



Abu Dhabi EHSMS Regulatory Framework (AD EHSMS RF)

EHS Regulatory Instrument

Code of Practice

EHS RI – CoP 27.0 – Confined Spaces

Version 2.0 I

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With gratitude Abu Dhabi EHS Center acknowledges the great support provided by the Executive Council in facilitating the issuance of Abu Dhabi Emirate Environment, Health and Safety Management System (AD EHSMS) and its implementation at Emirate level.

The issuance of the system would not have been possible without the supervision, diligent efforts and productive recommendations of the AD EHS Center Board of Directors.

These documents (Regulatory Instruments) constitute the efforts of the Abu Dhabi EHS Center and the concerned Sector Regulatory Authorities and who worked together to integrate all relevant regulatory requirements under *AD EHSMS RF*. The input, contribution and constructive views of all sectors is highly appreciated.

May these documents prove to be beneficial and helpful in system implementation and in expanding the knowledge in the EHS field.



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Preface

This Abu Dhabi EHS Regulatory Instrument was developed by the Energy Sector Regulatory Authority AD EHS Center as the primary Competent Authority for this topic to set the minimum mandatory requirements.

Every effort was made in developing this document so that it does not conflict with existing local or federal laws and regulations. In case of conflict, requirements of the existing local and federal laws and regulations shall prevail, and all concerned are obliged to bring the same to the attention of AD EHS Center for resolution.

This AD EHS Regulatory Instrument has been developed, reviewed and approved, following the process as described in *AD EHSMS Implementation Guideline: The Integration of EHS Requirements in the Emirate of Abu Dhabi*, by the following stakeholders:

- Abu Dhabi EHS Higher Committee;
- Abu Dhabi EHS Center;
- Environment Agency Abu Dhabi;
- Department of Municipal Affairs;
 - Abu Dhabi Municipality;
 - Al Ain Municipality;
 - Western Region Municipality;
- Department of Transport – Abu Dhabi;
- Abu Dhabi Water and Electricity Authority;
- Health Authority - Abu Dhabi;
- Higher Corporation for Specialized Economic Zones (ZonesCorp);
- Center for Waste Management – Abu Dhabi;
- Abu Dhabi Tourism Authority;
- Abu Dhabi Food Control Authority;
- Abu Dhabi Education Council
- Regulation and Supervision Bureau; and
- Other Relevant Federal and Local Competent Authorities.

The AD EHSMS consists of the following hierarchy of documents:

- AD EHSMS RF Elements - Mandatory System Requirements

EHS Regulatory Instruments:

- Standards and Guideline Values - Mandatory EHS threshold and exposure levels
- Codes of Practice - Mandatory EHS technical requirements – subject specific
- Mechanisms - Mandatory system implementation processes and procedures

Guidelines:

- Technical Guidelines - Non-mandatory guidance on how to implement an EHS Regulatory Instrument
- AD EHSMS Guidance Documents - Non-mandatory guidance and interpretation of an *AD EHSMS RF* concept and/or principle

Further, this document is not intended to conflict with any contractual obligations in effect at the time of its issuance. However, all future contracts shall adhere to applicable requirements stated herein, and existing long term contracts shall be brought into compliance with its requirements as soon as reasonably practicable as stipulated by relevant subject authorities.

This document will be reviewed periodically as part of the continual improvement cycle.

1. Introduction

- (a) This Code of Practice (CoP) applies to all employers within the Emirate of Abu Dhabi. This CoP is designed to incorporate requirements set by Abu Dhabi EHS Center and Sector Regulatory Authorities in the Emirate of Abu Dhabi.
- (b) This CoP establishes the requirements and standards so that the risks associated with confined Spaces are assessed, that control measures are implemented in accordance with the hierarchy of controls and those measures are taken to prevent injury, illness and disease to persons who might be exposed to risks arising from those activities.
- (c) *AD EHS TG – Safe Work in Confined Spaces*, provides further information on how employers can comply with the requirements of this CoP. The information contained within the technical guide is not mandatory, however is seen as best advice and following the information within the technical guide will assist employers in complying with the requirements of this CoP.

2. Training and Competency

2.1 General Training

- (a) Where it has been identified that the employer has confined spaces within his facilities or undertakings the employer shall ensure that all relevant employees are trained on the hazards of confined spaces and the need to prevent unauthorised entry.

2.2 Specific Confined Space Entry Training

- (a) Employers shall ensure that EHS training complies with the requirements of:
 - (i) *AD EHSMS RF – Element 05 – Training and Competency*;
 - (ii) *AD EHS RI – Mechanism 7.0 – AD EHS Professional Entity Registration*; and
 - (iii) *AD EHS RI – Mechanism 8.0 – AD EHS Practitioner Registration*.
- (b) The employer shall develop and implement a training program appropriate to ensure that all relevant employees who enter a Permit Required Confined Space (PRCS) acquire the understanding, knowledge, and skills necessary for the safe performance of all duties assigned under the PRCS Program.
- (c) The training program shall cover, as a minimum the following areas:
 - (i) hazard identification;
 - (ii) equipment selection and testing;
 - (iii) permits to work;
 - (iv) safe working procedures – general and specific to the entry;
 - (v) hygiene;
 - (vi) gas detection and monitoring;

- (vii) use of oxygen escape sets (if required through risk assessment);
 - (viii) type, selection and use of PPE; and
 - (ix) incident and emergency procedures.
- (d) The employer shall ensure that training is provided to each affected employee:
- (i) before the employee is first assigned duties involving PRCS entry;
 - (ii) before there is a change in assigned duties;
 - (iii) whenever there is a change in PRCS operations that presents a hazard about which an employee has not previously been trained; and
 - (iv) whenever the employer has reason to believe either that there are deviations from the PRCS entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.
- (e) Employers shall maintain a record of the required training that contains the following information:
- (i) name and Emirates ID number of the employee;
 - (ii) subject(s) of training;
 - (iii) training provider;
 - (iv) dates(s) of training; and
 - (v) person(s) providing the training.

3. Requirements

3.1 Roles and Responsibilities

3.1.1 Employers

- (a) Employers shall undertake their roles and responsibilities in accordance with the general requirements of *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation* Section 3.2.5.
- (b) Employers shall undertake their specific roles and responsibilities in accordance with the following:
 - (i) employers shall ensure that all activities that require persons to work within a confined space, are identified and recorded;
 - (ii) employers shall allow entry to confined space only when it is not reasonably practicable to achieve the purpose without such entry to the confined space; and
 - (iii) employers shall ensure that all persons required to enter a confined space are competent and fully aware of the emergency procedures.

3.1.2 Employees

- (a) Employees shall undertake their roles and responsibilities in accordance with the general requirements of *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation* Section 3.2.7.
- (b) Employees shall undertake their specific roles and responsibilities in accordance with the following:
 - (i) never enter a confined space unless authorised to do so and only once appropriate control measures have been identified and implemented; and
 - (ii) report any hazards and defects immediately.

3.2 Planning and Assessment

- (a) Employers shall ensure the following:
 - (i) an assessment of the various risks is undertaken and systems of work are established which are safe to all parties involved or affected including the public;
 - (ii) that effective procedures and controls are in place, which are implemented in order to manage activities safely and without risk to health;
 - (iii) that for the Building and Construction Sector the management of confined spaces requirements are included in the Pre-Tender Environment, Health and Safety Plan in accordance with *AD EHS RI – CoP 53.0 – EHS Management During “Construction Work”*; and
 - (iv) that associated safe systems of work, and site rules are included in the Environment, Health and Safety Construction Management Plan (EHS-CMP) in the case of the

Building and Construction Sector in accordance with *AD EHS RI – CoP 53.0 – EHS Management During “Construction Work”*.

3.3 Definition

- (a) An enclosed space (enclosed or partially) which:
- (i) is at atmospheric pressure during occupancy; and / or
 - (ii) is not intended or designed primarily as a place of work; and / or
 - (iii) may have restricted means for entry and exit; and / or
 - (iv) may:
 - have an atmosphere which contains potentially harmful levels of contaminant; or
 - not have a safe oxygen level; or
 - cause engulfment.
- (b) Confined spaces include but are not limited to:
- (i) storage tanks, tank cars, process vessels, boilers, pressure vessels, silos and other tank-like compartments;
 - (ii) open-topped spaces such as pits or degreasers;
 - (iii) pipes, sewers, shafts, ducts and similar structures; and
 - (iv) any shipboard spaces entered through a small hatchway or access point, cargo tanks, cellular double bottom tanks, duct keels, ballast and oil tanks, and void spaces, but not including dry cargo holds.

3.4 Identification of Confined Spaces

- (a) Every employer shall ensure that all activities that require persons to work within a confined space are identified and recorded.
- (b) Every employer shall ensure that all identified confined spaces are clearly identified to all persons with a sign reading – *CONFINED SPACE – PERMIT REQUIRED – DO NOT ENTER*. All safety signs shall be in line with the requirements of *AD EHS RI – CoP 17.0 – Safety Signs and Signals*.
- (c) The language of the sign shall be in both Arabic and English, and any other language appropriate for the understanding and comprehension of the exposed workforce.
- (d) The employer shall, in line with section 2.2 inform all affected persons of the general hazards of the identified confined spaces and the safe working procedures for entry.

3.5 Work in Confined Spaces

- (a) Where it has been deemed required, in line with the requirements of section 3.4 (a), for persons to enter a confined space for work purposes, every employer shall develop a Permit Required Confined Spaces Program (PRCSP).

- (b) The PRCS program shall include, as a minimum, the following items:
- (v) list of all identified PRCS;
 - (vi) activities undertaken, under normal operation, within the confined space;
 - (vii) list of competent confined space entry persons;
 - (viii) list of competent emergency rescue persons, in relation to confined spaces;
 - (ix) list of all associated equipment, including calibration requirements;
 - (x) record of all entry into a confined space, including persons undertaking the entry and/or supervising the tasks; and
 - (xi) specific risk assessment and safe working procedures for each confined space identified in line with *Section 3.2*.
- (c) The PRCS shall be readily available for inspection by staff and/or relevant regulatory authorities.

3.6 Risk Assessment

- (a) Every employer shall undertake an appropriate risk assessment for each entry into a confined space.
- (b) The risk assessment shall be specific to the activity being undertaken and to the time and date of entry.
- (c) The risk assessment shall follow the requirements of *AD EHSMS RF – Element 02 – Risk Management*.
- (d) The risk assessment shall identify all foreseeable hazards related to the persons entering and/or working within the confined space. The risk assessment shall also consider any additional risks introduced to others due to the work being undertaken within the confined space.
- (e) The risk assessment shall also consider assessment of any previous content or residue present within the confined space.
- (f) The risk assessment shall also include any emergency situations that may occur as a result of the work being undertaken.
- (g) Completed risk assessments shall be held within the PRCS program as reference and record for each individual entry to a confined space.

3.7 Safe Working Procedure

- (a) Every employer shall develop safe working procedures for each identified PRCS which his employees shall enter.
- (b) The safe working procedure shall be specific to the activity being undertaken and to the time and date of entry.

- (c) The employer shall ensure that the persons undertaking the task within the PRCS fully understand and comprehend the safe working procedure.
- (d) The safe working procedure shall as a minimum contain information on:
 - (i) provision of supervision (safety watch);
 - (ii) competence for employees working in confined space;
 - (iii) communications methods and procedures;
 - (iv) emergency response procedure and rescue plan(s);
 - (v) testing and monitoring of the environment (atmosphere) of the confined space;
 - (vi) ventilation and removal of residues;
 - (vii) isolation from gases and other hazardous materials;
 - (viii) liquids and other flowing materials;
 - (ix) isolation from mechanical and electrical equipment;
 - (x) selection and use of appropriate equipment;
 - (xi) selection and use of Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE);
 - (xii) use of portable gas cylinders and internal combustion engines;
 - (xiii) access and egress;
 - (xiv) fire prevention and control;
 - (xv) lighting inside the confined space; and
 - (xvi) limiting duration of exposure (working in the confined space).

3.8 Emergency Procedures

- (a) No person shall enter or work within a PRCS unless appropriate specific arrangements have been prepared for the rescue of persons in the event of an emergency, whether or not arising from a specified risk.
- (b) The emergency arrangements shall be specific to the activity being undertaken and to the time and date of entry.
- (c) The emergency arrangements referred to in the CoP shall not be considered appropriate unless:
 - (i) they reduce, so far as is reasonably practicable, the risks to the health and safety of any person required to put the arrangements for rescue into operation; and
 - (ii) they require, where the need for resuscitation of any person is a reasonably foreseeable consequence of a relevant specified risk, the provision and maintenance of such equipment as is necessary to enable resuscitation procedures to be carried out.

3.9 Communication

- (a) Every employer shall ensure that appropriate communication systems are in place prior to entry into a PRCS.
- (b) The communication system shall ensure uninterrupted communication:
 - (i) between those inside the PRCS;
 - (ii) between those inside the PRCS and those outside the PRCS;
 - (iii) to summon help in case of an emergency;
 - (iv) between those outside the PRCS to raise the alarm to those inside the PRCS; and
 - (v) from those outside the PRCS to initiate emergency procedures;
- (c) Communication systems shall be intrinsically safe, reliable and frequently tested.

3.10 Confined Space Entry Permit / Permit to Work

- (a) Every employer shall, prior to entry to a confined space, ensure that a confined space entry permit has been completed.
- (b) Entry into the confined space shall be prohibited until all conditions as identified within the confined space entry permit have been satisfied and verified.
- (c) *The entry permit system shall follow the requirements of AD EHS RI – CoP 21.0 – Permit to Work Systems.*
- (d) Each Permit to Entry / Work shall be specific to the activity being undertaken and to the time and date of entry.
- (e) Employers shall ensure prior to the commencement of confined space work, the following precautions are taken, to prevent any fire, explosion, injury or other danger developing during the performance of confined space work:
 - (i) ensure the appropriate ventilation of the confined space work area, including, atmospheric oxygen concentration levels between 19.5% and 23.5%;
 - (ii) ensure constant supervision and stand-by man;
 - (iii) appropriately locate the equipment, including emergency fire fighting equipment;
 - (iv) isolate the area where the confined space work is to be performed;
 - (v) ensure the provision of a safe entry to and exit from the confined space area;
 - (vi) the testing for the presence of any flammable gas or flammable vapour in the confined space work area;
 - (vii) ensure the concentration of any flammable gas or flammable vapour, as determined by the testing required is less than 5% of its Lower Explosion Limit (LEL);
 - (viii) if specified by the confined space permit, a firewatcher shall be stationed in the area near the work, for the safe conduct of the confined space work and shall ensure that no condition arises that will lead to a hazardous situation in the confined space work area;

- (ix) the confined space work area shall be secured overnight and at the expiry of a confined space work permit, to ensure unauthorized entry;
- (x) at the completion of a job, the equipment shall be returned to its normally secure mode and the fire fighting equipment that has been brought to the Confined space work area shall be returned to its normal storage; and
- (xi) at the completion of a job the “confined space work permit” shall be signed off.

4. References

- *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation*
- *AD EHSMS RF – Element 02 – Risk Management*
- *AD EHSMS RF – Element 09 – Compliance and Management Review*
- *AD EHS RI – CoP 4.0 – First Aid and Medical Treatment*
- *AD EHS RI – CoP 6.0 – Emergency Management Requirements*
- *AD EHS RI – CoP- 17.0 – Safety Signs and Signals*
- *AD EHS RI – CoP 21.0 – Permit to Work Systems.*
- *AD EHS RI – CoP 24.0 – Lock out / Tag out*
- *AD EHS RI – CoP 28.0 – Hot Work Operations*
- *AD EHS RI – CoP 30.0 – Lone Working / Working in Remote Locations*
- *AD EHS RI – CoP 36.0 – Plant and Equipment*
- *AD EHS RI – CoP 52.0 – Local Exhaust Ventilation*
- *AD EHS TG – Safe Work in Confined Spaces*
- *L101 – Safe work in confined spaces – HSE Books – ISBN 97871766233 3*

