



UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION
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IN REPLY REFER TO:
StaO 5103.1C
ENVL

15 OCT 2007

STATION ORDER 5103.1C

From: Commanding Officer Marine Corps Air Station, Yuma
To: Distribution List

Subj: ASBESTOS-CONTAINING MATERIALS OPERATIONS AND MAINTENANCE
PROGRAM

Ref: (a) EPA 560/OPTS 20T-2003
(b) 29 CFR 1926.1101
(c) 29 CFR 1910.1001
(d) 40 CFR 763.
(e) 29 CFR 1910.134
(f) EPA 560/OPTS-86-001
(g) 29 CFR 1910.1101
(h) EPA 560/5-85-024
(i) EPA 600/4-85-024
(j) EPA 600/4-85-030A
(k) 40 CFR 61

Encl: (1) Asbestos Control Program Operations and Maintenance Plan

1. Purpose. The Asbestos Operations and Maintenance (O&M) Plan provides policies and procedures in accordance with references (a) through (k) in order to minimize the exposure of building occupants, maintenance workers, and contractors to asbestos fibers at the Marine Corps Air Station (MCAS) Yuma. In addition, it delineates specific responsibilities and actions to be taken when and where such potential exposures are found to exist as per reference (a), Managing Asbestos in Place: A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials (The "Green Book").

2. Cancellation. StaO 5103.1B.

3. Background. Asbestos minerals are very resistant to fire, heat or cold transfer, chemicals, and ultraviolet light degradation. In addition, asbestos is very strong and durable. It is generally mixed with other materials in various percentages to strengthen a material in order to make it more durable, heat resistant, or produce an acoustic muffling quality. These manufactured materials are called Asbestos-Containing Materials (ACM). The ability of an ACM to release fibers is called its friability. The definition of friable ACM is a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Exposure to asbestos fibers can cause life-threatening diseases usually manifested after a latency period of

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20-40 years. It can cause asbestosis (fibrotic lung disease), mesothelioma (cancer of the lining of the lungs or abdominal cavity), lung cancer, or digestive cancers.

In recognition of the serious health hazards associated with the exposure to asbestos and the numerous sources of potential exposure, the Government has established strict controls to limit both occupational and environmental exposures. It should be noted that the use of asbestos poses minimal risk as long as it is handled correctly.

4. Policy. It is the policy of MCAS Yuma to provide a safe and healthful working and living environment for all personnel. Established asbestos control safety procedures will be adhered to in order to effectively eliminate the hazards of asbestos exposure. Training will be provided to all MCAS Yuma personnel who have the potential for asbestos exposure, in accordance with references (a) The "Green Book" (b) 29 CFR 1926.1101 Asbestos in the Construction Industry, and (c) 29 CFR 1910.1001 General Industry Standard for Asbestos. To assure maximum safety in the maintenance and repair of the facilities at MCAS Yuma the following items are directed:

a. Only non asbestos-containing materials may be purchased, used, or approved for use on existing and proposed Marine Corps facilities.

b. Notification is required prior to any renovation or demolition as described by paragraph 9 of this instruction.

c. Structures constructed, repaired, and/or maintained prior to 1988 should be assumed to contain asbestos unless appropriate sample analysis proves otherwise.

d. Asbestos-containing materials (ACM) that are identified as being in a safe (intact) condition on existing facilities do not represent a hazard until there is a need to remove or physically disturb the material.

e. Large-scale testing and removal of ACM on MCAS Yuma facilities should not be implemented solely to alleviate a potential asbestos hazard.

5. Elements of the O&M Plan. There are seven basic elements to the Asbestos O&M Plan according to the EPA "Green Book", reference (a). These elements represent a pro-active asbestos management program for existing asbestos in and around buildings or other structures

a. Notification: Notification of building occupants, maintenance and custodial personnel, visitors, and contractors of the location and types of ACM and procedures to avoid disturbance.

b. Work Controls/Work Orders or Service Calls: A system to review all work requests (for new construction or renovation) and service calls (for general maintenance) for the likelihood of disturbing ACM.

c. Work Practices: Specific work practices are established to avoid or minimize fiber release during activities affecting ACM.

d. Record keeping: Documentation of all O&M activities including inspection and survey data, physical condition of the ACM, response and abatement actions, employee training, and medical and respiratory program information.

e. Training: Personnel involved with ACM management will be trained in accordance with EPA regulations. Awareness training is recommended for occupants of buildings that contain asbestos.

f. Worker Protection: The worker protection portion of the program includes medical surveillance, issuance and use of proper personal protective equipment (including respiratory protection) to perform asbestos-related tasks, exposure monitoring, air monitoring, and use of proper equipment and supplies as per references (d) 40 CFR 763 Subpart G, "Worker Protection Rule", (e) 29 CFR 1920.134 OSHA Respiratory Protection Standard, and (f) EPA 560/OPTS-86-001 Respiratory Protection Guidance.

6. Program Responsibilities. Responsibilities are assigned as follows:

a. Supervisors and Contractors

(1) Shall not perform work unless they have provided a written OSHA Compliance Plan and the Plan has been approved by the Asbestos Program Manager (APM) located in the environmental department. In addition, copies of all training and health certificates must be provided to the APM prior to start of any work.

(2) Shall ensure that personnel required to perform work involving asbestos follow the appropriate regulatory guidelines: OSHA Asbestos in the Construction Industry, references (b) and (g); OSHA Respiratory Protection Standard, reference (d), OSHA General Industry Standard, reference (c), and Guidance for Service and Maintenance Personnel, reference (h).

(3) Shall provide protective clothing, respirators, all necessary equipment and supplies, shower facilities, and medical surveillance for their workers, as required.

(4) Shall ensure that workers are adequately trained.

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(5) Shall ensure proper notification to individuals who may be affected by this work.

(6) MCAS Yuma personnel shall request all work operations that involve potential occupational asbestos exposures be evaluated by the Asbestos Program Manager (APM).

b. The MCAS Yuma APM

(1) Shall provide overall coordination of the Asbestos Program at MCAS Yuma.

(2) Shall review and update this Station Order at least annually. A committee consisting of a Respirator Protection Program Manager, Industrial Hygienist, Safety Coordinator, Medical Officer/Occupational Nurse, and Asbestos Inspector support the APM in the implementation of the Asbestos O&M Plan.

c. All Personnel with Potential Exposure to Asbestos

(1) Shall be trained in accordance with 40 CFR 763, reference (d), obtain and properly use personal protective equipment (PPE) and use safe work practices as trained when working with asbestos.

(2) Shall report fro medical surveillane test and examinations as required.

(3) Shall follow procedures as specified in the Asbestos O&M Plan.

7. Asbestos Work/Abatement.

a. Asbestos fibers may be released during general maintenance, renovation or demolition activities, thereby presenting an asbestos exposure potential. There are four classes of asbestos work as set forth in 29 CFR 1926.1101, reference (b).

(1) Class I: Activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM. This includes but is not limited to sprayed-on and toweled-on fireproofing/surfacing and acoustical ceilings.

(2) Class II: Activities involving removal of ACM or PACM which is not TSI or surfacing materials. This includes but is not limited to, the removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

(3) Class II: Repair and maintenance operations where ACM and PACM including TSI and surfacing ACM and PACM is likely to be disturbed.

(4) Class IV: Custodial and housekeeping operations where employees contact but do not disturb ACM or PACM and activities to clean up dust, waste, and debris resulting from Class I, II, and III activities. Asbestos-contaminated waste and clothing will be disposed of in accordance with all regulations.

8. To assess, and minimize, asbestos exposure potential, the following procedures are established:

a. Work Initiation/Work Requests or Service Calls

(1) Engineering Technicians, Engineers, Architects, Contractors, and the Self-Help Coordinator shall address asbestos in the planning stages of projects.

(2) MCAS Yuma personnel and contractors requesting maintenance or work, or an asbestos inspection shall submit a Work Request to the APM located in the environmental department.

(3) The APM will consult building records for historical data pertaining to asbestos inspections and surveys to ascertain whether sampling is warranted.

b. Sampling and Analysis

(1) If sampling is warranted, then an accredited Asbestos Inspector will sample all suspect ACM that might be affected by the proposed work pursuant to the EPA's Guidance for Controlling Asbestos-Containing Materials in Buildings (the "Purple Book"), reference (i), and reference (j) EPA's Simplified Sampling Scheme for Surfacing Materials (the "Pink Book").

(2) A duly accredited laboratory using the technique of Polarized Light Microscopy (PLM) and/or Transmission Electronic Microscopy (TEM) will analyze the samples.

c. Notification of Results. The APM for MCAS Yuma shall:

(1) Use the final lab results to notify the Industrial Hygienist, BSD, contractors, building occupants and other personnel as appropriate, of any building or area testing positive for asbestos.

(2) Use the final lab results to determine the appropriate response action for any proposed project, whether it requires maintenance or abatement activities.

(3) Notify the originator of the work request of all regulatory requirements to be performed.

d. Compliance Work Plan

(1) The approved contractor will file OSHA Asbestos in Construction Compliance Plan for any work affecting ACM at MCAS Yuma prior to undertaking such work. The APM will approve the Compliance Plan before work commences.

e. Work Practices

(1) The approved contractor shall ensure that personnel required to perform work involving asbestos follows the appropriate regulatory guidelines.

(2) Asbestos work will be reviewed and approved by the APM, the Resident Officer in Charge of Construction (ROICC) and/or Engineering Technicians (ET).

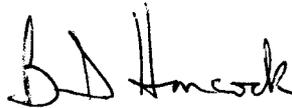
f. Record keeping. The APM will maintain all records of asbestos related work undertaken at MCAS Yuma.

9. EPA compliance 40 CFR Subpart M Section 61.145, reference (k) provides the administrator with written notice of intention to demolish or renovate. This means that prior to any commencement of demolition or renovation; you must thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II non-friable ACM. If you encounter a combined amount of RACM if at least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or at least 1 cubic meter (35 cubic feet) if facility components were the length or area could not be measured previously. In a facility being renovated, including any individual nonscheduled renovation operation, all the requirements listed above apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed is; at least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components. Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable. At least 10 working days before asbestos stripping or removal work or any other activity begins such as site preparation that would break up, dislodge or similarly disturb asbestos-containing material). In no event shall an

operation covered by this paragraph begin on a date other than the date contained in the written notice of the start date.

a. Contractors shall submit the completed NESHAP notification to the Asbestos Program Manager for review and submission to the State five working days prior to the start date on the NESHAP 10 day notification.

b. The Station Environmental Department shall inspect, approve, and sign all Waste Manifests and shipments leaving MCAS Yuma; this includes inspection of the transport vehicle and the waste contents. The transport driver MUST be present for original signatures. For questions on this matter contact: The Station Environmental Department at ext. (928)269-5215/3201.



B. D. HANCOCK

DISTRIBUTION: B

FINAL REPORT

STATION ORDER 5103.1C ASBESTOS CONTROL PROGRAM OPERATIONS AND MAINTENANCE PLAN MARINE CORPS AIR STATION YUMA, ARIZONA

Prepared for

Southwest Division Naval Facilities Engineering Command
and
Marine Corps Air Station Yuma

April 2003

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List of Acronyms

ACM	asbestos-containing material
ADEQ	Arizona Department of Environmental Quality
AHERA	Asbestos Hazard Emergency Response Act
AIHA	American Industrial Hygiene Association
APM	Asbestos Program Manager
BSD	Base Services Department
CFR	Code of Federal Regulations
CP	Competent Person
DOS	Department of Safety
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
f/cc	fibers/cubic centimeter
HEPA	High-Efficiency Air Particulate
HVAC	Heating, Ventilation and Air Conditioning
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIOSH	National Institute of Occupational Safety and Health
NIBS	National Institute of Building Sciences
NIST	National Institute of Standards and Technology
O&M	Operations & Maintenance
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PACM	presumed asbestos-containing material
PCM	phase contrast microscopy
PEL	Permissible Exposure Limit
PLM	polarized light microscopy
PPE	personal protective equipment
RACM	Regulated Asbestos Containing Material
ROICC	Resident Officer in Charge of Construction
RPPM	Respiratory Protection Program Manager
TEM	transmission electron microscopy
TSI	Thermal System Insulation
WSR	waste shipment record

Definitions

ABATEMENT - Procedures to control fiber releases from asbestos-containing materials; includes encapsulation, repair, enclosure, and removal.

AIR LOCK - A system for permitting personnel passage without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 6 feet (2 meters) apart.

AIR MONITORING - The process of measuring the fiber content of a specific volume of air in a stated period of time.

ASBESTOS - A group of naturally occurring minerals that separate into small thin fibers. There are six asbestos minerals used commercially: chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite.

CLEAN ROOM - An uncontaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment.

COMPETENT PERSON - As described in 29 CFR, Part 1910.1101 and 1926.58.

CONTAMINATED AREA - A work area where airborne concentrations of asbestos exceed or can reasonably be expected to exceed the Permissible Exposure Limit (PEL).

DEMOLITION - The destruction or removal of any structural member of a facility, together with any related handling operations.

ENCAPSULATION - Applying a penetrating or bridging sealant to the friable asbestos material (left intact) to render it non-friable.

ENCAPSULANT (SEALANT) - A liquid material which can be applied to asbestos-containing material and that controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

ENCLOSURE - All herein specified procedures necessary to complete enclosure of all asbestos-containing material behind airtight, impermeable, permanent barriers.

EQUIPMENT ROOM - A contaminated area or room that is a part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.

FRIABLE ASBESTOS MATERIALS - Any material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder (when dry) by hand pressure. (Drilling, grinding, etc.)

GLOVE BAG TECHNIQUE - A method with limited applications for removing small amounts of friable asbestos containing material from ducts, short pipe runs, valves, joints and elbows

HEPA FILTER - High Efficiency Particulate Air Filter capable of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 micrometer in length as defined by EPA and ASHERA

HEPA VACUUM EQUIPMENT - Portable vacuum cleaners fitted with certified (UL 586 label) HEPA Filters.

INTACT - ACM has not crumbled, been pulverized or otherwise deteriorated so that it is no longer likely to be bound within its matrix

REMEDIATION - A process of asbestos management involving removal, repair, encapsulation, encasement, etc.

REMOVAL - All herein specified procedures necessary to strip all asbestos-containing materials from the designated areas and to dispose of these materials at an acceptable site.

RENOVATION - Altering in any way one or more of a facility components.

EXECUTIVE SUMMARY

The Asbestos Operations and Maintenance (O&M) Plan provides policies and procedures in accordance with references (a) through (n) in order to minimize the exposure of building occupants, maintenance workers, and contractors to asbestos fibers at the Marine Corps Air Station (MCAS) Yuma. In addition, it delineates specific responsibilities and actions to be taken when and where such potential exposures are found to exist.

Asbestos minerals are very resistant to fire, heat or cold transfer, chemicals, and ultraviolet light degradation. In addition, asbestos is very strong and durable. It is generally mixed with other materials in various percentages to strengthen a material in order to make it more durable, heat resistant, or produce an acoustic muffling quality. These manufactured materials are called asbestos-containing materials (ACM). The ability of an ACM to release fibers is called its friability. The definition of friable ACM is a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

Exposure to asbestos fibers can cause life-threatening diseases usually manifested after a latency period of 20-40 years. It can cause asbestosis (fibrotic lung disease), mesothelioma (cancer of the lining of the lungs or abdominal cavity), lung cancer, or digestive cancers. In recognition of the serious health hazards associated with the exposure to asbestos and the numerous sources of potential exposure, the Government has established strict controls to limit both occupational and environmental exposures. It should be noted that the use of asbestos poses minimal risk as long as it is handled correctly.

It is the policy of MCAS Yuma to provide a safe and healthful working and living environment for all personnel. Established asbestos control safety procedures will be adhered to in order to effectively eliminate the hazards of asbestos exposure. Training will be provided to all MCAS Yuma personnel who have the potential for asbestos exposure.

There are seven basic elements to the Asbestos O&M Plan. These elements represent a pro-active asbestos management program for existing asbestos in and around buildings or other structures.

1. Notification: Notification of building occupants, maintenance and custodial personnel, visitors, and contractors of the location and types of ACM and procedures to avoid disturbance.
2. Periodic Surveillance/Re-inspection: Regular (annual) surveillance of ACM to note, assess, and document changes in condition. Re-inspections will be performed every 3 years.
3. Work Controls/Work Orders or Service Calls (Maximo) A system to review all work requests (for new construction or renovation) and service calls (for general maintenance) for the likelihood of disturbing ACM.
4. Work Practices: Specific work practices are established to avoid or minimize fiber release during activities affecting ACM.
5. Recordkeeping: Documentation of all O&M activities including inspection and survey data, physical condition of the ACM, response and abatement actions, employee training, and medical and respiratory program information.
6. Training: Personnel involved with ACM management will be trained in accordance with EPA regulations. Awareness training is recommended for occupants of buildings that contain asbestos.

7. Worker Protection: The worker protection portion of the program includes medical surveillance, issuance and use of proper personal protective equipment (including respiratory protection) to perform asbestos-related tasks, exposure monitoring, air monitoring, and use of proper equipment and supplies.

The Asbestos Operations and Maintenance Plan also describes the responsibilities of personnel involved. These include the Asbestos Program Manager, Respiratory Protection Program Manager, Industrial Hygienist, Safety Coordinator, Medical Officer/Occupational Nurse, Asbestos Inspector, Supervisors, Contractors, and those persons that may be exposed to asbestos-containing materials.

The Plan discusses the regulatory framework in which asbestos work shall be performed and the different classes of work; from custodial activities to removal. Disposal practices are also a very integral part of the Plan.

This Plan was produced in conjunction with Station Order 5103.1C, which summarizes and provides general highlights of the Plan. The Operations and Maintenance Plan should be read in its entirety by persons who hold the positions discussed in the second paragraph above as well as all custodial personnel as they are responsible for the safe handling of asbestos-containing materials.

1.0 INTRODUCTION

1.1 OBJECTIVE

This Asbestos Operations and Maintenance (O&M) Plan is one of the key elements in the Marine Corps' Asbestos Management Program Ashore. It provides a responsible alternative to asbestos removal by developing a pro-active, in-place asbestos management program for existing asbestos in and around buildings.

The Asbestos O&M Plan minimizes exposure of building occupants, maintenance workers, and contractors to asbestos fibers by establishing work practices and procedures. The purpose of the work practices is to:

- ◆ Maintain existing asbestos-containing materials (ACM) in good condition;
- ◆ Ensure proper cleanup of asbestos fibers previously released;
- ◆ Prevent further release of asbestos fibers; and
- ◆ Monitor the condition of the ACM.

The Plan must address the management of all types of ACM including surfacing material, thermal system insulation, and other applications such as floor and ceiling tiles, fabrics, etc. Both friable and non-friable materials are considered and managed appropriately. Friable materials are those that can be crushed by hand pressure.

By law, all friable and non-friable ACM that will become friable must be removed from buildings before demolition or renovation, since these actions will impact the material. Therefore, the Asbestos O&M Plan is **not** a permanent solution, but limited to intentional disruption of ACM for repair, or removal of small areas of significantly damaged material, or small areas where removal is necessary to facilitate maintenance/renovation activities.

1.2 O&M ELEMENTS

According to the U.S. Environmental Protection Agency (EPA), an Asbestos O&M Plan should include the following seven elements:

- 1) **Notification:** A program to notify building occupants, maintenance and custodial personnel, visitors, and contractors of the location of ACM and procedures to avoid disturbance.
- 2) **Periodic Surveillance/Re-inspection:** Regular surveillance of ACM to note, assess, and document changes in condition. Perform periodic surveillance on an annual basis, in conjunction with the annual building safety or facility inspection. Document and report changes in the condition of the ACM to the Asbestos Program Manager (APM). Additionally, EPA-certified inspectors will perform a complete re-inspection every three years.

- 3) **Work Controls/Work Orders and Service Calls:** A system to review all work requests for the likelihood of disturbing ACM.
- 4) **Work Practices:** Establishment of work practices to avoid or minimize fiber release during activities affecting ACM. Work practices are detailed in the National Institute of Building Sciences (NIBS), *Guidance Manual: Asbestos Operations & Maintenance Work Practices*, and U.S. Army Corps of Engineers, *Asbestos Abatement Guidelines Detail Sheets*.
- 5) **Recordkeeping:** Documentation of all O&M activities including: inspection and survey data, physical condition of the ACM, response and abatement actions, employee training, and medical and respiratory program information.
- 6) **Training:** Training of personnel involved with ACM management, including: the APM, building inspectors, project designers, and removal workers in accordance with EPA regulations in an accredited course. Maintenance and custodial personnel, where their work activities may result in the disturbance of ACM, require training in proper O&M procedures, in accordance with EPA regulations. Awareness training is recommended for occupants of buildings that contain asbestos. Through proper training, the incidence of accidental disturbance can be greatly reduced.
- 7) **Worker Protection:** Requirements are set forth in the Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1926.1101.

1.2.1 ACM Categories

This Asbestos O&M Plan addresses all types of ACM present in buildings at Marine Corps Air Station (MCAS) Yuma. A material is considered to contain asbestos if the asbestos content of the material is at least one percent. ACM is classified in one of the three following categories:

- ◆ **Surfacing Material:** Examples include ACM sprayed or troweled on to surfaces such as decorative plaster on ceilings, acoustical ACM on the underside of concrete slabs or decking, or fireproofing materials on structural members.
- ◆ **Thermal System Insulation (TSI):** Examples include ACM applied to pipes, boilers, tanks, and ducts to prevent heat loss or gain, or condensation.
- ◆ **Miscellaneous ACM:** Examples include asbestos-containing ceiling or floor tiles, textiles, and other components such as asbestos-cement panels, asbestos siding, transite panels and roofing materials.

Note: For the purposes of this document, ACM shall also include those materials not tested but presumed to contain asbestos, or presumed asbestos-containing material (PACM). Only laboratory analysis of bulk samples, conducted by an accredited laboratory, can demonstrate that PACM is non-asbestos. Until determined that PACM is non-asbestos, all asbestos regulatory requirements apply.

1.3 SCOPE

The Asbestos O&M Program is divided into three types of projects:

- ◆ Those which are unlikely to involve any direct contact with ACM;
- ◆ Those which may cause accidental disturbance of ACM; and

- ◆ Those that involve relatively small disturbances of ACM.

The first type of project involves routine cleaning of shelves and counter tops or other surfaces in a building (provided ACM debris is not present). Generally, such activities would not disturb ACM. The second type of project could include maintenance work above a suspended ceiling in an area that may have surfacing ACM overhead. The third type of project (small maintenance, repair, or installation projects involving minor disturbances of ACM) includes activities such as the installation of new light fixtures on, or in, an ACM ceiling. Another example is a single glove bag operation to remove a small amount of TSI to repair a pipe in a boiler room.

On 10 August 1994, OSHA defined four classes of asbestos work. They include:

- ◆ Class I: Activities involving the removal of TSI and sprayed-on, troweled-on, or otherwise applied surfacing ACM and PACM.
- ◆ Class II: Activities involving removal of ACM or PACM that is not TSI or surfacing materials.
- ◆ Class III: Repair and maintenance operations that are likely to disturb ACM or PACM.
- ◆ Class IV: Custodial and housekeeping operations where minimal contact with ACM or PACM may occur.

Larger scale projects (Classes I and II) involving more complex procedures for the intentional removal of ACM are considered asbestos abatement projects. Asbestos abatement projects include ACM removal prior to demolition and enclosure during renovation. These projects require asbestos control and abatement procedures that are outside the scope of this Asbestos O&M Plan. However, information on the location of removal, enclosure, or encapsulation should be used to update the building O&M files. Inventory records should be updated as needed to include change in condition, amount, and accessibility. For contract projects, require the abatement contractor to forward, to the APM, copies of updated building drawings, which note the location of removed and remaining ACM; National Emission Standards for Hazardous Air Pollutants (NESHAP) notifications; disposal records; Compliance Plan, and, final air clearance sampling results.

1.4 APPLICABLE STANDARDS AND GUIDANCE DOCUMENTS

Federal, state, and local regulations provide the basis for developing an activity's O&M plan. Table 1 shows the most pertinent regulations applicable to MCAS Yuma. A list of pertinent regulations and guidance documents is included as Appendix A. Since rules and regulations affecting asbestos management are constantly revised, some conflicting information may be found within the listed documents. In such cases, follow the more restrictive guidance. Utilize these standards as a reference for the Asbestos O&M Plan.

Table 1. Applicable Standards and Guidance

Regulation/ Guidance	Type	Citation	Remarks
NESHAP ¹ , Subpart M	Federal Regulation	40 CFR 61	<ul style="list-style-type: none"> Regulates asbestos demolition, construction, and removal activities. Defines friable and non-friable asbestos at 1% by area.
ADEQ ²	State/Local Regulation	40 CFR 61	<ul style="list-style-type: none"> Enforces NESHAP requirements.
AHERA ³	Federal Regulation	40 CFR 763	<ul style="list-style-type: none"> Defines procedures for handling and managing asbestos in schools. Sets forth training requirements of asbestos workers under the Model Accreditation Plan.
OSHA ⁴	Federal Regulation	29 CFR 1926.1101 29 CFR 1915.1001 29 CFR 1910.1001	<ul style="list-style-type: none"> Defines exposure and excursion limits, general health and safety.
Purple Book	Federal Guidance	EPA 560/5-85-024	<ul style="list-style-type: none"> Guidance on identification of management planning of in-place asbestos.
Respiratory Protection	Federal Regulation	29 CFR 1910.134 29 CFR 1926.1101 29 CFR 1915.1001	<ul style="list-style-type: none"> Regulations for respirator use, fit test, training.
Sampling	Federal Guidance	EPA 560/5-85-030A	<ul style="list-style-type: none"> Definition of homogeneous area.

¹NESHAP: National Emission Standards for Hazardous Air Pollutants

²ADEQ: Arizona Department of Environmental Quality

³AHERA: Asbestos Hazard Emergency Response Act

⁴OSHA: Occupational Safety and Health Administration

1.5 BACKGROUND AND SITE DESCRIPTION

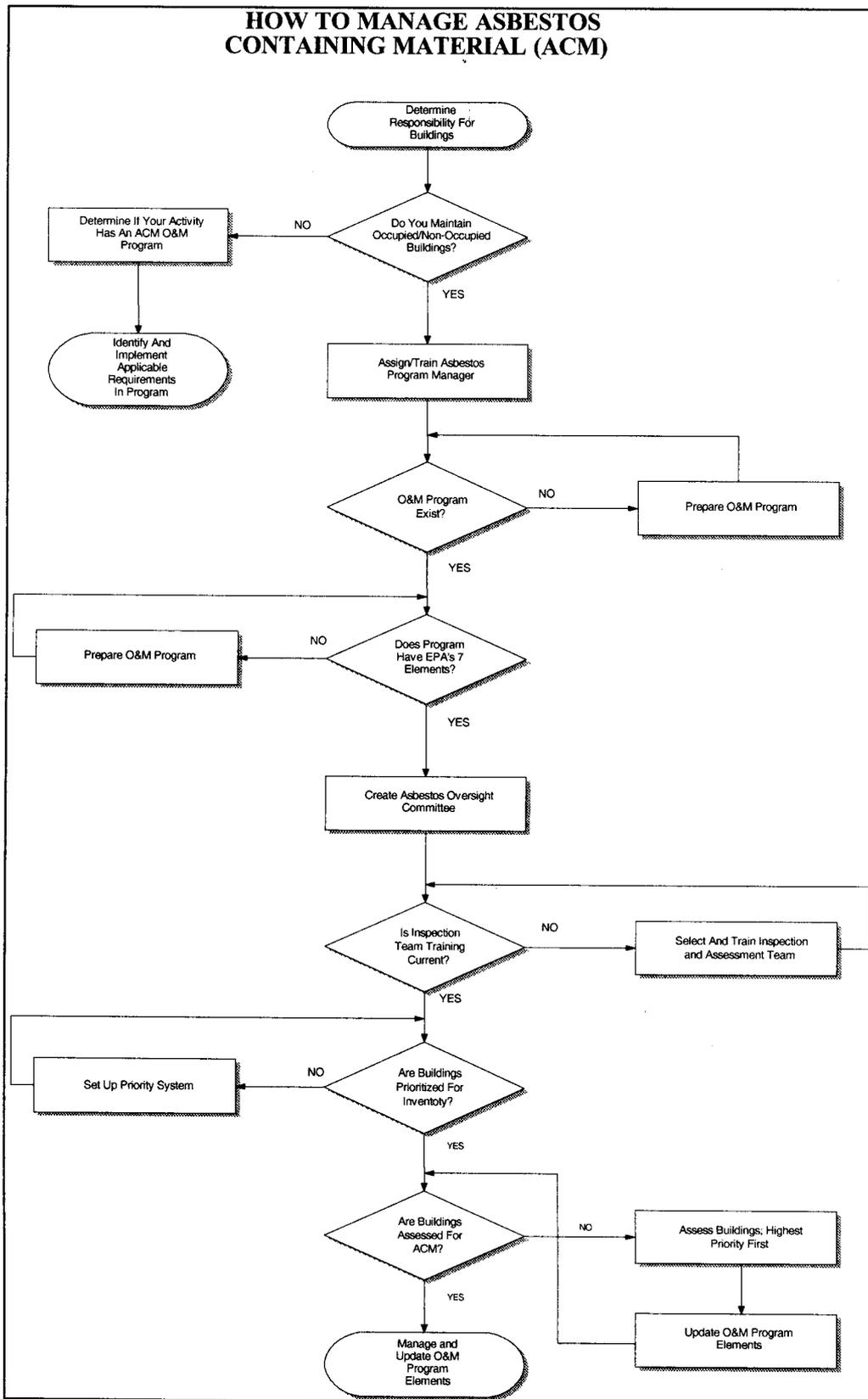
MCAS Yuma consists of the main air station, two satellite facilities, and ranges that, when combined, encompass approximately 1.34 million acres of desert lands in the states of Arizona and California. The main air station is situated in the southeast portion of the City of Yuma.

There are over 500 buildings at MCAS Yuma, many of which were constructed during World War II and inherited from the United States Army and Air Force. The main air station consists of an airfield with runways, taxiways, parking aprons, and operations and training buildings. There are also bachelor housing and personnel support facilities, including the commissary, theater, bowling alley, outdoor recreation facilities, Sonora Pueblo consolidated Club. There is a family housing area located in the southeastern part of the air station and a water treatment plant along Avenue 3E, adjacent to the family housing area. The southern portion of the station is occupied by the ordnance storage and handling facilities.

The Environmental Department at MCAS Yuma is responsible for ensuring that facility-wide activities comply with applicable Clean Air Act regulations and ADEQ requirements. The schedule identifies each individual structure at the station, whether an asbestos survey has been conducted, and what materials were found to contain asbestos. This Asbestos O&M Plan is based upon materials assumed and confirmed to

contain asbestos, identified on the schedule and upon subsequent building inspections. Asbestos inspections have been conducted at MCAS Yuma on an as-needed basis prior to the potential disturbance of surfaces by demolition, renovation, and maintenance activities. Records and inventories of inspections are on file at the Station Environmental Department.

The flow chart on the following page summarizes the general process for the management of ACM at MCAS Yuma.



2.0 ASBESTOS PROGRAM MANAGER RESPONSIBILITIES

2.1 ASBESTOS PROGRAM MANAGER

The Commanding Officer of MCAS Yuma has appointed the Station Environmental Department to designate an appropriate person as the APM. To implement all aspects of the asbestos program, the APM shall be properly qualified through training and experience. Training should include Asbestos Hazard Emergency Response Act (AHERA) as a Building Inspector/Management Planner, Project Designer, and Contractor/Supervisor.

The APM and or his/her alternate have the authority to oversee all asbestos-related activities in buildings, including inspections, O&M activities, abatement actions and response actions. The APM shall ensure that federal building workers are trained in O&M procedures. In addition, the APM shall verify that custodial and maintenance staffs, contractors, and outside service vendors, with regard to all asbestos-related activities, are in compliance with current asbestos regulations. All maintenance or repair activities dealing with ACM, whether friable or non-friable, are approved by the APM prior to implementation. The APM shall implement the following procedures:

- ◆ Initiate the provisions of this Asbestos O&M Plan;
- ◆ Ensure the proper cleanup of damaged ACM;
- ◆ Initiate monitoring and surveillance of identified ACM;
- ◆ Initiate and define regulated areas to control unauthorized access to ACM;
- ◆ Assess the need for other control measures and response actions; and
- ◆ Approve abatement projects if additional corrective action is necessary.

The APM should be accredited by the EPA as an Asbestos Inspector, Management Planner, Contractor/Supervisor, and Project Designer. These four types of training are the recommended minimum training for the APM. These training disciplines will ensure the APM is knowledgeable in all aspects of asbestos management and operation procedures. The APM will implement this Asbestos O&M Plan and update it as necessary. The APM shall:

- ◆ Notify building occupants of ACM in their building via memo or asbestos awareness training. Additionally, maintain a building plan, in a readily accessible area, indicating the location of all known ACM or PACM.
- ◆ Ensure workers directly involved with ACM abatement activities are accredited by the EPA.
- ◆ Provide contractors/contract workers, who may come in contact with asbestos, with information regarding the exact location of ACM in their work vicinity.
- ◆ Post warning labels directly on the ACM. If direct labeling is not possible, post a warning sign on the entry doors. Post warning signs on the doors of all mechanical rooms where ACM may be encountered.

- ◆ Ensure that ACM is maintained in good condition until its required removal for maintenance, renovation, or demolition.
- ◆ Ensure the ADEQ NESHAP Notification for the removal of Regulated Asbestos Containing Material (RACM) removal is properly completed prior to the start of the removal of RACM.
- ◆ The air station Environmental Department shall review and approve all NESHAP Notifications and will be the activity that submits the completed NESHAP Notification to ADEQ..
- ◆ The air station Environmental Department shall review and approve all work plans written for asbestos abatement and/or renovation work involving asbestos prior to beginning work activities.
- ◆ Ensure that all asbestos-related work activities at MCAS Yuma are in accordance with aforementioned federal and state rules, regulations, and requirements.
- ◆ No work shall start with out written authorization from the APM indicating that the plan has been accepted and all required documents have been reviewed.

2.2 OVERSIGHT COMMITTEE

This Asbestos O&M Plan establishes an Asbestos Control Program Oversight Committee. The committee meets on a quarterly basis to discuss current and upcoming projects that impact asbestos. The APM is responsible for establishing a meeting time and place.

The committee shall be comprised of the APM, Respiratory Protection Program Manager (RPPM), Medical Clinic Industrial Hygienist and Medical Officer, and representatives from the Environmental Department, Base Services Department (BSD), Facilities Maintenance Engineering Department, Department of Safety (DOS), and all other offices involved in asbestos management. Additionally, include representatives from the Resident Officer in Charge of Construction (ROICC) when discussing impending contracts involving asbestos work. Current members of the committee are listed in Table 2.

Table 2. Asbestos Oversight Committee Members

Title	Department/Code	Phone
APM	Environmental Dept./6280/ENVL	(928) 269-5215
Industrial Hygienist	DOS	(928) 269-3610
OSH	DOS	(928) 269-5699
Med. Officer / Occupational Nurse	Medical Clinic	(928) 269-2567
Asbestos Inspector	Environmental Dept./6280/ENVL	(928) 269-5136
Air Program Manager	Environmental Dept./6280/ENVL	(928) 269-3201

The following paragraphs describe the responsibilities of the Oversight Committee:

Program Oversight: The APM will administer, as well as ensure, regulatory compliance for asbestos-related projects at MCAS Yuma. In addition, the APM will provide technical support to customers in conjunction with inspection, sampling, awareness training, etc.

Inventory: The APM will maintain records from completed asbestos building inventories. AHERA-certified inspectors shall complete additional inventories and sample collection. Information from these surveys shall be incorporated by the APM into the inventory record. Periodic re-inspections will be performed according to applicable regulations.

Training: The APM will ensure that applicable personnel certifications are current and to conduct awareness training when and where as needed. The RPPM DOS will be responsible for issues related to the respirator program.

Project Initiation: Asbestos abatement projects are either customer generated by filing a work order with BSD (Maximo) or submitted by the APM.

Project Design: The APM will participate in support of project design accomplishment by BSD.

Abatement Plan: Abatement projects being accomplished by contractor personnel require submissions of an OSHA Compliance Plan, proof of certification for personnel and equipment, and proof of medical surveillance..

Environmental Compliance: The APM shall assume responsibility, and be the point of contact, in coordination with the Environmental Department for all compliance issues concerning applicable regulations relative to asbestos and asbestos abatement policies and procedures at MCAS Yuma.

Work Orders and Service Calls: Work Orders/Service Calls will be completed via (MAXIMO). Depending on the information provided, the APM will assign each request a priority Code. Emergencies will be handled as appropriate..

Notification: The APM will notify building occupants, custodial workers, contractors, and maintenance staff of the presence and condition of ACM, and the need to avoid disturbance. FMD, BSD, or contractors performing asbestos abatement or O&M activities will be required to notify building occupants prior to beginning the project.

Abatement: During performance of asbestos abatement functions, the project(s) Competent Person (CP) will have complete authority over abatement actions. The CP is responsible for seeing that the entire abatement conforms to the approved abatement plan and all applicable regulations as set forth in the CFR, and the policies of the MCAS Yuma.

Worker Protection: The DOS is responsible to the Commanding Officer for the Occupational Safety and Health program for operations on the activity. The CP will assume responsibility for the safety of his crew during all phases of the abatement. The APM will coordinate with the CP and Safety on related issues in conjunction with abatement operations.

Air Sampling: Industrial Hygienist is responsible for any air monitoring deemed necessary by the APM in conjunction with work performed by Marine Corps personnel. Contractors are responsible for conducting any air monitoring required in association with an abatement project. Contractors shall provide copies of air monitoring sample analysis to the APM.

Materials: The APM will support the BSD with technical data concerning required equipment, type, and location of materials affected by abatement or O&M projects. The BSD or the contractor will be responsible for maintaining an adequate inventory of supplies and equipment.

Disposal: All applicable regulations shall apply to disposal of ACM. Disposal of non-friable ACM will be coordinated with the, APM, and the Environmental Department for materials review and authorization signature prior to disposal. The APM and I&L will coordinate with the appropriate Contracts Division representative to have certified dumpsters emptied, or to have additional certified dumpsters delivered and/or moved.

3.0 NOTIFICATION

3.1 NOTIFICATION OVERVIEW

The APM notifies building tenants, occupants, maintenance workers, and contractors about the location and physical condition of ACM that they might disturb, and the need to avoid disturbing the ACM. Notification informs people of the potential hazards in the vicinity. Informed persons are less likely to unknowingly disturb ACM and cause the release of fibers into the air. The methods of notification and specific information given depend on the type, location, and condition of ACM.

All building occupants should attend an asbestos awareness program. The program should inform personnel about how to avoid disturbing ACM and who to contact when they detect damaged ACM. New personnel will be informed through the new hire orientation program before they begin work. Additional notification may also be in writing or by posting signs or labels.

Clear lines of communication with all building occupants, custodial workers, contractors, and maintenance staff are an integral part of this Asbestos O&M Plan. This approach, along with information regarding the presence, location, and condition of ACM, encourages understanding that the presence of asbestos is not necessarily hazardous and that ACM can be effectively managed in place.

The ADEQ regulates asbestos work in Arizona. When abatement activities are planned, the APM will be responsible to notify the ADEQ of the planned abatement specifics.

3.2 NOTIFICATION REQUIREMENTS

In regulated service and maintenance areas, such as boiler rooms or areas known to contain friable damaged ACM, place signs adjacent to the ACM that state: "**Danger-Asbestos Hazard-Do Not Disturb Without Proper Training and Equipment**", to alert and remind contractors and maintenance staff. In areas with boilers or pipes or other service areas where the potential for damage to ACM may occur, place prominent warning signs next to or on the ACM.

The APM will conduct information briefings to reinforce and clarify written notices and signs, and provide an opportunity to answer questions. All persons likely to disturb ACM are included in the notification program. The APM informs all new employees about the presence of ACM before they begin work. Additional signs and information sessions in languages other than English are provided where a significant number of building occupants, custodial workers, contractors, maintenance staff, or visitors do not speak English. Special provisions are made for illiterate workers, such as providing clear visual information signs illustrating the potential hazards of disturbing ACM and showing where ACM is located. The specific information the APM provides for each building depends on the tasks of the building occupants and service workers. Building occupants or workers will receive additional information as it is gathered.

The APM determines the form used to notify building occupants, custodial workers, contractor, and maintenance staff. The form, at a minimum, shall contain the following information:

- ◆ Location of ACM around or within the building and where it might be disturbed;
- ◆ Condition of the ACM and the appropriate response if that condition changes;
- ◆ The health hazards of inhaling airborne asbestos and notice that the presence of ACM does not necessarily represent a health hazard;
- ◆ Warning not to disturb the ACM while performing routine work tasks;
- ◆ Directives for persons to report evidence of disturbance or damage of ACM and the name, location, and phone number of the APM;
- ◆ Notification to report any dust or debris that might come from the ACM, any change in the condition of the ACM, or any improper action by building personnel to the APM;
- ◆ Instructions to custodial, contractors, and maintenance workers who are taking special precautions during work activities to properly clean up any asbestos debris and guard against disturbing ACM;
- ◆ Results of any asbestos area air sampling conducted in the building;
- ◆ Record of ACM inspection and appropriate action taken, if any, to protect the health of people potentially exposed to ACM; and
- ◆ Notice that periodic re-inspection will occur.

A sample of a tenant notification letter is included in Appendix A.

Additional notification to building occupants is required whenever an asbestos abatement project is initiated. The APM shall send a memo, or ensure that the abatement contractor will send a memo, to building occupants prior to beginning an asbestos project. The memo should be posted outside the regulated area and include the following information:

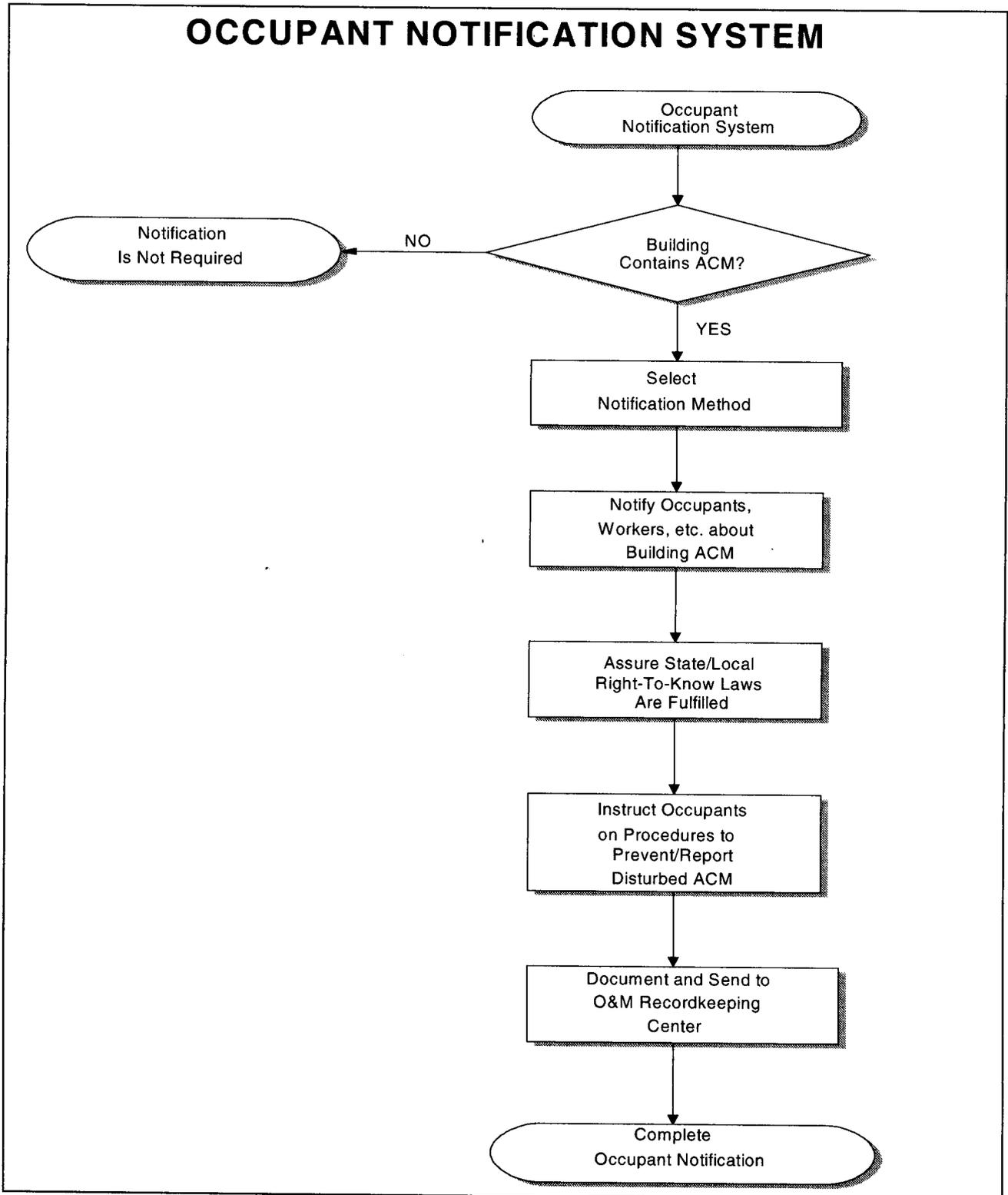
- ◆ Project location(s);
- ◆ Project dates;
- ◆ Point of contact with phone number;
- ◆ Information on what is being done to minimize/prevent any fiber release; and
- ◆ Information on periodic surveillance to ensure that remaining ACM remains in good condition.

A copy of the memo should be included in the building O&M file.

The APM must notify the ADEQ prior to performing abatement of ACM reasonably expected to exceed 160 square feet, 260 linear feet, or 35 cubic feet of ACM within a calendar year. ADEQ regulates asbestos work in Arizona. The notification to the agency should include the following information:

- ◆ Name and address of the owner or operator;
- ◆ Approximate amount of friable asbestos-containing material present in the building (in lineal or square feet);
- ◆ Location of the building being demolished or renovated;
- ◆ Scheduled starting and completion dates of the project;
- ◆ Nature of planned project and method(s) to be used (in accordance with 40 CFR Part 61, NESHAP); and
- ◆ The name and location of the waste disposal site where the asbestos waste material will be deposited.

A flow chart illustrating the Occupant Notification System is provided on the following page.



4.0 TRAINING

Training is one of the keys to a successful O&M program. In general, training provides a background on asbestos uses and health hazards, asbestos regulations, respiratory and other personal protective equipment (PPE), and key concepts of asbestos hazard control. Trained personnel reduce the risk faced by both building workers and occupants from the release of asbestos fibers due to improper work practices.

All custodial and maintenance workers, abatement workers and contractors, or other persons involved in asbestos-related activities receive training if they have the potential to disturb ACM, enter an asbestos regulated area, or perform ACM related activities.

Training complies with OSHA General Industry Standard for Asbestos (29 CFR 1910.1001); OSHA Construction Industry Standard for Asbestos (29 CFR 1926.1101); OSHA Respiratory Protection Standard (29 CFR 1910.134); EPA NESHAP (40 CFR 61, Subpart M); EPA Worker Protection Rule (40 CFR 763, Subpart G); and EPA AHERA Regulations (40 CFR 763, Subpart E).

4.1 TRAINED PERSONNEL

The APM maintains a record of trained personnel. The APM also maintains the attendance roster of custodial and maintenance workers who receive Class IV asbestos awareness training.

Table 4 lists the asbestos training and certification requirements for each type of asbestos operation.

Table 4. Asbestos Training and Certification Requirements Listed by Type of Operation

Type Operation	Type Personnel	Type Accreditation Required *	Initial Training Requirement	Annual Recert Or Refresher & Length	Regulatory Citation
Design of Projects That Involve Removal of ACM Or Work In Proximity Of ACM/PACM	Architects, Engineers, & APMs	Abatement Project Designer	3 Day Asbestos Project Designer Course	Yes 1 Day	** 40 CFR 763.92
Review Of Projects To Determine Adequacy Of Control	Engineers, Industrial Hygienists, & APMs	Abatement Project Designer	3 Day Asbestos Project Designer Course	Yes 1 Day	** 40 CFR 763.92
Person Responsible For Asbestos Removal, Encapsulation, Enclosure And/Or Repair (Class I And II Asbestos Work)	Asbestos Abatement Supervisor Or Competent Person	Asbestos Abatement Contractor/ Supervisor	5 Day Asbestos Abatement Contractor/ Supervisor Course	Yes 1 Day	29 CFR 1915.1001(O)(4)(I) 29 CFR 1926.1101(O)(4)(I) ** 40 CFR 763.92 40 CFR 61 Subpart M
Person Responsible For Maintenance And Housekeeping (Class III and Class IV Asbestos Work)	Maintenance And Housekeeping Supervisors, Qualified Person	None	16 Hour Operations And Maintenance Course	Yes Not Specified	29 CFR 1915.1001(O)(4)(II) 29 CFR 1926.1101(O)(4)(II)
Physical Gathering Of Suspected ACM/PACM Samples For Lab ID	Safety Personnel Industrial Hygienist, Facility Inspectors	Asbestos Inspector	3 Day Asbestos Inspector Course	Yes 1/2 Day	29 CFR 1915.1001(K)(5) 29 CFR 1926.1101(K)(5) ** 40 CFR 763.92
Development Of Asbestos Management Plans & Asbestos O&M Plans	Facility Inspectors & the APM	Asbestos Management Planner	2 Day Asbestos Management Planner Course (Inspector Accreditation Required As Prerequisite)	Yes 1/2 Day	** 40 CFR 763.92
Laboratory Analysis Of Airborne Sample	Industrial Hygiene, and Qualified Facility Inspector	Proficiency Analytical Testing (PAT) Rounds	5 Day NIOSH 582 Course Or Equivalent	Yes (PAT)	29 CFR 1910.1001 App. A 29 CFR 1915.1001 App. A 29 CFR 1926.1101 App. A

MCAS Yuma

Asbestos Operations & Maintenance Plan

Type Operation	Type Personnel	Type Accreditation Required *	Initial Training Requirement	Annual Recert Or Refresher & Length	Regulatory Citation
Personnel Who Engage In Class I Work	Abatement Workers	Asbestos Abatement Workers	4 Day Asbestos Abatement Worker Course; Or 5 Day Asbestos Abatement Contractor/ Supervisor Course.	Yes 1 Day	29 CFR 1915.1001(K)(9) 29 CFR 1926.1101(K)(9) ** 40 CFR 763.92
Personnel Who Engage In Class II Work Only	Abatement Workers	None	4 Day Asbestos Abatement Worker Course; or 5 Day Asbestos Abatement Contractor/Supervisor Course	Yes Not Specified	29 CFR 1915.1001(K)(9) 29 CFR 1926.1101(K)(9)
Personnel Who Engage In Class III Operations Only	Maintenance Workers	None	16-Hour Operations & Maintenance Course.	Yes Not Specified	29 CFR 1915.1001(K)(9) 29 CFR 1926.1101(K)(9)
Personnel Who Engage In Class IV Operations Only And Housekeeping Where ACM Or PACM Is Present	Maintenance & Custodial Workers	None	2 Hour Asbestos Awareness Course	Yes 2 Hours	29 CFR 1910.1001 (J)(7) 29 CFR 1915.1001(K)(9) 29 CFR 1926.1101(K)(9)
Responsible For Overall Asbestos Program	Activity Asbestos Program Managers	Letter Of Appointment From Commanding Officer	3 Day Abatement Project Designer Course And 2 Day Asbestos Inspector/ Management Planner Course, NFESC Asbestos Program Manager Course (Inspector Accreditation Required As Prerequisite)	Yes 1 Day	Recommended Training
Air Sampling	Asbestos Workplace Monitors And Clearance Samplers	None	2 Days And On The Job Training	None	Recommended Training
Automotive Brake And Clutch	Auto Mechanics	None	2 Hour Awareness Plus Hands-On Training	None	29 CFR 1910.1001(J)(7) 29 CFR 1915.1001 App. L
General Industries Operations Above PEL (Not Otherwise Classified)	Various	None	2 Hour Awareness And Operation Specific	Yes	29 CFR 1910.1001(J)(7)

MCAS Yuma

Asbestos Operations & Maintenance Plan

Type Operation	Type Personnel	Type Accreditation Required *	Initial Training Requirement	Annual Recert Or Refresher & Length	Regulatory Citation
				Not Specified	

* A list of accredited training sources may be obtained from EPA-AHERA-NDAAC, C/O Vista Computer Services Suite 304, 6430 Rockledge Drive, Bethesda, MD 20817. **1-800-462-6706**

** Training and certification requirements apply to all persons performing asbestos-related work as workers, supervisors, inspectors or project designers working in public and commercial buildings (which includes all government-owned and operated buildings)

4.2 AWARENESS TRAINING FOR CUSTODIAL AND MAINTENANCE WORKERS: AHERA LEVEL 1/OSHA CLASS IV

This training is for custodial and maintenance workers, contractors, and employees involved in cleanup tasks, such as sweeping, mopping, dusting, cleaning, and vacuuming of ACM. This course is required for OSHA Class IV Asbestos Work and requires a minimum of two hours of training per 40 CFR 763.92(a)(1). Topics include:

- ◆ Background information on asbestos;
- ◆ Health effects of asbestos;
- ◆ Worker protection programs;
- ◆ Location of ACM in facility buildings;
- ◆ Recognition of ACM damage and deterioration;
- ◆ Review of this Asbestos O&M Plan; and
- ◆ Proper response to fiber release episodes.

4.3 OPERATIONS & MAINTENANCE TRAINING: AHERA LEVEL 2/OSHA CLASS III

This course covers O&M procedures for OSHA Class III Asbestos Work and is designed for workers involved in repair and maintenance operations where ACM, including TSI and surfacing materials, are likely to be disturbed. Examples include repair or removal of a small section of damaged pipe insulation or the installation of electrical conduit in an air plenum containing ACM or ACM debris. This type of work requires 16 hours of O&M training. This course includes more detailed discussions of topics covered in the AHERA Level 1 course, and the additional topics listed below per 40 CFR 763.92(a)(2):

- ◆ Federal, state and local asbestos regulations;
- ◆ Proper asbestos-related work practices;
- ◆ Proper methods of handling ACM, including waste handling and disposal;
- ◆ Respirator use, care, and fit testing;
- ◆ Protective clothing donning, use, and handling;
- ◆ Hands-on exercises for techniques such as glove bag work and High-Efficiency Particulate Air (HEPA) vacuum use and maintenance; and
- ◆ Appropriate and proper worker decontamination procedures.

A "competent person" is required to supervise this work activity.

4.4 ASBESTOS ABATEMENT WORKER TRAINING AHERA LEVEL 3/ OSHA CLASS I & II

This four-day EPA/AHERA accredited course is required for workers who conduct asbestos abatement (OSHA Class I and II) or have direct intentional contact with ACM. The worker is trained how to perform a removal job, construct an enclosure, and encapsulate a surface containing ACM. In addition to the elements of the AHERA Level 1 and 2 courses, this course will typically include a variety of specialized topics, such as:

- ◆ Pre-asbestos abatement work activities;
- ◆ Work area preparation;
- ◆ Establishment of decontamination units;
- ◆ Personal protection, including respirator selection, use, fit testing, and protective clothing;
- ◆ Worker decontamination procedures;
- ◆ Safety considerations in the abatement work area;
- ◆ Practical hands-on exercises; and
- ◆ Proper handling and disposal of ACM wastes.

4.5 ASBESTOS ABATEMENT CONTRACTOR/SUPERVISOR TRAINING

Supervisors of OSHA Class I and II work are required to complete the five-day EPA/AHERA accredited Asbestos Abatement Contractor/Supervisor Course, which also designates the individual as a "competent person". The APM shall receive this training, as well as the Asbestos Building Inspector Course, Asbestos Management Planner Course, and Project Designer Course. Course topics include:

- ◆ Physical characteristics of asbestos and ACM;
- ◆ Potential health effects related to asbestos exposure;
- ◆ Employee PPE;
- ◆ State-of-the-art work practices;
- ◆ Personal hygiene;
- ◆ Additional safety hazards;
- ◆ Medical monitoring;
- ◆ Air monitoring;
- ◆ Relevant federal, state, and local regulatory requirements, procedures, and standards;
- ◆ Respiratory Protection Programs and Medical Monitoring Programs;
- ◆ Insurance and liability issues;
- ◆ Recordkeeping for asbestos abatement projects;
- ◆ Supervisory techniques for asbestos abatement activities;

- ◆ Contract specifications; and
- ◆ Course review.

4.6 INSPECTOR TRAINING

Certification as an Asbestos Inspector is required for all personnel who inspect for ACM in buildings. An inspection includes those activities undertaken to specifically determine the presence or location, or to assess the condition of, friable or non-friable ACM or PACM. An accredited three-day EPA/AHERA training course is required. Course topics include:

- ◆ Background information on asbestos;
- ◆ Potential health effects related to asbestos exposure;
- ◆ Functions/qualifications and the role of inspectors;
- ◆ Legal liabilities and defenses;
- ◆ Understanding of building systems;
- ◆ Public/employee/building occupant relations;
- ◆ Pre-inspection planning and review of previous inspection records;
- ◆ Inspecting for friable and non-friable ACM and assessing the condition of friable ACM;
- ◆ Bulk sampling/documentation of asbestos;
- ◆ Respiratory protection and PPE;
- ◆ Recordkeeping and writing the inspection report;
- ◆ Regulatory review;
- ◆ Field trip; and
- ◆ Course review.

4.7 MANAGEMENT PLANNER TRAINING

The Management Planner Course is recommended for personnel responsible for implementing and managing the Asbestos O&M Plan. This training includes the three-day Asbestos Inspector course and two additional days of training. This training will aid the APM in administering the Asbestos O&M Plan. Course topics include:

- ◆ Course overview;
- ◆ Evaluation/interpretation of survey results;
- ◆ Hazard assessment;
- ◆ Legal implications;
- ◆ Evaluation and selection of control options;

- ◆ Role of other professionals;
- ◆ Development of an Asbestos O&M Plan;
- ◆ Regulatory review;
- ◆ Recordkeeping for management planner;
- ◆ Assembling and submitting the management plan;
- ◆ Financing abatement actions; and
- ◆ Course review.

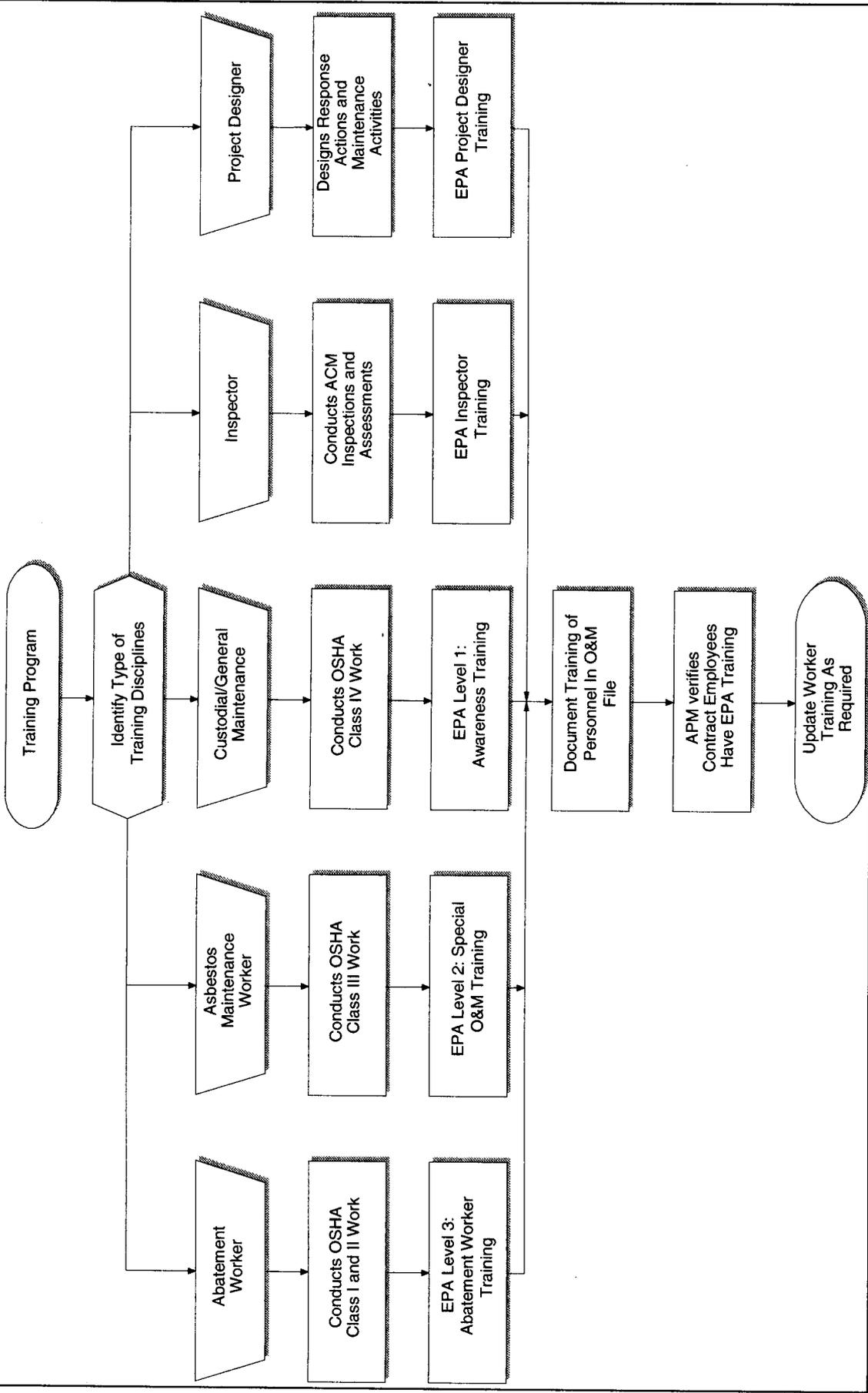
4.8 PROJECT DESIGNER TRAINING

Asbestos Project Designer certification is required for a person who designs any of the following activities: (1) a response action, other than an OSHA Class III work activity; (2) a maintenance activity that disturbs friable ACM, other than an OSHA Class III work activity; and, (3) a response action for a major fiber release episode. Project designers shall complete a three-day accredited EPA/AHERA course. Course topics include:

- ◆ Background information on asbestos;
- ◆ Potential health effects related to asbestos exposure;
- ◆ Overview of abatement construction projects;
- ◆ Safety system design specifications;
- ◆ Field trip;
- ◆ Employee PPE;
- ◆ Additional safety hazards;
- ◆ Fiber aerodynamics and control;
- ◆ Designing abatement solutions;
- ◆ Final clearance process;
- ◆ Budgeting and cost estimating;
- ◆ Writing abatement specifications;
- ◆ Preparing abatement drawings;
- ◆ Contract preparation and administration;
- ◆ Legal/liabilities/defenses;
- ◆ Replacement;
- ◆ Role of other consultants;
- ◆ Relevant federal, state, and local regulatory requirements, procedures, and standards; and
- ◆ Course review.

A flow chart illustrating the Asbestos Training Program is provided on the following page.

ASBESTOS TRAINING



5.0 WORKER PROTECTION

A worker protection program includes medical surveillance, PPE, personal exposure monitoring, and engineering controls. Engineering controls are the preferred method for worker protection. Contractors conducting maintenance and repair operations will notify the APM, in writing, that they have an asbestos worker protection program in place. Additionally, OSHA regulations require a written respiratory protection program whenever an O&M plan specifies that service workers wear respirators, or where respirators are made available to workers. The APM must verify and approve these programs prior to allowing any asbestos work to begin.

5.1 WORKER PROTECTION DURING ROUTINE O&M

5.1.1 Medical Surveillance

OSHA 29 CFR 1926.1101 and 1915.1001 require workers who wear respirators, or who are exposed to asbestos at levels equal to or in excess of the Permissible Exposure Limit (PEL) of 0.1 fibers/cubic centimeter (f/cc) for 30 days or more per year, to be enrolled in a medical surveillance program.

Before starting work, a baseline medical exam is required to document the worker's health. Each year after that, the doctor looks for any changes in the worker's health compared to the first exam. With the yearly exam, a disease can be found early. The earlier an asbestos disease is found, the better the chances for treatment. By law, the employer must pay for all exams.

Asbestos medical exams must include at least four parts:

1. A work history, to determine if the worker ever worked with materials that might have damaged the lungs. It is an official questionnaire, required by OSHA, asking the worker about past work, smoking habit, lung disease, etc.
2. A general physical exam that concentrates on the worker's lungs, heart, and stomach. This is to see if these organs are normal, without any medical problems that exposure to asbestos could make worse. After the general physical exam, the doctor will determine if the worker can wear a respirator, and if they can work with asbestos.
3. A breathing test, called a pulmonary function test, to make sure that the lungs are not damaged before beginning work. It is used as a baseline for later tests.
4. A chest x-ray to make sure that the worker's lungs are not damaged before beginning work. It is compared to future x-rays to find any changes that take place in the lungs over the year.

The MCAS Yuma Medical Clinic conducts the medical exam for MCAS Yuma/BSD personnel. Information from the medical exams are retained by the Occupation Nurse. Contractors shall verify the medical file for all workers or other persons who may perform work in a regulated area, or who meet the above criteria. Contractors

shall ensure that their workers have passed the physical examination and have received a respiratory compliance letter from a doctor. Verification should be provided in writing to the APM.

5.1.2 Personal Protective Equipment

PPE is designed to protect the worker from inhalation or dermal exposure to free or releasable asbestos fibers. PPE consists of disposable Tyvek coveralls, head covering, protective glasses or goggles, disposable gloves, disposable shoe covers, and a proper respirator. In general, upon completion of O&M work in a regulated area (under direction of the APM) workers will HEPA vacuum their protective clothing in the decontamination zone. Leaving the respirator in place, the worker will remove protective clothing and fold it inside out as it is removed. All disposable protective clothing and respirator filters are disposed of as asbestos-containing wastes.

Protective clothing is available through BSD. The O&M workers shall be trained in the proper use, removal, and disposal of protective clothing. Some O&M activities may not require the use of protective clothing. The APM will assess this need on a case-by-case basis.

5.1.3 Respiratory Protection

When effective engineering controls are not feasible, or while they are being implemented, the RRPM will ensure that appropriate respirator protection is used. A member from DOS is designated as the RPPM for MCAS Yuma. The RPPM's responsibilities include providing training in proper respirator use and limitations, and ensuring that each worker is physically fit to wear a respirator.

The RPPM provides respirators with HEPA filters and conducts fit testing. Employees are responsible for using the respiratory protection provided in accordance with the instructions and training given by the RPPM. BSD and contractors doing maintenance, repair, or major asbestos abatement projects shall provide appropriate respirators and fit-test their own employees.

The selection of the proper respirator is based on an asbestos fiber concentration of 0.01 f/cc **INSIDE** the respirator. After determining the asbestos concentration exposure level by air sampling and applying the respirator protection factor, select the proper respirator. Workers, entering an area where they can reasonably expect to exceed the PEL of 0.1 f/cc, must wear respirators with a protection factor greater than 10. Without air sampling data available, workers in areas where asbestos will be disturbed must, at a minimum, wear half-face, full-face, or full-face powered air-purifying respirators. Only respirators approved by National Institute of Occupational Safety and Health (NIOSH) and the Mine and Safety Health Administration are approved for use. Disposable dust and particle type respirators do not meet the required criteria and are not permitted.

5.1.4 Exposure Monitoring

Employees who expect to exceed the PEL of 0.1 f/cc shall have the proper training and be included in a medical surveillance program. Contractors shall provide proofs of the following to the APM:

- ◆ Establishment of a respiratory protection program, respirator fit-test certificates;

- ◆ Sampling records from daily personal exposure monitoring;
- ◆ Program to notify employees of air monitoring results as soon as possible;
- ◆ Establishment of an asbestos-regulated negative pressure enclosure area in cases where the concentration of airborne asbestos exceeds the PEL;
- ◆ Designation of a "competent person"; and
- ◆ Names and certificate numbers of asbestos abatement personnel.

5.1.5 Air Monitoring

For sample analysis, non-Navy laboratories must be accredited by either the National Institute of Standards and Technology (NIST) and/or the American Industrial Hygiene Association (AIHA). The laboratory will use phase contrast microscopy (PCM) to determine airborne fiber concentration, following NIOSH Method 7400 counting rules. PCM analysis is not specific for asbestos fibers; consequently, its use for baseline or clearance samples is limited. However, PCM is quite useful during asbestos abatement when airborne fibers are likely to be asbestos. PCM results can be available with little lead time, and PCM is more economical than the costly, but more accurate, transmission electron microscopy (TEM) analysis. TEM analysis is specific to asbestos fibers and has a more precise detection level. PCM analysis is considered sufficient for O&M work baseline air monitoring.

If air sampling indicates airborne fiber levels inside the containment area exceed 1.0 f/cc, cease work and immediately begin additional engineering controls to reduce airborne fiber levels. If fiber levels outside a regulated area reach 0.01 f/cc, notify the APM, extend the regulated area, evacuate people from the affected area, limit access, and control the release of airborne fibers. If fiber levels exceed 0.1 f/cc, medical monitoring will ensue and respirators shall be worn.

5.1.6 Equipment and Supplies

Maintenance workers or asbestos abatement contractors, assisting with O&M activities in areas where ACM may be disturbed, shall have the necessary equipment and supplies to contain ACM and to perform abatement and decontamination in regulated ACM areas. Refer to the NIBS asbestos *Guidance Manual* for a listing of required equipment.

5.2 WORKER PROTECTION DURING ASBESTOS ABATEMENT

5.2.1 Personal Protective Equipment Used During Abatement

PPE is worn to prevent body contamination. Provisions presented in Sections 5.1.2 and 5.1.3 apply whenever PPE is required. Contractor and MCAS Yuma/BSD personnel that are currently trained for asbestos abatement or O&M functions shall comply with these provisions.

Decontamination procedures are essential for protecting both worker and property from the spread of contamination. Everyone leaving the work area for any reason, including lunch breaks, rest breaks, phone calls, and equipment retrieval must strictly adhere to these procedures.

Note: Decontamination procedures can be found in the NIBS *Guidance Manual: Asbestos Operations & Maintenance Work Practices*, and asbestos regulations.

5.2.2 Medical Examinations for Workers

OSHA 29 CFR 1926.1101 and 1915.1001 require employers to provide workers who wear respirators, or who are exposed to asbestos at levels equal to or in excess of the PEL, 0.1 f/cc as an 8-hour time weighted average for more than 30 days per year, with an initial and annual medical examination. The exam consists of taking a medical history and administering a pulmonary function test and a chest x-ray. A certificate of medical qualification for respirator use and asbestos work is provided prior to wearing a respirator or performing any ACM-related activities. Medical examinations are required for all abatement employees and for all contractors who may work within the abatement site containment structure.

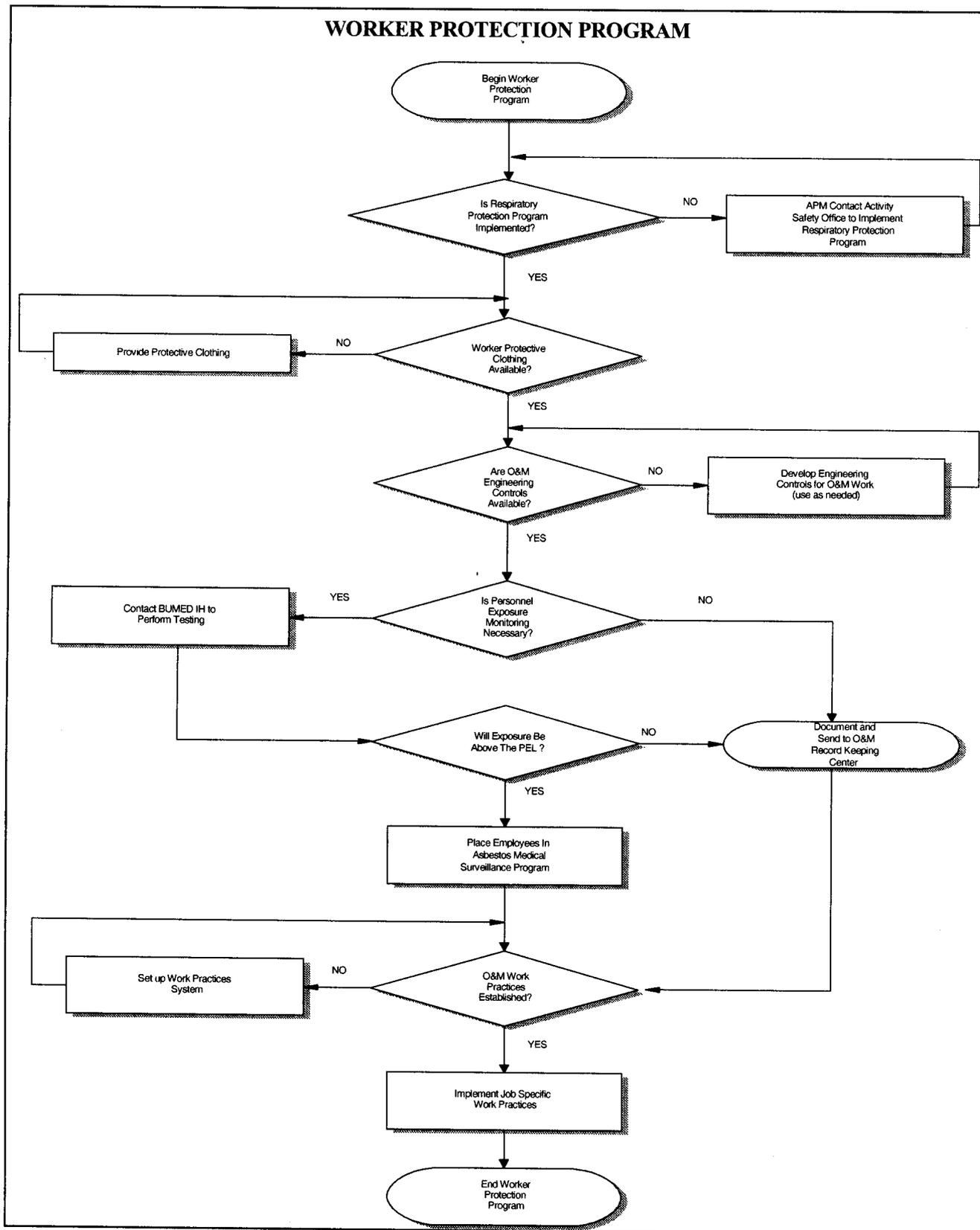
5.2.3 Worker Training

Workers undergo rigorous training on the health risks of asbestos exposure. Such training includes the use of, care of, and fit-testing of respirators. Attention should be paid to abatement procedures and policies and other hazardous materials handling. Refer to Section 4.3 for appropriate asbestos training requirements.

5.2.4 Smoking and Eating

Asbestos fibers are hazardous when inhaled and may be hazardous when ingested. To protect against such hazards, smoking, drinking, eating, chewing gum or chewing tobacco is prohibited in any area requiring the use of PPE.

A flow chart describing the decision tree of the MCAS Yuma worker protection program is presented on the following page.



6.0 WORK PRACTICES

The Asbestos O&M Plan focuses on a special set of asbestos work practices for the custodial, maintenance, and construction staff. Work practices and standard operation procedures provided in this plan are based on information in the NIBS, *Guidance Manual: Asbestos Operations & Maintenance Work Practices* and U.S. Army Corps of Engineers, *Asbestos Abatement Guideline Detail Sheet*, EP 1110-1-11.

In addition, OSHA Standard 29 CFR 1926.1101, Construction Industry and 29 CFR 1915.1001, Shipyard Industry, require the following work practices and engineering controls regardless of the levels of exposure or classes of asbestos work:

- ◆ HEPA-equipped vacuums;
- ◆ Wet methods; and
- ◆ Prompt cleanup and disposal of waste/debris.

Additional controls may be necessary to achieve compliance with the PEL/excursion limit, including:

- ◆ Negative pressure system with local exhaust ventilation and HEPA filters;
- ◆ Enclosure or isolation of processes;
- ◆ Ventilation of regulated area; and
- ◆ Supplement with respiratory protection.

The following work practices are prohibited regardless of measured exposure or the results of initial exposure assessments:

- ◆ Use of high-speed abrasive saws without attached HEPA filtered point of cut ventilator, or HEPA filtered enclosure;
- ◆ Use of compressed air;
- ◆ Dry sweeping, shoveling, or other dry cleanup method; and
- ◆ Employee rotation as means of reducing exposure..

Proper implementation of the Asbestos O&M Plan is very important to ensure worker safety. All O&M work that involves direct contact with friable ACM or disturbance of friable or non-friable ACM will be performed by EPA trained maintenance staff or approved contractors. Use the methods detailed in the NIBS *Guidance Manual: Asbestos Operations & Maintenance Work Practices* and the U.S. Army Corps of Engineers *Asbestos Abatement Detail Sheets*, or equivalent.

Specific procedures for controlling asbestos fiber releases are also discussed in the NIBS *Guidance Manual*. In general, "critical barriers" or "mini-containment structures" are required for access to regulated areas or

activities that may disturb ACM. Critical barriers are necessary to contain ACM and may include barriers at doorways, hatches, open ceilings, shafts, and holes in plenum walls. Mini-containment structures are one or two-chamber polyethylene structures designed to provide a barrier and decontamination area for entry and exit of workers and equipment. Contained areas will be posted per OSHA regulations.

Large-scale abatement requires more complex controls and procedures that are site-specific and outside the scope of this Asbestos O&M Plan. Perform large-scale abatement in accordance with the asbestos specification or written work plan prepared by the architectural and engineering contractor. If abatement is conducted by an asbestos contractor, then they will be bound by contract to comply with the provisions of the asbestos abatement specification or Compliance Plan (work plan). The APM shall be informed of the extent of the asbestos abatement project by reviewing the drawings, contract, and attending the pre-construction meeting.

6.1 CLASS I AND II ASBESTOS WORK PRACTICES

OSHA Standard, 29 CFR 1926.1101 defines Class I Asbestos Work as any activity involving the removal of TSI and surfacing ACM. The definition also includes Class III repair and maintenance work where more than one standard waste bag or standard glove bag is needed (a standard waste/waste bag shall not exceed 60 inches in length and width). Class II Asbestos Work is defined as any activity involving the removal of ACM that is not TSI or surfacing material (i.e., wallboard, flooring, roofing, siding, mastics, gaskets).

Requirements for Class I Asbestos Work are:

- ◆ Designate regulated area;
- ◆ Use wet methods, a HEPA filtered collection device, and provide prompt cleanup;
- ◆ Use critical barriers (or other effective means of isolation):
- ◆ Seal Heating Ventilation and Air Conditioning (HVAC) systems with a double layer of 6 mil plastic or the equivalent;
- ◆ Use impermeable drop cloths or 6 mil plastic below removal area and place drop cloths over objects remaining in the regulated area;
- ◆ Ventilate area away from workers breathing zone towards a HEPA filtered collection device;
- ◆ Use of one or more specific control methods listed below (each method includes specifications and work practices):
 - Negative Pressure Enclosure System,
 - Glove Bag System,
 - Negative Pressure Glove Bag System,
 - Negative Pressure Glove Box System,
 - Water Spray Process System, or
 - Walk-In Mini-Enclosure;
- ◆ Use of alternative methods are certified by a Certified Industrial Hygienist or Professional Engineer who is also an EPA-accredited Project Designer:

Requirements for Class II Asbestos Work are:

- ◆ Designate a regulated area;
- ◆ Use wet methods, a HEPA-filtered collection device, and provide prompt cleanup;
- ◆ Use critical barriers (or other effective means of isolation);
- ◆ Use impermeable drop cloths below removal area;
- ◆ Alternative methods may be used if demonstrated that the PEL cannot be exceeded. A competent person must certify the method in writing.

6.2 CLASS III AND IV ASBESTOS WORK PRACTICES

OSHA Standard 29 CFR 1926.1101 defines all O&M work that involves direct contact with friable ACM, or disturbance of friable or non-friable ACM as Class III or Class IV Asbestos Work.

Class III Asbestos Work is defined as repair and maintenance operations, where ACM, including TSI and surfacing material, is likely to be disturbed. The maximum amount of disturbed material must not exceed that which will fit into one standard glove bag or standard waste bag. The standard glove bag/waste bag shall not exceed 60 inches in length and width. The minimum requirements for Class III Asbestos Work are:

- ◆ Designate a regulated area;
- ◆ Use wet methods, a HEPA-filtered collection device, and provide prompt cleanup;
- ◆ Use a negative pressure system with local exhaust ventilation and HEPA filters, when feasible;
- ◆ Use impermeable drop cloths below removal area;
- ◆ Use glove bags or mini-enclosures whenever disturbance involves: drilling, cutting, abrading, sanding, chipping, breaking, or sawing TSI or surfacing materials;
- ◆ Isolate area if PEL is exceeded; and
- ◆ Decontamination process includes HEPA-vacuuming clothes over a drop cloth.

Class IV Asbestos Work is defined as maintenance and custodial activities during which employees contact ACM, and activities that involve the cleanup of waste and debris containing ACM. Class IV Asbestos Work requires the following:

- ◆ Use a HEPA-filtered vacuum or steam-clean all carpets;
- ◆ Use a HEPA-filtered vacuum or wet clean all other floors and other horizontal surfaces;
- ◆ Provide prompt cleanup;
- ◆ HEPA-vacuum clothes over drop cloths for decontamination purposes; and
- ◆ Dispose of all debris, filters, mop heads, drop cloths, and cloths in sealed, leak tight containers.

Additional cleaning shall be determined and recommended in writing by the APM. Methods and frequency shall be considered.

In addition, OSHA 29 CFR 1926.1101 specifies the following work practices for vinyl and asphalt asbestos flooring material:

- ◆ Prohibit sanding of flooring material;
- ◆ Vacuums shall be equipped with HEPA filters;
- ◆ Disposable dust bag, and metal floor tool (no brush) shall be used to clean floors (applies to floor removal/renovation or areas containing accessible thermal system insulation or surfacing ACM/PACM, or visibly deteriorated ACM);
- ◆ Strip finishes using low abrasion pads (speed lower than 300 rpm) and wet methods; and
- ◆ Burnish or dry buff only on floorings that have sufficient finish so that the pad cannot contact the material.

6.3 FIBER RELEASE EPISODES

Immediately notify the APM, of an ACM disturbance or episode causing the release of asbestos fibers. Prohibit access to the area until the APM can make an estimate of the extent of contamination. Often, the MCAS Yuma Spill Team, and/or Fire Department, is contacted to control spill situations. The teams are trained in emergency response and will isolate the area until the APM determines that the area is safe for re-entry.

If moderate to relatively large amounts of ACM are disturbed, the APM must use the following general procedures to address the hazard:

- ◆ Keep ACM wetted, if possible;
- ◆ Ascertain scope of the asbestos episode;
- ◆ Evacuate people and identify and isolate the regulated area;
- ◆ Limit entry to the regulated area by persons other than those necessary to perform the maintenance project;
- ◆ Isolate the building HVAC system, if applicable;
- ◆ Post signs to prevent entry by unauthorized persons;
- ◆ Institute O&M work practices and worker protection;
- ◆ Institute personal exposure monitoring activities;
- ◆ Establish need for medical surveillance of workers;
- ◆ Establish perimeter air monitoring stations, if possible;
- ◆ Contact appropriate personnel at BSD or I&L for contract

Special procedures are generally needed to minimize the spread of fibers throughout the building after an asbestos fiber release occurs, such as the explosion or fire in a building known to contain asbestos, partial collapse of an ACM ceiling or wall, or accidental disturbance of ACM. These procedures are needed whether the ACM disturbance is intentional or unintentional. Under AHERA regulations, a "major fiber release" (large asbestos episode) is defined as one involving more than three square feet of ACM. The procedures followed will vary according to the amount of ACM affected, the extent of fiber released from the ACM, the relationship of the release area to the air handling systems, and whether the release site is accessible to building occupants. Depending on the severity of the episode, asbestos consultants and contractors may be needed to develop a strategy for conducting the clean-up operations.

In general, major fiber releases shall include but not be limited to: prompt cleanup performed by trained personnel, ACM shall remain wet at all times, isolate the area by closing doors, windows, etc., and/or erecting temporary barriers to restrict airflow and the migration of asbestos fibers and asbestos-containing waste material from the site. Restrict access to the site to prevent persons not involved in the cleanup operation from inadvertently entering the area. Restrict asbestos fibers from entering the HVAC system. Shut down the supply and return air to the affected area, and seal off the system to prevent fiber entry and contamination to adjacent rooms and areas. The final steps shall ensure a careful inspection, and final clearance air monitoring to verify satisfactory cleanup.

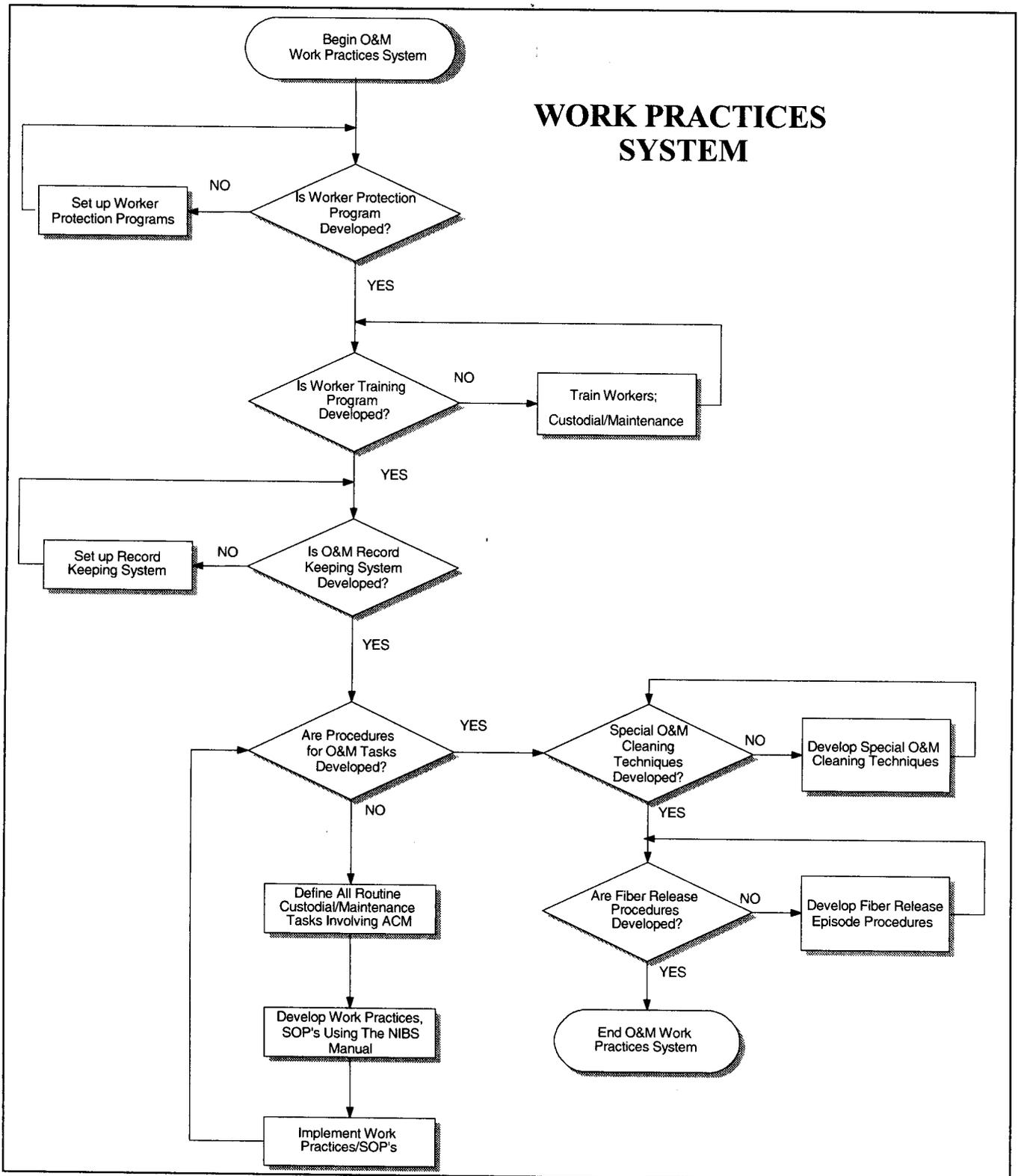
6.4 REGULATED AREAS

The primary method used to control access to and operations with ACM is the establishment of specific regulated areas. Regulated areas are defined in OSHA as those areas where Class I, II, and III asbestos work is conducted; any area where debris and waste from such work accumulates; and, work areas where the fiber concentration may exceed the PEL of 0.1 f/cc. Implement restrictive work procedures, with engineering controls, to reduce fiber release. Additionally, use health and safety protocols to protect workers in these areas.

Limit access to regulated areas or activities that may disturb ACM by installing "critical barriers" or "mini-containment structures". Critical barriers are necessary to contain ACM and may include barriers at doorways, hatches, open ceilings, shafts, and holes in plenum walls. Mini-containment structures are one- or two-chamber polyethylene structures designed to provide a barrier and decontamination area for entry and exit of workers and equipment. Post signs indicating regulated areas per OSHA regulations.

Locations of friable or damaged (friable and non-friable) asbestos materials are considered "regulated areas". The APM can also define other areas as regulated areas. Documentation of contact, both accidental and intentional, is placed on record at the APM's office.

A flow chart of the works practice system is presented on the following page.



7.0 WORK CONTROLS/WORK REQUESTS TO PREVENT ACCIDENTAL DISTURBANCE OF ACM

7.1 WORK CONTROLS/WORK REQUESTS AND SERVICE CALLS

The purpose of a work control/work order system is to ensure that the activity and contractor employees, who conduct maintenance and repair, are aware of the location of ACM and the restrictions and requirements of the Asbestos O&M Plan.

The work control/work order system allows review of work plans by the APM so that particular engineering and health procedures are implemented during the work activity. A work control system is required for all activities in regulated areas and for any activities that may disturb or damage ACM. A work request is generated for new construction and renovation projects..

The following O&M activities shall require an asbestos work request or a service call:

- ◆ Access to regulated areas or asbestos abatement containment;
- ◆ Decontamination of small amounts of asbestos debris resulting from unintentional disturbance of ACM;
- ◆ Building maintenance, repair, or installation activities that are conducted in any area regardless of.
- ◆ Building maintenance or repair activities that require the disturbance of ACM in any area.

7.2 WORK CONTROL/WORK ORDER SYSTEM

1. The following steps outline the work control system in use at MCAS Yuma. The person (Originator) requesting the construction, renovation, or maintenance project having the potential to disturb surfaces and/or materials by drilling, sanding, grinding, burning, sawing, or welding, etc., submits to BSD/I&L a work request, NAVFAC9-11014/20 or service call requesting an asbestos survey. A copy of the work request is contained in Appendix C. The work request/service call gives the location of the work, type of maintenance needed, and if known, information about any ACM in the vicinity of the work requested. A MAXIMO entry is made requesting an Asbestos Survey. The work request/service call is submitted, along with a copy of the scope of work, drawings, and/or floor plans, to the APM at the Environmental Department located at building 228 (telephone 269-5215/3201). The Originator must advise if this project is currently funded and request a priority code of 1 through 6 with (6) being the highest meaning project is funded and ready to start work. Note that all projects with a priority of 4 and above must be justified in detail.

2. Code 1 represents work to start within 6 months

Code 2 represents work to start within 4 months

Code 3 represents work to start within 3 months

Code 4 represents work to start within 2 months

Code 5 represents work to start within 1 month

Code 6 represents work to start within 1 or two weeks

3. The APM will review the work request/service call for impact on asbestos. Determine impact by referring to written records, building plans and specifications, and any building inspection or sampling reports.

4. If the potential for impact exists, the work request/service call is forwarded to the Asbestos Inspector. A visit to the work site by an Asbestos Inspector may be appropriate to determine whether ACM is present or to conduct bulk sampling. It should be noted on the form if ACM will not be disturbed.

5. Should the historical data meet the requirements of the work request/service call, the APM will submit those findings along with the regulatory requirements to the Originator. If historical data is not available, then an inspection will be performed. Priority status will be assigned to the inspection process by the APM based on need and work schedule.

6. If ACM is present, who ever will be performing the work/abatement will be responsible for preparing a compliance plan (work plan), which includes required work practices. The plan is then submitted to the APM for review. The APM has the authority to change the submitted work practices if deemed necessary. (Use the NIBS *Guidance Manual: Asbestos Operations and Maintenance Work Practices* as a reference when reviewing work practices.)

A site visit by APM or the Asbestos Inspector, may be needed to determine what work practices to institute to minimize the release of asbestos fibers during the maintenance activity. Items such as containment methods, equipment, worker protection (including appropriate respirators), decontamination procedures, waste disposal, and worker training certifications are specifically noted in the work plan.

7. Upon approval of the work plan, the APM takes the following actions:

- ◆ Signs the work request and compliance plan and forwards it to BSD with an authorization memorandum; and
- ◆ Places a copy of the work request, compliance plan, and authorization memorandum in the specific building O&M file.
- ◆ Note *Asbestos Inspection Reports, in-house or outside contractor can not be used if older than one year old.

7.3 CONTRACT PROJECTS

Work performed by an independent contractor that may involve the release of asbestos fibers shall incorporate the appropriate references and/or specific contract clause or clauses necessary to assure that:

- ◆ The contractor should be aware of the potential hazard to his/her employees and Marine Corps personnel.
- ◆ The contractor takes special precautions to comply with references 29 CFR 1910.1001; 29 CFR 1926.1101; 29 CFR 1915.1001; 40 CFR Part 61, NESHAP; and Asbestos NESHAP Revision, November 20, 1990 rule to protect his/her employees and Marine Corps personnel from exposure to asbestos fibers in excess of the PEL.
- ◆ The contractor measures and controls asbestos fibers outside the asbestos boundary to less than 0.01 f/cc as required by 29 CFR 1926.1101, 29, CFR 1915.1001, and 40 CFR 763. In addition, controlled/regulated areas shall meet these criteria prior to release for unrestricted access. Appropriate monitoring and enforcement of the contract provisions are the responsibility of the official who is responsible for contract compliance. Additionally, the contractor shall coordinate with the industrial hygienist and the APM,. Documentation of final air clearance levels shall be forwarded to APM for inclusion in the building files.
- ◆ The contractor provides the APM, in writing, a copy of the asbestos worker protection program .
- ◆ Contractor personnel shall be trained in accordance with the provisions of 29 CFR 1926.1101. Documentation of training shall be forwarded to the APM for inclusion in the building files.

Upon completion of the project, the contractor shall forward documentation on the type, amount, and location of the materials removed to the APM, for inclusion in the building files.

8.0 INSPECTIONS, PERIODIC SURVEILLANCE, AND REINSPECTIONS

8.1 INSPECTION

An asbestos inspection includes a survey of the building to locate and identify ACM and PACM, and an assessment of the materials condition. The inspection results are extremely helpful in carrying out an Asbestos O&M Plan; however, it can be developed, building by building, as needed. The inspection, conducted by an EPA-accredited inspector, includes identifying all suspect material, recording the location, quantity, characteristics, and assessing the condition of the material.

The inspection process focuses on identifying (1) surface materials, (2) thermal system insulation, and (3) miscellaneous materials, all of which are likely to contain asbestos. The locations of these materials are noted and homogeneous sampling areas defined. The suspect materials must be sampled and analyzed for asbestos. Bulk samples will be collected following the guidelines of AHERA, detailed in 40 CFR 763. Samples will be analyzed using polarized light microscopy (PLM) to determine the asbestos content, prior to allowing any O&M work that could disturb the material. TEM may be required to distinguish between false negatives and true negatives from PLM analysis. Samples will be analyzed at a certified asbestos laboratory. If bulk samples of suspect ACM are not taken, it will be presumed that the materials contain asbestos until laboratory analysis proves otherwise. The appropriate O&M practices and response actions for all areas assumed to contain asbestos will be followed.

Asbestos inspections of most of the buildings and structures on the base have been conducted on an as-needed basis. This Asbestos O&M Plan is based upon materials, assumed and confirmed to contain asbestos, identified in the inspections. Copies of the inspection results and any abatement activities that have been conducted can be found in the APM office located at the environmental department.

Periodic surveillance is one of the key objectives of an O&M plan. Combined with reinspections, work control/work orders, and ongoing reports from maintenance workers of changes in condition; periodic surveillance ensures that damaged or deteriorated materials are detected. Periodic surveillance can be conducted by in-house personnel annually or more frequently, if necessary.

Periodic surveillance can be conducted in conjunction with the annual facility or building inspection. The DOS, Facilities Management Engineering Division, and BSD may provide valuable insight and assistance during periodic/annual safety inspections, maintenance, construction/engineering and planning activities. If necessary, the APM will schedule more frequent surveillance for specific buildings. The findings from the surveillance will be added to the building's asbestos O&M file.

Each surveillance includes comments about the following assessment factors:

- ◆ Deterioration or delaminating from underlying surfaces;
- ◆ Water damage;
- ◆ Physical damage, including the presence of debris;
- ◆ Disturbance of ACM by employees;
- ◆ Accessibility; and
- ◆ Number of people potentially exposed.

Whenever damaged materials are found, notify the APM immediately. The APM determines the change in condition, determines and initiates required corrective action, and documents the action for inclusion in the building's asbestos O&M file.

8.2 REINSPECTION

In addition to the annual surveillance, a reinspection of the ACM is conducted every three years by an EPA-accredited building inspector. For that year, the reinspection is conducted in lieu of periodic surveillance.

The inspector performs the following tasks:

- ◆ Visual inspections of all the functional spaces defined in the original survey report to identify and verify all suspect friable and non-friable ACM by homogeneous areas;
- ◆ Review the periodic surveillance documents;
- ◆ Review abatement records, work evaluation forms, and fiber release reports;
- ◆ Determination of friability through touch; and
- ◆ Update the survey report and the management plan accordingly.

The information should be updated on the form "Reinspection of Asbestos-containing Materials" included in Appendix C. The completed form should be included in the building records file.

Air monitoring may be used to supplement the physical reinspection, as necessary. An Industrial Hygienist or other qualified personnel shall perform the air sampling. PCM is used if air monitoring is selected. If the ACM is currently in good condition, increases in airborne asbestos levels may provide an early warning of deterioration or disturbance of the ACM.

Bulk samples of previously unsampled, suspect materials and newly identified homogeneous areas will be collected, as necessary, following the guidelines of AHERA, detailed in 40 CFR 763. The samples will be analyzed using PLM to determine the asbestos content. TEM may be required to distinguish between false negatives and true negatives from PLM.

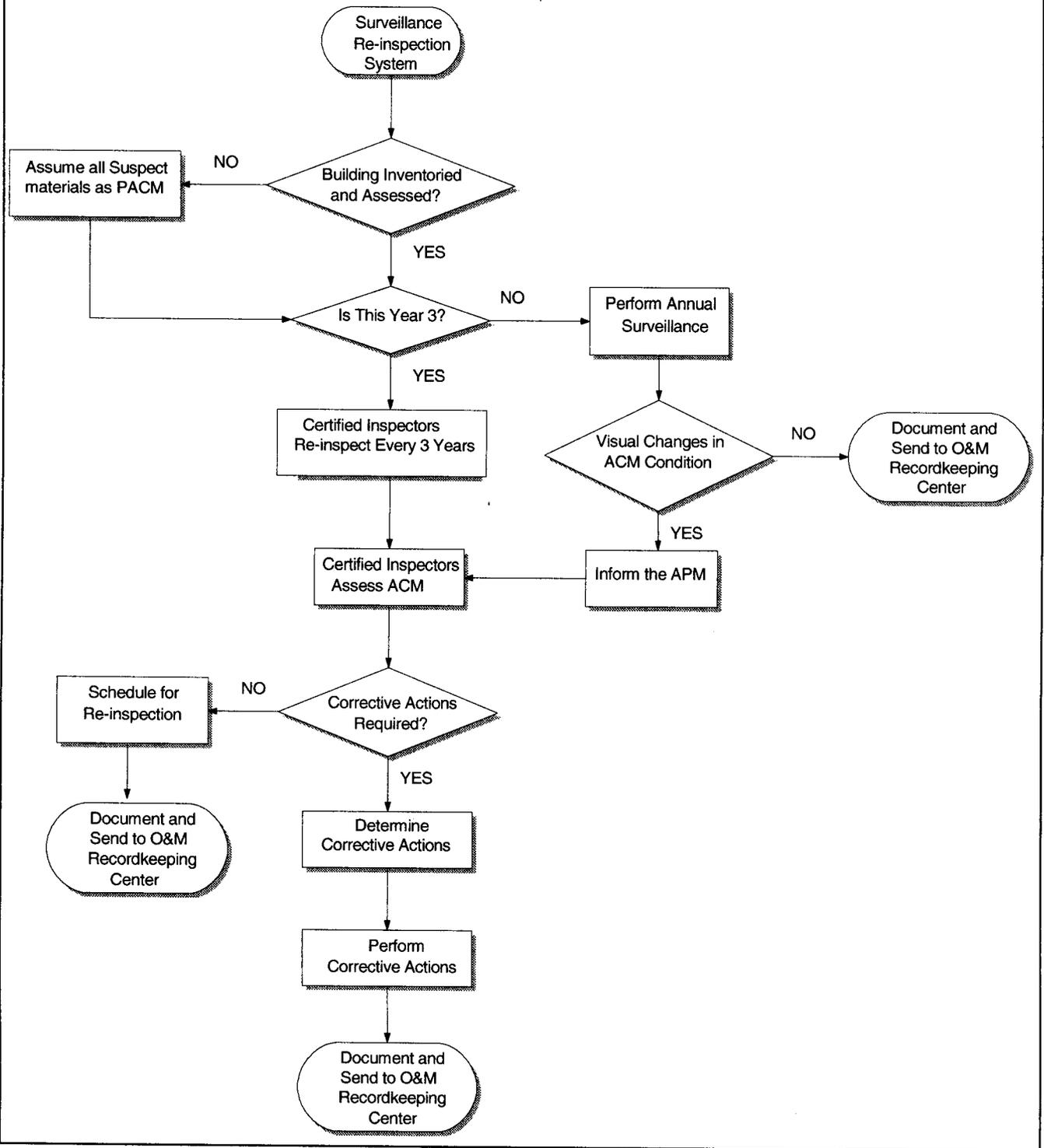
Air monitoring and bulk samples shall be analyzed by an accredited laboratory to confirm the presence or absence of asbestos. Only the following laboratories should be used:

- ◆ Navy/Marine Corps laboratories using the approved methods of measurement and analysis; and
- ◆ Laboratories accredited by either the NIST and/or the AIHA.

Call the EPA at 1-800-334-8571 for a list of accredited laboratories. It is necessary to use accredited laboratories to ensure accurate results.

A flow chart of the Surveillance and Inspection System is presented on the following page.

SURVEILLANCE AND RE-INSPECTION SYSTEM



9.0 RECORDKEEPING

The purpose of an O&M recordkeeping system is to establish and maintain a standardized system that clearly documents the implementation of an asbestos control program. The steps taken to identify asbestos material and associated hazards, and minimize the potential exposure to employees and building occupants are recorded for future reference. EPA, OSHA, and the Navy/Marine Corps have specific requirements concerning the various records and documentary information that must be maintained.

The recordkeeping system tracks the following types of data:

- ◆ Building information including, inspection or survey data, the physical condition of the ACM, and response actions taken in conjunction with the ACM;
- ◆ Employee training and medical program information;
- ◆ Data on work practices and procedures; and
- ◆ Additional federal/state/local recordkeeping requirements.

9.1 BUILDING INFORMATION

The APM retains all building asbestos management documents in a permanent file organized by building. The O&M building files include:

- ◆ **Inspection and Assessment Information.** Records on the location, quantity, characteristics, and assessment of the condition of suspect materials. Records on bulk sampling locations and results from laboratory analysis. Updates of the records with data collected during reinspections, periodic surveillance, and maintenance work. Includes information on ACM not identified during the initial inspection/assessment as it is located and sampled.
- ◆ **Work Control/Work Order System.** As maintenance and renovation activities occur, a work control/work order system is necessary to ensure that untrained workers do not inadvertently disturb ACM and that trained workers use the proper procedures when they are authorized to disturb ACM. The authorization of work requests is documented and the work orders reviewed. See Section 7.2 for details of the work control/work order system.

The work control/work order system is also tied into the personnel asbestos training and medical records to ensure that only trained individuals with proper medical clearance are allowed to perform activities that might potentially disturb asbestos.

- ◆ **Work Practices and Procedures.** The APM determines the proper O&M work practices to use whenever asbestos is disturbed during maintenance activities conducted by activity personnel. The APM reviews and approves the work practices of maintenance activities performed by contract personnel. The APM documents and maintains these work practices in the O&M building files. The APM also documents and maintains standard operating procedures for asbestos removal operations in the O&M building files.

- ◆ **Work Evaluation/Response Action Data.** Upon completion of maintenance or renovation work, the APM, and or other involved personnel, document all changes in the presence or condition of the ACM. The information is maintained by the APM in the O&M building files and database. For removal jobs, the information will include certification that work area is asbestos-free, final air sampling results, and the waste shipment record. For enclosure or encapsulation work, the information will include final air sampling results.

Additionally, the APM retains copies of asbestos abatement contract drawings and specifications, the work plan, final air clearance results, documentation of worker training, and documentation on the type, amount, and location of the materials removed.

- ◆ **Reinspection and Surveillance.** The re-inspection and periodic surveillance processes involves:
 - Updating homogeneous areas information, including the materials current condition;
 - Identifying new homogeneous areas and
 - Determining abatement actions.

Periodic surveillance and re-inspections are to be conducted as part of the annual Facility Inventory Inspection and Building Safety Inspection. Periodic surveillance is conducted annually by appropriate personnel and they report any changes in ACM condition to the APM for re-inspection by an EPA-certified inspector. Every three years, a certified inspector will conduct a re-inspection to re-assess the condition of the ACM. Changes in ACM condition are documented and entered into the asbestos database, filed in the O&M file, and the required cleanup and corrective actions are determined.

- ◆ **Building Occupant Notification.** Prior to any renovation or removal project, affected building occupants are notified of the following:
 - The exact location of the project;
 - The methods used to prevent fiber release; and
 - The methods used to ensure the remaining ACM stays in good condition.

The building occupants are notified by the APM via memo. A copy of the memo is posted at the project site and a copy is maintained in the building file.

9.2 EMPLOYEE RECORDS

Employee records are typically divided into three areas:

- ◆ Medical Surveillance Program;
- ◆ Respiratory Protection Program; and
- ◆ Training.

The Branch Medical Clinic maintains documentation on the Medical Surveillance Program.

The RPPM keeps the Respiratory Protection Program information, including training, medical exam, and fit-testing.

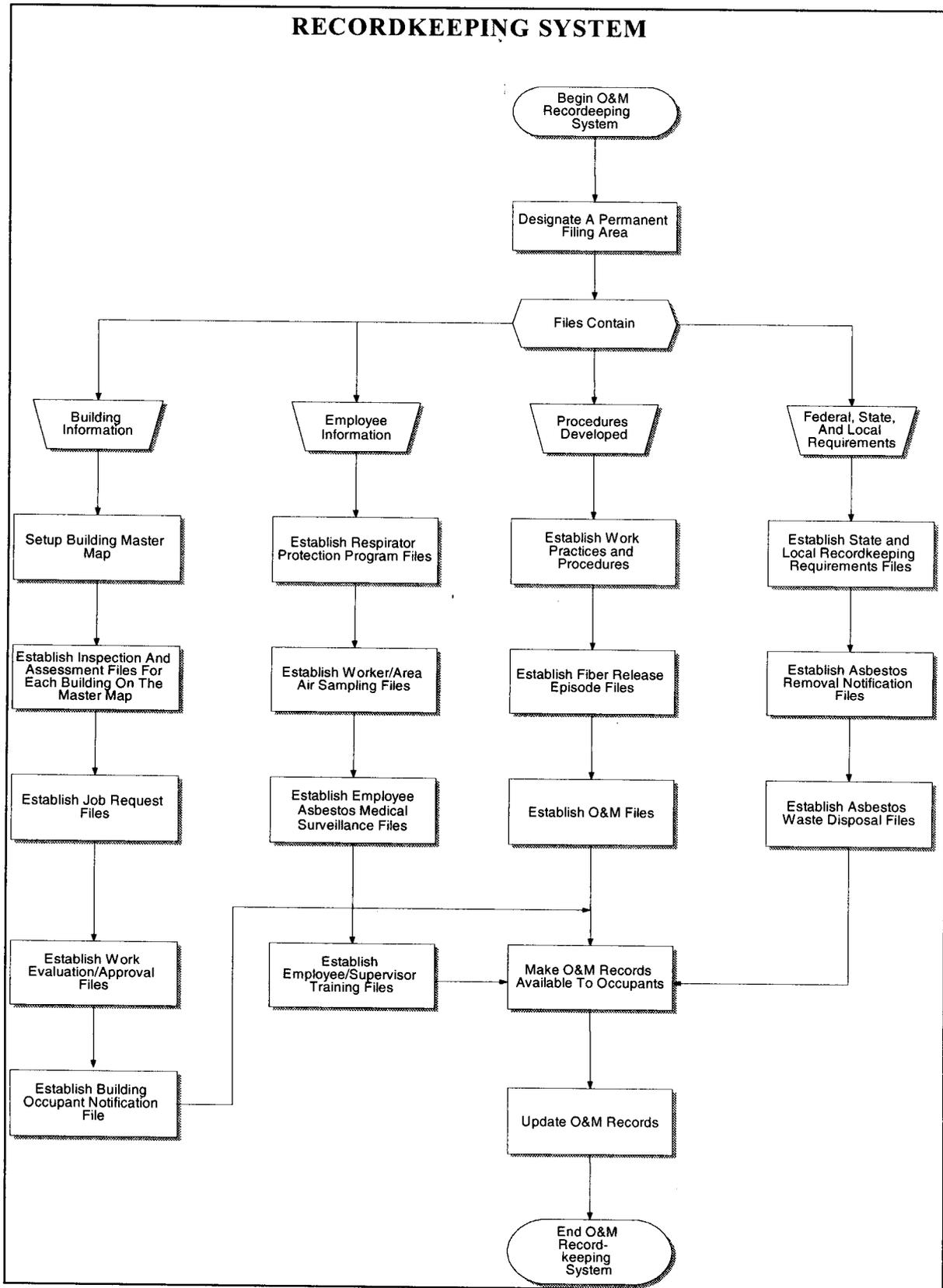
The APM maintains a copy of the EPA certifications for asbestos abatement workers, buildings inspectors, project designers, and competent persons. The APM also maintains class attendance records for activity maintenance workers who have attended the 16-hour asbestos O&M awareness course and custodial and maintenance workers who have attended the 2-hour asbestos awareness course.

9.3 O&M DOCUMENTS

Many different records are required for asbestos-related work and depend on the type and extent of the asbestos-related activity being performed. Information included in the building asbestos files includes:

- ◆ Regulatory requirements;
- ◆ Agency notifications;
- ◆ Inspection reports, updates, and surveillance records;
- ◆ Employee training record;
- ◆ Employee medical and personal air monitoring records;
- ◆ Notification requirements for building occupants and workers;
- ◆ Sign and labeling information and regulatory agencies;
- ◆ Asbestos abatement records;
- ◆ Waste disposal requirements

The recordkeeping system is described in the flow chart presented on the following page.



10.0 ASBESTOS WASTE DISPOSAL

10.1 TYPES OF MATERIALS

Materials disposed of as ACM waste include any designated contaminated materials such as ceiling tiles, lighting fixtures, fiberglass insulation, electrical fittings, and other construction materials that cannot be decontaminated. In some cases, items such as carpets, furniture, and drapes may also be designated as contaminated ACM waste. Other materials for disposal as ACM include PPE, all filters, including those used in respirators, HEPA-filtered exhaust units, HEPA vacuum cleaners, and water filtration units.

10.2 REQUIREMENTS FOR BAGS, BARRELS, OR DRUMS

All wastes must be wetted and sealed in 6-mil polyethylene plastic bags (double-bagged), or barrels or drums, double-lined with 6-mil polyethylene. Barrels or drums are used to contain pipe hangers or other sharp objects that could puncture or tear waste disposal bags. All bags, barrels, and drums must be permanently sealed before they are removed from the work site and must be labeled in accordance with OSHA, EPA, and Department of Transportation (DOT) requirements.

Containment area construction materials also need to be bagged for disposal as the area is disassembled following final air clearance testing. Alternatively, portions of the containment may be reused in future renovation projects, providing the materials have been adequately cleaned.

There are three required labels for each bag, drum or container of ACM waste.

Label #1: Required by OSHA 29 CFR 1926.1101, 1915.1001, and 29 CFR 1910.1001.

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

Proper Shipping Name: Required by DOT, for friable and/or RACM.

Asbestos, 9, NA 2212, PG III

DOT does not require placards on vehicles during transport of asbestos.

Label # 3: As required by EPA 40 CFR 61.150 (a)(i)(v), label containers or wrapped materials which contain asbestos waste material, and which will be transported off the facility, with the name of the waste generator, and the location at which the waste was generated. An example is shown below.

ASBESTOS WASTE

State and Federal Laws prohibit improper disposal. If found, contact the Arizona Department of Environmental Quality.

Waste Generator's Name:

Waste Generator's ID# (if applicable)¹

Waste Generation Location:
(address, City, State, Zip Code)

Note: Not all states require a generator ID number.

In addition to the above, if the asbestos-containing waste is friable, it will require a Hazardous Waste label. Those labels can be procured through the transporter, along with the required hazardous waste manifest.

10.3 TRANSPORTATION REQUIREMENTS

EPA regulates the disposal and DOT regulates the transport of asbestos-containing waste.

Hand trucks, push carts, or other devices that are used to transport waste to a trash receptacle must be plastic-lined and kept free from ACM debris. The transport cart must be thoroughly cleaned before being used for another purpose.

A registered waste hauler must be used to transport ACM from the site. An Asbestos NESHAP Waste Shipment Record shall be prepared and certified by the hauler and disposal site operator. The waste shipment record is approved and signed by the Environmental Department. .

In no case can loose asbestos waste be transported. Asbestos waste must be handled in such a way as to comply with NESHAP regulations. Absolutely no emissions to the air are allowed.

10.4 LANDFILL AND DISPOSAL REQUIREMENTS

All asbestos-containing waste must be deposited at a waste disposal site that is operated in accordance with NESHAP, 40 CFR 61.154. The state environmental agency can provide current information regarding which landfills are allowed to accept ACM.

A Waste Shipment Record (WSR) must accompany all asbestos to the landfill. Original signed copy of the WSR must be returned to the generator (MCAS Yuma Environmental Department) with-in 35 days. Copy of WSR must be retained by the generator (MCAS Yuma Environmental Department) before shipment leave off the base. WSR can only be signed by MCAS Environmental Department Personnel.

11.0 AGENCIES AND INFORMATION

- ◆ EPA Toxic Substances Control Act Hotline, Washington, DC. (202) 554-1404. General information concerning federal requirements in the areas of industrial and commercial notification procedures, school program, analytical methods, abatement projects, and product use restrictions.
- ◆ Consumer Product Safety Commission, Washington, DC. (800) 638-2772. Information concerning the identification and abatement of asbestos hazards in the home. Information on asbestos in certain consumer products is also available.
- ◆ NESHAP, (602) 771-2333 ADEQ, 1110 West Washington Street Phoenix, Az 85007-2955

12.0 REFERENCES

- National Institute of Building Sciences, *Guidance Manual: Asbestos Operations & Maintenance Work Practices*
- U.S. Army Corps of Engineers *Asbestos Abatement Detail Sheets*.
- U.S. Department of Labor: OSHA, U. S. Occupational Safety and Health Administration – General Industry Standard. Chapter XVII. Asbestos. 29 CFR 1910.1001. June 1986; Amended, September 1988.
- U.S. Department of Labor: OSHA Regulation. 29 CFR 1910.134 – Respiratory Protection Standard. June, 1974.
- U.S. Department of Labor: OSHA, U. S. Occupational Safety and Health Administration– Construction Industry Asbestos Standard. Chapter XVII. Asbestos. 29 CFR 1910.1101, 1994.
- U.S. Department of Labor: OSHA Regulation. 29 CFR 1915.1001 – Occupational Safety And Health Standards For Shipyard Employment. July, 2002.
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- U.S. EPA, 1985. U.S. Environmental Protection Agency. Measuring airborne asbestos following and abatement action. Washington, DC: USEPA. EPA 600/4-85-049. ("Silver Book")
- U.S. EPA, 1985. U.S. Environmental Protection Agency. Asbestos in buildings: Simplified sampling scheme for surfacing materials. Washington DC: USEPA. EPA 560/5-85-030A. ("Pink Book")
- U.S. EPA, 1985. U.S. Environmental Protection Agency. Guidance for controlling asbestos-containing materials in buildings. Washington DC: EPA 560/5-85-024. ("Purple Book")
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- U.S. EPA, 1986. U.S. Environmental Protection Agency. Abatement of Asbestos-containing Pipe Insulation. Washington DC: Technical Bulletin No. 1986-2.
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- U.S. EPA, 1988. EPA Study of Asbestos-Containing Materials in Public Buildings: A Report to Congress. February, 1988.
- U.S. EPA, 1989. Asbestos Ban and Phaseout Rule. 40 CFR 763.160 to 763.179. Federal Register, July 12, 1989.

- U.S. EPA, 1989. Asbestos: Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions; Final Rule (54 FR 29460, July 12, 1989)
- U.S. EPA, 1989. Guidelines for Conducting the AHERA TEM Clearance Test to Determine Completion of an Asbestos Abatement Project. Washington DC: EPA 560/5-89-001.
- U.S. EPA, 1989. Transmission Electron Microscopy Asbestos Laboratories: Quality Assurance Guidelines. Washington DC: EPA 560/5-90-002.
- U.S. EPA, 1990. U.S. Environmental Protection Agency. Managing Asbestos in Place: A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials. Washington DC: USEPA. EPA 560/OPTS 2OT-2003. ("Green Book")
- U.S. EPA, 1999. EPA Asbestos Materials Bans: Clarification, May 18, 1999.

APPENDIX A

SAMPLE NOTIFICATION LETTER

NOTICE TO RESIDENTS

BUILDING _____ CONTAINS ARCHITECTURAL ASBESTOS

Architectural Asbestos: Refers to any Asbestos Containing Material (ACM) used in any manner in building construction. Occupants of this facility are advised that ACM is present in the following areas:

- **VINYL ASBESTOS TILE (VAT)- 9 X 9, 12 X 12, MASTIC, COLOR**
- **VINYL SHEET FLOORING**
- **THERMAL SYSTEM INSULATION (TSI)**
- **WALL SYSTEMS/DRYWALL COMPOUND/TEXTURING**
- **SPRAY APPLIED ACOUSTICAL CEILING/SUSPENDED CEILING TILES**
- **FIREPROOFING**
- **OTHER:**

HEALTH RISK OF ACM: The mere presence of ACM does not necessarily represent a significant health risk. Asbestos may pose a serious health risk only when the asbestos fibers become airborne and then are inhaled. Therefore, if ACM is in a good state of repair, the asbestos fibers cannot be released and pose no health risk. ACM will need to be periodically inspected for signs of damage or deterioration. The Environmental Department Asbestos Inspector conducts these periodic inspections.

MINIMIZING EXPOSURE: Occupants of this facility are directed not to disturb ACM by practicing the following:

Do not disturb the above identified area containing ACM by drilling, cutting, sanding, grinding, burning, etc., into the surfaces of these areas.

Do not disturb floor tiles by sanding or dry buffing. Use a wet mop, sponge or cloth to clean floors. Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods. Use a chemical stripper to remove wax build-up.

Report any damage or deterioration observed of suspect ACM to the Housing Division Customer Service at (928) 269-2825 for appropriate repairs.

The point of contact for additional information/assistance is the Asbestos Program Manager at (928) 269-5215.

APPENDIX B

**MODEL OSHA WRITTEN COMPLIANCE PLAN FOR ASBESTOS
IN CONSTRUCTION**

MODEL OSHA WRITTEN COMPLIANCE PLAN FOR ASBESTOS IN CONSTRUCTION

This plan shall be used as a guide/boiler plate ONLY for achieving compliance at MCAS YUMA. An original Compliance Plan shall be drafted by the contractor and forwarded to the Asbestos Program Manager for approval prior to job start up. For questions concerning this matter, contact the Asbestos Program Manager at ext. (928) 269-5215.

This plan has been developed to comply with the OSHA Asbestos Standard, 29 CFR 1926.1101.

Scope: This section regulates asbestos exposure in all work where an employee may be occupationally exposed to asbestos. It includes but not limited to: Demolition or salvage of structures where asbestos is present; Removal, or encapsulation of materials containing asbestos; Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos; Installation of products containing asbestos; Asbestos spill/emergency cleanup; Transportation, disposal, storage, containment of and housekeeping activities involving asbestos; or products containing asbestos on the site or location at which construction activities are performed. Coverage under this standard shall be based on the nature of the work operation involving asbestos exposure.

All asbestos work or disturbance is categorized into four classes of work, each class having its own regulatory requirements:

Class I Work: Removal of thermal system insulation (TSI) or surfacing

Class II Work: Removal of any other asbestos containing material (ACM)

Class III Work: Maintenance level work up to one glove bag or waste bag

Class IV Work: Clean-up work in contact with ACM

1. Location of project: _____ (full address).
2. Asbestos inspection of this building performed by: _____ (name and address of inspection firm).
3. Inspection revealed that asbestos or asbestos hazards are present in the following locations: _____

4. Name of all building components to be treated: _____

 - a. These building components contain asbestos and represent a hazard to workers and who may disturb it during asbestos hazard control, renovation, abatement, or maintenance activities.
 - b. Standard prohibitions on asbestos work sites include: High speed abrasive removal, compressed air removal, dry sweeping or clean-up, employee rotation to comply with PEL.

This Job will be a demolition _____. This job will be a renovation _____. This job will involve the following asbestos hazard reduction measures: (complete all that apply and name all components):

Removal of _____

Replacement of _____

Enclosure of _____

Encapsulation of _____

Dust removal in the following areas _____

5. The job is expected to start on ___/___/___ and end on ___/___/___ . This compliance plan will take effect immediately on ___/___/___ . The competent person will conduct work site visual inspections on a daily basis.

Day 1: Initial setup, followed by _____
(name tasks to be completed)

Daily cleanup: wet mopping, HEPA vacuuming

Day 2 tasks: _____

Day 3 tasks: _____

Day 4 final cleanup and clearance _____

6. Equipment and materials: _____
HEPA vacuums, protective clothing, plastic sheeting, respirators, negative air machines, surfactants, scrapers, bars, chemicals with MSDS, etc.

7. Crew: the work will be completed by a crew of _____ (insert number) workers. Crew assignments are as follows:

Crew 1 _____ (name) _____ (task)

Crew 2 _____ (name) _____ (task)

8. Competent Person: _____ (name), an AHERA certified asbestos abatement supervisor, will be on site at all times and will act as the competent person for occupational health and safety issues. The asbestos supervisor license (or certificate) number is: _____ **provide copy of training certificate**. The Competent person will conduct daily inspections of the work areas to ensure that engineering control measures, work practices, PPE, and hygiene facilities are used as prescribed in this document.

9. Control Measures (check all that apply):

___ regulated area

___ method substitution (building component replacement, enclosure)

___ wet methods

___ wrapping materials to be discarded in plastic

___ respiratory protection

___ prompt cleanup of debris

___ negative air machines _____ insert number of machines

___ on the job training/hazard communication

___ HEPA vacuums

___ critical barriers (use of plastic barriers)

___ enclosure of the work area

___ signage

___ lockout/tagout/Ground Fault Circuit Interrupters

___ housekeeping

___ 3 stage decon

10. Respirators: All individuals in the work area will be provided with a NIOSH/MSHA-approved half-mask, air-purifying respirator equipped with HEPA cartridges or a powered air-purifying respirator (if so requested). Respirators will be provided in the context of a complete respiratory protection program; the written respirator program is attached.

Provide copies of respirator fit testing certificates.

Respirators will be required during (name phases of job for which respirators will be required): _____

11. Protective clothing: Disposable protective clothing will be provided by the contractor and will be worn at all times inside the work area. Protective clothing will be made of breathable fabric to reduce the potential for worker heat stress. If visibly contaminated with dust or debris, protective clothing will be HEPA vacuumed before it is removed.
12. Hygiene facilities: Employers must provide clean change areas for employees required to work in regulated areas or required to wear respirators and protective clothing. Showers and/or a three stage decon facility are used on jobs that generate high asbestos dust levels. Labeled plastic bins with covers will be used to separate disposable protective clothing from street clothing. Hot water, soap, and towels will be provided. Wastewater will be collected, pretreated onsite with filtration, and disposed of in accordance with _____ (name of local water and sewage authority).
13. Initial exposure assessment: The OSHA standard requires all employers to conduct initial exposure assessments for all jobs involving the use or removal of asbestos or asbestos containing materials (if employers do not have an exposure assessment they shall perform one).
 - a. Clearance (if required): shall be performed by an AHERA inspector or certified industrial hygienist who is completely independent of the asbestos hazard control contractor.
14. Medical surveillance program: A medical surveillance program is already in place for this work crew. It is supervised by: Dr. _____ (name, address, and phone number of physician and/or firm).
15. Training: The employer shall, institute a training program for all employees who are likely to be exposed in excess of a PEL and for all employees who perform Class I through IV asbestos operations. For Class I and Class II operations that require the use of critical barriers (or equivalent isolation methods) and or negative pressure enclosures under this section the following workers have been trained using the EPA Model Accreditation Plan (MAP) Asbestos abatement workers training (40 CFR part 763, subpart E, appendix C). The training was conducted by: _____ (name, address, and phone number of training provider). **Provide copies of training certificates.**
16. EPA compliance 40 CFR Subpart M Section 61.145
Provide the Administrator with written notice of intention to demolish or renovate. Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable. At least 10 working days before asbestos stripping or removal work or any other activity begins (such as site preparation that would break up, dislodge or similarly disturb asbestos material). **In no event shall an operation covered by this paragraph begin on a date other than the date contained in the written notice of the start date.**
 - a. Contractors must submit the NESHAP notification to the Asbestos Program Manager for review 5 working days before forwarding the notification to the Administrator.
 - b. The Station Environmental Department shall inspect, approve, and sign all Waste Manifests and shipments leaving MCAS Yuma. For questions on this matter contact: The Station Environmental Department at ext. (928) 269-3201.
17. Asbestos and/or asbestos containing building materials shall not be used at MCAS Yuma.

Plan completed by: _____ (name and signature)

Date: ___/___/___

APPENDIX C

FORMS

REINSPECTION OF ASBESTOS-CONTAINING MATERIALS

Location of asbestos-containing material (address, building, room, or general description):

Type of asbestos-containing material(s):

1. Sprayed-or troweled-on ceilings
2. Wall systems
3. Flooring and/or associated mastic
4. Other (describe):

Abatement Status:

1. The material has been encapsulated _____, enclosed _____, neither _____, removed _____.

Assessment:

1. Evidence of physical damage: _____
2. Evidence of water damage: _____
3. Evidence of delamination or other damage: _____
4. Degree of accessibility of the material: _____
5. Degree of activity near the material: _____
6. Location in an air plenum, air shaft, or airstream: _____
7. Other observations (including the condition of the encapsulant or enclosure, if any): _____

***Recommended Action:** _____

Signed: _____ Date: _____
(Evaluator)

**A Copy of the Work Request Form Will be Manually Inserted Here in
the Final Report**

APPENDIX D
MISCELLANEOUS

THIS SECTION INTENTIONALLY LEFT EMPTY.

**PLEASE INSERT ADDITIONAL ASBESTOS OPERATIONS AND MAINTENANCE
PROGRAM DOCUMENTATION OR OTHER MATERIALS AS APPROPRIATE**