

Asbestos Management Program



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**CORPUS CHRISTI REFINERY
ASBESTOS MANAGEMENT PROGRAM
Document Number 22-002
Occupational Health & Safety Department
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Refinery Manager

Manager OH&S Department

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Asbestos Management Program

1.0 INTRODUCTION

Asbestos is a generic term that applies to a group of naturally occurring, hydrated mineral silicates that are separable into fibers. The most common form of asbestos is known as chrysotile or "white asbestos".

There are two major health hazards associated with long-term exposure to airborne asbestos fibers. The first is a disease of the lungs known as asbestosis and the second is one of several forms of cancer.

In 1986, the Occupational Health and Safety Administration issued regulations for the control of airborne asbestos fibers. These regulations are intended to protect a larger section of the work force from the health hazards associated with asbestos fiber overexposure. It is with the intention of complying with these regulations, and in the interest of protecting the health of individuals on Koch premises that this policy is addressed.

2.0 POLICY

It is the policy of KOCH Refining Company to control occupational exposures to airborne asbestos fibers to the lowest achievable level through the use of engineering control methods. If the lowest achievable level is in excess of government regulated standards or other accepted occupational exposure guidelines as measured by standardized methods, then Koch will provide appropriate personal protective equipment for every worker at risk of exposure to the airborne asbestos fibers.

3.0 SCOPE

This policy applies to all Koch employees and Koch-supervised personnel employed by or performing services at the Corpus Christi Refinery or any of its ancillary facilities or independent contractors employed or providing services at the Corpus Christi Refinery or any of its ancillary facilities.

4.0 PROCEDURES

4.1 Permissible Exposure Limits, Asbestos

Eight hour time - weighted average (TWA) - 0.2 fiber per cubic centimeter of air.

Excursion Limit - 1.0 fiber per cubic centimeter of air as averaged over a 30 minute time period.

Action Level - 0.1 fiber per cubic centimeter, 8 hr TWA

4.2 Medical Surveillance

Workers who are or will be exposed to airborne concentrations of asbestos fibers at or above the action level and/or excursion limit shall receive pre-placement, periodic and termination of employment physical examinations, including the following:

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- Physical examination of the
 - respiratory system
 - cardiovascular system
 - digestive tract
- Work history
- Medical history
- Standardized respiratory disease questionnaire
- Chest x-rays
- Pulmonary function tests

Medical records shall be maintained for 30 years beyond the last date of employment.

4.3 Employee Information and Training

Workers who are or will be exposed to airborne concentrations of asbestos fibers at or above the action level and/or excursion limit shall attend a training program initially and annually thereafter, including the following topics:

- Health effects of air borne asbestos
- Relationship between asbestos exposure, smoking and lung cancer
- Quantity, location, use, release and storage of asbestos
- Nature of operations that could result in asbestos exposure
- Pre-planning requirements for asbestos removal
- Engineering controls and work practices in asbestos removal
- Personal protective equipment
- Respirators
- Emergency and cleanup procedures
- Description and purpose of the medical surveillance program
- Content of OSHA standard including appendices (29CFR1910.1001)
- Related public health organizations
- Requirement for posting signs & labels
- Housekeeping requirements

Employee training records shall be maintained for one year beyond the last date of employment.

Training shall be provided to qualify a "Competent Person" to perform the following:

- Establishing negative-pressure enclosures
- Ensuring integrity of n-p enclosures
- Controlling entry/exit of n-p enclosures
- Supervising worker exposure monitoring
- Ensuring worker compliance in wearing personal protective equipment
- Methods of exposure control
- Proper function of engineering controls

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4.4 Abatement Pre-planning Activities

All maintenance/construction/revamp/demolition projects shall conform with the following strategies unless an emergency condition prevails. An emergency condition is defined as a situation where following these procedures would endanger life/health or cause unacceptable property damage.

- 4.4.1 Determine whether the project entails removal of insulation. If so, the department requesting the work shall (See 4.4.2)
- 4.4.2 Identify all affected equipment numbers, piping, etc. and submit a maintenance work order, AFE, etc. to initiate activity.
- 4.4.3 The Asbestos Abatement Foreman shall receive the order for work and shall secure representative samples of the insulation for microscopic analysis. If the analysis reveals the presence of asbestos the (see 4.4.4)
- 4.4.4 Environmental Engineering Department shall be notified at least 10 working days prior to beginning the project, if more than 80 meters (260 linear feet) or more than 15 square meters (160 square feet) of asbestos - containing insulation are to be removed.
- 4.4.5 After the 10 day waiting period, the Asbestos Abatement Foreman may forward the work order to the appropriate asbestos abatement team. Only properly trained abatement workers and competent persons (see 4.3) shall be assigned to asbestos insulation removal.

4.5 Removal of Asbestos - Containing Insulation

4.5.1 Engineering Control Methods

- Local exhaust ventilation with high efficiency particulate arresting filter dust collection
- Vacuum cleaners with HEPA filters
- Enclosures, including glove bags
- Wetting methods
- Removal encapsulates
- Waste disposal in leak-tight containers labelled according to 29 CFR 1926.58(k)(2)

4.5.2 Regulated Areas

Prior to beginning asbestos removal the related process unit control room or Transfer Department control room shall be informed of the anticipated work so that a regulated area can be identified. The area may take the form of a temporary enclosure, or an area demarcated in any manner that minimizes the number of workers exposed to asbestos fibers.

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- 4.5.2.1 Regulated areas shall be identified by the use of suitable barriers and DANGER signs specified in 29 CFR 1926.58(k)(1)(ii).
- 4.5.2.2 No smoking, gum chewing, tobacco chewing, snuff dipping, eating or drinking shall be permitted in a regulated area.
- 4.5.2.3 All personnel entering a regulated area shall wear appropriate personal protective equipment including but not limited to protective clothing and head coverings, eye protection, safety hats, and safe footwear.
- 4.5.2.4 All personnel entering a regulated area shall wear a respirator approved for use with asbestos dust unless air sampling data shows conclusively that the airborne asbestos concentration is less than 0.1 fibers per milliliter of air as determined by NIOSH 7400 sampling and analysis procedures.
- 4.5.2.5 Initial and periodic monitoring of breathing zone atmospheres and work area atmospheres shall be conducted unless analysis reveal the exposure is below the action level and/or excursion limit. Monitoring shall comply with 29 CFR 1926.58(f) and analysis shall follow the NIOSH 7400 analytical method, or equivalent. Abatement workers shall be notified of monitoring results as soon as possible following receipt.
- 4.5.2.6 When the asbestos removal is complete the regulated area shall be thoroughly cleaned using the methods described in 4.5.1 and under the supervision of the Competent Person.
- 4.5.3 Hygiene Facilities and Practices
 - 4.5.3.1 Koch provides a decontamination facility designed in accordance with 29 CFR 1926.58(j)(2) and situated in proximity to the regulated area.
 - 4.5.3.2 All persons exiting a regulated area shall remove and dispose of contaminated clothing in the dirty room, and shall shower and don clean garments in the clean room.

5.0 RESPONSIBILITIES

Other than the responsibilities specified herein, the Competent Person shall perform or supervise the following:

- Set up enclosures
- Ensure integrity of enclosures
- Control entry to and exit from the enclosure(s)
- Supervise all required employee exposure monitoring

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- Ensure that workers wear appropriate personal protective equipment in the correct manner
- Ensure that workers are properly trained
- Ensure that workers use the hygiene facilities properly and perform the specified decontamination procedures

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KOCH REFINING COMPANY

CORPUS CHRISTI REFINERY
ASBESTOS MANAGEMENT PROGRAM

Policy and Procedures

1 INTRODUCTION

Asbestos is a generic term that applies to a group of naturally occurring, hydrated mineral silicates that are separable into fibers. The most common form of asbestos is known as chrysotile which has the general molecular formula: $3 \text{ MgO} \cdot 2 \text{ SiO}_2 \cdot \text{H}_2\text{O}$.

There are two major health hazards associated with long-term exposure to airborne asbestos fibers. The first is a disease of the lungs known as Asbestosis and the second is one of several forms of cancer.

In 1986, the Occupational Safety and Health Administration issued new, more stringent regulations for the control of airborne asbestos dust. These new regulations are intended to protect a larger section of the work force from the health hazards associated with asbestos dust overexposure. It is with the intention of complying with these regulations, and in the interest of protecting the health of KOCH Refining Company employees and their families, that this policy is addressed.

2 POLICY

It is the policy of KOCH Refining Company to control occupational exposures to airborne asbestos fibers to the lowest achievable level through the use of engineering control methods. If the lowest achievable level is in excess of government regulated standards or other accepted occupational exposure guidelines as measured by standardized methods, then KOCH will provide appropriate personal protective equipment for each and every employee at risk of exposure to the airborne asbestos fibers.

3 SCOPE

This policy applies to all employees of KOCH Refining Company, KOCH Chemical Company, and KOCH Industries, its subsidiaries and/or contractors employed at or otherwise performing work at the Corpus Christi Refinery or any of its ancillary facilities.

4 PROCEDURES

The following procedures shall be followed in implementing the above stated policy:

4.1 Planning requirements

All insulation removal projects shall conform with the following planning requirements completely unless an emergency condition exists. An emergency condition is defined as a situation in which following these procedures would endanger life/health or cause property damage.

4.1.1 Determine if project requires the removal of insulation

4.1.2 Identify equipment numbers, piping, etc. on process drawings

4.1.3 Notify Loss Control at least ten (10) working days in advance of the start of any project requiring insulation removal (20 days if more than 80 meters (260 linear feet) or more than 15 square meters (160 square feet) of insulation are to be removed).

4.1.4 Assist Loss Control in securing representative insulation samples for polarized light microscopy analysis; including identification of sample locations

4.1.5 After insulation sample analysis, clearance to proceed with insulation removal will be granted by Loss Control. Specific requirements for the removal of the insulating materials will be given at this time.

Specific requirements may include but are not limited to:

- * Assignment of a KOCH Project Coordinator
- * Submission of a written plan for insulation removal
- * Assignment of insulation removal to outside contractor
- * The use of specific engineering control methods
- * The use of specific personal protective equipment
- * Restricted area requirements including entry log
- * Hazard communication training on the hazards of asbestos
- * Waiver of requirements due to the absence of asbestos

4.2 Removal of Asbestos-containing insulation

4.2.1 Engineering Control Methods

The methods employed for the control of airborne asbestos dust shall be used in the following precedence:

- * Glove Bags
- * Mini-Enclosures
- * Wet Methods and/or Chemical Encapsulants
- * Dry Methods and HEPA vacuums

4.2.2 Removal Procedures

4.2.2.1 Restricted areas for the removal of asbestos-containing insulation shall be identified, prior to beginning work, by the use of barricade tape (or other suitable barrier) and appropriate warning signs.

4.2.2.2 All personnel entering a restricted area shall wear appropriate personal protective equipment including but not limited to respiratory protection, protective clothing and head coverings, eye protection, safety hats, and safe footwear.

4.2.2.3 All asbestos-containing material shall be placed in approved bags and transported to the holding area.

4.2.2.4 HEPA vacuum cleaners shall be provided for the decontamination of areas and personnel contaminated with asbestos.

4.2.2.5 All personnel entering a restricted area shall vacuum their outer clothing to remove asbestos fibers prior to leaving the area.

4.2.2.6 The demolition and stripping areas shall be cleaned and decontaminated of asbestos prior to removal of barricades and signs.

4.2.2.7 Removal of only the minimum amount of asbestos-containing insulation necessary for transportation to the stripping area will be permitted in the demolition area unless otherwise specified. All open, damaged, or otherwise friable asbestos-containing material shall be encapsulated before transporting to the stripping area.

4.2.2.8 No smoking, chewing gum or tobacco, eating or drinking shall be permitted in restricted areas.

4.2.3 Notification and Restricted Areas

Before beginning any asbestos removal work, the appropriate process or transfer control room shall be notified of the work in progress and the restricted area identified by the use of barricade tape and appropriate signs. The barricades shall not be removed until decontamination is completed.

4.2.4 Protective clothing

Protective clothing used for protection of personnel in restricted areas shall be approved by the Loss Control Department.

4.2.4.1 Protective clothing used for protection from asbestos shall consist of the following (unless otherwise stated in the specific Removal Plan):

- * Coverall, Tyvek(R) or equivalent, with elastic cuffs on arms and legs
- * Head covering, Tyvek(R) or equivalent
- * Gloves, rubber or PVC
- * Safe footwear
- * Safety hat
- * Eye protection

4.2.5 Respiratory protection

Appropriate respiratory protection equipment shall be worn by all personnel entering or working in a restricted area unless air sam-

pling shows conclusively that the airborne asbestos concentration is less than 0.01 fibers per milliliter of air averaged over an eight-hour time period per the NIOSH 7400 analytical method.

4.2.6 Decontamination of Personnel

All personnel entering a restricted area shall follow this decontamination procedure or the procedure outlined in the specific removal plan.

4.2.6.1 Before leaving the restricted area, all personnel shall completely vacuum their outer clothing including head-covering and respiratory protection equipment.

4.2.6.2 Personnel shall then proceed directly to the CHANGE HOUSE and enter by way of the "Dirty Room". DO NOT REMOVE RESPIRATOR!

4.2.6.3 Remove and thoroughly wash boots in the sink.

4.2.6.4 Remove coveralls and place in the container provided.

4.2.6.5 Remove the respirator and place in the container provided.

4.2.6.6 Proceed directly to the shower area and thoroughly shower the entire body including scalp.

4.2.6.7 Place bath towels in the special container located in the Building Crafts Shop.

4.2.7 Restricted Area Cleanup and Decontamination

When the removal of all asbestos-containing insulation is complete, the area shall be inspected by the KOCH Project Coordinator. If the area is visually clean to his/her satisfaction, then the barricades and signs may be removed and the area returned to Operations.

4.2.8 Air Sampling and Analysis

Air sampling and analysis shall be done in accordance with the requirements of 29 CFR 1910.1001 and 29 CFR 1926.58. Analysis shall follow the NIOSH 7400 analytical method (other recognized analytical methods may be used with prior approval from KOCH Loss Control). Workers shall be notified of the results of personal air sampling within ten working days of receipt of the analyses.

4.3 Working with Asbestos/Cement board and pipe

4.3.1 Whenever possible, work shall be performed outdoors using a properly shielded hand-tool vacuum system.

4.3.2 An approved respirator with HEPA filter or an airline respirator shall be worn when the shielded hand-tool systems are used. If unshielded tools are utilized, full protective clothing and the appropriate respirator shall be worn.

4.3.3 When the HEPA vacuum filter is filled, it shall be disposed of in a properly identified plastic bag as asbestos waste.

4.4 Outside Contractor Requirements

4.4.1 Contractors shall comply with the provisions of the OSHA asbestos standards (29 CFR 1910.1001 and 29 CFR 1926.58).

4.4.2 Restricted areas for the removal of asbestos containing insulation shall be identified by the use of barricade tape (or other suitable barrier) and appropriate warning signs.

4.4.3 All personnel entering a restricted area shall wear appropriate personnel protective equipment including but not limited to respiratory protection, protective clothing and head coverings, eye protection, safety hats, and safe footwear.

4.4.4 All personnel entering a restricted area shall wear a respirator approved for use with asbestos dust unless air sampling data shows conclusively that the airborne asbestos concentration is less than 0.1 fibers per milliliter of air as determined by NIOSH 7400 sampling and analysis procedures.

4.4.5 Air sampling and analysis shall be conducted in accordance with Section 4.3.7 above. Copies of all air sampling data shall be submitted to the KOCH Loss Control Department for review. Contractors shall allow KOCH to place sampling pumps on contractor personnel and to perform area sampling as a quality control measure to validate the contractors sampling data.

4.4.6 The contractor shall provide shower facilities for contract personnel at the stripping area. KOCH shall supply sanitary water for the showers.

4.4.7 All asbestos-containing material shall be placed in approved bags which will be provided to the contractor by KOCH. KOCH will arrange for disposal of the bagged asbestos.

4.4.8 The contractor shall provide HEPA vacuum cleaners for the decontamination of areas contaminated with asbestos.

4.4.9 All personnel entering a restricted area shall vacuum their outer clothing to remove asbestos fibers prior to leaving the area.

4.4.10 The contractor shall clean and decontaminate the demolition and stripping area of asbestos before removal of barriers and signs.

4.4.11 In the demolition area, removal of only the minimum amount of asbestos-containing insulation necessary for transportation to the stripping area will be permitted unless otherwise specified. All open, damaged, or otherwise friable asbestos-containing material shall be encapsulated before transporting to the stripping area.

5 RESPONSIBILITIES

The Project Coordinator (Engineer, Engineering Tech, Maintenance Foreman or Supervisor, etc.) shall obtain clearance from Loss Control as detailed above before beginning any project requiring insulation removal. He/she shall also have the responsibility of insuring that the provisions of this procedure and/or those of the removal plan are met.

Loss Control shall obtain representative insulation samples and analyze them for the presence of asbestos, shall grant clearance for insulation removal, shall approve the removal plan(s), shall specify appropriate personal protective equipment, and shall conduct the required air sampling, analysis and personnel notifications (KOCH personnel only) of sampling results.