

Gulfof**Mexico**



Operations: HSE

Health and Industrial Hygiene

**GoM Region Asbestos Operations and
Maintenance Safe Work Practice**

AMENDMENT RECORD

Amendment Date	Revision Number	Amender Initials	Amendment
09/15/2015	3	V. Murray; D. Liu	Updated authority and custodian. Embedded appendices as NAG links no longer were accessible. Removed references to NAG. Changed to the new GoM document template. Minor editing changes.
08/10/2012	2		Editing to align with NAG O&M and Asbestos Management Safety Practice. Added Building / Facility Asbestos Inspection & Bulk Sampling Standard Procedures. Content changes did not affect GoM operations since no asbestos containing products are known to be in supply.
08/27/08	1		Changed verbiage "will" to "shall" Updated waste management section Updated work practices for removal of ACM gaskets Added Appendix G Updated facilities inventory of asbestos section Updated Authority and Custodian Changed document number in footer from CD#1189 to UPS-US-SW-GOM-HSE-DOC-00541-2.
05/20/04	0	J. Kogut; S.	Initial Issue as controlled document.

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1 Purpose / Scope

1.1 Purpose

This SWP is designed to provide guidance for work activities involving Asbestos-Containing Materials (ACM). The Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) define ACM as any material containing more than one percent asbestos.

This SWP also outlines the specific procedures for working with and/or around ACM and helps management, supervision, field operations and maintenance personnel maintain regulatory compliance and worker and environmental protection.

1.2 Scope

This SWP applies to maintenance, construction, renovation, or demolition work involving ACM and materials that could potentially contain asbestos (facilities that have been determined not to have ACM by EPA Accredited and/or Licensed Inspectors are not included) at GoM Region facilities. Regulatory limits, management measures, work procedures, shipping requirements and disposal information are provided as part of this SWP.

2 Asbestos Overview

2.1 Background

Asbestos is a generic name given to a fibrous variety of six naturally occurring minerals (rock formations) that have been used for decades in the development of thousands of commercial products. Of that group of minerals, Chrysotile, Amosite and Crocidolite have been most commonly used in building and equipment products. The term "asbestos" is not a mineralogical definition but a commercial name given to this group of minerals, which possess high tensile strength, flexibility, resistance to chemical and thermal degradation, and electrical resistance. When mined and processed, asbestos is typically separated into very thin fibers that are microscopic in size.

Because these fibers are small and light, they may remain in the air for many hours if they are released from ACM. Prior to the discovery of the potential adverse health effects of exposure to asbestos fibers, ACM was used in industrial and commercial applications due to its durability and heat and chemical resistance properties. The potential for exposure can occur during construction activities, particularly from the disturbance of ACM while conducting renovation or demolition. Personnel may also be exposed during gasket removal, automotive brake or clutch repair work, and other maintenance activities.

ACM that are properly encapsulated, covered, not visibly damaged, or not in a friable condition generally will not release asbestos fibers at a hazardous level, especially in non-enclosed structures.

To minimize personnel exposure, it is important not to sand, grind, abrade, drill, cut, remove, tear, step on, brush against, hammer on, or in any way disturbs ACM or Presumed Asbestos-Containing Material (PACM).

To protect personnel from hazards associated with asbestos during construction and / or maintenance activities, all applicable government regulations and standards shall be followed to avoid personnel exposure.

More specifically, before performing any work that may disturb unidentified insulating or building materials, personnel must first determine whether the material contains asbestos.

- To eliminate delays in job execution, this determination is best performed during the planning process.
- Installation of new ACM is prohibited.
- Banding used to secure new insulation should be imprinted with "Asbestos Free" verbiage.
- Newly installed insulation must be accompanied by a SDS which indicates that no asbestos is in the product.
- Other new products, i.e. gaskets, pickings', pipe coatings, breaks, clutches, etc., must be accompanied by SDS.

The potential for exposure to asbestos can be safely managed if appropriate controls are implemented. Proper engineering and administrative controls, coupled with a high level of training, good work practices and proper use of Personal Protective Equipment (PPE), can virtually eliminate the risk of asbestos exposures.

2.2 Health Effects

Asbestos is a recognized health hazard and is regulated. However, according to the EPA, the presence of asbestos in buildings does not mean that the health of building occupants is necessarily endangered.

As long as ACM remain in good condition and are not disturbed, exposure is unlikely. The EPA has indicated in asbestos guidance documents that; "intact and undisturbed asbestos materials generally do not pose a health risk."

The potential for exposure exists when the material becomes damaged or "friable" to the extent that asbestos fibers become airborne and could be inhaled. Friable is defined as any material containing more than one percent asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.

The following diseases have been potentially linked to persons who are occupationally exposed to asbestos over a period of time:

- Asbestosis (fibrotic lung disease)
- Mesothelioma (cancer of the chest lining)
- Lung cancer
- Pleural plaques (thickening of the lining of the chest cavity)

2.3 Types of Asbestos-Containing Materials

Asbestos was commonly used in the past in pipe wrap and coatings, mastics, gaskets, pickings', brake pads, tank insulation, boiler insulation, vessel insulation, pipe insulation, fireproofing and building insulation and materials (e.g., floor tiles).

Some materials (i.e. cement-asbestos products (transite)) may be presumed per OSHA or assumed per EPA to be asbestos-containing. Although it is no longer permitted to install ACM in any BP facility, ACM may still remain in some older facilities.

The Asbestos Operations and Maintenance (O&M) SWP includes provisions for each category of ACM that could be present in buildings and facilities. The three main types of ACM, as stipulated by the EPA and OSHA, are as follows:

- Surfacing Material: ACM sprayed or troweled on surfaces, such as acoustical plaster on ceilings and fireproofing material on structural members.
- Thermal System Insulation: ACM applied to pipes, boilers, tanks and ducts to prevent heat loss, heat gain or water condensation.
- Miscellaneous Asbestos-Containing Materials: Floor and ceiling tiles, drywall texture and joint compound, siding, roof materials, sealants, mastics and textiles

Materials in the first two categories tend to be friable. Friable materials are more likely to release fibers when disturbed. However, non-friable materials may also release fibers if broken, cut, sanded or otherwise manipulated or abused.

Past industry experience and sampling of facilities have identified the following facility materials as having the potential to contain asbestos:

- Floor tile, mastic, and sheet vinyl flooring
- Wallboard joint compound and texture
- Cement-asbestos (transite) panels (siding and roofing)
- Thermal system / piping insulation
- Arc chutes in MCC switch gears
- Equipment insulation
- Mastics and coatings
- Pipe coating
- Clutch plates
- Brake shoes
- Gaskets
- Packing materials
- Roofing materials

Refer to Appendix B for a list of known ACM within your facility and Appendix C for a list of PACM.

Job tasks that may be associated with ACM include:

- Removal or application of mastics / muds on thermal system insulation
- Removal of gaskets, pickings', breaks, clutches, floor tile, cement-asbestos (transite) pipe, or wall board
- Renovation or repair of any structure or equipment
- Demolition of any structure
- Maintenance, alteration, or removal of switchgear electrical starter arc chutes manufactured prior to 1981
- Emergency clean-up of spilled asbestos-containing waste material

2.4 Regulatory Overview

Asbestos is a regulated substance; its condition, handling and disposal are regulated by the EPA, OSHA, and state health and environmental departments. All asbestos abatement activities must be undertaken by EPA-accredited personnel. In addition, some states require activities involving asbestos to be conducted by state licensed companies and personnel. Many states exempt industrial facilities from licensing requirements. Refer to OSHA, EPA, state and local regulations for local asbestos management requirements.

Both OSHA and EPA have detailed asbestos rules. Most states have adopted the EPA NESHAPS Asbestos Regulations. Several states, including the states of Texas and Louisiana, have local regulations which include state licensing, accreditation or certification requirements. The following regulations were referenced for the development of this SWP:

- USEPA's National Emissions Standard for Hazardous Air Pollutants (NESHAP) Asbestos Standard (40 CFR Part 61, Subpart M)
- USEPA's Toxic Substance Control Act (TSCA) – Asbestos Requirements (40 CFR Part 763)
- US Department of Transportation's (DOT) Hazardous Materials Regulation (49 CFR Part 172)
- OSHA's General Industry Asbestos Standard (29 CFR 1910.1001)
- OSHA's Construction Asbestos Standard (29 CFR 1926.1101)

The OSHA asbestos standards require employers to address a number of items which are triggered by potential exposure of personnel to airborne asbestos fibers. Exposure is defined in units of fibers per cubic centimeter (f/cc) of air collected. Two main provisions of the OSHA regulations fall into the general category of Permissible Exposure Limits (PEL) to airborne asbestos fibers. The OSHA established PELs are as follows:

- 8-Hour Time-Weighted Average (TWA) limit - 0.1(f/cc) of air based on an 8-hour TWA sampling period. This is the maximum level of airborne asbestos, on average, that any employee may be exposed to over an 8-hour period (normal work shift).
- Excursion Limit (EL) - 1.0 f/cc, averaged over a sampling period of 30-minutes.

Exceedance of these levels triggers mandatory requirements including the establishment of regulated areas, the posting of warning signs, the use of engineering controls and specific work practices, and the use of respirators and protective clothing.

For normal building / facility occupant activities and / or most O&M activities in areas where only non-friable ACM is present or where ACM is in good condition and not subject to disturbance, applicable OSHA PELs are not likely to be exceeded. However, it is possible that some building / facility occupant activities and / or O&M activities may disturb ACM to such an extent that the OSHA limits are exceeded, unless proper work practices are followed.

OSHA general industry regulations establish exposure standards for airborne asbestos fibers, as analyzed by Phase Contrast Microscopy (PCM). Most buildings and facilities with ACM have airborne fiber levels significantly below 0.1 f/cc when measured by PCM. For this reason, OSHA does not require air monitoring in these buildings and facilities if the ACM is in good condition and is not subject to disturbance. The OSHA requirements are not completely consistent with EPA recommendations and / or requirements.

The OSHA construction industry requirements for air monitoring are less flexible. Personal monitoring of workers must be performed unless historical data (within the past 12-months) for similar tasks indicate fiber concentrations below the PEL and EL. Additional monitoring is required whenever there has been a change in process or work practices. Daily air monitoring may be required for maintenance and repair projects. ACM abatement activities require daily monitoring unless a Negative Exposure Assessment (NEA) has been conducted within the past 12-months.

A NEA may be conducted for any one specific asbestos job which will be performed by employees who have been trained in compliance with the OSHA Standard. OSHA requires that a "Competent Person" conduct exposure assessments (NEAs). OSHA defines a "Competent Person" as one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them. The Competent Person may demonstrate that employee exposures will be below

the PEL by conforming to the following OSHA criteria:

- Demonstrate through objective data that the product or material containing asbestos or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PEL and EL under work conditions that have the greatest potential for releasing asbestos fibers
- Where the employer has monitored prior asbestos jobs for the PEL and the EL within 12-months of the current projected job, demonstrate that monitoring and analysis were performed in compliance with the OSHA Asbestos Standard in effect; the data were obtained during work operations conducted under workplace conditions “closely resembling” the processes, type of material, control methods, work practices and environmental conditions used and prevailing in the employer’s current operations; the operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job; and the data show that under the conditions prevailing in the current workplace, there is a high degree of certainty that employee exposure will not exceed the PEL and EL.

Refer to Appendix H for an NEA form. For assistance in completing the NEA, contact the Industrial Hygiene Team.

Air samples are analyzed by PCM utilizing the NIOSH 7400A Method. However, Transmission Electron Microscopy (TEM) analysis may be utilized for verification and / or clarification if fiber counts in excess of legal limits occur. PCM identifies the presence of fibers in general; TEM can specifically identify asbestos fibers.

Personnel shall avoid operations or procedures which could result in a violation of federal, state or local regulations. Refer to Appendix L for a summary of state regulatory agency requirements and contact information.

3 Management Overview

3.1 Fundamental of Asbestos Management

Operating Team Leaders must verify that potential asbestos exposure hazards have been identified and that the proper management of control measures during work involving ACM and PACM are in place, inclusive of proper training, resources, equipment and administrative support. Compliance assurance and SWP implementation is the responsibility of site / facility management and Team Lead personnel. The Industrial Hygiene Team is available to assist in providing outside resources to identify and / or abate ACM.

GoM Region facilities do not maintain employee workforces qualified to conduct OSHA Class I or II asbestos abatement work. Abatement work shall be conducted by third-party qualified and licensed contractors.

Personnel who have received OSHA Class III worker training are qualified to conduct OSHA Class III repair and maintenance work. OSHA Class III work is described as repair and maintenance work which is likely to disturb no more ACM than can be contained in one waste bag. BP employees who have received asbestos awareness training may conduct OSHA Class IV work, which is described as maintenance and custodial activities during which employees may contact, but **do not disturb**, ACM.

3.1.1 Responsibilities

Table 3.1.1-1, Management of Asbestos

Asbestos-Related Activity	Responsible Party
Identify ACM in facilities	EPA Accredited and / or Licensed Inspectors conduct surveys and / or collect bulk samples under the direction of the Industrial Hygiene Team as requested by Facility Management / Supervision.
Identify OSHA Class III workers	Facility Management / Supervision identifies workers
Medical surveillance for employees who perform OSHA Class III work	The Health Team arranges medical surveillance
Remove and properly dispose of gaskets, pickings' and small quantities of pipe coating ,according to regulatory requirements	OSHA Class III trained Team Leaders or Employees
Provide proper notification for removal and / or demolition	Facility Management / Supervision, supported by the Industrial Hygiene Team
Remove / abate ACM from buildings / facilities in compliance with state and federal regulations	Licensed Abatement Contractor through Facility Management / Supervision, with the support of the Industrial Hygiene Team
Dispose of asbestos waste	Facility Management and / or Abatement Contractor, with support of the local FEC / Waste Coordinator

Personnel must actively take responsibility for reducing their risk of asbestos exposure in accordance with regulatory requirements and the procedures outlined in this SWP.

3.2 Asbestos Installation and Replacement Mandate

Due to the potential health risks associated with asbestos, the future installation of ACM is prohibited. Non-asbestos containing products must be used for new installations or to replace existing ACM upon removal. SDSs shall be requested for these materials.

3.2.1 OSHA Asbestos Work Classification

Table 3.2.1, Asbestos Work Classifications

Agency/Organization	Work Classification	Impact
29 CFR 1910.1001 - OSHA 29 CFR 1926.1101 – OSHA	Class I Asbestos Work	Activities involving the removal of Thermal System Insulation (TSI) and surfacing ACM and PACM.
29 CFR 1910.1001 - OSHA 29 CFR 1926.1101 – OSHA	Class II Asbestos Work	Activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

29 CFR 1910.1001 - OSHA 29 CFR 1926.1101 – OSHA	Class III Asbestos Work	Repair and maintenance operations where ACM, including TSI and surfacing ACM/PACM, is likely to be disturbed and can be contained in one asbestos waste bag.
29 CFR 1910.1001 - OSHA 29 CFR 1926.1101 – OSHA	Class IV Asbestos Work	Maintenance and custodial activities during which employees may contact, but do not disturb, ACM or PACM

3.2.2 Management of Asbestos-Containing Materials In Place

Existing ACM must be identified, maintained in a good state of repair and regularly inspected. Each Facility is responsible for having facility surveys conducted to locate and positively identify ACM. If any material is suspect and samples are required to determine the contents of the material and the resultant work practices, the Industrial Hygiene Team can assist in identifying qualified asbestos inspectors.

If it is determined that ACM exists at a facility, the facility will be required to manage the asbestos by:

- Conducting periodic inspections for the integrity of the identified ACM
- Providing asbestos awareness training for all personnel at the facility
- Confirming that communication regarding the presence and location of ACM is provided to all contractors and visitors in an effort to verify that ACM is not disturbed

3.2.3 Demolition Work

Demolition work shall not be performed by GoM Region personnel. The anticipation of such work must be reported to federal and/or local authorities prior to work commencement, regardless of the presence or absence of asbestos (Refer to Section 4.4 Regulatory Agency Notifications of Asbestos Abatement or Demolition). Demolition, for the purposes of reporting requirements, is defined as the removal, wrecking, or burning of any load supporting structure of the facility. Contact the Industrial Hygiene or Environmental Team for assistance in determining what activities must be reported and the appropriate forms to be used to report a demolition.

3.2.4 Employee Information and Training

Personnel who may work near ACM should be notified of the presence and location of the ACM and instructed to avoid any activity that may disturb these materials (refer to Appendix D for a sample notification letter).

Personnel not licensed, accredited and/or certified to perform work on ACM or collect samples for laboratory analysis and identification shall not be permitted to perform any level of asbestos related work.

Personnel whose job responsibilities include the potential to come into contact with ACM and / or PACM shall receive asbestos awareness training and annual refresher training. This training parallels the two-hour training for Class IV Maintenance and Custodial Work (work activities that may contact ACM but do not disturb ACM). It does not provide the appropriate level of training to conduct any removal activities, including the removal of gaskets. Personnel who conduct OSHA Class III repair and maintenance work where ACM is likely to be disturbed shall receive OSHA Class III worker training.

OSHA Class III work and asbestos removal activities (OSHA Class I and II work) require work supervision by a Competent Person. OSHA requires specific asbestos work practice training for a Competent Person. For Class III work, the Competent Person must be trained in a manner consistent with the EPA requirements for training of local education agency maintenance and custodial staff.

The definitions for the different classes of asbestos work are included in Table 3.1.3 and the associated training requirements according to federal EPA and OSHA regulations are included in

Appendix L. Refer to Appendix L for a summary of state regulatory agency requirements and contact information. Asbestos abatement contractors must confirm that their employees receive and maintain asbestos training commensurate with the class of work they will be performing and applicable OSHA and EPA regulations.

3.2.5 Personal Protective Equipment for Working with ACM

If any person is anticipated to be exposed at or above the PEL or EL, protective clothing must be worn, including:

- Respiratory protection (HEPA filter),
- Goggles (unless a full-face respirator is used),
- Gloves,
- Tyvek coveralls,
- Head coverings, and
- Foot coverings.

Anyone required to wear a respirator must complete a medical questionnaire and be fit tested with the proper respirator prior to its use.

3.2.6 Respiratory Protection & Medical Surveillance

BP employees are only allowed to conduct OSHA Class III maintenance work and Class IV custodial work. OSHA requires the use of respirators for work involving the disturbance of thermal system insulation or surfacing material, where an NEA is not produced, or where monitoring results show a PEL has been exceeded. OSHA requires employers to “ensure that employees required to wear a negative pressure respirator are physically able to perform the work and use the equipment”. This determination must be made under the supervision of a physician. OSHA requires a “respirator protection SWP” and an annual respirator “fit test” for employees who use respirators. Respiratory protection must comply with the following OSHA requirements:

Table 3.2.6 OSHA Respiratory Protection Requirements

Airborne Asbestos Concentration	Required Respirator
Not in excess of 1 f/cc	Half face air purifying respirator with high efficiency filters
Not in excess of 5 f/cc	Full-face air purifying respirator with high efficiency filters
Not in excess of 10 f/cc	Powered-air purifying respirator (PAPR) with high efficiency filters or any continuous flow supplied air respirator
Not in excess of 100f/cc	Full-face pressure demand supplied air respirator
Greater than 100 f/cc	Full-face pressure demand supplied air respirator with an auxiliary positive pressure self-contained breathing apparatus

Any employee who requests a Powered Air Purifying Respirator (PAPR) for protection shall be provided one if it provides adequate protection for the work to be performed.

The OSHA Asbestos Construction Standard requires medical surveillance of all workers who, for a combined total of 30-days per year or more, engage in Class I, II or III asbestos work, or who are exposed above the PEL or EL. The OSHA General Industry Asbestos Standard requires medical surveillance of all workers exposed above the PEL or EL, with no 30-day per year limitation. Should a BP employee be exposed above the PEL or engaged in Class III work for a combined total of 30-days or more in a given year, a comprehensive medical examination will be provided.

4 Specific Asbestos Management Procedures

The specific procedures outlined in this SWP must be adhered to in association with the following asbestos related activities:

- Demolition or salvage of structures where asbestos is present
- Removal or encapsulation of materials containing asbestos (e.g., pipe insulation and gaskets)
- Construction, alteration, repair, maintenance, or renovation of structures, substrates or portions thereof that contain asbestos
- Asbestos release / emergency cleanup
- Transportation, disposal, storage, containment of, and housekeeping activities involving asbestos

4.1 General Requirements for Managing Asbestos

The Industrial Hygiene Team should be contacted for questions regarding potential ACM, for review of historical asbestos survey records, and for sampling of PACM or suspect asbestos containing materials.

OSHA Class I & II asbestos abatement projects facilities shall be conducted by third-party qualified and licensed asbestos contractors.

4.2 Facility inventory of Asbestos-Containing Materials

Bulk samples may be collected based on the age of the facility and the potential for the presence of ACM.

If no sampling data is available, an EPA-accredited and / or state licensed asbestos inspector will be required to obtain bulk samples, as required by the EPA and OSHA, and submit the samples to an accredited laboratory for analysis to determine asbestos content before any ACM-related work begins. Otherwise, materials suspected to contain asbestos must be presumed to contain asbestos per OSHA standards.

4.3 Building/Facility Inspections

OSHA requires building and facility owners to determine the presence, location and quantity of ACM and PACM at the work place. OSHA requires employers and building owners to treat thermal insulation, sprayed and troweled-on surfacing materials and flooring materials as ACM in any buildings built prior to 1981. The EPA requires building owners to inspect and test materials for asbestos prior to any activity that may disturb materials suspected of containing asbestos.

OSHA requires building and facility owners to notify employers and employees, including housekeeping personnel, of the presence and location of ACM or PACM in their buildings and facilities.

Notification of ACM / PACM locations should be given to prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing such material. Refer to Appendix D, Sample Employee and / or Contractor ACM or PACM Notification Letter.

4.3.1 Bulk Sampling for Identification

When bulk sampling and laboratory analysis is required to determine the asbestos content of materials, an Asbestos Hazard Emergency Response Act (AHERA) accredited and/or state licensed asbestos inspector must perform the sample collection. However, in an emergency, a Certified Industrial Hygienist (CIH) may perform sampling of suspect materials in non-public buildings and/or facilities. State and/or local licensing requirements must be evaluated prior to sampling. The Industrial Hygiene Team can be contacted to assist in selecting a qualified EPA-accredited and/or state licensed asbestos inspector.

OSHA requires a minimum of 3 samples of each homogenous material. Inside buildings, the EPA and OSHA require the use of the EPA AHERA bulk sampling protocol, which is summarized as follows:

- Surfacing Material (material sprayed-on, troweled-on, or otherwise applied to surfaces) - At least 3 bulk samples shall be collected from each homogeneous sampling area that is 1,000-square feet or less, at least 5 bulk samples shall be collected from each homogeneous sampling area that is greater than 1,000-square feet but less than or equal to 5,000-square feet, and at least seven bulk samples shall be collected from each homogeneous sampling area that is greater than 5,000-square feet.
- Thermal System Insulation (insulation material on pipes, boilers, etc.) - At least 3 bulk samples shall be collected from each homogenous material.
- Miscellaneous Materials (flooring, ceiling tile, mastics, coatings, cementitious material, etc.) - The EPA recommends that interior samples of miscellaneous materials be collected in a manner sufficient to determine if the material is ACM. A minimum of 3 samples from each area of homogenous miscellaneous material shall be collected.

The exterior of buildings / facilities are excluded from the AHERA bulk sampling protocol. Exterior samples should be obtained by an EPA-accredited inspector in a manner sufficient to determine if the material is ACM. However, it is recommended that a minimum of 2 samples be collected from each area of exterior homogenous non-friable material and 3 samples of each area of exterior homogenous friable material. The minimum number of samples varies by state. Refer to state regulations for specific requirements.

Bulk samples are currently required, by OSHA and the EPA, to be analyzed by visual estimation, utilizing Polarized Light Microscopy (PLM) analysis (EPA AHERA 40 CFR Part 763 Appendix E to Subpart E). The US EPA NESHAP (40 CFR Part 61) and the US EPA May 8, 1991, Clarification Memorandum (entitled "Clarification of NESHAP Requirement to Perform Point Counting to Quantify Asbestos Below 10%") indicate

"if the analyst detects asbestos in the sample and estimates the amount by visual estimation to be less than 10%, the owner or operator of the building may (1) elect to assume the amount to be greater than 1% and treat the material as asbestos-containing material or (2) require verification of the amount by point counting . . . if the result obtained by point count is different for a result obtained by visual estimation, the point count result will be used." The EPA allows for point count analysis at the owner's option, which may reduce the asbestos percentage to one percent or less. The US EPA NESHAP and the US EPA May 8, 1991 Clarification Memorandum regarding point counting defines friable and non-friable ACM as "any material containing **more than** one-percent asbestos". The US EPA AHERA regulations define ACM as "any material or product which contains **more than** 1 percent asbestos."

The Department of Labor (OSHA) defines ACM as "any material containing **more than** one percent asbestos. " Most states accept the EPA's recommended methods. Regulatory agencies consider all homogeneous materials to be asbestos-containing if one sample of the material contains asbestos. Homogeneous is defined by the EPA and OSHA as "material that is uniform in color and texture. "Therefore, if analytical results are reported to be one percent or less, by the point count method, the material is not considered ACM by regulatory agencies. However, it should be noted that OSHA requires limited employee protective methods (wetting) if a material is reported to contain any amount of asbestos.

Sample analyses must be performed by labs accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), which is a proficiency program under the jurisdiction of the National Institute of Standards and Technology (NIST). Contact the Industrial Hygiene Team for laboratory information.

Bulk sample analytical procedures to be used are outlined under NIST's National Voluntary Laboratory Accreditation SWP. The analytical method to be used is EPA's interim method 000 / M4-82-020.

A copy of the Bulk Sampling Form can be found in Appendix F, Asbestos Sampling Form / Chain of Custody. Copies of any bulk sampling records must be forwarded to the Industrial Hygiene Team for inclusion in the BP Industrial Hygiene database.

4.3.2 Warning Signs and Labeling of ACM/PACM

GoM Region facilities must inform occupants of the presence and location of ACM and PACM. OSHA allows warning signs to be posted in lieu of labels. When warning signs are used, they shall be posted at all entrances to mechanical equipment rooms/areas and control rooms that contain ACM or PACM.

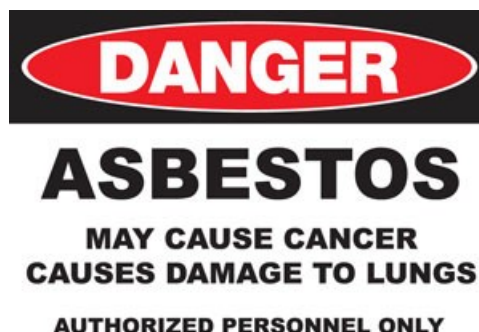
The signs must identify the ACM and PACM which is present, its location, and appropriate work practices which, if followed, will confirm that ACM and/or PACM will not be disturbed. Signs are required to be posted in areas where they will be clearly noticed by personnel.

The posting and maintenance of signs and their location is the responsibility of the facility operations management team, with guidance from the local Health and Safety (H&S) Site Leads or the Industrial Hygiene Team. The industry standard for these signs is a yellow color with black lettering. The following verbiage is suggested:

Table 4.3.2-1: Warning Signs and Labeling of ACM/PACM

DANGER: ASBESTOS		
ACM/PACM IN THIS AREA INCLUDE:		
<input type="checkbox"/> Pipe Fitting Insulation	<input type="checkbox"/> Pipe Run Insulation	<input type="checkbox"/> Tank Insulation
<input type="checkbox"/> Gaskets	<input type="checkbox"/> Pipe Coating	<input type="checkbox"/> Finishing Mastics
<input type="checkbox"/> Tank Base Pads	<input type="checkbox"/> Packings	<input type="checkbox"/> Caulks
<input type="checkbox"/> Sheet Flooring	<input type="checkbox"/> Floor Tile	<input type="checkbox"/> Floor Tile Mastic
<input type="checkbox"/> Roofing	<input type="checkbox"/> Cement-Asbestos (Transite)	<input type="checkbox"/> Sink
<input type="checkbox"/> Other	<input type="checkbox"/> Acoustical Coating	
<p>THESE MATERIALS CONTAIN ASBESTOS FIBERS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST AVOID CREATING DUST</p> <p>AUTHORIZED PERSONNEL ONLY</p> <p>BEFORE PERFORMING WORK THAT MAY DISTURB THIS MATERIAL, CONTACT HSSE FOR APPROPRIATE WORK PRACTICES AND INFORMATION</p>		

If warning signs are not used, warning labels must be affixed to existing ACM / PACM and be printed in large bold letters on a contrasting background. The industry standard is a label with the word "Danger" in red on a white background with black lettering. It is recommended that warning labels be placed on friable ACM. The label must contain the following information:



The US Department of Transportation (DOT) also has labeling requirements for asbestos waste containers. Commercially available asbestos waste bags are usually pre-printed with these requirements. The label must contain the following information:

RQ WASTE ASBESTOS
Class 9 MIXTURE NA2212, III

Asbestos-containing waste containers (bags or drums) are required by OSHA to be properly labeled, and must include the name of the waste generator and the location at which the waste was generated (as required by the EPA) prior to transporting off the facility site.

Previously installed and tested materials, with laboratory analytical results indicating “no asbestos detected”, may be secured with “Non-Asbestos” or “Asbestos Free” imprinted banding and / or labels indicating that the material does not contain asbestos. The industry standard is a blue label with white lettering.

4.3.3 Maintaining Identified ACM/PACM

Facilities should periodically inspect previously identified ACM to assess the integrity of materials. Maintenance and upkeep of these materials is crucial in order to prevent potential asbestos exposure.

Keeping track of changes to ACM is an essential part of an effective O&M SWP. Additional control measures may be necessary if the ACM deteriorates, shows signs of damage, or if the potential for disturbance increases. After the O&M SWP is in effect, a periodic surveillance of the buildings and facility should be conducted by a member of the maintenance staff who has received, at minimum, asbestos awareness training. Any changes since the last periodic surveillance should be recorded on the Surveillance of ACM Form included in Appendix G.

The presence of damaged friable ACM and/or debris represents a potential health hazard to building and/or facility occupants. If damaged ACM is discovered at any time, restricted access to these areas shall be enforced until proper repair or abatement is completed. Immediate repairs and other abatement work are recommended to eliminate the potential health hazards posed by damaged materials or by materials vulnerable to damage. Non-friable ACM has the potential to release fibers if cut, sawed, drilled, sanded, removed or damaged.

The form for recording periodic inspections of ACM is in Appendix G (Surveillance of ACM form). A condition assessment of each ACM or PACM should be recorded on the Surveillance of ACM form. Support for completing inspections can be obtained from the Industrial Hygiene Team. Once completed, a copy of the inspection record should be forwarded to the Industrial Hygiene Team for inclusion into the BP Industrial Hygiene database. The original document should be placed in the Health, Safety, and Environment (HSE) files.

4.4 Regulatory Agency Notifications of Asbestos Abatement or Demolition

Guidance and support can be obtained for state and / or federal notification and reporting requirements by contacting the Industrial Hygiene Environmental Team in Houston.

4.4.1 Renovation (Asbestos Abatement)

The EPA NESHAP Asbestos Standard for Demolition and Renovation (40 CFR 61.145) requires a 10-day notification prior to a renovation project involving disturbance of ACM. Notification is required for work involving Regulated Asbestos-Containing Material (RACM) of more than 260-linear feet on pipes, 160-square feet on other facility components, or 35-cubic feet on facility components. RACM is defined as

- a) friable asbestos material,
- b) Category I non-friable ACM (packing, gaskets, flooring and roofing) that has become friable
- c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or
- d) Category II non-friable ACM (nonfriable ACM other than Category) that has a high probability of becoming, or has become, crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Notification requires estimates of both the RACM to be removed and the RACM to be left in place. NESHAP asbestos notification requirements allow states that enforce their own asbestos regulations to have their own notification procedures. Refer to Appendix L (State Asbestos Regulatory Agencies) for state-specific information.

Update notifications are required if the removal date changes or the amount of ACM to be removed differs by more than twenty percent. Removal work must begin on the beginning date stated in the notification or re-notification.

4.4.2 Demolition

Under the EPA NESHAP, a 10-day notification is required for all demolition projects, even if no known ACM is present. Demolition, as defined by the EPA and OSHA, is the wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

4.4.3 Annual Notification / Reporting Requirements

Advance notification of at least 10-working days to the EPA or delegated state agency is required prior to all asbestos abatement projects. However, notifications for maintenance activities can be submitted annually or on a project by project basis. These must be received by the EPA 10-days before work starts for a new year. Notification is required for maintenance work involving Regulated Asbestos-Containing Material (RACM) of more than 260-linear feet on pipes, 160-square feet on other facility components, or 35-cubic feet on facility components. Projects involving less than these amounts do not require notification. If the amount of ACM removed is likely to exceed the amounts listed in an original annual notification, the annual notice must be revised. Facilities should review notifications against actual amounts of ACM reported periodically throughout the year in an effort to avoid exceeding the amounts of ACM reported.

4.4.4 Emergency Notifications

Emergency work sometimes requires that asbestos work be performed immediately to maintain operations and to prevent other health or safety hazards. Emergency work is acknowledged in regulations and is permitted under certain circumstances; however, all emergency asbestos work must be conducted by a qualified and licensed asbestos abatement contractor and supervised by a Competent Person for the class of work being conducted. A written notification must be submitted to the EPA or the delegated state agency no later than 1-working day after the emergency. Notification requirements vary from state to state. Refer to Appendix L State Asbestos Regulatory Agencies for state specific information.

- Notification of emergency abatement work must be submitted to the EPA or delegated state agency within one working day of the emergency. Notifications of postponements may be made by phone if followed up by written notice.
- CERCLA Notifications – a one-pound release of friable ACM into the environment requires immediate reporting to the National Response Center (NRC) and possibly the Local Emergency Planning Committee (LEPC). In the event of a reportable release, contact the Environmental cell phone at (832) 315-8059 for reporting assistance.

A Competent Person should always be contacted if there is a release. Based on the type, condition and extent of the dislodged material, the Competent Person can determine if the cleanup should be classified as a Class I, II or III job.

4.5 Maintenance and Custodial Work

When conducting Class III and IV maintenance and custodial work, personnel should consider the following conditions prior to starting work.

- If ACM has been identified and is not friable, it should not be disturbed by any invasive means, such as drilling holes into cement-asbestos (transite) walls, removing intact piping insulation, or cutting any ACM.
- If ACM gaskets can be removed intact without any disturbance or scraping and the gasket is intact and not friable or damaged, the gasket can be removed and placed in the proper waste packaging.
- If ACM is in questionable condition (e.g., the ACM is not intact, is friable or damaged, or it is not known if the material is ACM), then the material should not be disturbed and a Competent Person should be contacted to determine the method of removal or repair.

Housekeeping staff that have been trained at the awareness level can care for and maintain asbestos-containing flooring material and other intact ACM. The OSHA General Industry Standard outlines the following practices for asbestos-containing flooring maintenance.

- Sanding of asbestos-containing floor material is prohibited.
- Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300-rpm and wet methods.
- Burnishing or dry buffing may be performed only on asbestos-containing flooring which has sufficient finish so that the pad cannot contact the asbestos-containing flooring material.

4.6 Asbestos Project Management

Any work involving asbestos shall require the following.

- Conducting an initial exposure assessment (by an OSHA Competent Person) for each job type involving ACM.
- The H&S Site Lead or asbestos Competent Person shall coordinate asbestos abatement activities and conduct periodic surveillance of ACM.
- Asbestos abatement contractor qualifications shall be periodically reviewed by the onsite asbestos Competent Person.
- Contractors performing asbestos related jobs will be responsible for conducting their own initial exposure assessments and employee exposure monitoring and must, upon completion of projects, provide copies of results to BP for inclusion in the Operation Center's HSSE files.
- Project design, project monitoring, and clearance air monitoring may also be required, depending on the details of specific abatement projects. The Industrial Hygiene Team can be contacted to assist in selecting a qualified EPA-accredited project designer and air monitoring technician.
- BP may secure the services of a licensed, accredited testing laboratory to perform laboratory analysis of air samples. The laboratory should be independent and be a successful participant in the Proficiency Analytical Testing (PAT) SWP for airborne fiber counting. The PCM analyst should be NIOSH 582 trained. A microscope and technician may be set up at the job site, or samples may be sent to the laboratory for analysis. A complete report, certified by the testing laboratory, of all air monitoring analytical results should be stored in the facility HSSE files, with a copy furnished to the Industrial Hygiene Team. The Industrial Hygiene Team can be contacted to assist in selecting a qualified testing laboratory.

The BP asbestos Competent Person or Industrial Hygiene Team member will complete an "Asbestos Abatement Activity Checklist" for each asbestos abatement project (refer to Appendix J for the Asbestos Abatement Activity Checklist).

4.7 Emergencies or Accidental Disturbance of ACM

Restricted access to areas with damaged ACM shall be enforced until cleanup and repair is completed. In the event of accidental disturbance of ACM, treat the material as you would any hazardous chemical and use the emergency shower. Once the clothing is wet, it can be removed and replacement clothing can be put on. Wet clothing should be put into an appropriately labeled asbestos bag obtained from the local asbestos Competent Person.

Minor Episodes: It is the intent of BP that no OSHA Class I or II asbestos abatement be conducted by BP personnel and that all such activity is conducted by an accredited licensed asbestos abatement contractor. Minor episodes, (per the EPA, less than 3-linear feet) such as a small section of insulation falling from a pipe or a worker, accidentally bumping into a beam and dislodging a small amount of fireproofing ACM (less than 3-square feet), can be treated by OSHA class III trained personnel with wet cleaning and HEPA-vacuum techniques utilizing protective clothing, OSHA air monitoring or NEA, respiratory protection, proper disposal, proper decontamination and proper repairs (OSHA Class III work procedures).

Major Episodes: Major fiber release episodes (per the EPA, more than 3-square or linear feet) should be considered a serious event. Large amounts of ACM falling from heights of several feet

could contaminate an entire building or area with asbestos fibers. If 3-square feet or more of surfacing ACM or 3-linear feet or more of thermal system insulation delaminates or is dislodged from its substrate, the episode shall be considered major. Depending on the severity of the episode, asbestos consultants and abatement contractors may be needed to develop a strategy for conducting the cleanup operations. Response procedures should include isolating the area, posting warning signs, shutting off HVAC system(s), installing critical barriers, establishing a regulated area, installing containment barriers (as required by the Competent Person) installing negative pressure ventilation (as required by the Competent Person), respiratory protection, OSHA air monitoring, PPE, OSHA NEA proper disposal, cleaning with HEPA vacuum and wet wipe, encapsulation, area and clearance air monitoring and proper repairs. These procedures, and additional measures as necessary, should be employed by a licensed asbestos abatement contractor. Each major fiber release episode shall be documented in Tr@ction.

A specification prepared by an EPA-accredited and/or licensed asbestos consultant and project management and air monitoring is suggested. An asbestos abatement project must be designed by an EPA Model Accreditation Plan (MAP) Accredited Asbestos Project Designer if more than 3-square feet or a 3-linear foot of friable ACM is disturbed. OSHA Class III maintenance work, involving small quantities of ACM, generally does not require a design by an EPA MAP Accredited Asbestos Project Designer.

Contact the Industrial Hygiene Team for assistance in coordinating appropriate procedures for cleanup, decontamination and repair of the disturbed material and proper disposal.

4.8 Work Practices and Control Methods for Asbestos Abatement, Renovation, or Demolition

Personnel are qualified to conduct only OSHA Class III asbestos O&M work (through OSHA Class III worker training) and Class IV custodial work (through asbestos awareness training,) as described in Section 3.1.6, Employee Information and Training. Class III work is described as repair and maintenance operations where ACM is likely to be disturbed. Class IV work is described as job tasks where personnel may come into contact with ACM, but that do not disturb asbestos materials.

Specific work practices are required when ACM is disturbed. This is to prevent exposure to personnel and to prevent any environmental release of asbestos fibers. The type and degree of these controls will vary depending on the type of ACM and work activity, both of which determine the potential for fiber release and trigger OSHA work classifications.

In general, state and federal regulations require the following elements to be addressed by employers conducting asbestos abatement activities involving ACM (e.g., any third-party contractor conducting asbestos abatement activities):

- Performance of industrial hygiene monitoring,
- Establishment of regulated areas,
- Use of engineering and work practice controls,
- Development of written compliance SWPs,
- Provision for initial and/or Negative Exposure Assessment (OSHA Competent Person),
- Provision of respiratory protection,
- Provision of protective clothing, equipment and hygiene facilities,
- Communication of hazards,
- Notification of appropriate agencies of abatement and demolition activities,
- Performance of employee training,
- Provision of medical surveillance,
- Provisions for final visual inspection and air clearance,
- Provisions for disposal, and
- Maintenance of detailed records.

Additional details for the above elements can be found in Appendix J, Asbestos Abatement Activity Checklist.

A Certificate of Compliance (indicating that the work was performed in compliance with all regulatory and contractual requirements) shall be completed by the asbestos abatement contractor and submitted to the BP facility representative upon completion of an asbestos abatement project. Final payment shall not be made until this Certificate is executed and submitted to the BP representative with all post abatement submittals (daily activity logs, workers documentation, personnel air monitoring results, disposal manifest, etc.). A sample Certificate of Compliance is included in Appendix K.

4.9 Work Practices for Removal of Asbestos-Containing Gaskets, Pipeline Coating and Vehicle Brakes and Clutches

The determination of whether the ACM is intact (non-friable) or non-intact (friable) will further determine specific work practices. OSHA defines "intact" as ACM that has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to bind with its matrix.

OSHA work practices for Class III work require workers to wear a respirator and protective clothing while conducting Class III work where a negative exposure assessment is not produced. The training, work practices, respiratory protection and PPE requirements must be determined by an OSHA Competent Person. The Competent Person is required to provide for frequent and regular inspections of job sites. Air monitoring during gasket or pipeline coating removal work may be conducted in an effort to evaluate methods and to document compliance with regulatory requirements.

If the gasket or pipeline coating material is significantly damaged, the removal process may cause the release of airborne asbestos fibers. This determination must be made by an OSHA Competent Person. If the work crew is not prepared to undertake the removal of damaged gaskets or pipeline coating within a glove bag, the work can be contracted to a qualified asbestos abatement contractor. Contact the Industrial Hygiene Team for assistance in locating a qualified asbestos abatement contractor.

When removing gaskets / packing or pipeline coating that contain asbestos, if the material is visibly deteriorated and unlikely to be removed intact, removal shall be undertaken within a glovebag and shall be conducted by a qualified worker trained in OSHA Class III work procedures (under the supervision of a OSHA Competent Person). The use of power tools (buffing wheel, grinder, etc.) for removal of asbestos-containing gasket or pipeline coating material or dry sweeping debris is prohibited. Wet methods must be used throughout the removal operation.

4.9.1 Removal of Intact and/or Non-Intact Asbestos-Containing Gaskets and Packing with an NEA

All personnel who work adjacent to removal operations must be notified prior to any asbestos-containing gasket and packing repair or removal activities. The notification must include information regarding locations where asbestos work will be performed, the nature of the work, regulated area requirements and control measures that will be taken to prevent exposures to personnel.

Prior to beginning any asbestos-containing gasket and packing removal work, records (bulk sampling data) must be checked to verify if ACM is present. If unsure, verify by having a bulk sample collected by an EPA-accredited and/or licensed inspector or by treating material as asbestos-containing until known.

Procedures for removing asbestos-containing gaskets and packing are as follows;

- Isolate the work area; establish a regulated area by demarcating the work area with asbestos caution tape.
- Only those authorized may enter the regulated area.
- Gather tools and equipment (HEPA-filtered vacuum, spray bottle with surfactant (wetting agent), drop cloth (6-mil poly), asbestos disposal bag, glove bag, duct tape, scrub pad and wipe rags, encapsulant, disposable gloves, PPE, non-ACM replacement materials) to access and replace ACM.
- Don PPE as required by the Competent Person. If a NEA has been produced within the past

12 months, respiratory protection and protective clothing is not required by OSHA. The Competent Person shall select respiratory protection and protective clothing for each job.

- Set up and begin perimeter air monitoring and personnel air monitoring (as required by the Competent Person). If a NEA has been produced within the past 12-months, air monitoring is not required by OSHA.
- Place drop cloth underneath the gasket / packing designated for removal.
- Disassemble equipment as needed to expose entire gasket/packing.
- Asbestos-containing gaskets may be removed by tapping (Flexitalic) or peeling (Garlock) if the gasket remains intact per the OSHA Standards.
- If the gasket is visibly deteriorated and unlikely to be removed intact, removal shall be within a glove bag as determined by the Competent Person. The gasket remnants must first be sprayed with a wetting agent (surfactant) to prevent fibers from becoming airborne (refer to Appendix I for glove bag procedures).
- Thoroughly wet the gasket / packing and allow wetting agent to penetrate the gasket material.
- Use non-abrasive / non-destructive methods for removal.
- Remove intact gasket / packing material and place into labeled asbestos waste disposal bag.
- Clean flange or area where the gasket / packing was installed with a scrub pad and wet wipe upon completion.
- Spray the flange or area where the gasket / packing was installed with an approved asbestos encapsulant.
- Place all debris including scrub pad, rags, drop cloth (roll or fold inward to contain debris), disposable gloves and disposable clothing in the asbestos waste disposal bag. Evacuate air in the bag using a HEPA-filtered vacuum and seal with duct tape (twist top of bag, goose neck and seal air tight with duct tape). Place the sealed asbestos waste disposal bag into a second waste bag and seal as indicated for the first bag.
- Clean all tools by washing with surfactant water (dispose of water in the disposal bag).
- Clean protective clothing with a HEPA vacuum (dispose of clothing in the disposal bag).
- Properly bag and tag respirator for proper cleaning upon completion of the project.
- Install new materials and reassemble equipment.

Dispose of ACM waste bag with contaminated materials in a sealed and labeled designated asbestos waste container. The facility management team will arrange for transportation of the waste material to an approved asbestos waste landfill (refer to Section 4.10 for Waste Management Requirements).

4.9.2 Removal of Intact and Non-intact Asbestos-Containing Pipeline Coating with an NEA

Asbestos-containing pipeline coating is classified as Category I non-friable ACM as defined by the EPA. Per EPA NESHAP Regulations, removal of Category I non-friable ACM must be accomplished using “wet methods” and “SWP methods” with “no sanding, grinding, cutting or abrading”. The Category I material must not become friable (crumbled, pulverized or reduced to a powder). The use of power tools is prohibited. According to the EPA, “slicing or other methods that do not sand, grind, cut or abrade” do not apply to the EPA NESHAP Regulations. A Competent Person must determine that the pipeline coating is intact and will likely remain intact as defined by OSHA. Removal methods must not cause fiber release at or above the OSHA PEL.

All personnel who work adjacent to removal operations must be notified prior to any asbestos-containing pipeline coating repair or removal activities. The notification must include information regarding locations where asbestos work will be performed, the nature of the work, regulated area requirements and control measures that will be taken to prevent exposures to personnel.

Prior to beginning any asbestos-containing pipeline coating work, records (bulk sampling data) must be checked to verify if ACM is present. If unsure, verify by having a bulk sample collected by an EPA Accredited and / or Licensed Asbestos Inspector or treating it as asbestos-containing until known.

Asbestos-containing pipeline coating may be removed by SWP methods without the use of a glove bag if the coating remains intact per OSHA Standards.

If the pipeline coating is not intact or the coating within the work area is visibly deteriorated and unlikely to be removed intact, removal must take place within a glove bag as determined by the Competent Person. The pipeline coating remnants must first be sprayed with a wetting agent (surfactant) to prevent fibers from becoming airborne (refer to Appendix I for glove bag procedures).

Procedures for removing asbestos-containing pipeline coating are as follows;

- Isolate the work area; establish a regulated area by demarcating the work area with asbestos caution tape.
- Only those authorized may enter the regulated area.
- Gather tools and equipment (HEPA-filtered vacuum, spray bottle with surfactant (wetting agent), drop cloth (6-mil poly), asbestos disposal bag, glove bag, duct tape, scrub pad and wipe rags, encapsulant, disposable gloves, PPE, non-ACM replacement materials) to access and replace ACM.
- Don PPE as required by the Competent Person. If a NEA has been produced within the past 12-months, respiratory protection and protective clothing is not required by OSHA. The Competent Person shall select respiratory protection and protective clothing for each job.
- Set up and begin perimeter air monitoring and personnel air monitoring (as required by the Competent Person). If a NEA has been produced within the past 12-months, respiratory protection and protective clothing is not required by OSHA. Respirator protection and protective clothing is recommended where its use is feasible.
- Place drop cloth underneath the pipeline coating designated for removal.
- Disassemble equipment as needed to expose entire work area.
- Wrap the pipe with duct tape at each side (end) of area where coating is to be removed.
- Thoroughly wet the pipeline coating with a wetting agent.
- Slice the coating (with an approved cutting tool) at each side (end) of area where coating is to be removed
- Use non-spark tools and chip off pipeline coating while continually wetting the material.
- Remove intact pipeline coating material and place into labeled asbestos waste disposal bag.
- After gross removal is complete, wet pipe surface and use a flat blade slicing tool to remove any remaining material.
- Clean area where the pipeline coating was installed with a scrub pad and wet wipe upon completion. The use of an approved solvent may be necessary.
- Spray the area where the pipeline coating was installed with an approved asbestos encapsulant.
- Clean all tools by washing with surfactant water (dispose of water in the disposal bag).
- Clean protective clothing with a HEPA vacuum (dispose of clothing in the disposal bag).
- Place all debris, including scrub pad, rags, drop cloth (roll or fold inward to contain debris), disposable gloves and disposable clothing in the asbestos waste disposal bag. Evacuate air in the bag using a HEPA-filtered vacuum and seal with duct tape (twist top of bag, goose neck and seal air tight with duct tape). Place the sealed asbestos waste disposal bag into a second waste bag and seal as indicated for the first bag.
- Properly bag and tag respirator for proper cleaning upon completion of the project.
- Install new materials and reassemble equipment.
- Dispose of ACM waste bag with contaminated materials in a sealed and labeled designated asbestos waste container. The facility management team will arrange for transportation of the waste material to an approved asbestos waste landfill (refer to Section 4.10 for Waste Management Requirements).

4.9.3 Vehicle Brake and Clutch Assemblies

- Vehicle brake pads and clutch plates may contain asbestos. Personnel who work on vehicle brake pads and clutch plates may do so (per OSHA) without additional PPE as long as they utilize wet methods and do not exceed five brake or clutch jobs per week. If more than five brake or clutch jobs are performed within one week, OSHA requires specific engineering controls and work practices.
- At all times while performing this work, a wetting agent (surfactant) must be used to prevent fibers from becoming airborne.
- Dry brushing or the use of compressed air is prohibited by OSHA.
- All residual dust must be cleaned up using a HEPA equipped vacuum cleaner and wet wiping
- The use of compressed air for removing dust or debris is prohibited.
- Asbestos-containing brake pads, clutch pads and associated remnants must be disposed of as outlined in Section 4.10 (Waste Management) of this document.

4.10 Waste Management

ACM shall be disposed of in accordance with OSHA Regulation 29 CFR Parts 1910 and 1926, EPA Regulation 40 CFR Part 61, and all state requirements. NESHAP Regulations affecting transportation and disposal of asbestos-containing wastes were published on November 20, 1990 (55, FR 48406).

ACM (including gaskets, pipeline coating, brake pads, clutch plates and associated remnants) must be disposed of in OSHA approved asbestos waste bags. Waste bags and drums must be labeled as specified in Section 4.3.2 (Warning Signs and Labeling of ACM/PACM).

Asbestos wastes should be thoroughly wetted and placed in 6-mil plastic bags with the appropriate asbestos warning label. Bags should be sealed airtight while the waste material is still wet. Bag tops should be twisted and sealed with 3-wraps of duct tape, then bent over and sealed again with 3-wraps of duct tape. The bag should then be placed inside a second 6-mil plastic bag with appropriate labels. Regulations require a warning label on each bag which includes the waste generator's name and generating location. If waste materials are not immediately disposed of, they should be stored in a restricted area, with bags accumulated in a labeled plastic-lined cardboard or metal drum. Additional material should not be added to bags and bags should not be reopened after they have been sealed.

Many state asbestos regulations have disposal requirements which include additional waste container labeling information and transportation requirements.

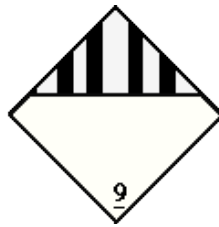
Disposal of asbestos may require pre-approval from state agencies as well as profiling from the disposal company prior to waste being accepted. Contact your local Field Environmental Coordinator or Waste Coordinator prior to asbestos abatement or demolition work to confirm that all approvals are acquired proactively.

- Asbestos disposal in most states requires an asbestos waste manifest form to be submitted to the owner, by a Licensed Contractor, upon completion of an asbestos abatement project
- According to the EPA NESHAP, ACM must be collected and sealed in airtight drums or by other methods deemed appropriate by the Competent Person as soon as possible after removal.

All asbestos waste must be labeled. If individual bags are collected into drums, each bag, as well as the drum, must have warning labels as follows.

**DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST**

- All containers must be marked with DOT information. A Class 9 label must be affixed. The name of the waste generator, BP, and location the waste was generated must be on each bag.
- Vehicles used onshore to transfer ACM must also be marked with a DOT Class 9 Placard as follows:



- Asbestos is considered a special waste. Proper manifesting must include the BP shipping manifest, BP Hazardous Material Manifest, BP non-hazardous waste manifest, any specific state required form (for shipments states with specific requirements), and any disposal landfill required manifests. The waste manifest, or Waste Shipment Record (WSR), must accompany the waste and be given to the landfill operator. The operator will return a completed WSR to the generator within 30-days. If not received within 35-days, the generator must contact the landfill or transporter. If a copy is not received within 45-days, the generator must report it in writing to the EPA.

For further information, refer to the local Waste Management SWP.

4.11 Record Keeping

OSHA requires the following records:

- Objective data that is relied on to determine if installed asbestos is not capable of releasing fibers greater or equal to the PEL or EL. This record shall be kept for the duration of the owner's reliance upon such data
- Exposure measurements, which shall be maintained for at least 30-years in Medgate
- Medical surveillance records, which shall be maintained in Medgate for the duration of employment plus 30-years
- Training records, which shall be kept on the facilities or in VTA for one year past last date of employment
- Data rebut the presumption that material is PACM, as needed

- Records and notifications, which shall be kept for the duration of ownership and then transferred to successive owners.

In addition, each Facility will keep the following records for 30-years:

- All air monitoring (data sheets, calibration, analytical reports) and bulk sampling (data sheets and analytical reports) records
- All respirator training and fit testing records
- Government agency notifications, waste transportation, treatment and disposal records
- All hazard communication (HazCom) training records
- All formal training records and licensing requirements

Though contractors are responsible for keeping their own records, GoM Region facilities shall keep copies of job contracts, contractor insurance coverage records, licensing records and monitoring results.

5 Training

For training requirements, contact the Industrial Hygiene Team.

6 Reference and Relevant Links

OMS: 3 Risk, 3.4 Health & Hygiene

7 Appendices

Appendix A: Facility Site / Equipment Plan



APP-A-Facility
Site-Equipment Plan.

Appendix B: List of Known ACM within the Facility



APP-B-List of Known
ACM Within the Facilit

Appendix C: List of Suspect ACM (PACM)



APP-C-List of
Suspect ACM.doc

Appendix D: Sample Employee and / or Contractor ACM or PACM Notification Letter



APP-D-Employee
and/or Occupant PAC

Appendix E: Building / Facility Asbestos Inspection & Bulk Sampling Procedure



App-E-Building-insp
procedures.doc

Appendix F: Asbestos Bulk Sampling Form / Chain of Custody



App-F-Asbestos Bulk
Sampling Form.doc

Appendix G: Surveillance of ACM Form



APP-G-Periodic
Surveillance of ACM F

Appendix H: Negative Exposure Assessment



APP-H-Negative
Exposure Assessment

Appendix I: Asbestos Glove Bag Procedures



App-I-GlovebagProc
edure.doc

Appendix J: Asbestos Abatement Contractor Certificate of Compliance



APP-J-Contractor
Certificate of Complia

Appendix K: State Asbestos Regulatory Agencies Regulations, Training and License Requirements Summary



APP-K-StateLicenseSummary.doc

Gulf of Mexico

Document Authorization Form

Navigate through the form with the Tab key to fill in data. Just click on the boxes you wish to check



Document Details			
Special Instructions			
Document Number	UPS-US-SW-GOM-HSE-DOC-00541-2	Revision	3
Document Title	GoM Region Asbestos Operations and Maintenance Safe Work Practice (SWP)		
Next Review Date	09/15/2017		
This form to be used for authorizing new, revised and obsolete documents, please indicate clearly which category applies:			
Reason for Issue: (check as applicable)	<input type="checkbox"/> New Document	<input checked="" type="checkbox"/> Revised Document	<input type="checkbox"/> Obsolete Document

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