
	SOP-121 (Ver. 3) Asbestos Program
Standard Operating Procedure (SOP)	Effective: 1/25/2022 Supersedes: 11/02/2020
Approved By: James D. Herberg General Manager 	

I. Purpose

The purpose of the Asbestos Program is to outline the requirements necessary to protect employees, staff, contractors, and visitors from the hazards associated with asbestos and outline regulatory work requirements. The Program establishes responsibilities for Orange County Sanitation District (OC San) personnel to follow to ensure the safety all personnel and to minimize OC San employee exposure associated with materials, activities, or processes that have the potential to release asbestos at or above the Cal OSHA permissible exposure level (PEL) and excursion limit (EL) for asbestos.

This Program covers small scale, short-duration (SSSD) maintenance activities, where the intent is not to abate asbestos but perform repair or maintenance with the potential to disturb or create waste that can fit in a single waste bag or performed in a single prefabricated mini enclosure. This Program does not cover larger scale asbestos removal in conjunction with renovation or demolition operations, which would be conducted by a state-licensed abatement company.

II. Background

Asbestos is a naturally occurring group of fibrous minerals. It was added to many building materials because it is heat and chemical resistant, strong, and not easily degraded. Asbestos was widely used in building materials prior to 1980, however asbestos can still be found in materials used after 1980, although it is rare. Asbestos is primarily found in insulation around pipes, ducts, and tanks, gaskets, as well as used for spray-on fireproofing, plaster, fire doors, wallboard, fume hood linings, linoleum, laboratory countertops, and floor tiles. Asbestos is a concern when it is disturbed, and the fibers become airborne. Asbestos fibers can be inhaled and carried into the lower regions of the lung where they can cause the following diseases:

- Asbestosis: a buildup of scar-like tissue in the lungs that can lead to reduced respiratory function that often leads to disability and death.
- Mesothelioma: a rare and fatal malignant cancer of the membrane lining the lungs, stomach, heart, and other internal organs.
- Lung cancer: a malignant cancer that invades and blocks the lung’s air passages. Smoking tobacco combined with asbestos exposure significantly increases the chance of developing lung cancer.

OC San has identified asbestos throughout OC San’s plant facilities that our operations and maintenance staff may encounter during routine activities. Several structures and facilities at OC San’s Plant 1, Plant 2, and the offsite pump stations contain asbestos-containing materials (ACM). Maintenance activities performed in these structures can expose workers to breathable asbestos fibers. OC San Risk Management Division maintains a database of

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asbestos survey results. Maintenance employees only perform Class III or Class IV asbestos-related work, which are the only work activities covered by this Program. Class I through Class IV asbestos-related work performed by contractors is regulated by OC San Specification 01900 for Hazardous Material Mitigation and Controls.

Based on monitoring data conducted to date by OC San, if employees follow the current work practices and engineering controls provided in this Program and the associated job safety analyses (JSAs), then it is not probable that any OC San employee could be exposed to asbestos over the Cal OSHA PEL or EL.

All contractors hired by OC San to perform work identified by this Program, must follow OC San Specification 01900 Hazardous Materials Mitigation and Controls as a minimum work standard.

III. Definitions

Abatement: Process of eliminating or reducing the asbestos hazard in the building material or structures.

Asbestos: Includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite, and any of these minerals that have been chemical treated and/or altered.

Asbestos-Containing Material (ACM): Any material containing more than 1% asbestos.

Asbestos-Containing Construction Material (ACCM): Any manufactured construction material containing more than 1/10th of 1% asbestos by weight.

Class I Asbestos Work: Activities involving the removal of thermal systems insulation (TSI) and surfacing ACM, and presumed ACM (PACM).

Class II Asbestos Work: Activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III Asbestos Work: Repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

Class IV Asbestos Work: Maintenance and custodial activities during which 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.

Competent Person: One who can identify existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them, one who can identify existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them.

Disturbance: Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in

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one standard sized glove bag or waste bag to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Excursion Limit (EL): The level in which an employer shall ensure that no employee is exposed to an airborne concentration of asbestos more than 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

Friable: ACM that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure and which contains greater than 1% asbestos by area or weight.

HEPA: High-efficiency particulate air filter that is capable of trapping and retaining at least 99.97% of all monodisperse particles of 0.3 micrometers in diameter.

Job Safety Analysis (JSA): Is defined as is a technique that focuses on job tasks to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment and provides control requirements to minimize the hazards.

Permissible Exposure Limit (PEL): An employee exposure to an airborne contaminant in a workday, expressed as an 8-hour TWA concentration, which cannot be exceeded. Asbestos PEL is 0.1 f/cc.

Presumed Asbestos-Containing Material (PACM): Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of a material as "PACM" may be rebutted when the employer or owner demonstrates that PACM does not contain more than 1% asbestos.

Regulated Area: An area established by the employer to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

SDS: Safety data sheets. Detailed specification sheets which conform to OSHA guidelines for communicating hazards of products.

Surfacing Material: material sprayed, troweled-on, or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes).

Thermal system insulation (TSI): ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

IV. Responsibilities

A. Risk Management Division

1. OC San General Manager has overall responsibility to ensure compliance with asbestos-related requirements and delegates authority to Risk Management to establish, implement, and manage the applicable programs.

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2. Provide compliance assistance, perform potential exposure evaluations, and monitoring activities as needed.
3. Develop JSAs for known work tasks where there is a potential of disturbing asbestos-containing materials.
4. Evaluate facility operations and proposed facility renovations and construction to determine if ACM/PACM will be disturbed and recommend bulk sampling or other appropriate actions, if warranted.
5. Review work and compliance plans for asbestos abatement projects.
6. Coordinate services of licensed and certified contractors to conduct exposure assessments, surveys, and remediate asbestos.
7. Provide technical assistance regarding this Program as well as interpret, report, and communicate asbestos-related results as necessary.
8. Arrange for waste collection and sign transportation and disposal manifests for asbestos-containing wastes.
9. File, maintain, and update asbestos inventory information and asbestos abatement air clearance results, as regulatory required.
10. Provided an annual notification to OC San employees in accordance with California Health and Safety Code, Chapter 10.4. This notification includes the location and type of ACM.
11. Review and update this Program annually.

B. Supervisors/Managers

1. Ensure that employees or contractors working with or around asbestos are familiar with the contents of this Program and its applicable regulatory requirements.
2. Assure employees who are required to be trained receive training in accordance with this Program.
3. Assure employees practice safe work procedures in accordance with their training and use the proper equipment and controls.
4. Request assessments of work activities in areas containing asbestos when there is a question about the content of composition of the material.

C. Employees

1. Report materials suspected of containing asbestos to your supervisor prior to disturbance. Notify supervisor and/or Risk Management of any newly discovered ACM or PACM within 24 hours of the discovery. Immediately report accidental disturbances to your supervisor and Risk Management.

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2. Perform removal activities as trained for in a safe manner following all regulations and this Program while wearing appropriate personal protective equipment as necessary for the type of job performed.
3. Follow all safety rules, policies, and procedures regarding activities involving asbestos. Refer to assigned JSAs in Cority for asbestos-related work activities.
4. In general, do not disturb or remove any suspected or known asbestos without prior approval and without strict adherence to this Program.

D. Contractors

1. Must follow OC San's safety rules, policies, and procedures.
2. Upon discovery of ACM or PACM, the Contractor shall stop work and immediately notify the OC San Engineer assigned to the project.
3. Only properly trained and licensed contractors shall remove, abate, or clean up asbestos dust and debris.

V. Assessment

- A. OC San must assess the workplace to determine the presence of asbestos. This is typically achieved by collecting representative samples of building materials and coatings (either by destructive or non-destructive methods) suspected of containing asbestos. Samples will be submitted to a qualified, nationally recognized laboratory with successful participation in the National Voluntary Laboratory Accreditation Program (NVLAP) for analyzing asbestos.
- B. OC San maintains sampled material results in an asbestos database, managed, and updated by Risk Management.
- C. OC San may review as-built drawings for past projects to determine if building constructed prior to 1980 may have contained asbestos. Safety data sheets may also be reviewed to determine if asbestos is a component of products used. Drawings and safety data sheets will be provided to OC San's Industrial Hygiene Consultant or in-house building inspection personnel to complete the survey.
- D. The survey must be conducted prior to renovation or demolition of any building, regardless of date of construction. A scope of work will be developed for each project that outlines the materials present as well as the abatement or stabilization techniques to be utilized.

VI. Exposure Monitoring

- A. Employees in job classifications, such as Maintenance Mechanics, Facilities Workers, Electrical Maintenance, Instrumentation Maintenance, Painters, Machinists, and Welders/Fabricators, that may expose them to asbestos above the Cal OSHA PEL or EL, shall be included in an initial and periodic exposure monitoring program (e.g., personal breathing-zone monitoring).

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1. Results of exposure assessments shall be communicated to employees who may be directly affected by the assessed exposure. Monitoring results shall be communicated individually and in writing within 5 days following receipt of analytical results.
 2. Historical data indicates employees are not anticipated to exceed the TWA PEL and/or EL, therefore, reassessment of exposures will be conducted periodically, every 3 years, and if workplace conditions change in a manner that may increase exposure.
 3. All monitoring data is maintained by Risk Management and made available for access by affected personnel upon request.
 4. In general, collection of personal samples should be representative of a full shift including at least one sample for each job classification collected from the employee's breathing zone, in each work area either for each shift or for the shift with the highest exposure level.
 5. Employee exposure is that exposure which would occur if the employee were not using a respirator.
- B. Risk Management may hire independent consultants to conduct asbestos oversight and air monitoring during removal projects conducted by abatement contractors as well as O&M authorized staff.
- C. Sampling is conducted using approved National Institute of Occupational Safety and Health (NIOSH) Method 7400.
- D. Maintenance personal exposures are categorized by type of removal to serve as a negative exposure assessment as required by Cal OSHA. A negative exposure assessment is job specific and the workplace conditions, type of material, control methods, work practices, and environmental conditions must closely resemble those of the activity to be represented. The assessment is used to show that personal exposure levels for a given job are well below the permissible exposure limits, so the appropriate level of respiratory protection can be used.
- E. In cases where exposure assessments are not completed, the following shall be provided to the employee:
1. Appropriate respiratory protection and protective clothing in accordance with the Respiratory Protection Program and as suited to the specific work task determined by Risk Management.
 2. Containment or isolation means.
 3. Change areas.
 4. Hand washing facilities.
 5. Training for Hazard Communication, respiratory protection, work practices, and the appropriate asbestos training.

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VII. Notification Procedures

- A. Every effort should be made to pre-notify individuals who work in or adjacent to areas where asbestos activities will take place. The notification can be verbal or written.
- B. All work activities shall be stopped if you discover building material that you suspect contain asbestos. Do not attempt to handle the material or dispose of the material. Contact the Risk Management Division office immediately for assistance.
- C. Written notification required to Cal OSHA for asbestos work only when the amount of ACM exceeds 100 square feet.

VIII. Regulated Areas

- A. Asbestos
 - 1. All Class I – III asbestos work must be conducted within a regulated area. A regulated area must have the following:
 - a) Must be demarcated in a manner to restrict persons from entering and protect from exposure to airborne asbestos.
 - b) Must have signs posted with the following information:

DANGER
ASBESTOS
MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

and

WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA

- c) Must require the use of respirators prior to entry.
 - d) Must not allow employees to eat, drink, smoke, chew tobacco or gum, or apply cosmetics.
 - e) Must be supervised by a competent person.
 - 2. Under no circumstances is an OC San employee that has not been trained as an asbestos worker allowed to enter a regulated area. Special provisions will be made by Risk Management for emergency personnel, that possess a minimum of Asbestos O&M Training (OSHA Class III), depending on the situation.

IX. Methods of Abatement

- A. Asbestos
 - 1. Class I and Class II asbestos work will be performed in accordance with OC San Specification 01900 for Hazardous Materials Mitigation and Controls. Class I and

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Class II work will be performed by a third-party licensed asbestos abatement contractor.

2. Class III asbestos work, such as minor asbestos-related work as part of maintenance, minor repair, or minor clean-up, must be conducted using engineering and work practice controls which minimize the exposure to employees performing the asbestos work and to bystander employees. This includes:
 - a) Demarcating the work area as a “regulated area.”
 - b) Using wet methods.
 - c) Utilize vacuum cleaners equipped with HEPA filters to collect debris and dust containing asbestos.
 - d) In general practice, there should be no abrading of TSI materials. However, if work involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of TSI or surfacing material, employees must use impermeable drop cloths, and must isolate the operation using mini-enclosures or glove bag systems.
 - e) Where monitoring results show the PEL has been exceeded, the employees must contain the work area using impermeable drop cloths and plastic barriers or their equivalent or shall isolate the operation using control systems.
 - f) Jobs which involve the disturbance of TSI or surfacing material, or when air monitoring results show that the PEL has been exceeded, employees must wear, at a minimum, half-face air purifying negative pressure respirators equipped with HEPA cartridges.
3. Class IV asbestos work must be conducted using wet methods, HEPA vacuums, and prompt clean-up of debris containing ACM or assumed ACM.
4. Employees cleaning up debris and waste in a regulated area where respirators are required must be fitted according to the requirements in accordance with the Respiratory Protection Program.
5. All ACM debris is assumed to be waste that contains asbestos and must be handled according to the OC San waste handling procedures. Each plant has assigned EPA ID numbers and have waste profiles for friable and non-friable asbestos. ACCM is disposed of as general construction debris.

X. Respiratory Protection

A. General

1. OC San employees will be issued respirators by Risk Management, as required. All employees must be medically cleared for respirator use prior to issuance. Refer to the Risk Management’s Respiratory Protection Program for additional details.
2. Respiratory protection may include the following: half-face or full-face tight-fitting air-purifying respirators with HEPA cartridges. All respirators will be quantitatively fit tested by Risk Management or approved vendor, and all mandatory users will be required to be fit tested annually.

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3. Respirators for asbestos work must be worn when conducting the following:
 - a) All Class I activities.
 - b) All Class II activities where ACM is not intact.
 - c) All Class II and III activities where wet methods are not used.
 - d) All Class II and III activities that do not have a negative exposure assessment.
 - e) All Class III work involving thermal systems insulation or surfacing materials.
 - f) All work where employees are exposed above the PEL or EL.
 - g) In emergencies.

XI. Protective Clothing

- A. OC San employees will be supplied with protective clothing consisting of disposable Tyvek® suits. The suits are required to be worn during Class I and Class II asbestos operations involving greater than 25 linear feet or 10 square feet, any operation without a negative exposure assessment, or any operation where exposures will exceed the PEL.
- B. Suits should be routinely inspected for rips or tears while working. Damaged suits should be mended or immediately replaced. All contaminated suits should be properly disposed with asbestos waste.

XII. Hygiene Facilities

- A. Decontamination areas must be established for Class I asbestos work that is greater than 25 linear or 10 square feet of thermal system insulation or surfacing materials. It must be set up adjacent and connected to the regulated area. All employees must exit and enter through the decontamination area that must consist of an equipment room, shower area, and clean room in series.
- B. Decontamination areas are also required for Class I work involving less than 25 linear or 10 square feet, or Class II and III work where exposures exceed the PEL or EL, or where there is no Negative Exposure Assessment. An equipment area must be established adjacent to the regulated area for the decontamination of employees and equipment.
- C. It must consist of an impermeable drop cloth on the floor surface. Work clothes must be HEPA vacuumed before removal, all equipment must also be cleaned prior to removal and employees must enter and exit through the equipment room from the regulated area.

XIII. Housekeeping

- A. All asbestos waste and debris must be promptly cleaned up by properly trained workers and disposed in the proper manner. Only HEPA filtered vacuums may be used when vacuuming these materials.
- B. Dry sweeping, vacuum cleaners, shop vacuums, and compressed air are prohibited for cleaning.

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XIV. Medical Surveillance

- A. As a result of exposure assessments and depending on the outcome, employees may be required to be involved in a medical surveillance program for asbestos exposures or due to involvement in the respiratory protection program.
- B. Medical surveillance requirements may include a health exam, medical questionnaire, and chest x-ray.
- C. For respirator use, medical surveillance requirements involve a pulmonary function test.

XV. Training Requirements

- A. OC San employees whose job classification may expose them to asbestos shall receive, as a minimum, Hazards Communications training, which includes content on the hazards of asbestos.
- B. Only employees trained in the Federal Department of Transportation (DOT) Hazardous Materials shipping procedures may sign hazardous waste shipping documents (e.g., manifests) involving asbestos contaminated wastes.
- C. To avoid potential exposure, and in accordance with regulations, only trained and qualified individuals may disturb ACM. Contact Risk Management for training, if employees fall into one of these groups or are otherwise likely to disturb ACM:
 - 1. Class I and II Training
 - a) Required training for activities that involve the removal of asbestos containing materials which include but are not limited to the following: thermal systems insulation, surfacing materials, wall board, floor tile and sheeting, ceiling tile, roofing materials, and siding. Training is 32 hours for worker level and 40 hours for competent person level.
 - b) If individuals are to be trained in Class II operations only, the training will consist of a minimum of 8 hours with hands-on training for the type of material that will be removed. Annual refreshers are required for both classes.
 - 2. Class III Training
 - 1) Required training for activities that involve the disturbance of thermal system insulation or surfacing materials for the purpose of conducting repair or maintenance activities only. Training is 16 hours with a 4-hour refresher annually.
 - 2) For Class III operations for which the competent person determines that the EPA curriculum does not adequately cover the training needed to perform that activity, training shall be conducted that the employee is able to understand and include the specific work practices and engineering controls set forth by this SOP.
 - 3. Class IV Training

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- a) Class IV training is required for all maintenance and custodial staff that work in buildings that have asbestos containing materials. Initial training is 2 hours with refreshers required annually.

XVI. Disposal Procedures

- A. Asbestos waste must be containerized within transparent and leak tight plastic bags of at least 6-mil thickness. Wastes must be double-bagged, wet, sealed with duct tape, and have the appropriate label attached. Utilize specialty asbestos disposal bags from a commercial supplier with OSHA-compliant warning labels either preprinted or purchased separately.
- B. The wastes generated by asbestos O&M shall be transported to the designated OC San hazardous waste storage area. The waste shall be placed in closable accumulation containers designated by Risk Management, which will maintain the accumulation containers and arrange for off-site disposal in accordance with DTSC and DOT guidelines.

XVII. Recordkeeping

All records created or generated during this procedure shall be legible and stored in a way that they are readily retrievable in facilities or electronic document/content management systems that provide a suitable environment to prevent damage, deterioration, or loss. Records may be in the form of any type of media, such as hard copy or electronic media. The OC San Records Retention Schedule is the official procedure governing the retention, retirement, and destruction of District records. Document owners should use these schedules to determine the item and series that best fit their records. Document owners are responsible for ensuring that documents are properly marked, indexed, and filed for their projects or area of responsibility.

XVIII. Reference

Title 8, California Code of Regulations, Section 1529 Asbestos

Title 8, California Code of Regulations, Section 5208 Asbestos

Title 40, Code of Federal Regulations, Section 763.92(a)(1)(2)

South Coast Air Quality Management District (SCAQMD), Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities

XIX. Revision History

Version	Date	By	Reason
1	06/23/2012	Rodney Collins	New Policy
2	09/02/2020	John Frattali	Periodic Update – Refer to Program Change Log
3	12/07/2021	Sheri Ventanilla	Periodic Update – Refer to Program Review Findings Log