

Operations Challenge Safety Event 2010

Situation:

You find a coworker at the bottom of a (confined space) lift station unconscious. You suspect he/she has been overcome with an unknown chemical gas or lack of oxygen. You immediately call for the in-plant rescue team. As you begin setting up the rescue effort another co-worker has a heart attack. This person is laying unconscious, one of the rescuer's calls 911 emergency services. An AED is available; the heart attack victim will need to have an airway established. His or her breathing and pulse is checked. There is no pulse, an AED is retrieved and administered. After one shock from the AED, the victim pulse returns and emergency services have arrived.

Directions:

Four-minute equipment check: The team will be allowed onto the platform to check all competition equipment and supplies for four minutes prior to the actual start of the event. The head judge will inform the team captain when the four minutes are completed. At this time all team members must immediately move to their starting area. If all equipment problems have not been resolved by this time, they will be addressed with the team in starting position. A delay at this point is cause for a penalty. Judges will not answer team questions during the four-minute inspection time or during the event. All questions will be answered on Monday during the pre-competition meeting. This is done to assure all teams receive the same instructions.

No equipment can be pre-assembled prior to the start. If anything has been pre-assembled, the head judge will instruct the team to disassemble the equipment prior to starting. If there is still pre-time left, then no penalty will be assessed, but if the four-minutes have been used up, a penalty of excessive pre-check will be assessed. All equipment must be placed back behind the line in the equipment storage area at the end of the four-minute equipment check.

The team captain will notify the head judge as to which team member is the designated attendant for the initial lockout tagout. All printed and signed names of the entrant and qualified person may be made on the permit at this time; names must be legible. **Fill out the lockout tag** To avoid subjectivity, the judges will verify legible handwriting at this time. The power for the gas detector and blower will be left in the off position. At the end of the four-minute time all team members must immediately move to their starting area, i.e., starting or ending in the decontamination area:

- 1) Team members will start behind the designated starting line
- 2) The team captain will start the event by yelling, "Start"
- 3) The entry person will put on full body harness.
- 4) One team member will turn on the detector and test the manhole atmosphere for 30 seconds using a gas detector and provided stopwatch.
- 5) One team member will place the electrical safety switch in the off or disconnected position.
- 6) The Designated Attendant will be the first person to lockout the disconnect switch by using the gang hasp and **their red colored lock** and tag. Each additional team member will place their lock and tag on the gang hasp. *Note: No one will enter the manhole until all four locks are locked in place on the gang hasp.* At the end of the event the disconnect will remain locked and tagged out, each team member will maintain custody of their key and have it at the end of the event to turn in to the head judge.
- 7) The qualified person will fill out the confined space entry permit. The only entries required on the permit during the timed event are acceptable (safe entry levels) readings for oxygen, combustible gas and hydrogen sulfide.
- 8) Necessary team members will assemble the non-entry rescue system not over the manhole. The Safe Approach Davit Arm will be assembled and leveled. All pins must be in place and the unit leveled before entrant is attached to the Davit arm winch and SRL. Then move the Davit Arm over the manhole. The entry person with the safety harness on will be attached to the fall protection device (SRL). This must be done before the manhole safety cover is removed.

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- 9) Remove the manhole safety cover.
- 10) Install the blower saddle vent into the manhole; attach the 90-degree fitting to the saddle. Place the blower 5-ft from the manhole and attach the blower hose to the 90-degree fitting and turn the blower on.
- 11) The fourth person will find that a co-worker has collapsed from a heart attack and is unconscious. The Airway Breathing and Circulation will be assessed first (A.B.C.). The victim's pulse will be checked for 10 seconds. The AED Trainer unit will be used to start the victim's (half CPR mannequin) heart, 911 will arrive after the first shock is given and 30 compressions have been administered.
 - a. This person will call 911 emergency services
 - b. Tilt head for airway, check victim for breathing (5 seconds counted out while looking at chest to see rise and fall or not) and a pulse (place two fingers over carotid artery, 10 seconds counted out, none will be found)
 - c. After the pulse is checked, The AED (trainer) cover will be opened up
 - d. The electrodes will be plugged in and the two paddles be placed properly on the victim
 - e. The remote will be plugged into the both the AED and Remote
 - f. Using the on/off button turn the AED unit on.
 - g. Once the unit prompts "Connect Electrodes"
 - h. Using the remote-press the paddle button or the top right button on the remote
 - i. The rescuer will administer the AED using the prompts from the AED unit
 - j. One simulated shock will be given from the AED Trainer.
 - k. After the one shock is administered the unit will prompt for CPR to begin.
 - l. Give the victim 30 compressions. While giving the compressions count out to 30. Each compression must be deep enough to create the click noise in the mannequin.
 - m. After the 30 compressions, it will be assumed the victim has recovered and emergency services have arrived.
 - n. Remove the paddles from the victim.
 - o. Turn the AED unit off and put away with all other equipment.
- 12) Entrant will be lowered into the manhole on the work seat with the Safe Approach winch. **The work seat will be raised to a height above the platform floor before the entrant can get on or off the work seat.**
- 13) When the entry person enters the manhole a third team member will continually monitor the fall protection lines until entry person is out of the manhole.
- 14) The entry person will put a full body harness on the victim. After the full body harness is on the victim and properly adjusted, the victim will be raised gently out of the manhole while the entrant will assist in guiding the victim from below. No lifting the victim from below.
- 15) The work seat is removed from the winch hook. Do not drop the work seat.
- 16) The winch hook is connected to the center "D" ring on the victim's harness.
- 17) Another team member will lift the victim using the Salalift winch.
- 18) Two team members will carry the victim to the chair in the designated area and begin the decontamination process. Do not drag the victim; all body parts must be off the ground (floor of the platform) while moving the victim to the chair. Activate the shower by pulling the shower handle to its furthest position downward. The body harness will remain on the victim.
- 19) The team member tending the fall protection system will assist in bringing up the entrant with the use of the work seat and the Salalift winch. The work seat must be lowered using the winch on the davit arm.
- 20) Team members will disassemble and store all equipment **behind the line in the equipment storage area**. The Davit Arm must be fully disassembled; **all pins will be placed in their proper holes. The winch cable must be within the length of the weight and hook**. The full body harness will remain on the entry person. Time will end when all team members cross the finish line and the team captain raises his/her hands above their heads and shouts "Stop."
- 21) All team members will stay in the start/finish area until released by the judges. Judges will collect the entry permit, stopwatch, harness, gas detector and lockout keys. Once the team

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has been released they will leave the competition area. The captain will be escorted to a waiting area for review of the event with the head judge.

Safety

The manhole opening will be protected with a safety cover before a team accesses the platform. It must not be removed until the Davit Arm is fully assembled and in place over the manhole, the entrant is completely and properly in the harness, and attached to the SRL that is fully attached to the Davit Arm. The cover must be reinstalled on the manhole opening as soon as the entrant has been removed from the manhole and before the davit arm is removed from the manhole opening.

Atmosphere Tester

Turn the meter on first; do not wait for the meter to fully start up. With one end of the hose attached to the meter place the other end of the hose into the manhole. **There will be two marks on the hose. One should be through the manhole (under the platform floor), with the other mark above the manhole rim (above the platform floor).** Once in this position the 30-second test will begin. The team member using the meter must remain with the meter and keep track of their time. Once the initial test is completed remove the hose from the manhole and from the meter. The gas meter must enter the manhole with the entrant. It must remain in the confined space until the entrant is removed from the manhole. **A stopwatch will be provided to each team; this is for the team to time the 30-second atmosphere test.**

Blower Placement

The blower must be placed 5 ft from the rim of the manhole prior to entry. There will be a square drawn around the perimeter of the manhole to allow the teams to correctly locate the blower. The blower may be placed at any point. The blower power cord will not be plugged in, but the switch **must be turned on and left on.**

Permit

The only entries required on the permit during the event are acceptable readings for oxygen, combustible gas and hydrogen sulfide. These three entries must be made after the 30 second test and before anyone breaks the plane of the manhole. Do not wait for the readings on the gas meter. Any acceptable reading (considered safe for entry by OSHA) may be entered on the permit after the 30-second test. Readings will be written to the tenth. Example oxygen of 20 PPM will be written 20.0 PPM. Only one entrant may be listed on the permit and allowed to enter the manhole. **Gloves may be removed from the hands of the person completing the permit and only while he/she is entering information on the permit.**

Victim's Harness

The full body harness on the victim must be tight enough to ensure proper care of the victim; **that is no more than a fist** under the chest strap in the center of the chest. **The harness will be adjusted for proper fit by the team.**

Decontamination Procedures

Place the victim in the armchair below the emergency shower. Activate the shower by pulling the handle to the furthest position downward.

Heart Attack Victim Revival Using AED

The victim is unconscious and there is not pulse
Use the ABC's

- a. Airway- Tilt the mannequins head back
- b. Breathing- look and listen for breathing (5 seconds)
- c. Circulation – Check for pulse (at least 10 seconds)

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Turn on the AED (trainer unit) and follow the prompts
 Place the two AED paddles on the victim correctly.
 When prompted, give the victim one shock.
 Commence CPR (it will then be assumed the victim's pulse and breathing has returned and emergency services have arrived.)
 Remove the two paddles from the victim
 Turn the AED off and put away the unit with all the other equipment.
 The heart attack victim (half mannequin) will stay where it was found.

Personal Hygiene

Do not place any thing into your mouth, i.e., gas detector, pencils, pens, or straps. This will result in a penalty.

Equipment Provided for Competition:

- 16ft X 16ft platform (6ft height) with a 36 inch circular opening in the center of the floor.
- Full body mannequin (victim). Approx. weight 105 lbs.
- Phone to call emergency services
- One arm chair
- One clipboard
- One stopwatch
- Mounted phone
- One manhole safety cover manufactured by Safe Approach Inc.
- One General Duty Safety Switch, 100A, Square D Brand, Grainger Item 5B662
- One Gang hasp and 4 locks
- Four Lockout/tagout Tags

Safe Approach Items Description and Numbers

Item Description	Number
Safe Approach Rescue/Retrieval Davit w/ Adjustable Base & 50' Retrieval Winch	00697-2
Pulley Block w/ Carabiner for 3-Way Recovery Unit	00697-PB
60' Self Retracting Lifeline w/ Rescue Winch Built In (3-Way Recovery Unit)	2360-01-01
Mounting Bracket for 3-Way Recovery Unit	00697-WSB
Universal Fit Full Body Harness w/ Shoulder D-Rings (S,M,L,XL)	7250-02-01
2X-Large Full Body Harness w/ Shoulder D-Rings	7250-02-01XL
Work Seat W/ Belt - Large	8152
Work Seat W/ Belt - Medium	8151

USA Blue Book Item Description and Numbers

One GasAlertMax Gas Detector	
One emergency Shower – horizontal Retrofitted with a vertical pipe 7" (+ or -) ft high	42580
One Axial blower w/canister & 15 ft of 8" hose	70186
One manhole saddle vent	42890
One universal saddle vent mount	42891
One 90 degree elbow for saddle vent	42898
Padlock Red	25595
Padlock Yellow	25596
Padlock blue	25597

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Padlock Green	25598
Gang Hasp	25535
Four Lockout Tags	46162

Annuvia Inc. Item Description and Numbers Contact:

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Annuvia, Inc.

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One AED Trainer Unit Medtronic LIFEPAK	500T
Half CPR Mannequin (CPR Prompt)	Adult/Child

Equipment Provided by Teams

Teams will be required to supply and wear, as appropriate, the following:

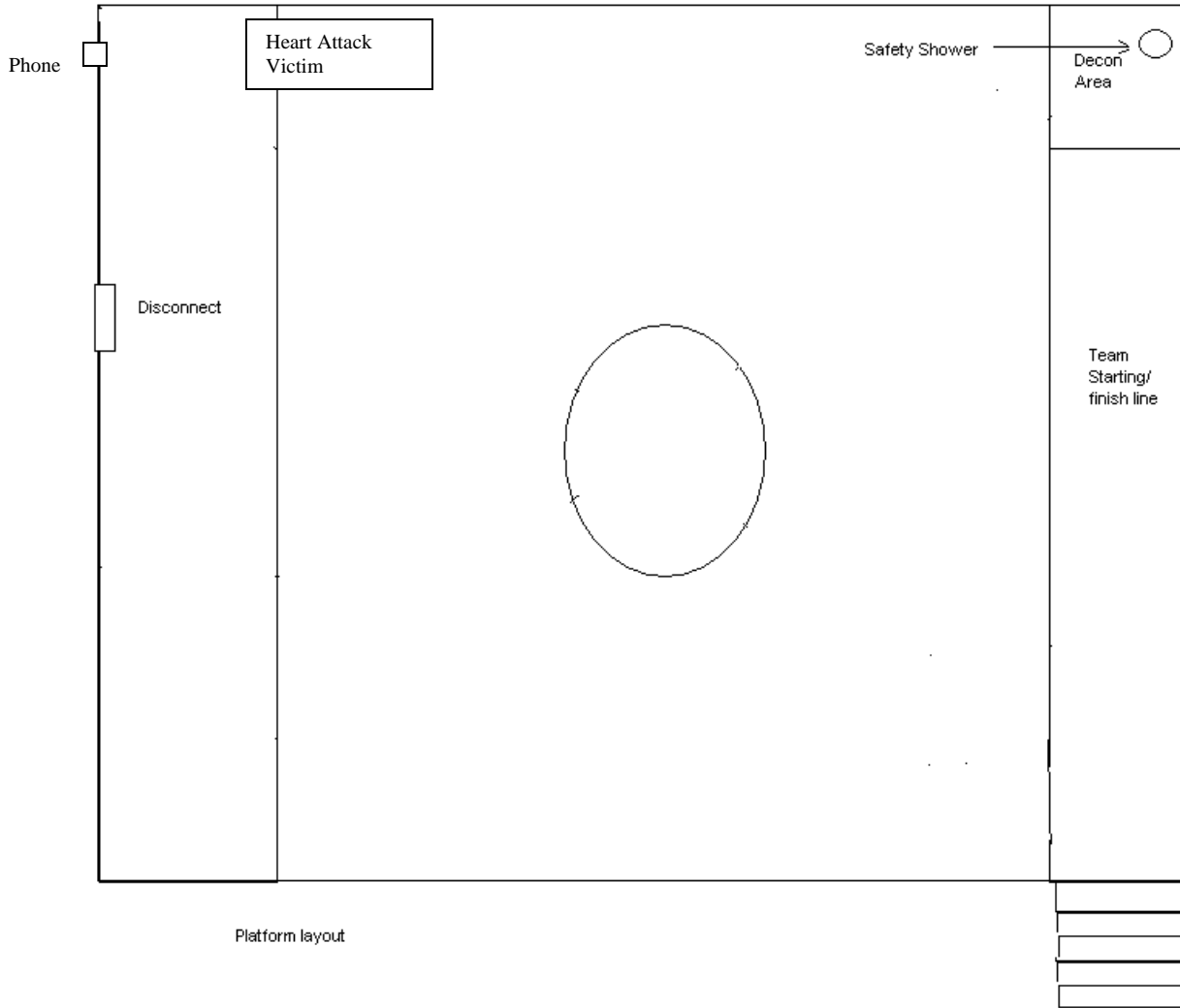
1. Steel-toed shoes ANSI rating Z41-PT99
2. Hardhats Cap or full brim Style meeting ANSI standard ANSI Z89.1-2003 Type 2
3. Safety glasses/goggles ANSI rating Z87.1-2003
4. Leather gloves, mechanics gloves. Gloves with fingertips removed, or **holes in the glove are not acceptable.**
5. Pencil or pen to write on confined space permits

Each team will need two full (one for the victim) body harnesses and one work seat. You select the sizes. These will be supplied at WEFTEC.

Teams interested in acquiring their own equipment for practice prior to WEFTEC, contact *David Kozlowsky* [Safe Approach, Inc.](http://SafeApproach.com) Ph: 207-345-9900, Safe Approach has agreed to a discount on the items they are providing. You will need to provide your team name, utility, and MA name.

Teams interested in acquiring their own equipment for practice prior to WEFTEC, contact Eric Pfeuffer at USA Bluebook 1-800-925-8399 Ext. 250. USA bluebook has agreed to a discount on the items they are providing. You will need to provide your team name, utility, and MA name.

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Judging Criteria

Safety Judges will stop competitors from competing if any unsafe actions are detected until corrections are made **Time will not stop, and judges will not identify the safety issue for the team.**