

# National Manual for Assets and Facilities Management Volume 10, Chapter 4

## Medical Services and Medical Surveillance Procedure

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## Medical Services and Medical Surveillance Procedure

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# Medical Services and Medical Surveillance Procedure

## 1.0 PURPOSE

This Procedure establishes Medical Surveillance Policy for employees and contractors/subcontractors working on Facility's hazardous waste area's and/or radiation contamination areas.

The Medical Surveillance Policy establishes a minimum requirements of assessing the employee's health prior to handling hazardous materials, determining the employee's suitability for work assignments requiring the use of personal protection clothing and equipment, and monitoring for evidence of changes in the employee's medical indicators that could be work-related.

## 2.0 SCOPE

The Medical Surveillance Policy establishes a method of assessing the employee's health prior to handling hazardous materials, determining the employee's suitability for work assignments requiring the use of personal protection clothing and equipment, and monitoring for evidence of changes in the employee's medical indicators that could be work-related. This also stipulates the requirements and the responsibilities of the Facility Management or Contractor Responsible.

This procedure applies to Facility's throughout the Kingdom of Saudi Arabia and environmental control activities on government owned facilities and O&M where these activities occur.

## 3.0 DEFINITIONS

Definitions	Description
ANSI	American National Standards Institute
HSE	Health, Safety and Environment
OSHA	Occupational Safety and Health Standards

## 4.0 REFERENCES

- ANSI 288.6–1989, Respirator Use–Physical Qualifications for Personnel as a guide
- OSHA 29 CFR 1910.95 Occupational Noise Exposure.
- EPM-KSH-PL-000001 Medical Services and Medical Management Plan
- EPM-KSH-PR-000003 Occupational Health Records Maintenance System Procedure

## 5.0 RESPONSIBILITIES

### 5.1 Facility Manager

The Facility Manager or Contractor Responsible is responsible for ensuring the resources and arrangements are available for the implementation and management of this procedure.

### 5.2 HSE Representative

The HSE Representative is responsible for verifying that people are current with respect to medical qualification requirements before they are permitted to enter controlled areas.

The HSE Representative will initiate a request for supplemental medical surveillance if any exposures or overexposures occur where medical surveillance may be indicated, including:

- After acute exposure to any toxic or hazardous material.
- At the discretion of the HSE Representative and the consulting occupational physician when an employee has been exposed to dangerous levels of toxic or hazardous materials.
- After an employee is injured, becomes ill, or develops signs or symptoms due to possible exposure to toxic or hazardous materials.



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At hazardous waste areas, the HSE Representative maintains the medical records system, prepares reports of medical qualifications status, and establishes policies.

The HSE Representative manages the program medical surveillance provider contracts. The HSE Representative prepares and transmits information concerning the work environment and chemical and physical exposures, both actual and potential, to the medical officer.

### 5.3 Supervisor

- Medical surveillance requirements for subordinate employees remain current.
- Subordinate employees are aware of individual requirements and are responsible for promptly reporting medical conditions to the Facility first aid station.

### 5.4 Employees

- Correctly completing any Medical Surveillance Questionnaire or other forms.
- Reporting any preexisting health conditions or new health conditions to the first aid station/HSE.
- Reporting any unplanned exposure to their supervisor or the HSE Representative.
- Reporting any prescription or drug use to the first aid station or HSE Representative.

### 5.5 Contractors

Each Contractor associated with work in Hazardous areas of a Facility will implement a medical surveillance program consistent with these requirements. Each contractor will be open to audit as to compliance with this procedure.

### 5.6 Qualified Personnel

- Review all medical data and will prepare a report of an employee's medical qualifications and, where applicable, the employee's ability to use respiratory protection.
- Note any restrictions or conditions that may increase the employee's risk of adverse health effects and limitations on work.
- Determine if the Facility's employees may work in a hazardous area.

## 6.0 REQUIREMENTS

### 6.1 Program Elements and Objectives

The objectives of the program are to baseline, monitor and protect the health of individuals working in hazardous environments in facilities. The program consists of the following elements:

- Past medical history, including information concerning prior occupational illness, prior exposures, and personal and family medical history.
- A medical profile which includes physical examination, blood and urine tests, and other tests to establish a baseline, and identify any significant medical conditions.
- Ongoing surveillance to monitor indicators that may be related to work in hazardous environments.

### 6.2 Requirement for Health Assessment

Each Facility will establish a medical surveillance program for its employees where applicable by regulation.

### 6.3 Frequency and Content of Health Assessments

All Facilities will provide for a comprehensive health assessment at a frequency of not less than once every 12 months. Contractor will use a qualified medical provider to implement its program. The content of medical surveillance programs will be established by the Medical Services Manager and will be based on the nature and extent of hazards to which the Facility's employees may be exposed.



### 6.4 Health Assessment Criteria

One intended result from each health assessment is the determination of whether, in the physician's medical judgment, the examined individual is in good health with no medical condition that might put the individual at increased risk from work at a hazardous waste Facility, working with hazardous material or from respirator use. This is documented on the physician's statement form. To this intent, each health assessment must include the elements described below.

The medical examination should be supplemented by procedures and special tests only as warranted by the health status of the individual and likely or documented exposures to specific hazards or stresses. For each health assessment, after the baseline health assessment, the examining physician shall pay attention to changes in the individual's health status since the baseline assessment, to evaluate the need for additional surveillance or treatment for medical conditions potentially arising from Facility work.

#### 6.4.1 Questionnaire Review & Screening Physical Examination

The examining physician shall review the completed medical questionnaire; discuss it, as necessary, with the employee to confirm that relevant information is identified; and conduct a screening physical examination.

#### 6.4.2 Basic Physical Examination

The following information shall be determined:

- Height
- Weight
- Temperature
- Pulse
- Respiration
- Blood Pressure
- Habits (smoking, drinking habits)
- Asthmatic/Allergy Conditions
- Pregnancy (females)
- Prostate Condition (males).

An overall evaluation shall be made of any abnormal conditions for:

- Chest (heart and lungs)
- Peripheral Vascular System
- Abdomen and Rectum (including hernia exam)
- Spine and other components of the musculoskeletal system
- Genitourinary System
- Skin
- Nervous System.

#### 6.4.3 Basic Blood and Urine Laboratory Tests

##### 6.4.3.1 Blood Tests

Each assessment shall include a basic panel of blood counts and chemistries to evaluate blood forming, kidney, liver, endocrine, and metabolic functions. The following blood tests are the minimum desirable:

- White Blood Cell Count, Differential Cell Count, and Platelet Estimate.
- Hemoglobin and/or Hematocrit.
- Albumin, Globulin, and total Protein.
- Total Bilirubin.
- Serum Glutamic Oxalacetic Transaminase (SGOT).
- Serum Glutamic Pyruvic Transaminase (SGPT).
- Lactic Dehydrogenase (LDH).
- Inorganic Phosphate.



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- Alkaline Phosphatase.
- Calcium.
- Phosphorous.
- Uric Acid.
- Creatinine.
- Urea Nitrogen.
- Cholesterol.
- Glucose.
- Tuberculin Skin Test.

### 6.4.3.2 Urine Tests

Each assessment shall include the following urinalysis:

- Specific gravity.
- pH.
- Microscopic Examination.
- Protein.
- Acetone.
- Glucose.
- Albumin.

### 6.4.4 Pulmonary Function Test

The examining physician shall administer pulmonary function tests on a spirometer, measuring forced vital capacity (FEV) and forced expired volume (FEV<sub>1</sub>), comparing these values to the Spirometry Predictor Tables for Normal Males and Females. Suggested criteria for evaluating pulmonary function are as follows:

#### ACCEPTABLE

FEV<sub>1</sub> - 75%      and      FEV<sub>1</sub> 70%  
FVC

#### BORDERLINE

FEV<sub>1</sub> - 75%-60%      and/or      FEV<sub>1</sub> 70% - 55%  
FVC

#### REJECTED

FEV<sub>1</sub> - 60%      and/or      FEV<sub>1</sub> 55%  
FVC

### 6.4.5 Respirator Use Evaluation

The physician shall closely evaluate the skin, cardiac, and pulmonary system of respirator users, and carefully examine histories or symptoms of allergy and any personality or psychological factors which may affect an individual's ability to use a respirator effectively. Since specific health requirements for respirator users are not available, the physician must judge an employee's fitness for respirator use based on clinical findings and projected respirator demands. The physician shall use ANSI 288.6-1989, Respirator Use-Physical Qualifications for Personnel as a guide, or equivalent international standard.

### 6.4.6 Vision Screening

The physician shall administer screening tests for visual acuity, depth and color perception.

### 6.4.7 Audiometric Testing

The physician or technician shall administer pure tone audiometric tests (air condition) for each ear. Minimum test frequencies are 500, 1,000, 2,000, 3,000, 4,000 and 6,000 Hz. Testing shall be in accordance with OSHA (1910.95) requirements, or equivalent international standard.

### 6.4.8 Other Tests





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### 6.4.8.1 X-ray

Chest x-rays are not routinely performed as part of the health assessment. X-rays are obtained only when clinically indicated by other testing procedures, such as pulmonary function test. A baseline chest X-ray may be performed if it is recommended by the examining physician for the medical evaluation of the employee. However, no baseline chest x-ray is obtained if the employee has had one within the past three years; that record should be obtained from the former physician, radiologist, or hospital. X-rays should be standard 35 x 43 cm posterior-anterior (P-A) exposures. All films are read or reviewed by a board-certified radiologist or other competent medical specialist.

### 6.4.8.2 Electrocardiogram

An electrocardiogram of the standard 12 lead resting type is included in the baseline examination, and should be interpreted by an internist or cardiologist. Subsequent periodic electrocardiograms are obtained when recommended by the examining physician should consider exercise electrocardiography (stress test) for employees over 35 or for those displaying obvious risk factors for coronary artery disease (obesity, heavy smokers, etc.).

The frequency of exercise electrocardiograms is based upon the examining physician's recommendations. The examining physician should be aware that expected work operations include the use of chemical protective clothing and respirators that may increase heat or other physiological stress impacts upon the individual.

### 6.4.8.3 Special Tests

Employees may need special tests in addition to those outlined above. Criteria for such tests are established in conjunction with known or suspected exposure hazards (Table 1). The examining physician shall determine the need for special tests after reviewing the employee's medical questionnaire and consulting with the Facility's industrial hygiene personnel. In addition, the physician may recommend one or more of the following non-routine tests:

- VDRL or other Serologic Tests for Syphilis
- Serum Specimen for freezing and storage
- Female Cervical Cytology Test (Pap Test)
- Serum Triglycerides
- Serum Sodium, Potassium, and total Chlorides
- Gamma Glutamyl Transpeptidase (GGTP)
- Carcino-Embryonic Antigen
- Stress Electrocardiogram
- Serum Glutamic Pyruvic Transaminase (SGPT)

Substance	Recommended Special Tests
Inorganic arsenic	Sputum cytology, urinary arsenic
Benzene	Reticulocyte count
Cadmium	Urinary analysis
Mercury	Urinary mercury, blood mercury, liver and kidney function, signs of gingivitis and tremors
Inorganic lead	Blood lead, peripheral blood smear morphology
Asbestos	Chest x-ray

Table 1: Examples of special tests for specific substance hazards

### 6.4.8.4 Exercise Stress Test

A maximum exercise stress test may be recommended by the examining physician for personnel who use SCBA or negative pressure respirators under strenuous work effort. Individuals who have apparent



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ischemic disease or cannot perform well on a treadmill because of respiratory, musculoskeletal or other physical problems should not be assigned to positions where strenuous work effort is required.

### 6.5 Medical Surveillance Records and Tracking

The HSE Responsible will maintain the qualification status of all program personnel, including subcontractors. Only non-confidential information will be available to other Facility personnel in reports or databases. Each employee may have access to all their medical records. The HSE Responsible will publish a monthly status update of medical qualification of program employees.

### 6.6 Subcontractor Records

Each subcontractor employer will maintain an independent medical surveillance program for its employees in accordance with these procedures. The HSE representative and the Construction Manager/Functional Manager will be provided with certification reports and medical restrictions to validate each employee's status to participate in Facility operations.

### 6.7 Medical Surveillance Submittals

The following provide the minimum requirements for contractors/subcontractors, and sub-tier contractors:

#### 6.7.1 Contractors

Before working on any program Facility for the first time, subcontractor personnel will register with the Facility HSE representative to establish their medical fitness to work on the Facility.

Medical qualification expiration dates, work limitations, and respirator-qualified personnel will be entered in the program database, for use by the HSE representative.

#### 6.7.2 Sub-Tier Contractors

Before working on any program Facility for the first time, other subcontractor personnel will register with the HSE representative to establish their medical fitness to work on the Facility. The HSE Responsible will forward these records to the program HSE representative for inclusion in program records.

#### 6.7.3 Exceptions

Where controlled areas are established, exceptions will be considered for good cause shown, and will require approval of the HSE Responsible and Client for limited duties or one-time entry where no significant exposure risk is present.

When identified in advance, exceptions to the medical surveillance requirement will be included in the Facility-specific HSE plan.

### 6.8 Exit/Termination Medical Examination

All employees participating in the medical surveillance program will be offered an exit or termination medical examination within 30 days after the conclusion of their work regardless of their reason(s) for leaving the Facility. An Exit/Termination Examination may be preempted if:

- The period since the employee's last examination has not exceeded 60 days.
- The employee has not worked in the exclusion or contamination reduction zones (for radiation work).
- The Facility obtains the concurrence of the occupational physician or medical services manager (as applicable) and the Facility HSE representative.



### 6.9 Arranging Health Assessments

The HSE representative will schedule health assessments for all appropriate Facility personnel and ensure that the examining physicians have the following information:

- A description of the employee's duties as they relate to the employee's exposures.
- The employee's exposure levels or anticipated exposure levels.
- A description of any personal protective equipment used or to be used.
- Accessible information from previous medical examinations of the employee which is not readily available to the examining physician.
- Information about specialized hazards that have been or are likely to be encountered, the bioassay required, and any suggested special tests needed.
- Instructions not to reveal, in the written opinion given to the employer, specific findings or diagnoses unrelated to occupational exposure.
- A release form signed by the employee stating that the physician may release to the employee's work qualification and any related restrictions.

The HSE representative will furnish the following forms to each employee required to have a health assessment:

- Medical Questionnaire.
- Medical Examination Authorization.
- Request for Medical Clearance for Respirator Use.

### 6.10 Access to Records

All Facilities will establish procedures for maintenance and confidentiality of medical records. Management will arrange for records maintenance for at least 30 years following completion of employment. Access to medical records is normally limited to Health Services and Human Resources Personnel.

The HSE representative will give each employee a copy of the associated physician's written opinion within 2 weeks of receipt. If the employee has been deemed by the examining physician to be medically/physically unable to perform for hazardous waste area or hazardous material Facility work, the HSE representative will verify that the employee is aware of the physician's decision and will advise the employee to contact his/her personal physician.

For records in the custody of another employer, the employer will ensure that an employee or designated Responsible has access to any associated medical record in a reasonable time, place, and manner. An initial copy of the requested record will be provided, at no extra cost to the employee, within 15 days of the request. All requests must be made in writing and signed by the person making the request. Such requests for personnel will be forwarded to the HSE representative.

## 7.0 MEDICAL SURVEILLANCE CATEGORIES

### 7.1 Category I Personnel

Category I Personnel may participate in activities without restriction. Category I Personnel will have an annual physical exam. Personnel who do not complete renewal examination within 1 month of the anniversary date will be denied authorized access. With approval of the Medical Provider and the HSE Responsible, persons who enter controlled access areas on a limited basis may be required to take a medical examination only once every 2 years.

### 7.2 Category IR Personnel

Category IR Personnel are, for medical reasons, restricted in their participation in Facility activities. Category IR Personnel will request approval of the HSE representative prior to entering controlled access areas. The review and approval will be based on the nature and extent of Facility work, potential exposures, and stresses, and the limiting condition.



### 7.3 Category II Personnel

Category II Personnel are not qualified to participate in Facility activities within controlled areas. Category II Personnel do not participate in the medical surveillance program. Personnel whose regular duties do not involve Facility work or require the use of respirators are considered Category II.

### 7.4 Category III Personnel

Category III Personnel are authorized to enter controlled areas on a limited basis; with authorization being based on Facility-specific conditions at the time entry is desired. Category III personnel may enter controlled areas for no more than thirty days per calendar year. Category III Personnel include staff and technical staff who are not routinely involved in hazardous area work, and who are not required to wear respirators to enter controlled areas. Category III Personnel do not participate in the medical surveillance program.

## 8.0 INFORMATION PROVIDED TO EMPLOYEE AND HSE REPRESENTATIVE

The physician will submit to the HSE representative a report on personnel who have been required to participate in the medical surveillance program. The physician will furnish the employee with the reported information, which will include:

- Results of the medical examination and tests (to the employee only).
- The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at increased risk of material health impairment because of work in hazardous material operations or emergency response.
- The physician's recommended limitations upon the employee's assigned work.
- A confidential statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions requiring further examination or treatment.

The physician will provide the HSE representative only opinions (including any limitations) and findings that are related to occupational exposure (see **Attachment 1 - EOM-KSH-TP-0000X1 - Physician's Statement Form Template** and **Attachment 2 - EOM-KSH-TP-0000X2 - Report of Medical Examination Template**).

## 9.0 DOCUMENTATION

The Medical Provider for the Facility, for all personnel participating in the medical surveillance program, will maintain medical surveillance records. The medical record for everyone will include, at a minimum:

- The employee's name and national ID number.
- The physician's written opinions, recommended limitations, reports, and results of examinations and tests.
- The Physician's Statement Form, signed and dated by the examining or consulting physician, certifying the employee as medically fit to work at the hazardous waste area or hazardous material area and to wear respiratory and other personal protective equipment.
- Any employee medical complaints related to hazardous substance exposure.
- Information furnished to the physician by the HSE representative or the individual's employer.
- Copies of Return to Work Authorizations signed by a physician.
- Copies of employee industrial hygiene exposure monitoring results.
- Copies of employee occupational noise exposure monitoring results.
- Copies of employee heat stress monitoring data.
- Any written requests for access to medical records.

### 9.1 Subcontractor Personnel

Each subcontractor is responsible for retention of medical records of their employees assigned to any controlled area of the Facility.

The subcontractor is responsible for maintaining all employee medical and exposure records. Medical surveillance programs of subcontractors are subject to audit by contractor.



### 10.0 ATTACHMENTS

1. EOM-KSH-TP-000017 - Physician's Statement Form Template
2. EOM-KSH-TP-000018 - Report of Medical Examination Template



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### Attachment 1 - EOM-KSH-TP-000017 - Physician's Statement Form Template

EMPLOYEE NAME: \_\_\_\_\_

EXAM DATE: \_\_\_\_\_

COMPANY: \_\_\_\_\_

LOCATION: \_\_\_\_\_

POSITION: \_\_\_\_\_

The Examining Physician or Medical Consultant has reviewed the medical information regarding the above employee, and the following status has been established:

1. There is no medical abnormality that will interfere with the duties of the individual or place the employee at increased risk of health effects from hazardous material operations.

2. The employee may work at hazardous material operations with the following restrictions.

\_\_\_\_\_  
\_\_\_\_\_

3. Deferred pending further evaluation.

\_\_\_\_\_  
\_\_\_\_\_

4. Clearance for respirator use, if applicable.

Based on the information obtained from the medical examination, the above-named individual has been found medically:

- Qualified to use a respirator
- Not qualified to use a respirator
- Follow-up with personal physician recommended. See report of medical examination.

Physician's Signature: \_\_\_\_\_

Printed Name of Physician: \_\_\_\_\_

Physician's Address/Phone: \_\_\_\_\_

Physician's State License No: \_\_\_\_\_



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### Attachment 2 - EOM-KSH-TP-000018 - Report of Medical Examination Template

EMPLOYEE NAME: \_\_\_\_\_

EXAM DATE: \_\_\_\_\_

COMPANY: \_\_\_\_\_

EMPLOYEE NO: \_\_\_\_\_

POSITION: \_\_\_\_\_

The Examining Physician or Medical Consultant has reviewed the medical information regarding the above employee, and the following status has been established:

- A ( ) There is no medical abnormality which will interfere with the duties of the individual.
- B ( ) Medical condition exists which will not interfere with job responsibilities. The individual has been advised of this finding.
- C ( ) The examination disclosed a medical abnormality which may require special consideration by the company.

- D ( ) Deferred pending further evaluation.

- E ( ) Clearance for respirator use, if applicable.  
Based on the information obtained from the medical examination, the above-named individual has been found medically:

- ( ) qualified to use a respirator  
( ) not qualified to use a respirator

- F ( ) Follow-up with personal physician recommended.

Signature of Reviewing Physician

Address

License No.

Phone No.