



Lusail Real Estate Development Company

Health, Safety, Security, Environment, Logistics & Quality Department

Lusail Construction Safety Management Procedure – Medical Qualification & Surveillance

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COMPANY PROPRIETARY INFORMATION

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1. Description

This element of the LCSMP details the requirements for medical surveillance and medical arrangements for the Lusail Construction project. This element applies to all Lusail personnel, Contractors, Developers, Consultants and subcontractors working on the Lusail projects.

2. Definitions

Term	Description
Action Level	Indicates the level of a harmful or toxic substance/activity that requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring.
Biological Monitoring	Measurement of the absorption of a chemical in the worker.
Bloodborne Pathogens	Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).
Fit Test	Use of a challenge agent or medium to evaluate the fit of a particular respirator on an employee.
Chemical Substance	Organic or inorganic substances of a particular molecular identity listed in the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS), latest edition.
Health Exposure Records	Documents that log the sampling levels and monitoring levels of possible health hazards.
Medical Records	Documents associated with personal physical conditions resulting from exposure to toxic substances.
Medical Release to Work	A document, signed by a registered physician, stating that the employee in reference is capable of performing assigned duties with or without restrictions and with or without reasonable accommodation.
Workplace Exposure Limits (WELs)	Regulatory limits on the amount or concentration of a substance to which a person may be safely exposed without adverse health effects.
Reasonable Accommodation	The practice of accommodating (within reason) capable employees to perform their work assignments.
Toxic Substance	A substance that demonstrates the potential to induce cancer, produce short- and long-term disease or bodily injury, affect health adversely, produce acute discomfort, or endanger life of humans or animal resulting from exposure via the respiratory tract, skin, eye, mouth, or other routes in quantities that are reasonable for experimental animals or that have been reported to have produced toxic effects in humans.

3. Responsibilities

The Contractor is fully responsible for the pre-planning, development of Method Statements, Job Hazard Analysis overall safe work planning and implementation. The Contractor's Project Management is responsible for the assurance that all work is planned and conducted according to the pre-planning document, Contractor and Lusail Health Safety & Environment (HSE) procedures and the Qatar Construction Specifications 2010. Should a conflict occur between procedures/standards or requirements the more stringent will apply.

4. Employee Qualification

The contractor must ensure that all employees are physically, medically, and emotionally capable, with reasonable accommodation, of performing the essential functions of their work assignments. Factors to be considered in assigning work include strength, endurance, agility, coordination, and visual and hearing acuity.

Employees who have temporary physical limitations that restrict abilities or affect job performance must inform a supervisor or the HSE Representative before beginning a work shift:

- If the employee's limitations cannot be reasonably accommodated, that employee is dismissed from the day's work.
- An employee is not guaranteed the same work assignment based on availability and physical limitations.
- Assigning work to those who are incapable (even with reasonable accommodation) when performing these work assignments can be hazardous. The employee's condition could be aggravated to a more serious state, or an employee could cause an accident that could injure other employees. Effects could also include legal and/or financial responsibility for the aggravation of a pre-existing medical condition or the incurrence of a new injury.

At no time while on duty may employees use or be under the influence of alcohol, narcotics, intoxicants, or similar mind-altering substances, in accordance with [LUS-HSE-WG3-446-038](#), Substance Abuse Policy.

Whenever possible, the Contractor must provide reasonable accommodations for individuals with disabilities. The Contractor must have a restricted-duty work policy that offers individuals work assignments consistent with any limitations imposed by a doctor with no loss of pay. Operators of any equipment or vehicle must have visual acuity of 20/20 and use corrective lenses at all times when operating equipment. Operators shall be able to read and understand the signs, signals, and operating instructions in use.

5. Medical Provider Selection

The HSE Representative identifies local providers for medical treatment, medical evaluations, and medical surveillance, which may include hospitals, Local Health Care Providers (LCHP), and/or Occupational health practitioner. The Lusail Occupational Health Advisor can assist in identifying local medical providers.

- ◆ Initially, the HSE Representative anticipates the type of medical emergencies anticipated requiring treatment and includes them in the project emergency response plan in accordance with LUS-HSE-SP2-447-001 Emergency Planning & Procedure:
 - Non occupational emergencies (e.g., heart attack, stroke)
 - Occupational injuries (e.g., lacerations, amputations, fractures, internal organ damage, and chemical exposures).
- ◆ Occupational Health Practitioners are selected based on experience, access to relevant equipment, contacts with the client, and other employers. Any doctor serving as a medical advisor is subject to the approval of the underwriters for the workers' compensation insurance. A meeting held with the doctor, preferably at the site, to provide an overview of the safety program, identify specific hazards and address concerns.

The Occupational Health Practitioner evaluates the qualifications of clinic personnel and the availability of in-house diagnostic equipment to ensure that the facility can accurately perform the medical protocol. Periodically, Lusail may require a project office to use a specific clinic for employee examinations.

6. Medical Evaluation

The HSE Representative identifies jobs that require medical surveillance/biological monitoring and determines the frequency of evaluation in accordance with the table below.

Type of Evaluation	When Required
Baseline medical evaluation	<ul style="list-style-type: none"> • At start of work for all employees working on the Lusail Project • When included in a Medical Surveillance Plan
Subsequent medical evaluations	<ul style="list-style-type: none"> • When a doctor or occupational health nurse recommends follow-up, according to medical surveillance protocols; e.g., periodic evaluations at specified intervals • When a supervisor informs you that an employee needs re-evaluation • Presence of medical signs or symptoms • Changes in worksite conditions, such as physical work effort, personal protective clothing, or temperature that could substantially increase physiological stress. • As required by the medical surveillance plan
Audiometric exam	<ul style="list-style-type: none"> • As required by LUS-HSE-WG3-446-007, Hearing Conservation
Spirometry	<ul style="list-style-type: none"> • As required by LUS-HSE-WG3-446-008, Respiratory Protection Program.

Medical Evaluation must include employees who work in the following areas:

- ◆ Hazardous materials team members
- ◆ Employees working in compressed air environments
- ◆ Employees enrolled in medical surveillance programs
- ◆ Employees with potential exposure to heat stress, in accordance with [LUS-HSE-WG3-446-036](#), Heat Stress Management Plan
- ◆ Operators of cranes, cableways, and other hoisting equipment, in accordance with [LUS-HSE-WG3-446-026](#), Cranes, Hoists, and Lifts
- ◆ Blasting, in accordance with [LUS-HSE-WG3-446-031](#), Blasting
- ◆ Members of Emergency Response or Rescue teams
- ◆ Professional drivers (bus drivers, heavy duty drivers)
- ◆ Professional Divers
- ◆ Catering and food handlers

To schedule an appointment, the HSE Representative contacts the Occupational Health Practitioner. The confirmation of the appointment will be sent to Human Resources.

The Occupational Health Advisor advice on the medical surveillance protocols specific to Lusail's operations for the type of exam requested. Exams may include:

- ◆ Physical exam and historic health exposure questionnaire
- ◆ Asbestos workers – current
- ◆ Asbestos workers – previous
- ◆ Hazmat workers
- ◆ Night Shift
- ◆ Substance-specific exams for workers handling regulated substances, see [LUS-HSE-WG3-446-035](#), Toxic and Hazardous Substances

- ◆ Audiometric (hearing) tests
- ◆ Skin evaluation
- ◆ Vision exam
- ◆ Spirometry test (lung function)

The HSE Representative provides the following information to the Occupational Health Practitioner:

- ◆ Type of hazard and duration of exposure on Lusail construction site
- ◆ Name of employee to receive exam (for the baseline exam, the employee's social security number is also required)
- ◆ Exam type required(e.g., audiometric, physical, psychological, baseline, after injury or exposure)
- ◆ Preferred date/time for exam
- ◆ Name of contract clinic who are able to perform the required biological monitoring and medical surveillance
- ◆ Name and phone number of person authorizing exam

HR obtains a written recommendation from the Occupational Health Practitioner by asking him to perform the examination that contains the following medical information and completed, Employee Health Assessment & Historic Health Exposure Questionnaire (Attachment [LUS-HSE-FM4-446-001](#))

- ◆ Medical certificate confirming employee is medically qualified to perform the work
- ◆ Any limitations of work for the employee
- ◆ What future medical evaluations, if any, are needed
- ◆ A statement that the employee has been provided a copy of the written recommendation

HR provides follow-up evaluation for employees when the Occupational Health Practitioner requires more information to make a final recommendation.

The Occupational Health Practitioner medical certificate does not reveal any specific findings or diagnoses unrelated to occupational exposures, illnesses, or accidents.

7. Respirator Medical Evaluation

Respirator medical evaluations are conducted prior to fit testing for employees who are required to use respirators or who voluntarily use respirators that are not filtering-face piece respirators.

Type of Evaluation	When Required
Initial medical evaluations (spirometry or peak flow)	Before respirators are fit-tested or used
Subsequent medical evaluations	<p>When doctor recommends follow-up; e.g., periodic evaluations at specified intervals</p> <p>When a respirator program administrator or supervisor informs you that an employee needs re-evaluation</p> <p>When medical signs or symptoms are present (e.g., breathing difficulties):</p> <ul style="list-style-type: none"> ● During fit-testing or program evaluation ● As reported by the employee <p>When worksite conditions change (e.g., physical work effort, personal protective clothing, or temperature that could substantially increase physiological stress)</p>

The Occupational Health Practitioner administers the Respirator Medical Evaluation Questionnaire (Attachment [LUS-HSE-FM4-446-002](#)) to employees who will be fit tested, or provides the employee with a medical exam that obtains the same information.

- ◆ The evaluation must be understandable to each employee.
- ◆ The examination or questionnaire is administered at no cost to employees. Employees must understand the content of the questionnaire.
- ◆ Employee confidentiality is maintained during the examination or administration of the questionnaire. Providing confidentiality is essential to secure successful medical evaluations.
- ◆ Provide the employee with an opportunity to discuss the questionnaire or exam results with the Occupational Health Practitioner during normal working hours.

The HSE Representative ensures that the Occupational Health Practitioner has the following information:

- ◆ Medical Determination of Respirator Limitations Form (Attachment [LUS-HSE-FM4-446-003](#))
- ◆ A copy of the project respiratory protection plan and all applicable regulations
- ◆ Information describing the respirators that employees may use, including weight and type
- ◆ Description of how the respirators will be used, including:
 - How often they will be used (e.g., daily, monthly)
 - The duration of respirator use (e.g., a minimum of 1 hour, up to 12 hours)
 - Employee's expected physical work effort
 - Additional personal protective clothing and equipment
 - Temperature and humidity extremes expected during use of respirators
- ◆ Include relevant references from [LUS-HSE-WG3-446-009](#), Exposure Identification & Controls, for specific medical requirements for employees exposed to benzene, asbestos, ethylene oxide, and other listed substances, to help the doctor determine whether the employee is medically fit for respirator use.

HR obtains a written recommendation from the Occupational Health Practitioner by asking him to complete the Employee Health Assessment & Historic Health Exposure Questionnaire (Attachment [LUS-HSE-FM4-446-001](#)) with only the following medical information.

- ◆ Whether the employee is medically able to use the respirator
- ◆ Any limitations of respirator use for the employee
- ◆ What future medical evaluations, if any, are needed
- ◆ A statement that the employee has been given a copy of the written recommendation

HR provides a follow up evaluation for employees when the Occupational Health Practitioner requires more information to make a final recommendation.

The Occupational Health Practitioner medical report does not reveal any specific findings or diagnoses unrelated to occupational exposures, illnesses, or accidents.

8. Medical Release Procedure

Lusail and Contractor employees are required to submit a Medical Release To Work Letter signed by a recognized medical authority upon return to the site and/or before reassignment when:

- ◆ Leaving the project site for medical or physical reasons (occupational or non-occupational)
- ◆ Being absent from the project because of injury, illness, or change in physical condition, that could interfere with safe work performance

To ensure prompt and adequate medical treatment in an emergency and to secure proper job placement, an employee experiencing any injury, illness, or change in medical condition must report the circumstance to the Contractors project HSE manager.

9. Medical Surveillance Plan

The HSE Representative and Occupational Health Practitioner identifies jobs that require medical surveillance, establishes appropriate surveillance procedures and frequencies, and develops procedures to schedule appointments, review results, and communicate with employees.

9.1. Enrollment Criteria

- ◆ The HSE Representative determines initial enrollment based on discussions with the employee's supervisor and Lusail Occupational Health Advisor. When an employee is hired to perform environmental field operations, the employee's supervisor contacts the HSE Representative to discuss the employee's assignment and exposure potential. Topics to be discussed include:
 - Description of the employee's assignment and responsibilities
 - Toxic or physical agents the employee is likely to encounter and anticipated exposure levels (if known), including noise and vibration.
 - The anticipated frequency at which the employee will use chemical protective clothing
 - The frequency at which the employee will use air purifying or atmosphere supplying respirators
- ◆ In accordance with [LUS-HSE-WG3-446-009](#), Exposure Identification & Controls, employees are enrolled in the medical surveillance program if their work involves regular, potential exposure to toxic substances or physical agents above established WELs or action levels, including:
 - Cleanup operations at a hazardous waste sites
 - Field investigations at sites containing chemical warfare agents
 - Remedial operations at gasoline stations or bulk storage terminals
 - Work requiring respirator use
 - Asbestos or lead sampling and abatement operations
- ◆ Medical surveillance is conducted as required by applicable Qatar Laws and regulations, including substance-specific regulations for the following compounds:
 - 1,2-dibromo-3-chloropropane (DBCP)
 - 1,3 -Butadiene
 - 2-Acetylaminofluorene
 - 3,3 -Dichlorobenzidine
 - 4-Aminodiphenyl
 - 4-Dimethylaminoazobenzene
 - Acrylonitrile
 - Alpha-naphthylamine
 - Asbestos
 - Benzene
 - Benzidine
 - Beta-naphthylamine
 - Beta-propiolactone

-
- Bis-chloromethyl ether
 - Bloodborne pathogens
 - Cadmium
 - Coke oven emissions
 - Cotton dust
 - Ethleneimine
 - Ethylene oxide
 - Formaldehyde
 - Formalin
 - Inorganic arsenic
 - Lead
 - Methyl chloromethyl ether
 - Methylene chloride
 - Methylenedianiline (MDA)
 - N-Nitrosodimethylamine
 - Vinyl chloride
- ◆ Employees assigned to operations in which exposure to toxic substances or physical agents above WELs or action levels is unlikely are exempt from the medical surveillance program. Examples of exempted operations include:
- Project management oversight from support zone
 - Geotechnical and land surveys without ground disturbance
 - Property transfer audits where no environmental sampling is performed
 - Ecological surveys
- ◆ Medical surveillance is conducted as soon as possible upon notification that an employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or when an employee has been injured or exposed to airborne contaminants, bloodborne pathogens, or heat stress above the WELs or published exposure levels in an emergency situation, in accordance with [LUS-HSE-WG3-446-009](#), Exposure Identification & Controls, [LUS-HSE-WG3-446-039](#), Bloodborne Pathogens, and [LUS-HSE-WG3-446-036](#), Heat stress Management Plan.
- ◆ The HSE Representative reviews employee participation in the medical surveillance program annually. If an employee's assignment has changed so that he no longer performs operations involving regular, potential exposure to toxic chemicals or physical agents above WELs or action levels, the employee is removed from the medical surveillance program.

9.2. Surveillance Protocols

- ◆ The environmental field protocol applies to employees assigned to hazardous waste, industrial field, or operations involving a potential for exposure to hazardous substances above WELs or action levels. The environmental field protocol includes:
- Medical history and physical: Initial, annual, and exit
 - Electrocardiogram (ECG): Initial, plus annual and exit if patient is 40 years or older
 - Cardio risk profile: Initial, plus annual and exit if patient is 40 years or older
 - Spirometry: Initial, annual, and exit
 - Audiometry: Initial, annual, and exit, as required in [LUS-HSE-WG3-446-007](#), Hearing Conservation Program

- Chest X-ray: Initial, annual (if more than 5 years since last chest radiography), and exit if over 1 year since last chest radiography
- Blood and urine: Initial and annual, as required
- Tetanus vaccine: If greater than 10 years since last inoculation, initial and annual
- Hepatitis B vaccine: Initial and booster dose.
- ◆ The asbestos medical surveillance protocol is required for employees assigned to operations in which the only potential exposure is to asbestos at or above WEL, in accordance with [LUS-HSE-WG3-446-035](#), Toxic & Hazardous Substances. Thus, employees assigned to asbestos abatement or sampling operations are enrolled in this medical protocol. The asbestos protocol includes:
 - Medical history and physical: Initial, annual, and exit
 - ECG: Initial, plus annual and exit if patient is 40 years or older
 - Spirometry: Initial, annual, and exit
 - Chest X-ray: Initial, annual as required, and exit (if more than 1 year since last chest radiography)
- ◆ Employees who could be exposed to other chemical or physical agents above occupational exposure limits are enrolled in the more comprehensive environmental field medical surveillance protocol.
- ◆ Medical protocols are not interchangeable. Enrolling a person performing hazardous waste operations into the asbestos protocol is prohibited. Blood and urine tests performed as a part of the environmental field protocol are not performed for the asbestos examination. Thus, any injury to the liver, kidney, or blood-forming systems that could result as a consequence of chemical exposure would not be detected by the asbestos physical.

Upon inclusion in a medical surveillance program, the employee and Occupational Health Practitioner completes an Employee Health Assessment & Historic Health Exposure Questionnaire (Attachment [LUS-HSE-FM4-446-001](#)) to document previous exposure to hazardous chemicals and examination results.

A physical examination is performed as a part of the checkout procedure for terminating employees. Employees who do not wish to receive an exit physical are instructed to sign, date, and return a letter to the HSE Representative. The signed letter and employee medical reports are forwarded to the medical centre for archiving.

10. Biological Monitoring

Biological monitoring is conducted when there is an indication of employee exposure to toxins above the WEL or action levels or at the discretion of the HSE Representative (after consultation with the physician).

Biological monitoring consists of an assessment of overall exposure to chemicals that are present in the workplace through measurement of the appropriate determinants in biological specimens collected from the employee after an exposure incident, in accordance with EH40 Occupational Exposure Limits.

Biological monitoring can only be conducted for substances for which the toxicology and pharmacology are well understood. To date, only 50 chemicals have methods developed for biological monitoring.

Because the concentration of some determinates can change rapidly, the specimen collection time must be followed. For most organic solvents, specimens must be collected as soon as possible after the overexposure event (end of shift on day of exposure).

As a minimum, employees who are assigned to work at sites where exposures to high concentration of metals are anticipated (lead, chromium VI, etc.) receive pre- and post-project testing.

The employee must be notified of the results of biological monitoring within 5 working days of receipt. Before work continues at a site where an overexposure has occurred, the HSE Representative must adjust work practices and personal protective equipment (PPE) requirements to ensure that adequate protective measures are in place.

Biological samples shall only be collected by licensed and registered medical or lab professionals.

11. Training

All employees shall be trained and be informed on the requirements for medical surveillance. Training may be incorporated into hazard-specific training, such as hazard communication, hearing conservation, heat stress, bloodborne pathogens, or respiratory protection training. Subcontractors must train their own employees.

12. Documentation

The records custodian documents all instruction and training. Records verifying medical qualification, exposure monitoring, audiometric testing, and personal medical records are maintained by the Contractor during the project and archived in employee individual files for 30 years following employee termination. All relevant certificates, exam results or employee records shall be made available for auditing by a Lusail Representative.

13. References

Qatar Construction Specifications 2010

EH40 Occupational Exposure Limits

EM 385-1-1, Safety – Safety and Health Requirements, Section 01.C, Physical Qualifications of Employees

NIOSH, Registry of Toxic Effects of Chemical Substances (RTECS), latest edition

14. Attachments

LUS-HSE-FM4-446-001	Employee Health Assessment & Historic Health Exposure Questionnaire
LUS-HSE-FM4-446-002	Respirator Medical Evaluation Questionnaire
LUS-HSE-FM4-446-003	Medical Determination of Respirator Limitations