

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE 06/01/2005	REPACES 01/22/2001
	APPROVAL ASJ	PAGE NUMBER 1 OF 8

CONTENT:

This instruction assigns responsibilities and establishes measures for the identification, regulation, utilization and disposal of asbestos-containing materials (ACM). The text includes:

1. General Policy
2. Determining the presence of ACM and Regulation
3. Employee Training
4. Work Practices
5. Housekeeping
6. Disposal
7. Personal Protective Equipment and Clothing
8. Caution Signs and Labels
9. Medical Surveillance

1.0 GENERAL POLICY:

It is Company policy to comply with Saudi Arabian Standards Organization (SASO), Industrial Safety & Health Regulations 319/1982, Part 4 and all requirements of Cabinet Decree 162 in a cost effective manner.

2.0 DETERMINING THE PRESENCE OF ACM AND REGULATION:

In Saudi Aramco asbestos has been principally used as an insulation material for vessels and piping, gasket material, and as siding and roofing. The main hazard from asbestos is inhalation of airborne fibers released during its handling, application, demolition or disposal. All asbestos products are considered hazardous during tasks where manipulation, modification or degeneration activities will cause release of hazardous fibers. Per the Government Cabinet decrees in effect, Saudi Aramco Organizations must establish asbestos abatement programs to locate and remove all existing asbestos containing and presumed asbestos containing materials (PACM) and replace them with asbestos-free substitutes. Until this task is accomplished, interim precautions must be implemented to minimize this hazard.

2.1 New Asbestos Containing Materials (ACMs) shall not be introduced into Saudi Aramco.

2.1.1 Materials Supply Materials Standardization shall ensure that all products introduced into the Saudi Aramco Materials Supply System (SAMS) are asbestos-free.

2.1.2 Saudi Aramco Proponent Organizations shall ensure that all direct purchase items are certified asbestos-free.

2.1.3 Saudi Aramco Proponent Organizations shall ensure that all equipment and material introduced by their contractors in all work sites, including temporary work sites, are asbestos-free.

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE	REPACES
	06/01/2005	01/22/2001
	APPROVAL ASJ	PAGE NUMBER 2 OF 8

2.1.4 Material Supply and proponent organizations shall include a standard clause in their purchase requisition for vendors to confirm that material quoted/supplied by them is asbestos-free.

2.1.5 Materials Supply and Environmental Protection Department (EPD) shall identify all ACMs listed in SAMS.

2.1.6 Consulting Services Department and Materials Standardization shall identify suitable asbestos-free replacements for all ACMs identified in paragraph 2.1.5.

2.1.7 ACMs shall be removed from SAMS as soon as suitable asbestos-free substitutes have been identified per paragraph 2.1.6 and stocked.

2.1.8 ACM shall not be used unless a suitable asbestos-free substitute absolutely cannot be identified by proponent, Consulting Services Department and Materials Standardization.

In this event, ACM products shall be identified by Consulting Services Department and Material Standardization as not having a suitable asbestos-free substitute. A written approval/waiver shall be obtained from Environmental Protection Department before the ACM is introduced in the SAMS as an asbestos containing item. Release of these ACM items requires Environmental Protection Department approval.

2.2 Saudi Aramco proponent organizations shall establish asbestos abatement programs to remove all ACMs, for which asbestos-free substitute have been identified under paragraph 2.1.6, from their premises in a timely manner.

2.2.1 Each Company facility shall have a detailed procedure regarding its asbestos abatement program in their respective Operating Instruction Manual (OIM). The procedure shall cover asbestos hazard control during any operational and maintenance activities where an asbestos hazard is involved (e.g. removal of pipe/equipment insulation, gasket). The asbestos abatement program and its scheduled implementation shall be coordinated through the Environmental Protection Department.

2.2.2 The asbestos abatement program and its implementation schedules shall set provisions for conducting asbestos hazard assessment (AHA) surveys with the assistance of EPD at all areas of plants and buildings to determine the presence of ACM.

2.2.3 Proponent organizations shall establish Hazard Identification Plans (HIP) covering the identification and quantification of ACM material in proponents' facilities, the safe removal of ACMs, and their disposal for each asbestos demolition job.

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE 06/01/2005	REPACES 01/22/2001
	APPROVAL ASJ	PAGE NUMBER 3 OF 8

2.2.4 Hazard Identification Plans shall be developed as per Company Safety Manual requirements. HIP shall cover worker training, work site evaluation, identification and removal procedures and disposal methods and shall be reviewed by EPD. Loss Prevention Department/EPD representatives shall inspect the job site regularly to ensure that the ACM removal job is in full compliance with the applicable regulations and company standards. EPD shall conduct air monitoring during the ACM removal to ensure that exposure levels are kept below the Company Permissible Exposure Limit (PEL) as required.

2.2.5 Company Permissible Exposure Limit for asbestos as established by this GI is 0.1 fiber per cubic centimeter of air for an eight-hour time weighted average.

3.0 EMPLOYEE TRAINING:

Operating Organizations shall ensure that all Saudi Aramco and contractor employees assigned to jobs in which asbestos is present have received adequate information, instruction and training. Training shall cover the nature of the hazard, its recognition, the proper use of respirators and protective clothing, controls and work practices.

4.0 WORK PRACTICES:

A Hazard Identification Plan detailing how the work shall be carried out to minimize exposures will be developed for each project where asbestos is present as per paragraph 2.2.3. This hazard identification plan shall be submitted to Environmental Protection Department and Loss Prevention Department for review at least 2 weeks prior to the start of the project. This hazard identification plan shall incorporate the work practices given below or their equivalent.

- 4.1 Wet methods shall be used in removing, or disposing of asbestos materials to prevent release of asbestos fibers. Asbestos-containing materials shall be wetted down prior to removal and continuously dampened while removal is in progress. If wet methods can not be applied, Environmental Protection Department must be consulted to develop special procedures for ACM removal.
- 4.2 Removal of asbestos must be done in a manner or using a method which minimizes scatter, dusting, or dispersion of asbestos fibers, and has been approved by EPD.
- 4.3 Insulation shall be removed in as many large pieces as possible to minimize the number of cuts.
- 4.4 Shearing, punching, sawing or drilling shall be performed manually and the work surface shall be wetted throughout the operation to minimize formation of asbestos dust. Cutting with power operated tools is prohibited unless equipped with High Efficiency Particulate Arrestor (HEPA) exhaust ventilation.

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE	REPACES
	06/01/2005	01/22/2001
	APPROVAL ASJ	PAGE NUMBER 4 OF 8

4.5 In performing work with asbestos containing brake or clutch frictions material, a specially designed HEPA asbestos vacuum cleaner shall be used during the dismantling, removal and replacement process to keep the work site clean and free of loose asbestos fibers. The use of compressed air for cleaning purposes is prohibited.

4.6 Eating, drinking and smoking is prohibited at the asbestos removal site. Workers must exit and shower per paragraph 7.0 below before eating, drinking, and smoking.

4.7 Implement requirements of this General Instruction and Joint Commission for International Accreditation in Saudi Aramco Medical Services Organization (SAMSO).

5.0 HOUSEKEEPING:

Work sites, adjacent areas, and machines or equipment used in connection with asbestos operations shall be maintained clean and free of asbestos fibers.

5.1 Equipment, furnishing, light fixtures and other material within the work area shall be removed from the work area. If these cannot be removed, they shall be covered and sealed with plastic to prevent contamination of this material with asbestos fibers.

5.2 Cleaning be done by wet vacuuming using specially designed HEPA filter equipped asbestos vacuum cleaners. After vacuuming, the work site shall be thoroughly wiped down using damp rags.

5.3 The work site shall be inspected by the Environmental Protection Department before re-occupation to ensure that the area has been properly decontaminated.

6.0 DISPOSAL:

Asbestos waste, scrap, debris and contaminated articles assigned for disposal shall be thoroughly wetted and collected in clear, impermeable heavy-gauge plastic bags which shall be sealed and properly labeled before being transported and isolated by burial in a special landfill as designated by the Environmental Protection Department.

6.1 The proponent shall contact Environmental Protection Department in writing 2 weeks prior to disposing of asbestos-containing waste giving details of source, quantity and location for their review and concurrence.

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REPACES

01/22/2001

APPROVAL

ASJ

PAGE NUMBER

5 OF 8

- 6.2 The proponent shall ensure that all waste leaving the work site is properly contained, sealed and labeled to prevent the release of asbestos fibers during transport and that Stationary Form SA 9563-Asbestos Disposal has been correctly filled and accompanies the load.
- 6.3 The landfill operator shall inspect received loads to verify that the waste has been properly contained to prevent the release of asbestos fibers during disposal prior to signing Form SA 9563.
- 6.4 Caution signs must be displayed at all entrances and at intervals of 100 meters (330 feet) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited.
- 6.5 The perimeter of the disposal site must be fenced to prevent access by the general public.
- 6.6 At the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos waste shall be covered with at least 15 centimeters (6 inches) of compacted non-asbestos-cover material.
- 6.7 Upon closure of the disposal site the asbestos-containing waste material shall be covered with at least 60 centimeters (2 feet) of compacted stable cover material such as marl. This final cover shall be maintained to prevent exposure of the waste.
- 6.8 The landfill operator shall maintain documentation specifying the location, quantity and depth of the buried asbestos wastes. Such documentation must be recorded along with a notice warning against excavation of the area. Copies of the documentation must be sent to Environmental Protection Department.

7.0 PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING:

7.1 Respiratory Protection

Respirators shall be provided and used whenever there is a potential for release of asbestos fibers as per Company Respiratory Protection Program requirements under GI 150.000.

7.1.1 Supplied air respirators shall be used whenever worker exposure evaluation by EPD indicates the need for this level of protection.

7.1.2 Half-face or full-face respirators equipped with HEPA filter cartridges which have been approved by EPD or LPD shall be used only where prior worker exposure evaluations have shown that these respirators would be adequate.

7.1.3 Disposable particulate respirators shall not be used for any asbestos related job.

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE 06/01/2005	REPLACES 01/22/2001
	APPROVAL ASJ	PAGE NUMBER 6 OF 8

7.1.4 The Project/Proponent Supervisor shall ensure that all workers potentially exposed to asbestos fibers are assigned their own respirator per sections 7.1.1 and 7.1.2 above and he shall ensure that these respirators fit properly.

7.1.5 The Project/Proponent Supervisor shall ensure that all workers who are required to wear a respirator were properly trained on the use and maintenance as required by the Construction Safety Manual. This shall include how to qualitatively test the fit of the respirator prior to entering the work site, the signs of respirator failure and how to clean, disinfect and store the respirator. He shall further ensure that respirators are being thoroughly checked, cleaned, disinfected and properly stored at the end of each work period.

7.1.6 All workers required to use respirators shall be evaluated for their fitness to use respirators by a qualified physician. For Saudi Aramco employees, this evaluation shall be conducted by the Occupational Medicine Section (Clinic H).

7.2 Protective Clothing

7.2.1 At the start of each shift, all employees working in jobs where asbestos is present, shall wear clean disposable coveralls, gloves and shoe covers and other protective equipment as prescribed in the Hazard Identification Plan (HIP).

7.2.2 Employees shall remove their street clothes and wear the protective clothing and equipment prescribed by the HIP as noted in paragraph 7.2.1. A clean change area shall be provided for this purpose.

7.2.3 At the end of each shift, workers shall proceed first to an adjacent, designated area where contaminated coveralls and equipment can be removed, collected and disposed of in accordance with paragraph-6 and then to showering/cleanup area. Selected equipment slated for reuse in the HIP shall be collected in a separate container and cleaned, decontaminated and disinfected as necessary prior to reuse.

7.2.4 Showering and cleanup facilities described in the HIP shall be inspected by Environmental Protection Department prior to project start-up to ensure that they meet the necessary Saudi Aramco Sanitary Code S-01.

8.0 CAUTION SIGNS AND LABELS:

8.1 Caution Signs

Caution signs in Arabic and English shall be posted to be readily visible at or near work areas Where airborne asbestos dust may be generated. The sign shall read:

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE	REPLACES
	06/01/2005	01/22/2001
	APPROVAL ASJ	PAGE NUMBER 7 OF 8

تحذير
 C A U T I O N
 اسبستوس
 ASBESTOS
 خطر على الصحة
 Health Hazard
 ينبغي لبس اجهزة
 Respirators and Protective
 التنفس والملابس الواقية
 coveralls must be worn
 عند دخول هذا المكان
 when entering this area

8.2 Labels

Arabic and English caution labels shall be applied to all containers holding raw materials, scrap, Waste, debris or other products containing loose asbestos fibers. Those labels shall be easily legible at reasonable distances. The labels shall read:

تحذير
 C A U T I O N
 خطر على الصحة
 HEALTH HAZARD
 يحتوى على اسبستوس
 CONTAINS ASBESTOS

9.0 MEDICAL EXAMINATIONS:

The proponent organizations shall submit to Preventive Medicine Services Division (PMSD), a list of employees involved in operations in which potential exposure to asbestos containing dusts exists for each task. They shall be subject to medical examination including chest x-ray and lung function study in accordance with the PMSD Pulmonary Protection Program.

There shall be a medical examination program for all employees who for a combined total of 30 or more days per year are engaged in working with asbestos containing material or are exposed at or above the Company permissible exposure limit.

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT SUBJECT: ASBESTOS HAZARD MANAGEMENT	G.I. NUMBER Approved 150.001	
	ISSUE DATE 06/01/2005	REPACES 01/22/2001
	APPROVAL ASJ	PAGE NUMBER 8 OF 8

RECOMMENDED:

Manager, Environmental Protection Dept

CONCURRED:

Vice President, Engineering Services
Senior Vice President, Engineering & Operations Services
Senior Vice President, Industrial Relations
Senior Vice President, Refining, Marketing & International
Senior Vice President, Exploration and Producing

APPROVED:

President and Chief Executive Officer