLFD shall immediately request a response from the Oakland County Technical Rescue Team.

For the purpose of emergency response, an excavation shall be defined as any depression, hole, trench or earth wall, man-made or natural, of four feet or greater depth.

Trench rescue operations present a significant danger to fire department personnel and may involve complex requirements for shoring, hand tools, earth- moving equipment and other specialized resources. The safe and effective management of these operations requires special considerations. Therefore, it shall be the policy of SLFD to not allow the entry of any personnel into an unsafe trench or excavation. This procedure identifies some of the critical issues which must be included in managing these incidents.

Cave-ins and collapses generally occur because of unstable soil conditions combined with improper or inadequate shoring. The potential for additional collapse must always be considered as a primary hazard and personnel must be aware that any action may disrupt the temporary stability and cause an additional collapse. The temporary stability, at any point in an operation, may be disturbed by removing soil or debris, by adding weight near the edge of an open cut, by vibration (such as vehicle movement), rain, or simply by the passage of time.

III. PROCEDURES FOR INCIDENTS WITH CONFIRMED OR POTENTIAL COLLAPSE/CAVE IN

Phase I: Arrive on Scene. Take Command. Size-Up.

A. Arrival On Scene
   i. First arriving company officer shall initiate formal Incident Command and begin an immediate size-up of the situation.
   ii. Spotting Apparatus. The first-in company should spot the apparatus at least 50 feet from the location of the trench failure. Command should dictate Level 1 staging at least 150 feet from the scene.

B. The Primary Assessment

i. Command should determine exactly what has happened.
ii. Assess the potential hazards to the rescuers.
iii. Secure a responsible party, job foreman, or witness to the accident.
iv. An early decision must be made as to whether this operation will be run in the rescue or recovery mode.
v. Request the DPW vacuum truck.
vi. Victim Information
    1. How many patients
    2. How long have they been buried
    3. Their last known location
    4. Has there been any communication from the victim(s)
vii. Job Site
    1. What type of work was being performed
    2. Soil category
    3. Depth and width of the trench/excavation
    4. Are blue prints or construction plans available
    5. What rescue actions have been started
    6. Are there any special hazards responders should be aware of, e.g., electric, gas, water, de-watering operations, methane gas.

C. The Secondary Assessment
    i. Assess on-scene capabilities.
    ii. Assign a safety officer.
    iii. Assign personnel to Pre-Entry Operations

Phase II: Pre-Entry Operations

A. Make The General Area Safe
    i. Create a hot, warm, and cold zone
        1. Hot zone extends 0-50 feet
        2. Warm zone extends from 50-150 feet
        3. Cold zone extends from 150-300 feet
    ii. Control traffic movement
        4. Shut down roadway
        5. Re-route all non-essential traffic at least 300 feet around the scene
    iii. Heavy excavation equipment within 300 feet of the trench shall be shutoff, stabilized and left in place until it is deemed safe to remove same.
    iv. Control the crowd
    v. Consider requesting Police assistance if not already on scene.
    vi. Remove all non-essential civilian personnel to at least 150 feet from the incident
    vii. Remove all non-essential rescue personnel at least 50 feet from the incident

B. Make The Rescue Area Safe
    i. Control all hazards in the area, i.e., utilities, electric, gas, water.
    ii. Monitor the atmosphere in the trench.
    iii. Ventilate the trench if necessary.

iv. Identify soil type and condition. CAUTION: If a collapse has already occurred, treat all soil as Class C.

C. Make The Trench Lip Safe
   i. Approach the trench from the ends if possible.
   ii. Look for unidentified hazards (i.e., fissures, unstable spoil pile).
   iii. Assess spoil pile for instability and distance from lip (must be a minimum of 2 feet.)
   iv. Remove any tripping hazards (i.e., shovels, shores, tree roots).
   v. Provide level area for ground pads.
   vi. Place ground pads around lip of trench. (Backboards may be used if plywood or planking is not available)
   vii. Place ingress and egress ladders in trench. There should be at least 2 ladders placed in the trench no more than 50 feet apart.
   viii. Upon arrival of the Oakland County Technical Rescue Team, SLFD will provide assistance as needed. SLFD will retain overall command of the incident.

IV. PROCEDURES FOR INCIDENTS WITHOUT COLLAPSE / CAVE IN

A. CAUTION: Entry into the trench may only be made if proper sloping/benching or shoring is in place. If any doubt exists about the safety of the trench, request assistance from the Oakland County Technical Rescue Team. Continually monitor the condition of the trench.
B. Arrival and Size Up as in Section III
C. Make The Rescue Area Safe
   i. Control all hazards in the area, i.e., utilities, electric, gas, water.
   ii. De-water the trench if necessary.
   iii. Monitor the atmosphere in the trench.
   iv. Ventilate the trench if necessary.
   v. Identify soil type and condition.
   vi. Remove objects trapping the victim (i.e., pipes, lumber, machinery).
D. Make The Trench Lip Safe
   i. Approach the trench from the ends if possible.
   ii. Look for unidentified hazards (i.e., fissures, unstable spoil pile).
   iii. Assess spoil pile for instability and distance from lip (must be a minimum of 2 feet.)
   iv. Remove any tripping hazards (i.e., shovels, shores, tree roots).
   v. Provide level area for ground pads.
   vi. Place ground pads around lip of trench. (Backboards may be used if plywood or planking is not available)
   vii. Place ingress and egress ladders in trench. There should be at least 2 ladders placed in the trench no more than 50 feet apart.
   viii. Assess victim's condition.
   ix. Proper patient packaging (backboard / stokes basket stretcher).
   x. Remove victim from the trench

V. ADDITIONAL CONSIDERATIONS

A. Consider Ambient Conditions
   i. Heat. Consider rotation of crews.
   ii. Cold. Consider affects of hypothermia on victim and rescuers.
   iii. Rain/Snow. Consider the effects of rain or snow on the hazard profile.
   iv. Time of day. Is there sufficient lighting for operations extending into the night.
B. Consider the effect on family and friends; keep family informed.
C. Consider news media; assign a Public Information Officer.

VI. MIOSHA REPORTING

The death of any employee from a work-related incident or the inpatient hospitalization of three (3) or more employees as a result of a work-related incident must be reported to the Michigan Occupational Safety and Health Administration (MIOSHA). MIOSHA's direct reporting number is (800)858-0397. The IC shall not turn over control of the scene until contact has been made with a MIOSHA representative. Although, it is the legal responsibility of the employer to make MIOSHA notification, SLFD shall make additional independent notification.

Approved by
/s/ Chief Mike Kennedy