Safe Working in A Confined Space

WHAT IS A CONFINED SPACE? (ICOP CS 2010)
“confined space” means an enclosed or partially enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work, and –
a) is liable at any time to –
   i. have an atmosphere which contains potentially harmful levels of contaminants;
   ii. have an oxygen deficiency or excess; or
   iii. cause engulfment; and
b) could have restricted means for entry and exit.
Example Manhole, Silo, Tunnel, Pipeline, excavations, trenches

COMPULSORY ENTRY PROCEDURES
• Step 1: Preparation for Permit to Work
• Step 2: Isolation
  ▪ Isolation work area & confined space
• Step 3: Initial Cleaning
  ▪ Draining/ Purging
• Step 4: Initial Ventilation
  ▪ Removed unwanted gases, heat generated, dust, and smells from the space
  ▪ Provide fresh air for the entrants
• Step 5: Pre-entry Testing
  ▪ Test air at the top, middle and bottom, and in remote areas
• Step 6: Continuous Ventilation
  ▪ Air from forced ventilation shall be from a clean source, free from contaminants
• Step 7: Preparation of PPE & Work Equipment
  ▪ All authorized entrants must use the standard protection PPE;
• Step 8: Issuance of Permit to Work
  ▪ Maximum duration of PTW is 8 hours, may be extended for a maximum of 4 hours (provided all the terms & conditions remain the same)
• Step 9: Entry and Work
  ▪ Start work only after the permit is approved by ES & PI
• Step 10: Work Completed

PERSONAL INVOLVED IN CONFINED SPACE
1. Authorised Entrant (AE)
   A person has attended a training course for AESP and passed the examination
2. Authorised Gas Tester (AGT)
   A competent person registered with DOSH
3. Entry Supervisor (ES)
   A competent person registered with DOSH
4. Stand-by Person (SP)
   A person has attended a training course for AESP and passed the examination
5. Permit Issuer (PI)
   A person has attended a training course for AGTES

HAZARD IN CONFINED SPACE
i. Hazardous atmosphere
   • oxygen: <19.5 % or > 23.5 % by volume
ii. Chemical hazards
   • accumulation of flammable or explosive gas > 10 % of its LEL; (eg: methane)
   • accumulation of toxic gas equal to or exceeding its permissible exposure limit (PEL). (eg: CO, H2S, NH3); or
   • any other atmospheric condition that is immediately dangerous to life or health (IDLH).
iii. Physical Hazards Eg. Slip and Fall
iv. Biological Hazards Eg. Virus or venom
v. Psychosocial Hazards Eg. Claustrophobia
vi. Ergonomic hazards Eg. Awkward position

TYPE OF PPE FOR ENTERING CONFINED SPACE
1. Head Protection
2. Foot Protection
3. Eye Protection
4. Hand Protection
5. Fall Arrest

HAZARD IN CONFINED SPACE

Gas-Air Mixture

Before Entering:
• Test for explosive atmosphere.
• Test for oxygen deficiency.
• Supply fresh air to work area.

Please refer to ICOP for Safe Working In A Confined Space 2010 for more details

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