

JIE Confined Space /Excavation Work Practices Presentation

Topic: Confined Space and Excavation Work Practices

Incident Review

In recent years the local news have reported startling headlines where confined space and excavation worksites have claimed the lives of Jamaicans in the industrial, construction and the community environment. To illustrate some of the most recent news headlines are being highlighted.

1. **Article February 27,2007 concrete mixer crushes man: A family is mourning the loss of their beloved relative after he died in hospital on Sunday from injuries he sustained inside a mechanical concrete mixer at Newport West in Kingston.**
2. **Article date February 9, 2009. One dead, another injured in freak accident** A 62-year-old man was killed and another man injured in an incident at a excavation site at Hollywood in Mammee Bay, St Ann, Saturday.
3. **Article Thursday, September 16, 2010: Farm workers died from 'environmental suffocation. Two Jamaicans were employed at Canadian apple farm.**
4. **Article Date November 12, 2010: Workers killed in trench cave-in: Tragedy struck at a construction site on Barbican Road in St Andrew yesterday afternoon, leaving two workmen dead and another hospitalized**
5. Article December 30, 2010 Manchester mishap - Ten-year-old drowns in community tank
6. **Article January 17, 2011 sad end for brothers-drowned in 15ft deep soak away pit in Manchester.**
7. Article November 8,2010: Resident protest boy's drowning death-8feet deep 30 “ pipeline hole

Confined Space

By OSHA's definition, a **confined space** :

- Is large enough for an employee/person to enter fully and perform assigned work
- Is not designed for continuous human occupancy; and
- Has a limited or restricted means of entry or exit.

These spaces may include underground vaults, excavations, tanks, storage bins, pits, septic tanks, dyked areas, vessels, silos and other similar areas.

On the other hand a **permit required confined space** is any confined space having one or more of the following hazardous characteristics:

- Contains or has the potential to contain a hazardous atmosphere
- Contains a material with the potential to engulf someone who enters the space
- Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section
- Contains any other recognized serious safety or health hazards

If these hazards are all eliminated from the confined spaces it is then termed **a non permit confined space**.

To prevent confined space accident every confined space entry operation must have a written entry and rescue plan. Adequate signage, labels and guarding must be in place to prevent unsuspecting persons and general public from endangering their lives.

By OSHA's definition :

- **An Excavation is a man-made cut, cavity, trench, or depression formed by earth removal.**
- **A Trench is a narrow excavation. The depth is greater than the width, but not wider than 15 feet.**

The Jamaican Regulations

The Regulations governing confined spaces/excavations in the Jamaican workplace .The Jamaica Factories Act:

1. The Jamaica Factories Regulations (JFR)1961
 - **Regulation 30 Working in Confined Spaces**
 - **Regulation 32 Steam Boiler-Being Inside**
2. The Building Operations and Works of Engineering Construction -Safety, Health & Welfare (BOWEC) Regulations, 1968.
 - **PART VIII: Excavations, Shafts and Tunnels**
 - **PART:XIV Health and Welfare**

JFR-Regulation 30

Working in Confined Spaces

(1) Where any work has to be done inside any chamber, tank or other confined space in which dangerous fumes or gases are liable to be present—

(a) The confined space shall be provided with adequate means of egress; and

(b) no person shall enter the confined space for any purpose unless the following requirements are complied with—

(i) All practicable steps shall be taken to remove any fumes or gases which may be present and, unless it has been ascertained by a suitable test that the space is free from dangerous fumes or gases, the person entering shall wear a belt to which there is securely attached a rope of which the free end is held by a person outside; or

(ii) The person entering shall wear a suitable breathing apparatus.

(2) No tank, pipe or vessel which contains or has contained any explosive or inflammable substance shall be subjected to any welding, brazing or soldering operation, or to any other operation which involves the application of heat, until such substance and any fumes or gases arising there from have been removed or rendered non-explosive or non-inflammable.

Regulations 32: *Steam Boiler-Being Inside*

No person shall enter or be in any steam boiler which is one of a range of two or more steam boilers unless—

(a) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range are disconnected from that part; or

(b) all valves or taps controlling such entry are closed and securely locked, and, where the boiler has a blow-off pipe in common with one or more other boilers or delivering into a common blow-off vessel or sump, the blow-off valve or tap on each such boiler is so constructed that it can only be opened by a key which cannot be removed until the valve or tap is closed and is the only key in use for that set of blow-off valves or tap.

BOWEC -PART VIII: Excavations, Shafts and Tunnels

- Shoring/timbering from cave ins and collapse
- examined by a competent person at least once in every period of seven days-documented
- adequate sloping to prevent fall or dislodgement of earth or other material so as to bury or trap a person employed or so as to strike a person employed from a height of more than four feet is liable to occur
- Timbering or other support of excavation
 - Supervision by a competent person and
 - Done by competent workmen.
 - Materials used must be sound and inspected by a competent person
- All struts and braces in any excavation, shaft, earthwork or tunnel shall be properly and adequately secured so as to prevent their accidental displacement or fall
- Means of egress in case of flooding

- Excavation and stability of adjacent structures from collapse
- Barriers Fencing/guarding or secure covering of accessible parts of excavations with fall hazard > 6'6" except for temporary work allowance
- Safeguarding edges of excavation from collapse
 - Stacking of material near the edge
 - *Load bearing equipment,*

BOWEC-PART: XIV Health and Welfare

- Effective steps shall be taken to secure and maintain the adequate ventilation
- no person shall be employed in or allowed to enter such working place or approach with poisonous or asphyxiating atmosphere
- Atmosphere suitably tested by or under the immediate supervision of a competent person and he is satisfied that it is free from the danger of a person being overcome by poisoning asphyxiation.
- Appropriate breathing apparatus, hole watch, body belt and retrieval system for rescue
- No stationary internal combustion engine in any enclosed or confined place unless specific provision is made for conducting the exhaust gases from the engine into the open air or the place is adequately ventilated so as to prevent danger to health from such exhaust gases

International Regulations (UK, Canada , USA)

- Canada Occupational Health and Safety Regulations PART XI-Confined Spaces
- Britain-The Confined Spaces Regulations 1997 *Statutory Instrument Regulations 1997 No. 1713*
- OSHA 29 CFR-1910.146 Subpart J-Permit-required Confined spaces-General Industry
- OSHA 29 CFR 1926.651 Subpart P – Excavations-construction Industry
- OSHA 29 CFR 1926.21 Subpart C-*Safety training and education*
 - Specifies training for personnel who are required to enter confined spaces and defines a "confined or enclosed space."
- OSHA 29 CFR 1926.800 Subpart S -Underground construction
 - Underground tunnels, shafts, chambers, and passageways..."
- OSHA 29 CFR 1926.956 Subpart V- underground electric transmission and distribution work
- ANSI Z117.11989, *Safety Requirements for Confined Spaces.*
 - Minimum safety for entering, exiting and working in confined spaces at normal atmospheric pressure.
- OSHA Confined Spaces in Construction [proposed rule](#) was issued Nov. 28, 2007 not yet promulgated