



Abu Dhabi EHSMS Regulatory Framework (AD EHSMS RF)

EHS Regulatory Instrument

Code of Practice

**EHS RI - CoP 12.0 – Prevention and Control
of Legionnaires Disease**

Version 2.0

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ACKNOWLEDGEMENTS

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 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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Abu Dhabi Education Council
التعليم أولاً Education First



مركز إدارة النفايات - أبوظبي
The Center of Waste Management - Abu Dhabi



هيئة أبوظبي للسياحة
ABU DHABI TOURISM AUTHORITY

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Preface

This Abu Dhabi EHS Regulatory Instrument was developed by the Health Authority - Abu Dhabi 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 City Municipality;
 - Al Ain City Municipality; and
 - 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 duty holders within the Emirate of Abu Dhabi. This CoP is designed to incorporate requirements set by UAE and Abu Dhabi regulatory authorities. If requirements of this document conflict with requirements set by another regulatory authority, employers are required to follow the more stringent requirement.
- (b) The requirements set out within this CoP are intended to specify the general requirements for prevention and control of legionnaire's disease. Specific technical requirements aligned to this CoP are referenced within.
- (c) The duty holder / employer shall ensure that all the relevant legal requirements for the operation/premise have been identified and adhered to in line with the requirements set out within this CoP.
- (d) The following CoP applies to all duty holders and places of business within the Emirate of Abu Dhabi that have equipment that uses, stores, or disseminates warm water. This includes, but is not limited to, swimming pools, hot tubs, heated spas, cooling towers, hot water tanks, large air conditioning systems, water treatment facilities, metalworking systems that use water, equipment for manufacture of plastic parts using injection molding, emergency water systems (to include safety showers, eye wash stations, and fire sprinkler systems), artificial fountains/waterfalls, water features, and other similar equipment that use and/or stores large amounts of water.
- (e) Single family, residential buildings are not subject to the requirements of this CoP. Multi-tenanted residential buildings are considered commercial establishments and the building management / facility management company shall be considered the duty holder and follow the requirements set forth in this CoP as if they were the building owner.

2. Training and Competency

- (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.*
- (a) Employees required to perform maintenance on equipment that uses or stores water, or employees that perform work at or near such equipment shall receive annual training from duty holders on the following content:
 - (i) explanation of Legionnaires' Disease and its history;
 - (ii) signs and symptoms of Legionnaires' Disease;
 - (iii) sources of exposure and transmission of Legionnaires' Disease;
 - (iv) risk factors associated with Legionnaires' Disease;
 - (v) precautions while working with potential sources; and
 - (vi) strategies to prevent the growth of Legionnaires' Disease Bacteria.

3. Requirements

3.1 Roles and Responsibilities

3.1.1 Duty Holders (Facility/Building Owners and/or Management Entities)

- (a) Duty holders shall perform an annual health risk assessment to determine if the building has any equipment or facilities that uses or stores water that is contaminated with, or could become contaminated with, the Legionnaires' Disease Bacteria, in accordance with *AD EHSMS RF – Element 02 – Risk Management*.
- (b) If the health risk assessment identifies any locations that could be contaminated with Legionnaires' Disease Bacteria, the facility/building owner shall implement a water treatment and maintenance program to reduce the risk of bacteria growth. Examples of acceptable treatment and maintenance programs can be found in the American Society of Heating, Refrigerating and Air-Conditioning (ASHRAE) Guideline 12-2000, Minimizing the Risk of Legionellosis Associated with Building Water Systems.
- (c) In the event that an employee / building resident / other person is found to have a suspected or confirmed case of Legionnaires' Disease or Pontiac Fever, the duty holder shall have samples taken of any potential exposure site and analyzed Legionnaires' Disease Bacteria by a laboratory certified by the Emirates Authority for Standardization and Metrology (ESMA), to test for Legionnaires' Disease.

3.1.2 Employers

- (a) Employers shall perform a health risk assessment of the worksite to identify locations where Legionnaires' Disease Bacteria could be present. For all identified locations, the employer shall develop a maintenance schedule and implement control measures to prevent the growth of Legionnaires' Disease Bacteria, in accordance with *AD EHSMS RF – Element 02 – Risk Management*.
- (b) When Legionnaires' Disease Bacteria is found in a work place, or an employee is confirmed to have Legionnaires' Disease (otherwise known as Pontiac Fever), the employer shall report the case immediately to the Health Authority of Abu Dhabi's office of Occupational and Environmental Health.

3.1.3 Employee Roles and Responsibilities

- (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 report any plant and equipment issues that could contribute to the growth of Legionnaires' Disease Bacteria.
- (c) Employees shall report all suspected cases of Legionnaires' Disease or Pontiac Fever to their employer.

3.2 Prevention of Legionnaires' Disease Bacteria Growth

- (a) Maintenance Program: duty holders and employers shall develop maintenance programs to prevent the growth of Legionnaires' Disease Bacteria for equipment and facilities that use and store water. Examples of locations/processes that require a maintenance program include, but are not limited to:
- (i) Potable Water Systems:
 - incoming water main;
 - water softener;
 - holding tanks / cisterns; and
 - water heater tanks (at the inflows and outflows).
 - (ii) Potable Water Outlets:
 - faucets or taps; and
 - showers.
 - (iii) Cooling Tower, Evaporative Condenser:
 - makeup water;
 - basin;
 - sump; and
 - heat sources and chillers.
 - (iv) Humidifiers/Nebulizers:
 - bubblers for oxygen; and
 - water used for respiratory therapy equipment.
 - (v) Other Sources:
 - decorative fountains, waterfalls, and water features;
 - irrigation equipment;
 - fire sprinkler system (after use);
 - emergency eyewash and showers;
 - swimming pools; and
 - whirlpools and spas.
- (b) Disinfection and Control:
- (i) employers / duty holders shall regularly clean and disinfect equipment and facilities that produce water droplets, aerosols, mists, and steam;
 - (ii) employees / duty holders shall establish a program to regularly flush systems that are not in daily use (eg. emergency eyewash, water storage tanks, etc.) to prevent the stagnation of water and growth of Legionnaires' Disease Bacteria; and

- (iii) employers / duty holders are encouraged to follow *ASHRAE Guideline 12-2000, "Minimizing the Risk of Legionellosis Associated with Building Water Systems,"* when developing programs to prevent the growth of Legionnaires' Disease Bacteria.
- (c) Monitoring and Inspection: facility owners and employers shall establish a monitoring and inspection program based on their risk assessment to evaluate the effectiveness of maintenance and disinfection.

3.3 Sampling for Legionnaires' Disease Bacteria

- (a) Sampling for Legionnaires' disease Bacteria shall be performed by a competent person with previous training and/or experience in sampling for Legionnaires' Disease Bacteria.
- (b) The sampling shall be performed in compliance with standards approved by ESMA for sampling for Legionella bacteria in water systems (eg. *BS 7592:2008 Sampling for Legionella Bacteria in Water Systems. Code of Practice - Nov 2008*).
- (c) Samples shall be sent to a laboratory certified by the Emirates Authority for Standardization and Metrology (ESMA), to test for Legionnaires' Disease.

3.4 Record Keeping

- (a) At a minimum, the following information shall be documented for Legionnaires' Disease Bacteria prevention programs:
 - (i) procedure(s) on how to prevent Legionnaires' Disease Bacteria;
 - (ii) maintenance and disinfection schedule;
 - (iii) employee training records; and
 - (iv) records related to confirmed cases of Legionnaires' Disease or positive sampling results.

4. References

- *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation*
- *AD EHSMS RF – Element 02 – Risk Management*
- *ASHRAE Guideline 12-2000, "Minimizing the Risk of Legionellosis Associated with Building Water Systems."*
- *U.S. Department of Health and Human Services / Public Health Service, Centers for Disease Control and Prevention, "Procedures for the Recover of Legionella from the Environment," January 2005*
- *ISO 11731:1998 Detection and Enumeration of Legionella*
- *ISO 11731-2:2004 Water Quality—Detection and enumeration of Legionella—Part 2: Direct membrane filtration method for waters with low bacterial counts*

- *BS 7592:2008 Sampling for Legionella bacteria in water system. Code of practice - Nov 2008.)*

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