****

CONFINED SPACES

STANDARD OPERATING PROCEDURE

Document ID: SOP-002

**Document Approval History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Document Revision No.** | **Effective Date** | **Created** **by:** | **Reviewed & Approved** **by:** |
| Revision 0 | DD.MM.YYYY | HSE Advisor | HSE Manager |
|  |  |  |  |

**Document Revision History**

|  |  |  |
| --- | --- | --- |
| **Document Revision No.** | **Sections Revised** | **Description of Changes** |
|  |  |  |
| 00 | N/a | Published |
|  |  |  |

# Purpose

To implement and maintain a system so that hazards during entry & working inside the confined spaces are proactively considered before the commencement of any task and to ensure a safe entry to confined spaces.

# Definitions

|  |  |
| --- | --- |
| Concept | Definition |
| Confined Space | An incident which results in death, injury loss, or damage |
| Competent person | person who has acquired through training, qualification or experience the knowledge and skills to carry out the task. |
| Hazard | A potential source of harm. |
| PPE | Personal Protective Equipment |
| Risk | Combination of the probability of occurrence of harm and the severity of that harm |
| Safe System of Work | A method of working that eliminates or reduces the risk of injury |

# Roles & Responsibilities

**Employer:** The employer is responsible for thehealth, safety and welfare at work of all his employees, and other people who might be affected by their activities, The employer shall do whatever is reasonably practicable to achieve this. It is also its responsibilities:

* The provision and maintenance of plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health
* The arrangements for ensuring the safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances
* To provide information, instruction, training and supervision to ensure the health and safety at work of his employees;
* To provide any place of work under the employer’s control, the maintenance of it in a condition that is safe and without risks to health and the provision and maintenance of means of access to and egress from it that are safe and without such risks;
* The provision and maintenance of a working environment for his employees that is, so far as is reasonably practicable, safe, without risks to health, and adequate as regards facilities and arrangements for their welfare at work.

It’s employer’s responsibilities to assess risks in the workplace. Risk assessments should be carried out that address all risks that might cause harm in your workplace. It must also:

* give you information about the risks in your workplace and how you are protected, also instruct and train you on how to deal with the risks.
* consult employees on health and safety issues. Consultation must be either direct or through a safety representative that is either elected by the workforce or appointed by a trade union.

**Employees**: Workers must take care of their own health and safety and that of others who may be affected by your actions at work. Workers must co-operate with employers and co-workers to help everyone meet their legal requirements. As a worker, if you have specific queries or concerns relating to health and safety in your workplace, talk to your employer, manager/supervisor or a health and safety representative.

**Project Manager**: Ensures that the project complies fully to the requirements of this standard operating procedure.

**HSE Advisor**: Identify remedial corrective actions required to meet this standard operating procedure. Ensure the requirements for issuance of permits for confined space entry are met.

**Supervisor**: Arrange all the requirements and obtain permit to work prior to start of any confined space entry job. Ensures that the safe system of work is in compliance with the project requirements and that a risk assessment has been conducted and communicated to the employees. Ensure that monitoring of confined space entry is being conducted and that atmospheric testing is effective and documented as required by the permit of work. Selects employees assigned to the task that are suitably trained and fit for the job.

**Gas Tester**: Verify the testing equipment is suitably calibrated and that tests are conducted in accordance to the permit requirements.

**Confined Space Watcher**: Maintains an accurate count of authorized entrants to the confined space by keeping a confined space entry/exit log.

# Training & Competence

Training will be provided to improve employee’s proficiency in their confined space entry duties and to familiarize employees with new or revised procedures. All personnel involved with confined space entry shall undergo a confined space entry training session. This includes entry hazards, including exposure modes, signs and symptoms of exposure, and consequence of exposure, emergency response, communication procedures, etc. The training shall be recorded and maintained on file.

All employees engaged in the confined space work, will be trained:

• Before the employee is first assigned duties under this program.

• Before there is a change in assigned duties.

• Whenever there is a change in operations that present a hazard about which an employee has not been previously trained.

# Personal Protective Equipment

# Procedure

## Confined Space Permit

A confined space entry permit must be completed prior to any work in a space meeting the definition of a confined space. The Supervisor will initiate the permit and the HSE Advisor will issue the permit. The issued permit shall be available at the work place at all times. The duration of the confined space may not exceed the time required to complete the assigned task, or one shift, whichever comes first.

The Supervisor will terminate entry to a confined space and cancel the permit when:

* The authorized time period of the permit has expired.
* The activity has been completed.
* A condition that is not allowed under the entry permit arises in or near the permit space.
* An emergency or incident required evacuation of the area.

The cancelled permits shall be maintained in the file.

## Confined Space Entry Testing and Monitoring

Designated gas tester will perform pre-entry testing to determine if acceptable entry conditions are present prior to entry and / or to enable to devise and implement adequate control measures for the protection of entrants. Perform continuous or periodic monitoring to ensure that acceptable conditions exist at all times during the operation. Test shall be conducted for oxygen and for any other toxic gases.

## Equipment Requirements

The following equipment/ arrangements shall be made available prior to any operations requiring confined space entry:

* Ventilation equipment
* Effective Communication arrangements
* Personal protective equipment including SCBA
* Temporary lighting arrangements
* Using only low voltage (12V) electrical power tools
* Appropriate warning signs
* Barriers
* Emergency rescue equipment
* Access / egress arrangements

## Access

Access openings into the confined space must permit rescue of all personnel who enter the confined space. These access ways (in and out) must be kept clear of any obstructions.

It may be necessary to provide scaffold platforms and stairs or ladders to the access levels to gain safe convenient access for work or rescue purposes.

## Electrical Equipment

Where electrical equipment must be used, the following precautions shall be taken:

* Not greater than 32v lighting;
* All cables of electrical equipment required in a confined space shall be provided and fed through a portable earth leakage unit located immediately outside the confined space;
* Where possible, electrical, welding and cutting equipment leads shall be fed into the confined space via a location other than those used for access / egress.

## Hot Works in Confined spaces

No source of ignition will be introduced into a confined space until appropriate control measures are implemented, and test results verify that dangerous air contamination and /or flammable and/ or explosive substances do not exist within the confined space.

Whenever oxygen consuming equipment are to be used, measures will be taken to ensure adequate combustion air and exhaust gas venting.

## Communication

Means must be provided to allow personnel within the confined space to communicate to others outside, who can initiate rescue procedures or summon help. The emergency can be communicated in a number of ways, for example by the tug of a rope, audible alarm, high intensity flashing lights or by radio. Whatever the means, it must be reliable and frequently tested.

# Emergency Arrangements

Contingency plans will depend on the nature of the confined space, the risks identified and consequently the likely nature of an emergency rescue.

Effective arrangements for raising the alarm and carrying out rescue operations in an emergency situation are essential. For an effective emergency procedure in place, the following points shall be considered but limited to:

* The identified hazards at the work site and the work to be performed.
* The worst-case situation.
* The Rescue Equipment normally kept on site.
* Tripod for the confined space has to be installed at the entry access.
* Safety harness should be worn by employees entering into the confined space area.
* The inertia reel is fixed with the tripod for hook the safety harness.
* The harness shall be checked for stability prior to entry by the supervisor for all entrants who will be working in the confined space.
* Lifeline from the inertia reel should be attached to the backside hook of the harness.
* The self-contained Breathing Apparatus shall be readily available at site prior personnel entry.
* Circumstances which could necessitate the use of special equipment such as harness, line and winch or pulley for personnel recovery from spheres or columns.
* Available manpower, especially those trained in first aid techniques.
* The availability of back-up air supplies as required.

The following emergency procedures have to be followed in case a hazard arises within the confined space

* For any emergency or injury, the Confined Space Watcher will inform to emergency response team through mobile phones or any other means without leaving location.
* Ensure emergency number is displayed within the work activity.
* The rescue procedure and equipment shall be identified in the training programme and all trained personnel should have knowledge about the rescue procedure and how to use the rescue equipment at the time of emergency.
* The approved rescue procedure and rescue equipment’s mentioned Tripod, safety harness, inertia reel & BA should be available at site.
* If any employee becomes ill, injured or experiences uneasiness, the worker is to be brought out from the Confined Space Area immediately.
* The injured personnel will be taken out side through access point while ensuring not to lose consciousness. If unconscious, ensure that retrieval will not cause any secondary harm and use the stretcher through access point.
* The victim shall be taken out through the inertia reel which hooked with fixed tripod and it should be attached to the backside hook of the victim harness.
* At least 2 nos. of trained standby personnel should be available to operate the winch.
* Standby Ambulance should be available always at site.
* Trained First Aider shall pay the attention of injury immediately and referred to clinic if required.
* Competent First Aider or Male Nurse only authorized to attend the IP (Injured Person)
* In any case, the Confined Space Watcher should not enter inside the Confined Space Area.