



094: Underground Construction

Why this topic is important

The accident and injury rate for underground construction is the highest of all types of work in the construction industry.

Cautions

If the lighting is inadequate, add portable lighting or contact your foreman for assistance in upgrading the lighting.

Follow check-in/check-out procedures. If there's an emergency, rescue workers need to know who is underground and who is not. Also, these procedures track your exposure times and other information about the job.

The above-ground attendant must not have any other duties. Do not send this person to get materials for you, and do not ask this person to enter the underground area to assist you. It may be permissible to change jobs with the attendant, if each party is qualified to do the job of the other.

Take air readings at intervals, as prompted by the attendant.

If you feel weak, dizzy, confused, or in any other way overly stressed, there is a reason. A dangerous reason. Come to a good stopping point and leave the area. Sometimes just some cool fresh air is all you need. Continuing to work can result in faulty work, injury, or death.

If a coworker shows symptoms of excess stress, send that coworker up. If the coworker refuses to leave, contact your foreman or have the attendant do so. The coworker's judgment may be impaired.

If a coworker refuses to go up, alert the rest of the crew and resolve the issue immediately, even if it means using physical force—again, this is a judgment impairment situation. In 1987, a team of nuclear workers was doing work several levels under grade on reactor coolant pumps. A worker repeatedly refused signals from other crew members to go up. The crew leader, making a final check before following the rest of the crew up, noticed this worker sitting in a corner in the dark. When he roused the worker, the man panicked and began tugging at his respirator—if he had taken it off, he would have died. The crew leader had no radio and carried the man, who was too dizzy even to walk, up 5 levels on ladders. This was arduous, but the end result was the crew leader exceeded his maximum lifetime radiation dose. He was 26 years old.

If a coworker sends you up, go without argument. Your judgment may be impaired.

Do not smoke in or near an underground construction area. If you must smoke, stay well downwind of the underground area and any rest areas used for the workers.

Maintain a fire watch when hot work is being performed.

If the air is deemed unsafe, suspend all work until the air is again deemed safe.

Clean up leaks and spills immediately.

Wear extraction PPE if the situation warrants, such as when space is too limited for another worker to carry you out if you become disabled. Extraction PPE allows another worker to pull you out with no assistance from you.

Discussion leader duties for this session:

Read your company's policies on confined entry and underground construction. Be prepared to answer questions during the discussion period.

What this Safety Talk covers:

Cautions and attendant duties for people engaged in underground construction or other underground electrical work.

Discussion notes :

Review and Discussion

What should you do if lighting is inadequate?

Why should you follow check-in/check-out procedures?

If you need more tools or materials for the job, should you ask the attendant to get them? Can you ask the attendant to give you a hand completing a job or carrying tools and materials out?

If you feel nauseated, what should you do?

If another worker looks stressed, what should you do? What if that person refuses to go up?

If someone signals you to go up but you feel fine, what should you do? Why?

What should you do if the air is deemed unsafe?

Why is extraction PPE important?

If you are the attendant and an underground worker cries out for help, what should you do?

If you must leave the area, even “just for a minute,” what should you do?

Attendant duties

If you are serving as an above-ground attendant, do not enter the underground area. If there is an emergency that requires entry, call for help and confirm help is on the way before entering. Mark the area clearly before entering, and wear the appropriate PPE. Failure to do this could be fatal for you and the worker you are attempting to assist. A situation occurred at a refinery where the attendant attempted to rescue another worker who has passed out inside a vessel. The attendant called for help, and then entered the vessel without breathing apparatus. When the help arrived, both the attendant and the worker were dead.

Prompt the workers to take air readings or gas readings as the confined entry permit requires. If the readings show a trend toward the safety threshold, increase the frequency of these readings. If the readings become a burden to the workers, request assistance so that another person can enter the work area and take the readings for them. Do not enter the work area to take the readings yourself.

Do not take a bathroom break, make a cell phone call, or do anything else that will distract you or cause you to leave the area. If you must leave the area, ensure the crew is out of the hole or another attendant can fulfill your duties.

Participant's Signature and Date

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