

CONFINED SPACE RESCUE

GENERAL

1. Preplan a confined space incident so that a safe, standard approach is used during a confined space rescue emergency.

REFERENCE: NFPA 1006, 2008 Edition, 7.2.1, 5.2.1

CONDITION: Given applicable guidelines and regulations and a preplan form and supply form(s).

COMPETENCE:

- Identify existing or potential hazards and document them on preplan.
- Isolation methods are identified and documented on preplan.
- Identify all access points for entry openings are documented on preplan.
- Identify all types of entry openings and document on preplan.
- Identify and evaluate internal configurations of confined space being preplanned.
- Identify special resources needed for site being preplanned.
- Draw/sketch location on forms, following policy

TIME: 20:00 minutes

2. Assess (size-up) a confined space rescue incident and manage the incident.

REFERENCE: NFPA 1006, 2008 Edition, 7.2.2, 5.2.1, 5.2.2, 5.2.4, 5.2.7

CONDITION: Given preplan or size-up information, information from applicable reference material, monitoring equipment, personnel protective equipment necessary to perform the assessment, radios, tactical worksheet, personnel accountability protocol, and SOP's.

COMPETENCE:

- Identify type of rescue situation, use reference material as appropriate.
- Identify the number of victims, perform risk/benefit analysis.
- Determine last reported location of all victims.
- Identify any witnesses and interview them for incident information.
- Identify correct reference material and use material appropriately.
- Establish command structure for rescue situation.
- Establish personnel accountability system for rescue situation.
- Establish communication system.
- Determine resource needs for the type of rescue incident.
- Determine search parameters.
- Establish command name and identify incident commander.
- Establish location of command post.
- Develop an initial incident action plan.
- Communicate IAP to rescue team members & monitor plan implementation.
- Terminate operations at conclusion of incident, document incident, custody of site transferred to ROP.
- Conduct and document debriefing and critic of incident.

TIME: 15:00 minutes

3. Conduct monitoring of the Confined Space environment so that a representative sample of the space is obtained.

REFERENCE: NFPA 1006, 2008 Edition, 7.1.1, 7.2.2

CONDITION: Given monitoring equipment, reference material, personnel protective equipment, accurately calibrated detection and monitoring equipment, and size-up information.

COMPETENCE:

- Identify type of monitoring equipment to be used.
- Identify proper PPE for incident.
- Confirm fresh air calibration of selected monitoring equipment.
- Don selected PPE.
- Obtain environmental sample of confined space.
- Document readings of sample taken.
- Determine ventilation effects on the confined space being monitored.

TIME: 5:00 minutes

4. Control hazards so that the rescue area is established and rescuers and victims are protected from further harm.

REFERENCE: NFPA 1006, 2008 Edition, 7.2.2, 7.2.3, 5.2.3

CONDITION: Given personal protective equipment, reference material, a confined space tool kit and barrier control devices.

COMPETENCE:

- Identify safety zones.
- Establish perimeter using barrier control devices.
- Control access to the rescue scene.
- Identify equipment needed to support a rescue situation.
- Determine location for supply cache.
- Determine lighting needs for rescue situation.
- Determine rehab needs based on the rescue situation, environmental conditions and available staffing.
- Track equipment.
- Identify and use proper PPE for incident.
- Use of reference material as appropriate for incident
- Identify, isolate, and mitigate all hazards, i.e., electrical hazard, hazardous material, physical or atmospheric hazards.

TIME: 20:00 minutes

5. Prepare for entry into a confined space.

REFERENCE: NFPA 1006, 2008 Edition, 7.1.2

CONDITION: Given a confined space incident, confined space rescue tool kit, personnel protective equipment, 2-member rescue team, following departmental SOP for pre-medical entry.

COMPETENCE:

- Establish communications with the patient if possible.
- Determine physical and mental status of patient.
- Continuous atmospheric monitoring is initiated.
- Entry point is determined.
- Evacuation method is determined and set up.
- Entry team member is selected based on site and patient condition.
- Entry team member medically evaluated before entry into confined space.
- Determine appropriate level of personnel protective equipment.
- Determine appropriate rescue system to be used (rope system)

TIME: 20:00 minutes

6. Enter a confined space.

REFERENCE: NFPA 1006, 2008 Edition, 7.1.3, 7.1.5, 5.2.5, 5.3.1, 5.3.3

CONDITION: Given a confined space incident, confined space rescue tool kit, personnel protective equipment, medical equipment for patient treatment, triage protocol, rescue related systems and equipment and 4-member team.

COMPETENCE:

- Maintain communications with the patient if possible.
- Rescuer dons PPE appropriate for rescue incident.
- Continuous atmospheric monitoring is conducted.
- Communication with IC, Safety and team are established and maintained during rescue operation.
- Rescuer enters confined space at selected entry point.
Rescuer maneuvers in confined space as needed
- Rescuer makes contact with patient and performs triage.
- Patient care is established following medical SOP's
- Safety is maintained for rescuer and patient.

TIME: 30:00 minutes

7. Package and remove a victim from a confined space environment.

- REFERENCE: NFPA 1006, 2008 Edition, 7.1.3, 7.1.4, 7.1.5, 5.2.5, 5.3.2
- CONDITION: Given a confined space incident, confined space rescue tool kit, personnel protective equipment, medical equipment for patient treatment, rescue related systems and equipment, and 4-member team.
- COMPETENCE:
- Patient care is maintained during removal process; ABC's are maintained, monitored and controlled.
 - Patient is packaged to protect them and given the smallest possible profile during removal from the confined space.
 - Patient is attached to retrieval system.
 - Continuous atmospheric monitoring is conducted.
 - Communication with IC, Safety and team are established and maintained during rescue operation.
 - Rescuer and victim exits confined space at selected entry/exit point.
 - Rescuer and victim decontaminated as necessary.
 - Victim care is transferred to EMS provider if appropriate.
- TIME: 30:00 minutes

8. Perform ground support operations for helicopter activities.

- REFERENCE: NFPA 1006, 2008 Edition, 5.2.6
- CONDITION: Given rescue scenario, operational plans, AHJ SOP's. proper PPE, and available resources.
- COMPETENCE:
- Don appropriate personal protective equipment including eye protection.
 - Identify location for appropriate landing zone (100' X 100' minimum).
 - Identify and mark landing zone and control landing zone perimeter
 - Establish communication with aircraft.
 - Communicate to aircraft wind conditions and any hazards such as overhead obstructions, powerlines, etc.
 - Land aircraft using appropriate hand signals or radio communication.
 - Secure perimeter around aircraft staying clear of tail rotor at all times.
 - Follow AHJ SOP's for helicopter operations
- TIME: 10:00 minutes

9. Inspect and maintain rescue equipment and personnel protective clothing used during a Confined Space rescue incident.

REFERENCE: NFPA 1006, 2008 Edition, 5.2.7, 5.4.1, 5.4.2

CONDITION: Given an assignment, confined space rescue equipment, personnel protective equipment, maintenance logs/records, specialized tools, cleaning and sanitation supplies, and manufacturer's guidelines as needed for equipment.

COMPETENCE:

- Inspect PPE and identify any defects or damage needing repair.
- Remove PPE from service if needed following department SOP.
- Clean PPE following manufacture recommendation/departmental SOP and return to operational readiness.
- Inspect rescue equipment and identify any defects or damage needing repair.
- Remove equipment from service if needed following departmental SOP.
- Clean equipment following manufacture recommendations/departmental SOP and return to operational readiness.
- Document all maintenance performed on equipment/PPE logs/records.

TIME: 10:00 minutes

10. As a member of a team, construct and direct the operation of a simple rope mechanical advantage system (low or high angle raising operation) so that the system constructed can accommodate the removal of all entrants from a Confined Space.

REFERENCE: NFPA 1006, 2008 Edition, 7.1.5, 5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5, 5.5.6, 5.5.7, 5.5.14

CONDITION: Given an assignment, victim, Confined Space rescue team, life safety rope, additional equipment as needed to complete assignment, personal protective equipment, 4-firefighter team.

COMPETENCE:

- Don appropriate PPE
- Determine incident needs and select rescue system for incident.
- Calculate expected load for system and anchor points.
- Select appropriate anchor point to meet incident needs.
- Determine critical angle (90-degree maximum) for assignment.
- Inspect equipment being used for system.
- Create anchor point.
- Tie appropriate knots, choose and rig system.
- Construct, attach belay system to mechanical advantage system.
- Attach mechanical advantage system to the anchor system.
- Select patient transfer device for incident.
- Attach transfer device to system.
- Perform safety check of system:
 - Physical and visual check of system is made to ensure proper rigging.
 - Load test is performed prior to life-loading the system.
 - Verbal confirmation of safety check is announced and acknowledged before life-loading the rope rescue system.
 - Monitor all personnel to ensure proper PPE is worn at all times.
- Secure patient to transfer device.
- Perform safety check of system with load attached, prior to movement.
- Operate system by giving operational commands.
- Operate belay system and belay load if system fails.
- Monitor system during operation.
- Communicate problems or needs as identified.
- Transfer patient to EMS once operation is complete

TIME: 30:00 minutes

11. As a member of a team, construct and direct the operation of a lowering system (low or high angle raising operation) so that the system can accommodate the load, is efficient, and is connected to an anchor and belay system and accommodates the load.

REFERENCE: NFPA 1006, 2008 Edition, 5.5.8, 5.5.9, 5.5.10, 5.5.11, 5.5.12, 5.5.13, 5.5.14

CONDITION: Given an assignment, life safety rope, carabineers, pulleys, rope grab device, and other auxiliary rope rescue equipment, personal protective equipment, 2-firefighter team.

COMPETENCE:

- Select appropriate rope and equipment.
- Calculate expected load for system and anchor points.
- Select appropriate anchor point to meet incident needs.
- Determine critical angle (90-degree maximum) for assignment.
- Inspect equipment being used for system.
- Create anchor point.
- Tie appropriate knots, chosen and rig system.
- Properly attach to descent control device, belay system to transfer device.
- Direct personnel effectively using proper communication techniques.
- Perform safety check of system:
 - Physical and visual check of system is made to ensure proper rigging.
 - Load test is performed prior to life-loading the system.
 - Verbal confirmation of safety check is announced and acknowledged before life-loading the rope rescue system.
 - Monitor all personnel to ensure proper PPE is worn at all times.
- Communicate problems or needs as identified.
- Monitor system during operation.

TIME: 20:00 minutes

12. Complete an assignment (litter attendant activities) while suspended from a rope rescue system so that risks to victim and rescuer are minimized.

REFERENCE: NFPA 1006, 2008 Edition, 5.5.1, 5.5.7, 6.2.1, 6.2.3

CONDITION: Given an assignment, rope rescue system, life-safety harnesses, litters, bridles and specialized equipment necessary for the environments.

COMPETENCE:

- Rescuer dons appropriate harness, PPE for assignment
- Understand limitations and hazards associated with working while suspended from a litter.
- Identify hazards associated with current environment in which rescue system is being employed.
- Rescuer communicates to patient about problem(s) or movement(s).
- Complete assignment while attached to system, (i.e., rescuer moves litter away from snag, etc.).
- Communicate assignment completion to system IC.

TIME: 10:00 Minutes