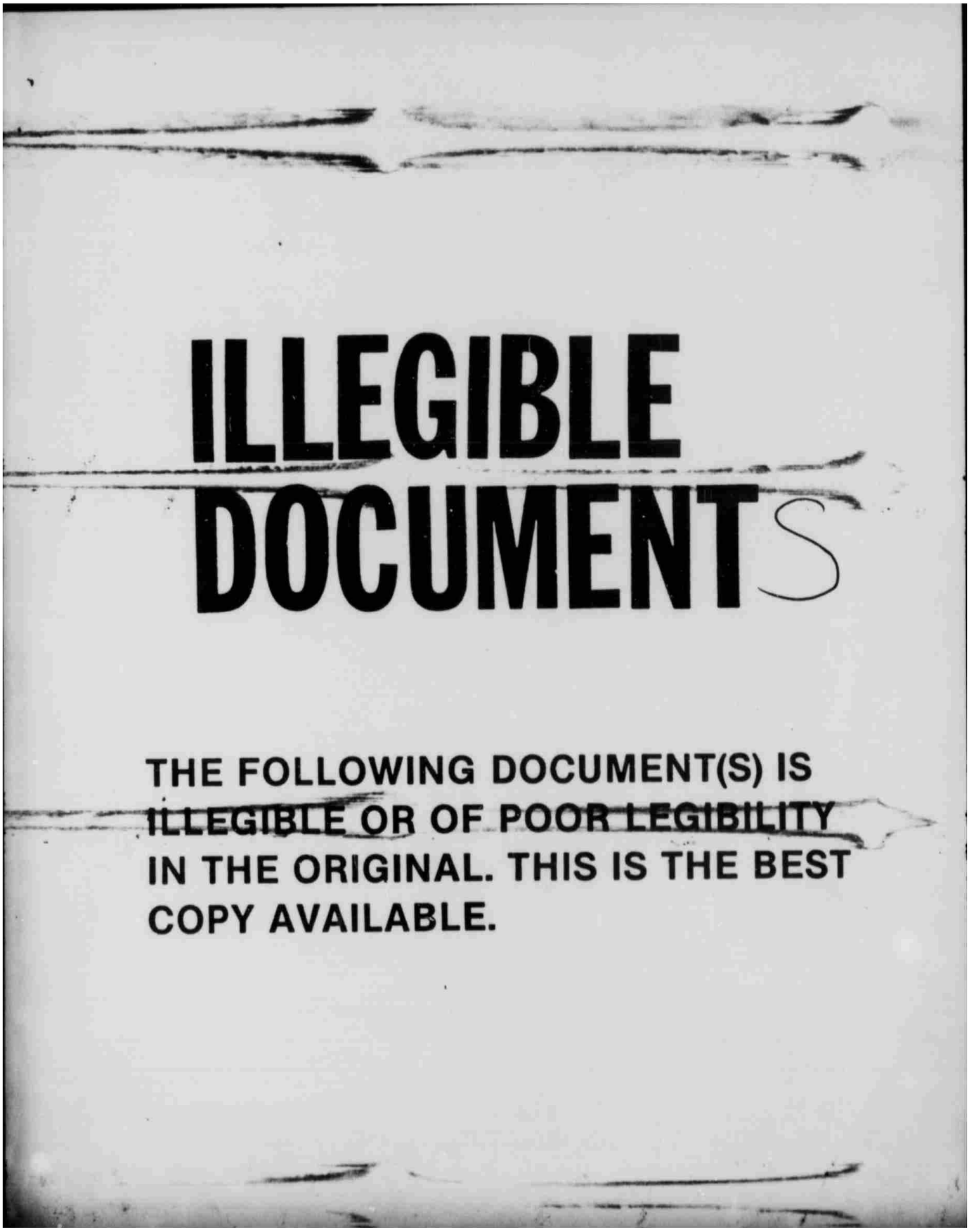


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DEPARTMENT OF THE NAVY
Office of the Chief of Naval Operations
Washington, D.C. 20350

OPNAVINST 6260.1
OP-09F
9 April 1974

OPNAV INSTRUCTION 6260.1

From: Chief of Naval Operations
To: All Ships and Stations (less Marine Corps field addressees not having Navy personnel attached

Subj: Control of asbestos exposure to naval personnel and environs

Ref: (a) Occupational Safety and Health Act of 1970, Public Law 91-596 (84 Stat. 1590)
(b) Federal Register of 18 Oct 1972 (29CFR1910 : 37FR 22102)
(c) Clean Air Act, as amended by Public Law 91-604 (84 Stat. 1676)
(d) Federal Register of 6 April 1973 (40CFR61: 38FR8820)
(e) OPNAVINST 5100.8B of 4 June 1973

Encl: (1) Occupational Health Standards, Control, and Medical Surveillance Requirements
(2) National Emission Standard for Asbestos
(3) Industrial Hygiene Technical Assistance Directory

1. Purpose

a. Occupational Health – To comply with National Safety and Health Standards on asbestos implemented and promulgated by references (a) and (b).

b. Environmental Protection – To comply with the National Emission Standard for asbestos implemented and promulgated by references (c) and (d).

2. Background

a. Asbestos is a general term used to describe several fibrous mineral silicates. Although there are many asbestos minerals, only six are of commercial importance. They are: chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. Major uses of asbestos are for asbestos cement products, fireproofing, high temperature insulation, and asbestos cloth.

b. Inhalation of excessive quantities of asbestos fiber can produce severe lung damage in the form of disabling or fatal fibrosis of the lungs. Asbestos has also been found to be a causal factor in the development of cancer (mesothelioma) of the membranes lining the chest and abdomen. Lung damage and disease usually develops slowly and often does not become apparent until some years after the initial exposure. In the case of mesothelioma, an outstanding feature has been the long period, commonly over 30 years, between the first exposure to asbestos and the appearance of a tumor.

c. Some examples of tasks which can generate excessive quantities of airborne asbestos fibers are: the fabrication, installation, repair or removal ("rip-out") of asbestos containing pipe and boiler insulation materials, power sawing of asbestos-containing fire retardant building materials, handling asbestos cloth curtains used for protection against welding spatter, and in brake relining and repair work.

d. Although asbestos-free substitute materials are being developed, much asbestos material continues to be used in the Navy, particularly in shipyard pipe insulation shops. In addition, ships presently in commission contain asbestos boiler and pipe insulation that will involve "rip-out" and potential personnel exposure for another 20 or more years.

e. Recognizing the serious health implications of asbestos exposure to humans, the government has imposed stringent occupational health and environmental protection standards [references (b) and (d) respectively] for the control of asbestos. These standards and controls, specified in enclosures (1) and (2) must be strictly enforced, both ashore and afloat.

3. Action

a. The Chief, Bureau of Medicine and Surgery, shall in accordance with reference (e), provide professional

11 PAGES

MAY 1

and technical assistance to commands for the purpose of evaluating asbestos exposures. Enclosure (3) provides a list of technical assistance available.

b. The Chief of Naval Material shall, in coordination with the Bureau of Medicine and Surgery, provide advice and technical assistance to define appropriate industrial hygiene controls and develop remedial projects.

c. Major claimants shall insure program support by budgeting the resources required to meet the regulatory standards for the control of asbestos as prescribed by this instruction.

d. Commanding officers shall insure that:

(1) Appropriate occupational health/industrial hygiene control measures and monitoring procedures in enclosure (1) are applied to processes and procedures using asbestos or asbestos containing materials.

(2) The National Emission Standard for Asbestos is complied with as prescribed in enclosure (2).

W. S. NELSON
By direction

Distribution:
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5801 Tabor Ave.
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OCCUPATIONAL HEALTH STANDARDS, CONTROL AND MEDICAL SURVEILLANCE REQUIREMENTS

1. Permissible Exposure Concentration

a. "Time Weighted Average (TWA)"-The 8-hour airborne concentration of asbestos fibers to which personnel may be exposed shall not exceed five fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in sections 4 and 5.

b. Effective 1 July 1976, the 8-hour TWA airborne concentrations of asbestos fibers to which personnel may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air.

c. "Ceiling Limit"-Personnel shall not be exposed to airborne concentrations of asbestos in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air.

2. Industrial Hygiene Control Measures

a. Local exhaust ventilation control measures and dust collection systems shall be designed, constructed, installed and maintained in accordance with the American National Standard, Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1971, available from the American National Standards Institute, 1430 Broadway, New York, New York 10018. Other assistance in this regard may be obtained from activities listed in enclosure (3).

b. Asbestos emission from asbestos fabrication, installation, or removal operations shall be prevented by the collection in bag filters of woven cotton fabrics having air flow permeabilities not exceeding 30 cubic feet per minute per square foot of fabric for woven fabrics or 35 cubic feet per minute per square foot for felted fabrics. Each square yard of felted fabric will weigh at least 14 ounces and be at least one-sixteenth inch thick throughout. No by-pass devices are permitted. Provisions shall be made to empty the collection hoppers without creating visible emissions of particulate matters.

c. All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the permissible exposure concentrations shall be provided with local exhaust ventilation systems.

d. As practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the permissible exposure concentrations.

MAY 1 4 197

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e. Asbestos-free substitute materials shall be tested, under the technical management of NAVSEC, and, if acceptable to NAVSHIPS, shall be used in place of asbestos containing materials.

f. No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent the release or airborne asbestos fibers in excess of the permissible exposure concentration.

g. Personnel engaged in the spraying of asbestos, the removal ("rip-out"), or demolition of pipes, structures, or equipment covered or insulated with asbestos, and in the removal or demolition of asbestos insulation or coverings shall be provided with a type "C" continuous flow or pressure-demand, supplied air respirator and special clothing in accordance with paragraph 3.e. of this instruction.

h. All external surfaces in places of employment shall be maintained free of accumulations of asbestos fibers.

i. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing consigned for disposal, which may produce in any reasonably foreseeable use, handling, storage, processing, disposal, or transportation, airborne concentrations of asbestos fibers in excess of the permissible exposure concentration shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers. Prior to placing in bags, asbestos wastes shall be wet down to reduce airborne concentrations.

3. Personal Protective Equipment

a. Compliance with permissible exposure limits shall not be achieved by the use of respirators except:

(1) during the time period necessary to commence industrial hygiene control measures,

(2) in work situations in which the control methods prescribed in paragraph 2 are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the acceptable limit, and

(3) during emergencies.

b. A respirator program shall be established as described in the requirements of the American National Standards, Practices for Respiratory Protection, ANSI Z-88.2-1969, available from the American National Standards Institute, 1430 Broadway, New York, New York 10018.

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c. Where a respirator is indicated by paragraph 3a, (1), (2), and (3), it shall be selected from those approved by the Bureau of Mines, Department of the Interior, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health, Education and Welfare. The provisions of section 2 paragraph g must be adhered to when selecting a respirator.

(1) A reusable or single use air purifying respirator, or a respirator described in paragraph 3c (2) and (3) shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the permissible exposure concentration, when the ceiling or the 8-hour time-weighted average concentration of asbestos fibers is reasonably expected to exceed no more than 10 times the limit.

(2) A full facepiece powered air purifying respirator, or a powered air purifying respirator, or a respirator described in paragraph 3c (3) shall be used to reduce the concentration of airborne asbestos fibers in the respirator below the permissible exposure concentration when the ceiling or the 8-hour time-weighted average concentration of asbestos fibers is reasonably expected to exceed 10 times, but not 100 times, the limit.

(3) A type "C" continuous flow or pressure-demand, supplied-air respirator shall be used to reduce the concentration of airborne asbestos fibers in the respirator below the permissible exposure limit when the ceiling or 8-hour time-weighted average airborne concentration of asbestos fibers is reasonably expected to exceed 100 times those limits.

d. A person shall not be assigned to tasks requiring the use of respirators if, based upon his most recent examination, an examining physician determines that the person will be unable to function normally wearing a respirator or that the safety or health of the person or other personnel will be impaired by his use of a respirator.

e. Special clothing such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings shall be supplied for personnel exposed to airborne concentrations of asbestos fibers which exceed the ceiling level.

f. At any fixed place of employment, change rooms shall be provided when exposure to the airborne concentration of asbestos fibers is in excess of the permissible exposure limit.

(1) Two separate lockers or containers for each person, so separated or isolated to prevent contamination of street clothes by work clothes, shall be provided.

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(2) Laundering of asbestos contaminated clothing shall be done so as to prevent release of airborne asbestos fibers in excess of the permissible exposure concentration.

(3) Anyone who gives asbestos contaminated clothing to another person for laundering shall inform such person of the requirements to prevent the release of asbestos in excess of the permissible exposure concentrations.

(4) Asbestos contaminated clothing shall be transported in sealed impermeable bags or containers.

4. Method of Measurement. All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400-450 magnification, using phase contrast illumination, with sample mounted in high viscosity solution of membrane filter material.

5. Monitoring

a. Sampling shall be of such frequency and pattern to represent with reasonable accuracy the level of exposure. Sampling shall not be at intervals greater than 6 months.

b. Samples shall be collected from within the breathing zone of personnel, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers. Records of environmental monitoring shall be maintained.

c. Measurement and monitoring shall be conducted under the supervision of an industrial hygienist. Sources of industrial hygiene assistance are provided in enclosure (3).

6. Caution Sign and Labels

a. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may exceed the permissible exposure concentration. Signs shall be posted at such a distance from such a location so that personnel may read the signs and take necessary steps before entering the area marked by the signs. The caution signs shall conform to the requirements of 20 inch by 14 inch vertical format signs, as specified in 1910.145(d)(4) of the Occupational Safety and Health Standards, Federal Register, Vol. 36, No. 105, May 29, 1971. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in this subdivision.

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Legend	Notation
Asbestos----------	1" Sans Serif, Gothic or Block.
Dust Hazard----------	3/4" Sans Serif, Gothic or Block.
Avoid Breathing----------	1/4" Gothic.
Wear Assigned Protective Equipment	1/4" Gothic.
Do Not Remain in Area Unless Your Work Requires It.	1/4" Gothic.
Breathing Asbestos Dust May Be Hazardous to Your Health.	1/4" Gothic.

Spacing between lines shall be at least equal to the height of of the upper of any two lines.

b. Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers occur in excess of the permissible exposure concentration. The caution labels shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust May Cause
Serious Bodily Harm

7. Medical Examinations

a. Naval personnel in an occupation exposed to airborne concentrations of asbestos fibers shall receive, within 30 calendar days following first employment, a comprehensive medical examination, which shall include as a minimum, a chest roentgenogram (posterior-anterior 14 by 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV 1.0). The same medical examination shall be conducted within 30 calendar days before or after the termination of employment.

MAY 14 1974

b. Naval personnel in an occupation exposed to airborne concentrations of asbestos fibers shall receive an annual examination to include, as a minimum, a chest roentgenogram (posterior-anterior 14 by 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV 1.0). X-ray films of asbestos workers shall be specially identified to the consulting radiologist. All medical record jackets shall be marked "asbestos worker."

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(10)

OPNAVINST 6260.1
9 April 1974

NATIONAL EMISSION STANDARD FOR ASBESTOS

1. General

a. Section 112 of reference (c) requires the administrator of the Environmental Protection Agency (EPA) to publish a list of hazardous air pollutants for which national emission standards will be promulgated. Reference (d), promulgated emission standards for three hazardous air pollutants, namely, asbestos, beryllium, and mercury.

b. Technical assistance for air pollution control is available upon request from the Navy Environmental Protection Data Base System at Engineering Field Divisions of the Naval Facilities Engineering Command.

c. Care must be taken to assure that measures to meet the emission standards are compatible with occupational health and safety standards contained in enclosure (1) of this instruction package, particularly with regard to collection devices and disposal procedures involved in asbestos fabrication (as in ship yard pipe or lagging shops), installation or removal operations. For additional information contact the industrial hygiene activities listed in enclosure (3).

2. Application of National Emission Standards for Asbestos

a. The National Emission Standards for Asbestos are contained in reference (d).

b. The standard became effective immediately upon publication and principally applies to the manufacturing of asbestos products. It does not include fabrication or repair operations if the operation does not involve the production of asbestos, cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving lap or other textile material.

c. The standard covers wetting procedures for the demolition of all institutional, commercial or industrial buildings containing asbestos. It also includes demolition of residential buildings containing asbestos insulation materials if the building has five or more dwelling units.

d. The standard includes spray-on applications of materials containing more than 1% asbestos on a dry weight basis.

e. "Rip-out" of asbestos from commissioned ships is not included in the National Emission Standard; however, commissioned ships must comply with Occupational Health and Safety Standards in enclosure (1) of this instruction.

Enclosure (2)

MAY 14

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INDUSTRIAL HYGIENE

TECHNICAL ASSISTANCE DIRECTORY

1. Industrial Hygiene personnel at BUMED activities are available to provide consultation and technical assistance to Commands in matters of occupational health. Specific assistance is available in the following areas related to asbestos control:

a. Evaluation of existing controls and recommendations for improved engineering controls, e.g. local exhaust ventilation systems.

b. Selection of protective clothing and appropriate respiratory protective devices.

c. Monitoring personnel exposure levels through collection of air samples and performing asbestos fiber determinations.

2. Forces Afloat. Forces afloat requiring the services of an industrial hygienist should request assistance from the nearest Navy Environmental and Preventive Medicine Unit (EPMU). The location of the units, their autovon numbers are as follows:

		AUTOVON
EPMU-2	Norfolk, VA	690-7671
EPMU-5	San Diego, CA	958-1263
EPMU-6	Pearl Harbor, HI	430-0111 (X-21147)
EPMU-7	Naples, Italy	NAVSTA NAPLES (X-468, 469)

3. Shore Activities

a. Shore activities located in Naval Medical Regions should request industrial hygiene services from the Regional Medical Center which will provide, or arrange for, the required services. Industrial hygiene services are available in the following Navy Medical Regions:

NRMC	Industrial Hygiene Department Telephone
Bethesda, MD NOS Indian Head Dispensary	743-4801
Bremerton, WA NSY Dispensary	478-2729
Charleston, SC NSY Dispensary	743-6100

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Jacksonville, FL	772-2841
NAS Dispensary	
Long Beach, CA	547-7972
NSY Dispensary	
Oakland, CA	646-2458
NSY Mare Island Dispensary	869-3173
NAS Alameda Dispensary	
Pearl Harbor, HI	433-1137 (X-31137, 24242)
NSY Dispensary	
Pensacola, FL	452-3639
NARMC Dispensary	
Philadelphia, PA	755-3209
NSY Dispensary	
Port Hueneme, CA	982-8683
NAS Dispensary	
Portsmouth, NH	439-1000 (X-398)
NSY Dispensary	
Portsmouth, VA	393-3280
NSY Dispensary	444-3746
NAS Norfolk Dispensary	
San Diego, CA	437-6266
NAS North Island Dispensary	

b. Shore activities located outside Naval Medical Regions which do not have in-house industrial hygiene services should request these services from the nearest EPMU (see section 2 of this directory) or the NAVY ENVIRONMENTAL HEALTH CENTER, 3333 Vine Street, Cincinnati, OH, AUTOVON: 989-3947 or Commercial: (513) 684-3947.

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