

CHAPTER 11

INSPECTIONS AND INVESTIGATIONS OF WORKPLACES BY FEDERAL AND STATE OSH OFFICIALS

1101. Background and Discussion

a. Per reference 11-1, Navy facilities are subject to Department of Labor (DOL) inspections with few exceptions.

b. In addition, with few exceptions, contractor operations at Navy activities are subject to DOL inspections.

c. Liaison between the contractor and the contracting agent will help ensure that all responsibilities and procedures for the inspections of contractor workplaces are clearly understood. Some contracts include the provisions of certain Defense Acquisition Regulations (DARs) (e.g., DAR 7-602.42 (NOTAL) for construction contracts) to ensure this liaison. Other contracts must provide a method for the liaison as well as requirements to protect Navy personnel from contractor operations.

d. The provisions that follow apply to the actions of Federal and State Occupational Safety and Health (OSH) officials while inspecting Navy shore installations, ships and Navy civilian workplaces. The inspection authority of Federal and State OSH officials is summarized in Appendix 11-A.

1102. Federal and State Occupational Safety and Health Inspections at Contractor Workplaces on Navy Shore Installations

a. The OSH Act provides for the development, issuance and enforcement of standards. DOD contractors, operating from DOD or privately-owned facilities located on or off Navy shore installations, are employers as defined in the Act and are subject to enforcement authority by Federal and certain State safety and health officials. Accordingly, and subject to the conditions and exceptions stated here, Navy shore activities shall grant permission for Federal and State Occupational Safety and Health Administration (OSHA) officials, to enter their installations without delay and at reasonable times to conduct inspections of contractor workplaces. These inspections may be routine or based on reports of unsafe or unhealthful conditions, specific complaints, accidents or illnesses of contractor employees.

b. Federal and State safety and health officials shall present appropriate identifying credentials and shall state the purpose of the visit to the Navy shore installation commander or his/her authorized representative and to the administrative contracting officer (ACO) (if appropriate), before conducting an inspection of contractor workplaces situated on a Navy shore installation.

c. A State may exercise jurisdiction over OSH matters involving a contractor workplace at a Navy shore installation provided the State has an OSH plan approved by the Secretary of Labor. Exceptions are stated in paragraphs 1102e and f.

d. Authorized safety and health officials from States without OSHA-approved OSH plans may, subject to exceptions noted elsewhere in this chapter, exercise jurisdiction over safety matters involving contractor workplaces on Navy shore installations only when there are no relevant OSHA standards in effect. Prior to authorizing an inspection or investigation, installation commanders shall request the State to provide confirmation that there is no relevant Federal OSHA standard applicable to the contractor workplace.

e. Under reference 11-1, only Federal OSHA officials may perform inspections in DOD contractor workplaces situated in areas where the United States holds exclusive Federal jurisdiction.

f. The Secretary of Labor has no authority over nuclear safety/health or explosive safety aspects of operations specifically covered by:

(1) Any State nuclear safety or health standard or regulation implementing 42 U.S.C. Section 2021 and 2121(b), or 2201(b).

(2) Any explosive safety or health standard or regulation implementing 10 U.S.C. 172.

NOTE:

This does not circumvent Secretary of Labor authority over other health/safety matters in the same operations. For example, a workplace in a munitions depot subject to DOD explosives safety standards is subject to OSHA jurisdiction for matters relating to machine guarding, noise, etc.

g. The Regional Commander and/or activity commanders shall immediately forward requests to inspect or investigate a contractor workplace, on a Navy shore installation involving handling or storage of ammunition or explosives, nuclear facilities or nuclear weapons by message to Commander, Naval Sea Systems Command (COMNAVSEASYS COM) with copies to the CNO (N4), COMNAVSAFECEN and the cognizant Echelon 2 command. All such requests shall identify the contractor workplace involved and furnish all other immediately available details. Installation commanders shall withhold access pending receipt of reply. Where granted, access shall be subject to the requirements of this manual and any conditions contained in the COMNAVSEASYS COM reply. COMNAVSEASYS COM shall furnish a reply as quickly as possible after receipt of the request.

h. Installation commanders shall not provide DOD contractors with advance notice of inspections by Federal or State OSHA officials except:

(1) In cases of apparent imminent danger to Navy or contractor employees.

(2) When specifically requested by Federal OSHA or State OSHA officials.

NOTE

Any person who violates the foregoing is subject to a fine of not more than \$1,000 or to imprisonment for not more than 6 months, or both.

i. When Federal or State safety and health officials require entry into a closed area to accomplish the purpose of their visit, and they cannot effectively be prevented from access to classified material by means such as covering the material to deny visual access, the following procedures apply:

(1) The Navy shore installation commander or the contractor, as appropriate, shall immediately notify the OSHA official and the Navy region or activity exercising security supervision over the contractor's workplace of the need for a personnel security clearance to enter the closed area.

(2) In the case of State OSHA officials or other State safety and health officials, the Navy security activity, after verifying the need for a personnel security clearance, shall in coordination with the State official, request the cognizant security office to contact the nearest OSHA regional or area office for a cleared Federal OSHA official to conduct the necessary inspection of the closed area.

(3) In the case of Federal OSHA officials, the Navy security activity, after verifying the need for a personnel security clearance, shall contact the appropriate cognizant security office and request:

(a) Verification of the Federal OSHA official's personnel security clearance.

(b) Expeditious processing of the visit request under reference 11-2. If the official's name is not on the list of cleared Federal OSHA personnel maintained by the cognizant security office, the Navy security activity shall request the cognizant security office to contact the OSHA regional or area office and request an appropriately cleared Federal OSHA official.

j. Federal or State OSHA officials or other state safety and health officials shall not take photographs on any Navy shore installation. Only Navy personnel or cleared contractor personnel shall take photographs requested by any such officials. Navy or contractor personnel shall not deliver photographs to the requesting official until all film, negatives, and photographs have been fully screened and classified by proper Navy authority, as appropriate, in the interest of national security. Activities shall forward further requests, by such officials, for documented data, sketches of military installations and equipment, reports or design information (e.g., noise sound levels, profiles, etc.) to the appropriate screening official for similar action. Screening officials shall normally complete this process within a period of 15 working days from receipt of the material.

k. Representatives of the Navy shore installation, Regional Commander and the ACO (if appropriate), shall accompany Federal OSHA and State OSHA officials on inspections and investigations. Representatives of the contractor and contractor employees may accompany these officials where requisite security clearances are verified.

l. Federal OSHA or State OSHA officials shall have access to, and be provided with, copies of records and reports pertinent to specific Navy contractor accident investigations, upon request, unless prohibited from release by the Privacy Act or exempted from release

under the Freedom of Information Act. When the cognizant engineering field division (EFD) of the Naval Facilities Engineering Command (COMNAVFACENGCOM) has defined the boundaries, Navy shore installation commanders should advise the applicable state OSHA office in writing of any areas on the installation that are located within an area of exclusive Federal jurisdiction.

m. Navy shore installation commanders and/or Regional Commanders shall refer all information regarding citations and notices issued to Navy contractors for violations of OSHA, state OSHA or other State safety and health standards involving DOD-furnished equipment, facilities or other property to the responsible ACO for appropriate action. Shore installation commanders and/or Regional Commanders shall send a copy to CNO (N09F) with copy to COMNAVSAFECEN.

n. DOD policy states that the contractor is responsible for resolving issues related to citations and initiating requests for delays in compliance with variations, tolerances or exemptions from applicable standards.

o. Regional Commanders and/or activity commanders shall advise CNO (N09F) with copy to COMNAVSAFECEN, via the chain of command, of any situation resulting from compliance with these procedures that could impair the Navy's ability to properly carry out its mission in support of the national defense or adversely affect the national security.

1103. Federal and State Occupational Safety and Health Inspections of Contractor Workplaces Aboard Navy Ships

This section provides guidance and procedures regarding requests by Federal or State OSH officials to inspect or investigate contractor workplaces aboard Navy ships in port or located at associated facilities (e.g., repair operations).

a. Subject to the conditions and exceptions stated below, Navy afloat activities shall permit Federal OSHA compliance officials, to be taken aboard U.S. Navy ships in port to conduct safety and health inspections and investigations of contractor workplaces. Commanding officers shall not grant State occupational safety and health officials access aboard naval ships and service craft or in areas of exclusive Federal jurisdiction.

(1) Except for the limitations imposed in paragraphs 1103a(2) and (3), commanding officers shall provide OSHA compliance officials, upon request, immediate access to contractor workplaces where contractor employees are currently performing work or where the contractor has equipment or other work-related material or paraphernalia in the workplace under a government contract.

(2) If the requested inspection/investigation involves handling or storage of ammunition or explosives, commanding officers shall deny the request for access. The commanding officer shall make a report of any such request to COMNAVSEASYS COM by message, with a copy to CNO (N09F) and COMNAVSAFECEN.

(3) With respect to nuclear-propulsion plant spaces on nuclear powered ships, related nuclear shipyard facilities ashore or afloat, shipboard nuclear support facilities or nuclear weapons areas, commanding officers shall forward the request for access by message

and by the telephone to COMNAVSEASYSCOM with a copy to CNO (N09F) and COMNAVSAFECEN. All message requests shall identify the contractor workplace involved and furnish all other immediately available details. Commanding officers shall withhold access pending receipt of the reply. Where granted, access shall be subject to the requirements of this chapter and any conditions imposed in the COMNAVSEASYSCOM reply. COMNAVSEASYSCOM shall furnish a reply expeditiously, and, if possible, within a period of 3 working hours from receipt of the request.

(4) In cases of non-nuclear ships or nuclear ships, with the exceptions stated in paragraphs 1103a(2) and (3), and per the procedures in paragraphs 1103a(1), commanding officers shall grant access to contractor workplaces (as defined above) after requesting Federal OSHA compliance officials to conduct inspections and investigations of such workplaces within reasonable limits and in a reasonable manner during regular working hours (except when other times are mutually agreed upon by the concerned officials).

(5) OSHA officials shall not take photographs. Navy personnel shall take any photographs requested by OSHA officials. Commanding officers shall tentatively classify these photographs as confidential, and shall not deliver them to OSHA compliance officials until all film, negatives and photographs have been sent to COMNAVSEASYSCOM and fully screened and censored, as appropriate, in the interest of national security. Commanding officers shall forward any design or system performance data (e.g., recordings of noise sound level profiles, etc.) to COMNAVSEASYSCOM for screening, as above, prior to release. COMNAVSEASYSCOM shall complete this process within a period of 15 working days from the receipt of material.

(6) Commanding officers shall not give OSHA officials copies of any Federal records or reports. If OSHA officials request access to Navy records or reports, commanding officers shall forward the request to the appropriate releasing officials.

(7) In addition to presenting appropriate identification credentials, commanding officers shall require all OSHA compliance officials to possess appropriate security clearance for entry into areas where the contractor workplace is located.

(8) Representatives of the ship's commanding officer, and, if appropriate, the ACO and the commanding officer or officer in charge of the region or shore activity at which the ship is located, shall accompany the OSHA compliance official at all times during the physical inspection of contractor workplaces. A representative of the contractor and a representative of the contractor's employees may accompany the OSHA compliance officials during the inspection/investigation provided proper security clearances are verified. If there is no authorized contractor employee representative, the OSHA compliance officer is only authorized to consult with a reasonable number of contractor employees concerning matters of health and safety in pertinent workplaces.

(9) OSHA compliance officials may privately question contractors, contractor employees or their authorized representatives during their inspection.

b. Unless the responsible OSHA official specifically requests it, Regional Commanders and/or activity commanders, and ship commanding officers shall not provide contractors with advance notice of OSHA inspections, except in cases of apparent imminent

danger to Navy or contractor employees. Any person who violates the foregoing is subject to a fine of not more than \$1,000 or to imprisonment of not more than 6 months, or both.

c. Ship commanding officers shall report full information regarding any OSHA inspection/investigation or request for inspection aboard ship in writing to the ships chain of command with copies to CNO (N09F), COMNAVSAFECEN, and COMNAVSEASYSKOM, see reference 11-5 for more detailed information.

1104. Federal Occupational Safety and Health Inspections of Navy Civilian Workplaces

a. Under the provisions of reference 11-1, Federal OSH officials, acting as representatives of the Secretary of Labor, may conduct announced or unannounced inspections at all Navy workplaces except military unique workplaces, workplaces staffed exclusively with military personnel, or workplaces located in foreign countries. Such inspections may be in response to a complaint from a Navy civilian employee or employee representative. They may schedule these inspections as part of DOL's targeted inspection program or as part of an evaluation of the DOD safety program. These inspections may also be solely at the discretion of the Secretary of Labor.

b. In addition to the exclusions mentioned above, the Secretary of Labor has no authority over nuclear safety/health or explosive safety aspects of operations specifically covered by:

(1) Any State nuclear safety or health standard or regulation implementing 42 U.S.C. 2021.

(2) Any nuclear safety or health standard or regulation implementing 42 U.S.C. Section 2021, 2021(b) or 2201(b).

(3) Any explosive safety standard or regulation implementing 10 U.S.C 172.

NOTE:

This does not circumvent Secretary of Labor authority over other health/safety matters in the same operations. For example, a workplace in a munitions depot, subject to DOD explosive safety standards, is subject to OSHA jurisdictions for matters relating to machine guarding, noise, etc.

c. Navy regions and/or activities employing civilians shall designate a coordinator with whom Federal OSHA officials may interface for inspection purposes. Regional Safety offices shall be the designated representatives for all activities to which they provide safety services.

d. Federal OSHA officials shall initially report to the Navy installation commander or his/her authorized representative, present identification credentials, and state the purpose of the visit. Regional Commanders and/or installation commanders shall admit these officials to conduct inspections of authorized Navy workplaces without delay, at reasonable times and in a reasonable manner. If the inspection is to involve areas/operations excluded under the provisions of paragraphs 1104a or 1104b, Regional Commanders and/or installation

commanders shall withhold permission for immediate access and forward a request for access by message and by telephone to CNO (N09F) and COMNAVSAFECEN and the appropriate chain of command having management cognizance. All requests shall identify the exclusion under consideration, and CNO (N09F) shall furnish an expeditious reply upon receipt of the message, as well as identifying other pertinent details regarding the inspection that must be performed.

e. Navy installation commanders shall require Federal OSHA inspectors to show appropriate security clearances if they require entry into closed areas. Federal OSHA officials must verify all security clearances. Navy personnel shall take any photographs these officials request in these areas. Navy Regional Commanders and/or installation commanders shall tentatively classify such photographs CONFIDENTIAL and shall not deliver them to Federal officials until higher authority (i.e., Echelon 2 and 3 commanders) have screened/classified all film, negatives and photographs as appropriate, in the interest of national security.

f. Representatives of the Regional and/or activity commander shall accompany Federal OSHA inspectors at all times.

g. Upon request, Navy Regional and/or installation commanders shall grant Federal OSHA officials access to available safety and health information related to Navy civilian employees. Examples are data on hazardous materials, copies of recent inspection reports, employee hazard reports and information on the status of abatement projects, provided such information is not specifically required by executive order to be classified in the interest of national defense or foreign policy and is otherwise releasable. Regional Commander and/or installation commanders shall also grant Federal OSHA officials access to and release copies of records and reports pertinent to specific accident investigations involving Navy civilian employees, provided such release is consistent with the Privacy Act and other applicable laws and regulations. With respect to the release of records pertinent to specific accident investigations involving Navy civilian employees, Navy installation commanders shall:

(1) Refer requests for copies of Judge Advocate General (JAG) investigative reports to the JAG (Code 35).

(2) Refer requests for copies of accident investigation reports to Commander, COMNAVSAFECEN (JAG), per reference 11-4.

h. Federal OSHA officials may interview or be accompanied by civilian employees or employee representatives with appropriate clearances during their visit.

i. If Federal OSHA officials issue reports or notices of unsafe or unhealthful working conditions discovered during their inspections, the commander of the inspected Navy activity shall or the Regional Commander on behalf of the inspected Navy activity shall forward a summary report with a copy of such notices immediately to CNO (N09F) and COMNAVSAFECEN. The commanding officer shall provide information copies to the chain of command having management cognizance. The commanding officer shall treat deficiencies discovered during such inspections in the same manner as deficiencies noted during internal Navy inspections.

j. If reports of inspections by Federal OSHA officials require a response, the commander of the inspected Navy activity shall provide such responses. Regional commanders shall provide responses for commands receiving safety support from the Regional host. Commands may participate in informal conferences with OSHA officials, and utilize established OSHA review/appeal procedures for Federal agencies in developing final resolutions to issues raised in OSHA inspections. Parent commands may require headquarters coordination prior to such responses. The activity commander shall provide copies of such responses to COMNAVSAFECEN and to the chain of command having management cognizance. Unresolved conflicts may require interagency resolution via DOD and DOL channels.

(1) Replies to OSHA violation notices shall be within time frames assigned by OSHA, shall specifically state abatement action and shall include appropriate backup information.

(2) If the command cannot resolve deficiency or abatement actions at the local level, it shall refer them up the chain of command for resolution.

1105. OSHA Targeted Inspections

Under Federal Agency Program requirements, OSHA maintains a targeted inspection program for Federal installations. Each fiscal year, OSHA targets Federal installations for inspections based on the frequency rate of their occupational injury and illness cases. If a rate is above the threshold established by OSHA (usually the average Federal Agency lost time case rate), OSHA would target the activity for inspection. Rate data is taken from Federal Employee Compensation Act (FECA) claims records. As part of the targeting program, OSHA requires each activity targeted for inspection to develop a targeting plan. The targeting plan shall identify high injury frequency work areas and specify actions to reduce mishap experiences. OSHA will notify activities targeted, by letter, at the beginning of the fiscal year and request that they prepare targeting plans. Regions and/or activities may use self-assessment improvement plans, as discussed in chapter 5, as a substitute for the targeting plans. Targeted activities shall forward copies of the plans to the chain of command, CNO (N09F) and COMNAVSAFECEN. Targeted activities shall also notify the chain of command, CNO (N09F), and COMNAVSAFECEN of inspection dates, and provide copies of reports and replies to reports.

1106. Overall Information Security Requirements

State and Federal agencies exercising their regulatory authorities in the area of occupational safety and health will periodically visit Navy activities. Regions and activities need to pay particular attention to ensure that Navy regulations and Federal statutes governing the control and protection of classified and sensitive unclassified information are properly enforced while avoiding any interference with the legitimate regulatory purpose being served. Commanders of Navy regions and activities shall use the following guidelines:

a. Permit only personnel with appropriate security clearances access to classified information, under reference 11-2. Limit such access to classified information required to resolve the matter at hand.

b. Navy commands handle a considerable amount of sensitive unclassified information controlled under Navy security regulations, Federal Export Control regulations and

other government-wide requirements. While access to this information does not require a security clearance, it is important that the holder and recipient of the information comply with applicable security regulations governing dissemination and protection of the information.

c. Place emphasis on the fact that classified or unclassified sensitive information must be controlled. Thus, if the recipient of controlled Navy information prepares reports or other documents based on the information, advise the recipient to seek advice from qualified Navy security personnel to ensure compliance with Federal laws and Navy regulations.

d. Classified or sensitive unclassified information produced during litigation or administrative proceedings also requires protection. Seek advice from the Office of the Judge Advocate General (Navy JAG) or cognizant Office of General Counsel (OGC) to ensure the classified or sensitive unclassified information is properly protected per reference 11-3.

Chapter 11

References

11-1. DODI 6055.1 of Aug 98, Department of Defense Occupational Safety and Health Program. http://www.dtic.mil/whs/directives/corres/pdf/i60551_081998/i60551p.pdf.

11-2. SECNAVINST 5510.30A of Mar 99, Department of Navy Personnel Security Program. <http://neds.daps.dla.mil/551030.htm>.

11-3. SECNAV Instruction 5510.36 of Mar 99, Department of Navy (DON) Information Security Program (ISP) Regulation. <http://neds.daps.dla.mil/551036.htm>.

11-4. OPNAVINST 5102.1D/MCO, of 25 May 05, Safety Investigation, Reporting and Record Keeping Manual, <http://www.safetycenter.navy.mil/instructions/ashore/5102/default.htm>

11-5. OPNAVINST 5100.19D of 30 August 01, Occupational Safety & Health Program Manual for Forces Afloat. <http://www.safetycenter.navy.mil/instructions/afloat/510019D.htm>.

Appendix 11-A

**Inspection of Department of Navy Workplaces by
Federal and State OSH Representatives**

	SHORE			AFLOAT		
	Contractor Workplaces	Civilian Employees' Workplaces	Exclusively Military Unique Workplaces	Contractor Workplaces	Civilian Workplaces	Exclusively Military Unique Workplaces
Federal OSH Representatives	YES 4,5	YES 4,5	NO	YES 3,4,5	YES 3,4,5	NO
State OSH Representatives	YES 1,2,4,5	NO	NO	NO	NO	NO

NOTES:

1. State OSH plan must be approved by the Department of Labor. If State plan is not approved, access may be denied. However, States without approved OSH plan may inspect contractor worksites only if there is no relevant Federal OSHA standard applicable to the contractor workplace.

2. If the Navy facility is in an area of exclusive Federal jurisdiction, State OSH representatives have no legal authority on the station and may be denied access to the facility.

3. Ships or service craft must be in port; Navy Department will not transport Federal OSHA representatives to ships or service craft that are underway.

4. Federal and State OSH representatives have no jurisdiction over military unique operations or equipment. In addition, these officials are not authorized to inspect workplaces or operations for compliance with any standard implementing 10 U.S.C 172 (explosive safety) or 42 U.S.C. Section, 2012, 2021, or 2022 (nuclear safety).

5. Inspections may be announced or unannounced.

CHAPTER 12

HAZARD ABATEMENT PROGRAM

1201. Discussion

a. The Navy incurs significant costs every year as a result of injuries, illnesses and property damage resulting from workplace hazards. Therefore, it is essential that the Navy develops and maintains programs to eliminate or control all identified hazards in a systematic manner.

b. Navy regions and activities shall utilize the policy guidance discussed in this chapter to develop occupational safety and health (OSH) hazard abatement (HA) programs. These programs place the primary responsibility for corrective action upon shore commanders, with assistance as required from higher-level commands.

c. Exclusions. Guidance contained herein does not apply to:

(1) Government-owned contractor-operated (GOCO) facilities. Policy for these facilities is set forth in the Federal Acquisition Regulations (FAR).

(2) The correction of deficiencies associated with design or operation of uniquely military workplaces (such as weapon systems), aircraft engineering change proposals to improve safety of flight, or ship alterations to improve fire protection or damage control.

(3) Deficiencies involving other Department of Defense (DOD) components or other Federal agencies. Correction of deficiencies that are the responsibility of another DOD component, Federal agency, or private organization shall be brought to the attention of the appropriate party for corrective action. The Federal Property Management Regulations (reference 12-1) describe procedures to follow with the General Services Administration (GSA). Executive Order (EO) 12196 makes the GSA responsible for abating hazardous conditions in GSA leased facilities. Commands shall refer problems that cannot be resolved to Deputy Under Secretary of Defense (Environmental Security) (DUSD (ES)) through the appropriate chain of command.

1202. Hazard Abatement Processing and Tracking

Hazards can be identified through annual inspections, industrial hygiene surveys, employee hazard reports and other inspections. Activity or regional OSH offices are responsible for managing hazard abatement. For hazards that are work process-related, the owner of the work process manages hazard abatement. For hazards that are facility-related, the owner of the facility manages hazard abatement. Regardless of the hazard identification method, hazards should be processed as follows:

a. Risk Assessment. The regional/activity OSH office shall assign each identified/validated hazard that cannot be corrected immediately a risk assessment code (RAC). The RAC represents the degree of risk associated with the hazard and combines the elements

of hazard severity and mishap probability taking into account potential health effects from the hazard. Appendix 12-A provides instructions for calculating the RAC for asbestos deficiencies.

(1) Hazard Severity. The hazard severity is an assessment of the worst reasonably expected consequence, defined by degree of injury or occupational illness which is likely to occur as a result of a hazard. The region or activities shall assign hazard severity categories by Roman numeral according to the following criteria:

- (a) Category I - Catastrophic: The hazard may cause death.
- (b) Category II - Critical: May cause severe injury or severe occupational illness.
- (c) Category III - Marginal: May cause minor injury or minor occupational illness.
- (d) Category IV - Negligible: Probably would not affect personnel safety or health, but is, nevertheless, in violation of a Navy OSH standard.

(2) Mishap Probability. The mishap probability is the probability that a hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operation and affected population. The OSH office shall assign a letter to mishap probability according to the following criteria:

- (a) Subcategory A - Likely to occur immediately
- (b) Subcategory B - Probably will occur in time
- (c) Subcategory C - Possible to occur in time
- (d) Subcategory D - Unlikely to occur.

(3) RAC. The RAC is an expression of risk, which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic number that can be used to help determine HA priorities.

<u>Hazard Severity</u>	<u>Mishap Probability</u>			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
I	1	1	2	3
II	1	2	3	4
III	2	3	4	5
IV	3	4	5	5

RAC

- 1 - Critical
- 2 - Serious
- 3 - Moderate
- 4 - Minor
- 5 - Negligible

b. OSH Deficiency Notice. The OSH office shall describe workplace hazards with a RAC of 1, 2, or 3 that cannot be corrected immediately, in Section A of a OSH Deficiency Notice, OPNAV 5100/12, (see appendix 9-B). The OSH office shall forward a copy of the notice to the official in charge of the operation where the hazard exists. The workplace supervisor shall post a copy of the notice in the area of the hazard until the hazard has been corrected. The OSH office shall update the posted notice, as necessary, to accurately reflect the status of the abatement action and required interim controls.

NOTES:

- The OSH office may distribute and post a computer-generated form that includes all the information required by OPNAV 5100/12.
- The OSH office shall transcribe RAC 1, 2 and 3 hazards reported by higher echelon OSH personnel (Oversight and Command Inspections) or the Occupational Safety and Health Administration (OSHA) to NAVOSH Deficiency Notices. The OSH office may also use the notices for documenting the correction of RAC 4 and 5 hazards as deemed appropriate,

The official in charge of the operation shall take prompt action to correct the hazard and within 30 days of the date of the notice, he/she shall complete Section B of the OSH Deficiency Notice and return a copy to the OSH office. Regions and/or activities shall implement interim protective measures pending permanent abatement and list interim corrections on the notice. The notice shall also indicate the status of the hazard including whether or not the hazard has been corrected and specific abatement action taken.

c. Abatement Plans. The OSH office shall record hazards assigned RACs 1, 2, or 3 that require more than 30 days for correction in a formal HA plan. This plan shall include the following standard data for each hazard (or logical grouping of similar hazards):

- (1) Dates of hazard identification
- (2) Location of the hazard(s)
- (3) Description of the hazard(s) including reference to applicable standards
- (4) Calculated RAC or estimated RAC (with hazard severity, probability of single occurrence, and annual personnel exposure cited separately)
- (5) Interim control measures in effect

- (6) Description of the abatement action, including estimated cost and completion date
- (7) Abatement priority (see section 1205)
- (8) Closeout statement, indicating completed abatement action and cost, with date of completed action; or process discontinued or worksite vacated. A computerized file is acceptable, vice the hard copy, as long as it contains all of the required closeout information. The OSH office shall make the HA plan available for review locally by recognized employee organizations, where applicable.

NOTE:

The OSH office may use a file of OSH Deficiency Notices, appropriately completed, as the abatement plan. OSH offices with fewer than 50 annual deficiencies or projects that will take more than 30 days to correct may use this approach. OSH offices with more than 50 deficiencies or projects annually that will take more than 30 days to correct shall develop a formal HA Plan and establish priorities for each project listed.

1203. Interim Controls

Regions or activities may be unable to immediately abate deficiencies under normal working conditions, and some hazards may require temporary deviation from OSH standards. Therefore, appropriate interim controls shall be established as soon as deficiencies are identified. OSH Offices shall document such controls on the OSH Deficiency Notice per appendix 9-B. The OSH office shall review and approve interim protective measures in effect for more than 30 days and revise, as appropriate.

1204. Hazard Abatement Project Development

The identification of a hazardous condition and the development of a deficiency abatement project require the close cooperation of the activity's facilities management and OSH personnel. Regions and shore activities can obtain specific engineering assistance from the cognizant Naval Facilities Engineering Command (NAVFACENGCOMS) Engineering Field Division or Activity (EFD/A) via an Engineering Service Request. The proposed project should fully correct the hazard in the most effective manner.

a. Local Funding. Navy programming and budget directives (e.g., Navy Comptroller (NAVCOMPT) Manual) provide general guidance for preparation and submission of budgets, via the chain of command. Region and/or activity budgets shall include items for correction of OSH deficiencies within the local commanding officer's funding authority.

b. Centrally Managed OSH Funding. Regions and activities shall submit projects to correct hazards that are beyond the funding capability of the local commander. Regions and activities shall submit projects to COMNAVFACENGCOM and their budget submitting office, in coordination with their facilities manager and/or Regional Engineer, utilizing the web-based Hazard Abatement Program.

(1) Project Acceptance Criteria. To be considered for central funding, projects must meet the following criteria:

(a) Since Operation and Maintenance, Navy (O&M, N) funds will be used for minor construction, repair and construction/procurement of installed equipment as defined in reference 12-2.

1. Funds must be for non-Navy Working Capital Fund (non-NWCF) activities only.

2. Ranges for centrally managed HA funds are as follows:

a. Minor construction: \$50,000 to \$1,000,000

NOTE:

Minor construction with O&M, N funds is typically limited to \$300,000 but the National Defense Authorization Act for fiscal year 1996, P.L. 105-106, section 2811 amended title 10, U.S.C., section 2805 (c) to allow use of O&M, N funds for construction costs up to \$1,000,000 for projects "intended solely to correct a deficiency that is life-threatening, health threatening, or safety threatening."

b. Repair: \$50,000 to \$1,000,000.

c. Ergonomics: equal to or more than \$10,000.

(b) Regions or activities may only submit projects correcting deficiencies with a RAC of 1, 2, or 3.

(c) Projects must be for the protection of safety and health vice protection of property. For example, installation of fire alarms, emergency egress, and other life safety projects for the emergency evacuation of personnel is acceptable. Regions or activities may not submit the installation of sprinkler systems to protect property.

(d) HA funds will pay for asbestos projects only if the asbestos is friable, accessible and damaged or the asbestos is in a location where it is subject to frequent damage even though immediately repaired by emergency actions.

(e) Regions or activities can submit upgrading projects if they are to alleviate severe hazardous conditions. For example, projects that provide guardrails where none exist may be submitted. Projects to raise guardrails from 38 to 42 inches to meet OSH standards would not be considered as correcting severe hazards.

(2) Unauthorized Projects. Projects, which normally do not qualify for central HA funding, include the following:

(a) Projects that are clearly due to the lack of maintenance or repair or have been expanded beyond OSH scope to include such elements. Regions and/or activities

shall fund the abatement of hazards developed due to wear and tear of facilities and equipment from appropriate region/activity or claimant funds.

(b) Projects involving facilities owned (On Plant Property Accounts) by Navy Working Capital Fund (NWCF) activities.

(c) Projects for environmental cleanup, compliance, or protection.

(d) Projects to provide accommodation for the handicapped. These are covered under other programs.

(e) Projects for U.S. Marine Corps facilities

(f) Projects for GOCO facilities

(g) Projects for purchase of ergonomic furniture

(3) Project Submissions.

(a) The regional or activity OSH offices shall request projects via the Internet using the on line HA database. Instructions for using the on line database will be issued by NAVFACENGCOM via the budget submitting office. The form in appendix 12-B can be used to collect the necessary information prior to going on line but this form is NOT to be submitted as a project request. See the hazard abatement web site at: <http://www.navfac.navy.mil/safety/webha/generaluser/fsetmain.htm>

(b) Prior to submitting an application, the regional or activity OSH office shall consult with both the Echelon 2 OSH director and the facilities manager. They shall coordinate the submission of projects with local activity facilities managers, but submission is, nonetheless, the responsibility of the OSH manager. The OSH manager shall consult with facilities personnel to determine such issues as existing construction, repair or demolition plans that would abate the hazard as well as the replacement cost of the facility in question.

(c) In their project requests, OSH managers shall fully describe and document the problem and provide all information necessary for prioritization. They shall show a clear violation of OSH standards in their project descriptions and cite the standards violated.

1205. Prioritization of Hazard Abatement Projects

In any given year, the backlog of deficiencies may exceed the funds available for OSH projects. It is, therefore, necessary that the Navy have a consistent and systematic methodology for the prioritization of these projects. In order to ensure that projects of highest importance receive first consideration, the Navy prioritizes projects as follows:

a. Locally Funded Projects. The regional or activity OSH offices shall prioritize projects that do not meet the criteria for centrally managed funding under the OSH HA program based on the RAC assigned to each identified hazard. See section 1202a for RACs. If several projects for correction of hazards with identical RACs exist, the activity OSH office shall assign

priorities based on the number of persons potentially exposed to the hazard and the total cost. All NAVFACENGCOMS commanding officers and activity facility engineers shall ensure that health and safety projects receive full consideration and are appropriately prioritized for execution with other local activity special projects.

b. Centrally Funded Projects. COMNAVFACENGCOM shall validate all projects and shall assign an abatement priority number (APN) per reference 12-3 for all proposed OSH HA projects submitted. The APN which comprises the RAC and cost effectiveness index will be used in determining abatement priorities.

1206. Responsibilities

a. Regional Commanders/Shore Activity Commanding Officers shall:

(1) Identify and correct hazards and maintain a current HA Plan with priorities established for each project listed. If the HA plan is maintained by the regional OSH office, it shall be done in such a manner that specific activity information (or plan) is readily available.

(2) Forward projects via the prescribed submission chain for hazards that cannot be corrected through local resources.

(3) Review, prioritize, and maintain current active projects.

b. Commander, Naval Facilities Engineering Command shall:

(1) Submit to CNO (N46), by 15 July each year, a proposed OSH Mishap Prevention and Hazard Abatement (MP/HA) Program Project Execution Plan per section 1204 for the following fiscal year.

(2) Develop, prepare and submit, via the chain of command, budget documentation for the OSH Mishap Prevention and Hazard Abatement (MPHA) program.

(3) Provide to CNO, budget submitting offices, sub-claimants, regions, and activities, management information, as may be necessary, relative to the OSH MPHA program.

(4) Provide engineering review of all OSH MPHA projects approved by budget submitting offices.

(5) Manage the design and construction of OSH MPHA projects per established procedures.

Chapter 12

References

- 12-1. Title 41 CFR 101, of Jul 97, Federal Property Management Regulations,
www.access.gpo.gov/nara/cfr/waisidx_02/41cfr101-19_02.html.
- 12-2. OPNAVINST 11010.20F of 7 Jun 96, Facilities Projects Manual.
<http://neds.daps.dla.mil/Directives/11010f20.pdf>.
- 12-3. DOD Instruction 6055.1 of Aug 98, Department of Defense Safety and Occupational Health (SOH) Program.
http://www.dtic.mil/whs/directives/corres/pdf/i60551_081998/i60551p.pdf.

Appendix 12-A

Instructions for Determining Risk Assessment Code (RAC) for Asbestos Projects

Assign a risk assessment code (RAC) to asbestos projects using the following methodology derived from DODINST 6055.1 of 19 August 1998.

1. **Probability:** determine the number of people exposed to asbestos then determine the number of hours per week the average person is exposed. Note the letter where the row and column intersect. This is the probability.

	HOURS/WEEK		
NO. OF PEOPLE	1-8	9-40	>40
1-4	D	C	B
5-9	C	C	B
10-49	C	B	A
50 or more	B	B	A

2. **Hazard Severity:** determines the severity based either on the naval asbestos facility score (NAFS) if available in the activity's asbestos inventory or from a judgment of the condition of the asbestos involved. The resulting Roman numeral is the hazard severity. (For more information on NAFS see Naval Facilities Engineering Service Center Pub SP-2027-ENV of Sep 97, Asbestos Control Program Operations and Maintenance Plan.) (NOTAL)

	SEVERITY
NAFS=66-102 or Severely Damaged	I
NAFS=33-65 or Damaged	II

3. **Risk Assessment Code (RAC):** an expression of risk, which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic numeral that can be used to help determine hazard abatement priorities.

	PROBABILITY			
HAZARD SEVERITY	A	B	C	D
I	1	1	2	3
II	1	2	3	NA

NOTE: NAFS less than 33 or undamaged asbestos is not considered to be a hazard in most cases. If you believe asbestos at your activity is an exception, complete a project application form with justification.

**Appendix 12-B
HAZARD ABATEMENT PROJECT REQUEST FORM**

ACTIVITY NAME AND ADDRESS:	Date submitted:
	Activity UIC:
	Budge Submitting Office:

PROJECT INFORMATION

1. Project title: <i>(Describe action to abate/eliminate the hazard)</i>			
2. Project No.	3. Estimated Cost (\$K)	4. Risk Assessment Code <i>(Circle one)</i> Severity 1 2 3	Probability
5. Problem: No. of people regularly exposed to the hazard:			
6. Proposed Corrective Action:			
7. Applicable Standards/Regulations:			
8. Citations <i>(OSHA, STATE AGENCIES, NAVINSGEN, ETC.):</i>			
9. Interim Controls:			
10. Points Of Contact <i>(Enter All Applicable):</i>			
<u>Function</u>	<u>Name</u>	<u>Phone</u>	<u>Fax</u>
a. OSH	_____	_____	_____
b. Facilities:	_____	_____	_____
c. Claimant:	_____	_____	_____

**Instructions for Using the
Hazard Abatement Project Request Form**

This form can be used to collect data for entry in the HA program on line. All Navy regions and activities except Navy Working Capital Fund activities are eligible to apply for funding. (Marine Corps activities are not eligible since the Marine Corps has a separate OSH program).

CRITERIA FOR PROJECT ACCEPTANCE:

- Projects must be for protection of personnel. Property protection projects will not be funded.
- Projects for environmental cleanup, compliance, or protection will not be funded by the HA program.
- Asbestos projects will be funded only if the asbestos is friable, accessible, and damaged.
- Government-Owned Contractor-Operated (GOCO) facilities are not eligible.

INSTRUCTIONS: Most data elements should be self-explanatory. Once the information is gathered, use the Internet accessible online HA database to submit projects.

1. **Project Title:** Enter a short phrase that describes the proposed action to abate/eliminate the hazard (e.g., "Eliminate fall hazards from aircraft, hangers 1,2, and 3" or "Remove hazardous paint solvent vapors in Bldg. 5)." The title should make it clear that the project is to correct a safety and/or health hazard and is not a routine maintenance project, energy conservation project, or other project not related to safety and health.
2. **Project No.:** Provide only if a local project has been developed. Otherwise enter "N/A". This is usually in a format such as "R2-93" or "C003-94."
3. **Cost Estimate:** Estimates at this stage are for budget development and need to be reasonably accurate. Any acceptable method for cost estimating may be used.
4. **Risk Assessment Code (RAC), Mishap Probability, and Hazard Severity:** The RAC is a single digit determined according to the instructions in Chapter 12 of this manual. Circle the RAC and enter the Mishap Probability and Hazard Severity. (For asbestos projects refer to Appendix 12-A: "Risk Assessment Code (RAC) for Asbestos Projects").
5. **Problem Description:** Enter the number of employees regularly exposed to the hazard. Briefly describe the nature of the hazard (include information about injuries, near misses, etc. related to this hazard). Include a statement of what injury or illness the hazard might cause. Include industrial hygiene data or other survey data as appropriate. The description should be understandable to the general reader.
6. **Proposed Corrective Action:** This paragraph should answer the question "What will the project do and how well will it correct the deficiency?" Include numbers such as "...install climbing devices on 15 ladders." It should be understandable to the general reader.
7. **Applicable Standards:** Primarily Occupational Safety and Health Administration standards but could also include National Fire Protection Assoc., American National Standards Institute, American Society of Mechanical Engineers, etc. The standard must be specific to the hazard addressed.
8. **Citations (if any):** Enter the agency, date and nature of citation.

9. Interim Controls: Enter controls in place to protect personnel until a permanent engineering fix is installed (e.g., respirators, special procedures (describe), etc.).
10. Consult with Echelon 2 facilities and OSH personnel to determine if Budget Submitting Office Actions will abate the hazard. Enter one Echelon 2 person contacted in block 10.
11. Submit one or more digitized photographs (.jpg format preferred) with the request. The online database has a facility for attaching digitized photographs as well as documents to the online request.
12. Submit applications using ONLY the online database. Instructions for using the database will be issued by NAVFACENGCOM via the budget submitting office. For additional information call your area HA program manager.

CHAPTER 13

FALL PROTECTION PROGRAM (Formerly Navy Occupational Safety Health Cost Data)

1301. Purpose

This chapter provides requirements to establish a managed fall protection program to protect Navy civilians and military personnel from the hazards of falling from heights at Navy Shore activities.

1302. Background

a. Falls from heights are a leading cause of work-related injuries and fatalities. The Navy continues to experience serious fall related mishaps, which lead to reduced readiness and productivity, as well as high medical and compensation costs resulting from these mishaps.

b. Mishaps involving falls are generally complex events frequently involving a variety of factors. Consequently, requirements for fall protection involve both work procedures and equipment-related issues in order to protect workers from recognized hazards.

c. The Navy requires activities to protect its personnel from recognized hazards. There is much more to workplace safety than a Navy activity representative arriving at a work site with a copy of the pertinent standards in hand. Navy activities have a duty to anticipate the need to work at heights and to plan their work activities accordingly – this means that effective mishap prevention must be incorporated into the job planning process. Falls are preventable. Careful planning and preparation lay the necessary groundwork for an accident-free workplace.

1303. Policy

Every command, work center, and unit shall have a safety culture with management commitment that promotes a safe work environment for personnel working at heights. The Regional Commander, Commanding Officer/Director, Officer-In-Charge of the Navy Activity is responsible for establishing and implementing a fall protection program, which includes identification and elimination/control of fall hazards. Navy activities are responsible for: assigning responsibilities; surveying and assessing fall hazards; providing prevention and control measures; training of personnel; inspecting the equipment; auditing and evaluation; proper installation and use of fall protection systems; and the availability of rescue equipment with accompanying rescue procedures. Fall protection must be provided to Navy civilians and military personnel exposed to fall hazards on any elevated walking working surface with unprotected sides, edges, or floor openings, from which there is a possibility of falling four feet (five feet for Shipyard Operations) or more to a lower level; or where there is a possibility of a fall from any height onto dangerous equipment, into a hazardous environment, or onto an impalement hazard.

1304. Basic Program Requirements

Each Navy activity, which has personnel exposed to fall hazards, is required to establish a managed fall protection program. The managed fall protection program shall be in writing and approved by the activity's safety office. As an alternative to this requirement, a Navy shore activity, in lieu of a separate written program with safety office review and approval, may state in writing that it is using

the *Department of the Navy-Fall Protection Guide for Ashore Facilities*, reference 13-1, as their fall protection program. A managed fall protection program includes:

- a. Activity Policy
- b. Duties and Responsibilities
- c. Workplace Surveys and Assessment of Fall Hazards
- d. Fall-Hazard Prevention and Control, Including the Preparation of Fall Protection and Prevention Plans (see reference 13-1)
- e. Training
- f. Inspection, Storage, Care, and Maintenance of Fall Protection Equipment
- g. Rescue Procedures
- h. Audits and Evaluation

1305. Activity Policy

Each activity may prescribe supplementary requirements for special conditions above and beyond the fall protection policy set out in this instruction.

1306. Duties and Responsibilities

Each Navy activity shall delineate duties and assign responsibilities in the implementation of a managed fall protection program. The activities shall ensure that assigned personnel have the necessary skills, knowledge, training, and expertise to manage, administer, and implement the fall protection program. Depending upon the activity size and mission, personnel who manage, administer and/or implement the fall protection program may either be assigned as full time or as part time (collateral duty) positions.

Personnel assigned to the fall protection program should have the following qualifications and responsibilities:

- a. The Fall Protection Program Manager: A person authorized by the command who is responsible for the development and implementation of the program. The manager shall ensure that personnel exposed to fall hazards and other personnel involved in the program receive adequate training as outlined in appendix A.

NOTE:

The program manager position need not be an exclusive title designation. With adequate education, training, and experience the same person may also function as a qualified person or competent person.

- b. Competent Person for Fall Protection: A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as

well as in their application and use with related equipment, AND who has the authority to take prompt corrective measures to eliminate the hazards of falling.

c. Qualified Person for Fall Protection: A person with a recognized engineering degree or professional certificate, and with extensive knowledge, training, and experience in the field of fall protection who is capable of performing design, analysis, and evaluation of fall protection systems and equipment.

d. End User of Fall Protection: A person who has been trained in the use of assigned fall protection equipment, including hands-on training in a typical fall hazard situation, and uses personal fall arrest or fall restraint/positioning device equipment while performing work assignments. A competent person who has the knowledge, expertise, and education to deliver the training should train end users. The competent person should also be qualified as a fall protection trainer for end users.

1307. Workplace Surveys and Assessment of Fall Hazards

a. Each Navy activity shall survey the workplace to identify potential fall hazards in accordance with Chapter 5 of instruction. Navy activities shall determine if the walking or working surfaces on which employees are to work have the strength and structural integrity to safely support the workers. Employees shall not be permitted to work on those surfaces until it has been determined that the surfaces have the requisite strength and structural integrity to support the workers and equipment related to their tasks. Once it has been determined that the surface is safe for employees to work on, then it should be determined if a fall hazard exists at the work location.

b. A fall hazard survey/assessment shall be conducted annually for comparison purposes.

c. After conducting the survey, a fall-hazard analysis shall be performed to determine the risk assessment, hazard severity, and fall mishap probability in accordance with Chapter 12 of this instruction. This will help in prioritizing the hazard ranking and selecting the most viable fall protection solutions.

1308. Fall-Hazard Prevention and Control Measures

a. The hierarchy or preferred order of control measures for fall hazards are:

(1) Elimination - Removing the hazard from a workplace. This is the most effective control measure (e.g., lower various devices or instruments, such as meters or valves to the height level of the individual, instead of servicing such devices or instruments at heights).

(2) Prevention - Isolating or separating the hazard from the general work areas (e.g., same level barriers such as guardrails, walls, or covers.)

(3) Engineering Controls - If the hazard cannot be eliminated, isolated, or separated, engineering control is the next-preferred measure to control the risk (e.g., design change or use of different equipment or techniques such as aerial lift equipment).

(4) Administrative Controls - This includes introducing new work practices that reduce the risk of a person falling (e.g., erecting warning signs or restricting access to certain areas).

(5) Personal Protective Systems and Equipment - These shall be used after other control measures (such as eliminating or isolating a fall hazard) are determined not to be practical, or when a secondary system is needed (e.g., when it is necessary to increase protection by employing a backup system).

NOTE:

Control measures are not mutually exclusive. There may be situations when more than one control measure should be used to reduce the risk of a fall.

b. Navy activities shall select fall protection measures compatible with the type of work being performed. If fall hazards cannot be eliminated, fall protection can be provided through the use of:

(1) Guardrail Systems. Guardrails consist of top and mid-rails, posts, and toe boards (toe boards as applicable). Guardrails are used to protect personnel on a walking working surface with unprotected sides or edges from reaching a fall hazard. The specifics on guardrail systems can be found in references 13-1 through 13-4.

(2) Work Platforms. When working from elevated work platforms, four feet (five feet for Shipyard Operations) or higher, the work platforms shall be equipped with a standard guardrail or other fall protection system. The specifics on work platforms can be found in references 13-1, 13-2, and 13-4.

(3) Safety Net Systems. Safety nets shall be installed as close as possible under the walking working surfaces with an unprotected side or edge, or when working over water, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, full body harnesses, or restraint/positioning belts are impractical. The specifics on safety net systems can be found in references 13-1 and 13-4.

(4) Personal Fall Arrest System. A system used to arrest a person in a fall from a working level. It consists of an anchorage system, connecting means, and full body harness and may include a lanyard, deceleration device, lifeline, or suitable combination of these. The specifics on personal fall arrest systems can be found in references 13-1 through 13-5. A personal fall arrest system must be rigged so that employees will not free-fall more than six feet, nor contact a lower level. See paragraph 1311 below for the requirements for tie-off points (anchorage) used for fall arrest systems. Safety belts (body belts) shall not be used in a personal fall arrest system.

(5) Work Positioning System. A combination of equipment that permits an employee to be supported on an elevated surface, such as a wall, and work with both hands free while leaning backward. The specifics on positioning systems can be found in references 13-1 through 13-4. See paragraph 1311 below for the requirements on tie-off points (anchorage) for a positioning system.

(6) Fall Restraint System. A system consisting of equipment and components connected together designed to restrain a person from reaching an exposed fall hazard. The specifics on restraint system can be found in references 13-1 and 13-3.

(7) Ladder-climbing Safety Devices. A device or climbing sleeve connected to the front D-ring on the climber's full-body harness that slides up or down a rigid rail or cable. Should

a fall occur, the device is designed to lock by inertia or cam-action to arrest the fall. Ladder-climbing safety devices must permit the worker to ascend or descend without continually having to hold, push, or pull any part of the device, leaving both hands free for climbing. These safety devices must be activated within two feet after a fall occurs. Ladder-climbing safety devices shall be attached to a frontal D-ring on the climber's full-body harness.

(8) Covers. Covers for floor holes or floor openings shall be capable of supporting, without failure, at least twice the weight of employee(s), equipment, and materials that may be imposed on the cover at any one time. When covers are removed, a guardrail, attendant, or other system shall be provided to protect floor holes or openings.

NOTE:

For fall protection solutions to specific work situations or unique military work applications see reference 13-1.

1309. Fall Arrest Equipment Selection Criteria

Navy activities shall only use fall arrest equipment where the manufacturer can substantiate through third party certification that the equipment meets the requirements addressed in reference 13-5, and/or fall arrest equipment is designed, selected, and approved by a Qualified Person for fall protection. Any equipment that has previously met ANSI A10.14 Standards, and is in proper working condition, will be deemed to be usable until January 1, 2007. After January 1, 2007, requirements of reference 13-5 are recommended. See appendix B for the fall arrest equipment selection criteria.

1310. Training

a. Training. Navy civilians and military personnel should be trained to recognize fall hazards. Navy civilians and military personnel who use fall protection equipment shall be trained in accordance with appendix A. Other Navy civilians and military personnel involved in the fall protection program should also be trained in accordance with appendix A.

b. Retraining. Retraining in relevant topics shall be provided to the end user when:

- (1) The end user has been observed using fall protection equipment in an unsafe manner,
- (2) The end user has been involved in a mishap or a near-miss incident,
- (3) The end user has received an evaluation that reveals that he or she is not using the fall protection equipment properly,
- (4) The end user is assigned a different type of fall protection equipment;
and/or
- (5) A condition in the workplace changes in a manner that could affect the safe use of the fall protection equipment that the end user is to utilize.

c. Refresher training. Personnel exposed to fall hazards shall receive refresher training on the safe use of fall protection equipment at an interval determined by the activity.

1311. Anchorage for Fall Arrest Equipment

a. Fall arrest and restraint/positioning anchorages criteria. See references 13-1 through 13-5.

(1) Fall Arrest Anchorages shall be capable of supporting a minimum force of 5,000 pounds per person attached; or shall be designed, installed, and used under the supervision of a qualified person, and shall maintain a safety factor of at least two. The specifics on anchorages can be found in references 13-1 through 13-5.

(2) Work Positioning Anchorages shall be capable of supporting at least twice the potential impact loading of an employee's fall.

(3) Restraint Anchorages shall have the capacity to withstand at least twice the maximum expected force that is needed to restrain a person from exposure to the fall hazard.

(4) Horizontal Lifeline Anchorages shall be designed, prior to use, by a registered professional engineer with experience in designing horizontal lifeline systems; or designed by a fall protection qualified person who has appropriate training and experience.

b. Fall arrest anchorages in new facilities, buildings and structures. During the design of new facilities, buildings, and structures, fall hazards should be considered and eliminated whenever possible. When elimination of fall hazards is not feasible, the design should include certified and labeled anchorages.

1312. Rescue Procedures

When personal fall arrest systems are used, the Navy activity must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A rescue plan for an employee suspended in a body harness after a fall shall be prepared in writing by the Navy activity and include a detailed discussion of the following: methods of rescue; methods of self-rescue, equipment used; training requirements, specialized training for the rescuers, procedures for requesting rescue and medical assistance; transportation routes to a medical facility; and pre-incident planning with jurisdictional public and Government-emergency response agencies. Specific guidance on rescue procedures can be found in reference 13-1. A rescue plan for an employee suspended in a body harness after a fall shall be site-specific.

1313. Inspection, Storage, Care, and Maintenance of Fall Protection Equipment

Before each use of fall protection equipment, the user shall carefully inspect the equipment following the inspection steps recommended by the fall protection equipment manufacturer to ensure that it is in good working condition. A fall protection Competent Person, other than the user, must inspect fall protection equipment at least annually. Inspection of the equipment by the fall protection competent person shall be documented. Guidance on storage, care, and maintenance of fall protection equipment can be found in the Navy Fall Protection Guide for Ashore Facilities, reference 13-1, Chapter 7 and in literature furnished by the fall protection equipment manufacturer.

1314. Falls from Heights Mishap Reporting

Falls from heights mishaps under this section shall be reported if they meet the reporting criteria of reference 13-6. When fall arrest equipment is impacted or activated during a fall, it should also be reported as a near-miss using the Hazard Report in reference 13-6.

1315. Audits and Evaluations

Fall protection programs shall be evaluated in accordance with Chapter 2 of this instruction.

Chapter 13

References

13-1. Department of the Navy Fall Protection Guide for Ashore Facilities

<http://www.safetycenter.navy.mil/osh/downloads/AshoreFallProtectionGuide.pdf>

13-2. 29 CFR PART 1910, Occupational Safety and Health Standards; 1910.21 thru 1910.24; 1910.27 thru 1910.30; 1910.66-Appendices C & D; 1910.67; 1910.68; 1910.176; 1910.178; 1910.179; 1910.180; 1910.268; and 1910.269.

http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1910.

13-3. 29 CFR PART 1915, Occupational Safety and Health Standards for Shipyard Employment; 1915.5; 1915.71 thru 1915.77; 1915.151 thru 1915.152; 1915.159 thru 1915.160.

http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1915.

13-4. 29 CFR PART 1926.500, Subpart M, Fall Protection Requirements in the Construction Industry

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10922.

13-5. American National Standard Institute (ANSI) Z359.1 (latest revision), Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components (NOTAL)

<http://www.ansi.org/>.

13-6. OPNAVINST 5102.1D/MCO P5102, of 7 Jan 05, "Navy and Marine Corps Mishap and Safety Investigation, Reporting, and Record Keeping,

<http://www.safetycenter.navy.mil/instructions/ashore/5102/default.htm>

Appendix 13-A

Fall Protection Training Requirements and Methods

Trainee GROUP	Desired Training Objectives	Training Mechanism and Type
End User/Authorized Person	<ul style="list-style-type: none"> - Selection and safe use of equipment - Application limits - Proper anchoring and tie-off techniques - Estimation of fall distances - Determination of deceleration distance - Total fall distance - Methods of inspection - Storage, care, and maintenance of equipment - Applicable regulations - Limitations of equipment - Specific lifelines - Rescue and self rescue techniques - Recognize fall-hazard deficiencies - Recognize fall risks at worksite 	Formal/hands-on training using local equipment or on-site training as applicable to the activity (16 hours or as appropriate)
Safety Professional/ROICC Personnel	<ul style="list-style-type: none"> - Recognize fall-hazard deficiencies - Recognize fall risks at worksite - Basic fall protection systems inspection - Methods of use - Proper anchoring and tie-off techniques - Methods of inspection and record keeping - Storage of the equipment - Applicable regulations 	Interactive CD-ROM or Formal Classroom
COTR/COR/CA Personnel	<ul style="list-style-type: none"> - Recognize fall-hazard deficiencies - Recognize fall risks at a worksite - Basic systems identification and proper use of equipment. 	Formal Classroom (Awareness Training)
Competent Person (As Designated by the Activity or Designated in Writing as the Competent Person)	<ul style="list-style-type: none"> - In addition to the authorized person training, the competent person training shall also include: - Various fall protection systems - Donning of the equipment - Proper inspection and record keeping - Recognize and identify fall hazards at work-site - Equipment installation techniques - Proper anchoring and tie off techniques - Risk assessment and hazard ranking - Review and approval of fall protection and prevention plans, and rescue and 	Competent Fall Protection Person and Program Manager CIN A493-0084 (Minimum 32 hours)

	<p>evacuation plans</p> <ul style="list-style-type: none"> - Applicable fall protection regulations - Plan and specification review and approval 	
Qualified Person	<ul style="list-style-type: none"> - Design, select, analyze, and certify fall protection systems and equipment - Preparation, update, review, and approval of fall protection and prevention plans, and rescue and evacuation plans - Fall protection regulations and standards - Plan and specification review and approval 	<p>Formal Classroom (40 hours or as appropriate)</p>
Architects and Engineers	<ul style="list-style-type: none"> - Understand various fall protection and prevention planning and design considerations during construction and maintenance phases - Recognize fall-hazard deficiencies - Recognize fall risks assessment and control measures at worksites - Basic systems identification and proper use 	<p>Formal Classroom Interactive CD-ROM (Awareness Training)</p>
Fall Protection Program Managers/ Administrators	<ul style="list-style-type: none"> - Recognize and identify fall hazards at workplaces - Risk assessment and hazard ranking - Selection, safe use, and limitation of fall protection systems and equipment - Storage, care, and maintenance of the equipment - Applicable fall protection regulations 	<p>Course Number CIN A-493-0084 (Minimum 32 hours) Fall Protection Competent Person and Program Manager (CIN A-493-0084)</p>
Supervisors of End Users	<ul style="list-style-type: none"> - Fall protection awareness training - Familiarization with SOPs - Local program requirements - Proper inspection and record keeping - Proper anchoring and tie-off techniques 	<p>Local Training plan/briefing, and/or instruction or SOP (Awareness Training)</p>

Appendix 13- B **Personal Fall Arrest Equipment Criteria**

1. Personal Fall Arrest Equipment

Elements of a Personal Fall Arrest System (PFAS) consist of an anchorage, connectors, and a full body harness and may include a deceleration device, lifeline, or suitable combinations. The PFAS must be capable of arresting a free fall safely, suspend the victim vertically while awaiting rescue, and allow rescue personnel to accomplish identified tasks in a fall hazard situation. All components and subcomponents of a PFAS must be compatible.

2. Components of a PFAS are as follows:

a. **Harness (Full Body)** A full body harness is the fundamental component of every PFAS. A wide variety of body harnesses are available that meet the requirements of ANSI Z359.1. There are two basic types of full body harnesses. The Type I harness is the H style harness with a chest strap that horizontally connects two vertical shoulder straps. The Type II harness consists of shoulder straps that cross at the chest. Full body harnesses used in fall arrest may also be integrally designed into coveralls or vests. Fundamentally, full body harnesses meeting the requirements of ANSI Z359.1 have the following common characteristics:

- (1) A dorsal "D" ring located along the centerline of the back approximately at the lower shoulder blade height.
- (2) Manufactured using synthetic straps or webbing.
- (3) Leg straps, shoulder straps, and buttocks strapping, which is fastened about the person and is used in a variety of combinations to distribute the fall arrest forces to over at least the upper thighs, pelvis, chest, and shoulders to reduce the potential of injury from impact forces.
- (4) After arresting a fall, suspends the victim approximately vertically.

In addition to these common characteristics, the design of a full body harness may incorporate the following additional features:

- (1) A frontal "D" ring for use with ladder climbing systems (notched rail or vertical wire rope systems).
- (2) Side "D" rings located at the side near the hip region, permitting the harness to be used in a work positioning system, which allows personnel to work with their hands free (Note: The side "D" rings are not to be used to arrest a fall).
- (3) Shoulder "D" rings that can be used to lower or recover personnel from confined spaces. These "D" rings are located at the top of each shoulder strap and are usually smaller in size than the dorsal "D" ring.

(4) Waist belts, depending upon the design, may be integral to the full body harness and necessary for proper use; or simply a convenience for attaching tools, carrying pouches, or providing lower back support.

(5) Shoulder pads, leg padding, integral elastic webbing, and a wide variety of other features that add commercial viability to products.

Full body harnesses designed as part of a PFAS may be used in a fall restraint system. A fall restraint system is used to keep personnel from a location that exposes them to the hazards of a fall.

Consideration must be given to the following items when selecting the appropriate full body harness:

- (1) Expected duration that personnel will be wearing the body harness.
- (2) Body stature and size of personnel assigned (one size does not fit all).
- (3) Gender of personnel expected to wear the harness.
- (4) Additional features that are task specific. These features must be carefully selected. For example, if a harness is used with a ladder-climbing device, a frontal "D" ring must be provided.

b. **Lanyards.** The lanyard as part of a PFAS connects the full body harness to an anchorage and reduces the forces of a fall through an integral shock absorber (deceleration device). Lanyards are available in three-, four-, or six-foot lengths, although longer safety lanyards are available. Lanyards must have self-locking snap hooks or carabineers and be designed for a PFAS. Commercial variations include adjustable lanyards that allow the lanyard to be shortened, reducing potential free fall distance. Variations also include lanyards with built-in chaffing protection and may include a "D" ring connector that allows a lanyard to be used to wrap around an anchorage. Double "Y" lanyards allow for 100% tie-off (i.e., one lanyard can always be connected to an anchorage).

When selecting a lanyard consideration must be given to the availability and location of the anchorage point, free fall and total fall distance, potential chaffing and weight and bulk of the person, and equipment.

c. **Tie-off Adapters.** The tie-off adapter is a common component of a PFAS. The tie-off adapter is, in essence, two "D" rings connected together by synthetic webbing or wire rope, typically with built-in chaffing protection. The tie-off adapter allows personnel to improvise an anchorage by wrapping the adapter around a structural member of suitable strength. A lanyard or other components of the PFAS can then be attached to the tie-off adapter. Tie-off adapters can be found in three-, four-, and six-foot lengths. Additional lengths can be purchased.

When selecting a tie-off adapter as part of a PFAS, consideration must be given to potential misuse and inappropriate use. Anchorages have failed when the tie-off adapters were not attached to sufficiently strong structural members.

d. **Self-Retracting Lanyard.** The self-retracting lanyard (SRL), also known as a self-retracting lifeline, refers to a wide variety of commercially available devices. An SRL is a device containing a drum-wound line or strap. This line can be slowly extracted from, or retracted onto the drum under slight tension during normal employee movement. After onset of a fall, the line automatically locks the drum and arrests the fall. The SRL is typically used in a vertical mode and is attached to a suitable overhead structural member. A locking snap hook at the end of the webbing or wire rope is attached to the dorsal "D" ring. The mechanism works in a manner similar to a retractable automobile seatbelt. The SRL comes in lengths from a few feet to an excess of a hundred feet in length. SRL advantages include a self-tending lifeline and reduced free fall distance. Disadvantages include high cost, weight of the equipment, requirement for specialized inspections, and the possibility of swinging into an obstruction during a fall if the SRL is extended too far horizontally.

e. **Vertical Lifeline/Rope Grab.** A vertical lifeline is a vertical line or rope attached from a fixed overhead anchorage independent of the walking/working surface to which a lanyard or ladder climbing device is attached. Only one person shall be attached to a vertical lifeline. Two workers will require two independent vertical lifelines.

A rope grab is a device that travels on a rope or cable and automatically engages the line and locks to arrest the fall of a worker. The rope grab is a very useful component of a PFAS when vertical mobility is required. When the rope grab is designed to manually lock, it may be used in a horizontal mode as part of a fall restraint system.

f. **Anchorage Connectors.** A wide variety of anchorage connectors are available as part of a PFAS. Examples of anchorage connectors include carabiners, beam clamps, roof anchors, and self-locking eye connectors. Anchorage connectors shall be designed in accordance with reference 13-5 to assure compatibility with other components of a PFAS.

g. **Horizontal Lifeline.** A horizontal lifeline is any flexible line commonly made of wire, wire rope, strapping, or rope strung horizontally between two anchorages. A horizontal lifeline can be a part of a PFAS. A horizontal lifeline can be either a permanent or a temporary system. A horizontal lifeline shall be designed, installed, and used under the supervision of a qualified person as part of a complete fall arrest system that maintains a safety factor of two.

Horizontal lifelines are available in kit forms and in a variety of lengths and styles. A properly designed kit contains specialized components to maintain proper tension of the lifeline, and to prevent the attachment points of the lifeline from exceeding designed strength requirements.

CHAPTER 14

MISHAP INVESTIGATION, REPORTING, AND RECORD KEEPING

1401. Discussion

a. Mishaps that result in damage to Navy facilities and equipment or occupational injuries, illnesses, or deaths to Navy personnel degrade operational readiness and increase operational costs. Investigation of such mishaps to identify causes and preventive actions as well as establishing accurate record keeping are essential to the success of the Safety and Occupational Health program. Mishap investigations aimed at determining how and why the event occurred are necessary to prevent future occurrence of similar events. Accurate records are necessary to establish trends, to conduct analyses, and to assess the effectiveness of the overall program. Certain records are necessary to comply with Department of Labor (DOL) Federal agency record keeping and reporting requirements. Certain records for foreign national employees may also be necessary to meet host country standards. These records should be part of the mishap record keeping program.

b. This chapter includes procedures that apply to Navy mishap investigation, reporting, and record keeping requirements for shore on-duty Navy personnel and Navy shore operational mishaps per reference 14-1. All non-aviation mishap investigations and reporting will follow the procedures outlined in reference 14-2.

c. Recording of Occupational Illnesses and Injuries shall be in accordance with the requirements in reference 14-2. Since all recording is conducted using web enabled safety system (WESS), all civilian and military occupational illnesses and injuries are reportable in addition to being recordable. Illness and Injury Logs for civilian and military personnel, and civilian Annual Reports of Work-related Illnesses and Injuries, per reference 14-1, will be maintained using WESS.

1402. Types of Mishap Investigations

A complete comprehensive mishap investigation is an essential tool in identifying the root causes of a mishap and thereby preventing recurrence. The reports required by reference 14-2 are separate and independent of investigations required by the Manual of the Judge Advocate General (JAG). JAG investigations are used to determine accountability and culpability. The sole purpose of the safety investigation is mishap prevention, not the determination of accountability.

a. Safety Investigation. Mishap investigations and reporting procedures are outlined in reference 14-2.

b. Judge Advocate General (JAG) Manual Investigations. Conduct JAG investigations, including claims investigations, as required by the JAG Manual. The safety investigator(s) and the JAG Manual investigator(s) shall not be the same person(s). Nothing in reference 14-2 prevents JAG Manual investigator(s) from access to the same non-privileged factual material or witnesses available to the safety investigator(s). Conduct the JAG Manual

investigation independently and separately from the safety investigations mentioned above. Reports of these investigations shall not be made a part of JAG investigations.

c. Criminal and Security Investigations. The Naval Criminal Investigative Service (NCIS) shall investigate any death occurring on a Navy installation, per SECNAVINST 5520.3B, except when the cause of death is medically attributable to disease or natural causes. When notified, NCIS will investigate the circumstances until criminal causality can reasonably be excluded. The investigations noted above must not compromise nor otherwise impede the NCIS investigation.

1403. Mishap Investigation Requirements

a. Shore regions and activities shall conduct a safety investigation of every mishap, major or minor, and handle the investigation as a search for facts as outlined in reference 14-2. The severity or significance of the mishap determines the extent of the investigation. The region or activity shall establish guidelines delineating roles and responsibilities for reporting and investigating all classes of mishaps. Military or civilian safety and occupational health professionals trained per Section 1405 shall conduct mishap investigations of Class A and B mishaps. The safety office shall ensure proper investigation of all mishaps and review all investigation reports. Management personnel may assist in mishap investigations, however, regions and activities shall not use information they obtain through the safety investigation for administrative or disciplinary action.

b. Safety departments shall notify the Injury Compensation Program Administrator (ICPA), medical, and/or industrial hygienists as needed, of their mishap investigation, which should include a request for specific support. The safety departments are to document the notification and specific results or any support received.

c. The investigator shall complete a written report with firm, factual findings of mishap root causes and recommendations for specific corrective action to be taken to prevent recurrence.

(1) For mishaps involving civilian personnel, the mishap investigator shall release to the ICPA all factual information regarding the mishap. The investigator is specifically forbidden to release any privileged safety information, including the analysis, findings, and recommendations of the investigator or mishap investigation board.”

(2) For all mishaps, the safety departments shall forward safety recommendations to appropriate department heads and/or supervisors, follow up with the appropriate department heads and/or supervisor to verify progress in implementing the corrective action, and notify command personnel of the department’s progress in implementing recommendations for corrective action.

d. Safety departments shall prepare and maintain a log of current status information on all recommendations for corrective actions in safety and mishap prevention matters.

e. Regions and activities shall electronically report all mishaps meeting the reportable criteria in reference 14-2 directly to COMNAVSAFECEN using the Web-Enabled

Safety System (WESS) or appropriate format from reference 14-2 if Internet connectivity is not feasible.

f. Protection, dissemination, and release of mishap information, and the concept of privileged safety information guidance are provided in reference 14-2.

g. Guidance on the assignment and conduct of Safety Investigation Boards, handling evidence and witness statements, and report submission and endorsements is provided in reference 14-2.

1404. Requirements to Ensure Reporting of All Mishaps and Hazards

At all levels, the immediate supervisor has the greatest influence on mishap and hazard reporting. Regions and activities shall take the following action to ensure that they report all mishaps and applicable hazards:

a. Indoctrinate all subordinates, especially new arrivals, to report all mishaps no matter how small, as well as the "near misses" as hazards where only chance prevented a mishap. Ensure personnel fully appreciate that activities cannot correct hazardous conditions unless personnel conscientiously report them.

b. Ensure supervisors report all mishaps to the region or activity safety office immediately so the safety office can initiate the appropriate action for the investigation.

1405. Mishap Investigation Training

Personnel who conduct Class A, B, C and other mishap investigations shall complete formal training in mishap investigation procedures and techniques. Safety professionals responsible for investigating region or activity level mishaps or Class A and B mishaps shall attend the Naval Occupational Safety and Health and Environmental Training Center (NAVOSHENVTRACEN) course, Mishap Investigation and Prevention (Ashore), course A-493-0078, or an equivalent course (as determined by the cognizant Echelon 2 headquarters). Safety professionals with formal mishap investigation training may provide formal classroom training to others in the region or activity (e.g., supervisors) that may perform Class C and other mishap investigations.

1406. Commanding Officer Review

Commanders, commanding officers and officers in charge, or their respective deputies, chiefs of staff, or executive officers, shall review lost time mishaps. The region or activity head, or his or her designee, with the safety manager shall decide which mishaps to review. At a minimum, regions and activities shall review any mishap that requires submission of an SIR per reference 14-2. The specific review mechanism is left to the command's discretion and can take many forms. This review will include the cognizant first-line supervisor and/or next level of management, and the injured employee if needed for amplifying information. The review shall involve safety, medical, compensation, and other management personnel, as appropriate. The object of the review is to determine compliance with and adequacy of established standards and

procedures, identify the underlying cause(s) of the mishap and take corrective action to prevent recurrence

1407. Shore Major Mishap Review

The purpose of Shore Major Mishap Review is for periodically reviewing Class A and select Class B mishaps, and taking actions to implement mishap investigation recommendations. This board shall meet at least annually. CNO (N09F) shall chair this board, which shall include representatives of Naval Inspector General (NAVINSGEN), headquarters commands experiencing mishaps under review, and others the chair selects.

1408. Mishap Analyses

Regions and activities shall conduct detailed analyses of their mishap experiences and develop annual fiscal year (FY) or calendar year (CY) mishap reduction goals (see chapter 32, Appendix 32-B for guidance on calculating mishap trends). The Safety Department is to analyze mishap data, including "near miss" data, on an annual basis to identify significant trends and utilize these trends to adjust training requirements and command personnel as well as identify goals, accountability issues, and potential failures of command infrastructure. They shall include these goals in command goals and specific strategies and measurement standards and develop actions for goal attainment (see chapter 5, paragraph 0505 for further guidance).

NOTE:

"Near miss" recording and data, in web enabled safety system (WESS), now uses the term "Hazard Reports".

1409. Records Disposition

- a. The records and reports this chapter requires will be retained for five years following the end of the fiscal year to which they relate.
- b. Regions and activities shall destroy general correspondence and records they accumulate in connection with the routine administration and operation of mishap investigation and reporting after two years.
- c. Records shall not be destroyed if they address corrective actions that are not yet complete.

1410. Injury/Illness Treatment (Civilian Employees Only)

- a. Reporting Procedures. Employees shall report immediately to their supervisors any occupational injury or illness. If an employee requests medical care, the supervisor shall offer to refer the employee to the activity medical treatment facility (MTF) occupational health department, if available, for examination and recording of the injury in the employee medical record. Referral to the activity MTF is not mandatory on the employee's part, nor shall it be construed as the initial choice of the attending physician. If the employee elects evaluation at the activity medical service, the supervisor shall furnish OPNAV 5100/9, Medical Referral Form

(appendix 14-A) or equivalent. Activities shall not permit employees to visit the Navy medical treatment facility (MTF) without having obtained the form, except where necessary to avoid delay in treatment to the detriment of an employee. In this case, activities may complete the form after the patient has been removed to the MTF.

b. Injury Report Control. The safety office may use appendix 14-A as one means of control to ensure the prompt receipt of information they need to investigate mishaps and to complete appropriate mishap reports for civilian employees. The safety office may use other tracking systems if they allow regions or activity safety offices to track MTF visits.

c. Preparation Procedure. Personnel shall observe the following instructions regarding the preparation and disposition of the Medical Referral, appendix 14-A:

(1) The supervisor shall complete the upper half of the Medical Referral Form in duplicate.

(2) The injured employee shall take both copies of the form to the MTF.

(3) The "Occupational-No" box is checked for personal illness cases only.

(4) Use of case number is optional within the activity.

(5) The MTF shall make every effort to determine whether or not an injury or physical disability is occupational before checking the "Questionable" block.

(6) The supervisor will notify the MTF and the cognizant Safety Manager of the reported occupational injury/illness for administrative purposes.

Chapter 14

References

14-1. DODI 6055.7 of 3 Oct 00, Mishap Investigation, Reporting and Record Keeping, http://www.dtic.mil/whs/directives/corres/pdf/i60557_100300/i60557p.pdf.

14-2. OPNAVINST 5102.1D/ MCO P5102.1B of 25 May 05, Mishap Investigation, Reporting, and Record Keeping, <http://www.safetycenter.navy.mil/instructions/ashore/5102/default.htm>

14-3. OPNAVINST 3750.6R of Mar 01, Naval Aviation Safety Program <http://neds.daps.dla.mil/3750.htm>.

APPENDIX 14-A

**Medical Referral Form
FOR OFFICAL USE ONLY (WHEN FILLED IN)**

Supervisor's Report		To Medical (Location)	Date of Report	
Employee's Name		Time & Date of Injury	Time Left Job	Time Returned
Social Security Number		Grade, Rate, Job Title	Occupational <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Questionable	
Reason for Referral: <input type="checkbox"/> Injury <input type="checkbox"/> Illness <input type="checkbox"/> Return to Work <input type="checkbox"/> Employee's Request <input type="checkbox"/> Other (Specify)				
Remarks:				
Supervisor's Signature:		Shop/Office:	Telephone #	Email:
Medical Report		Time Reported:	Time Released:	
Occupational <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Questionable		Degree of Injury <input type="checkbox"/> First Aid <input type="checkbox"/> Medical Treatment <input type="checkbox"/> Other (Explain)		
Recommended Disposition of Employee:				
<input type="checkbox"/> Return to Perm. Job _____		<input type="checkbox"/> Referred to Private Physician/Hospital		
<input type="checkbox"/> Restrict Activity Until _____		<input type="checkbox"/> Temporary Transfer to Another Job		
<input type="checkbox"/> Employee to Seek Care from Private Physician		<input type="checkbox"/> Other (Explain)		
Remarks:				
Provider Signature: _____		<input type="checkbox"/> Evaluation Completed <input type="checkbox"/> Follow-up On or Before _____		
Phone: _____		(Date)		

OPNAVINST 5100.23G
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CHAPTER 15

RESPIRATORY PROTECTION

1501. Discussion

a. This chapter establishes requirements and responsibilities for an ashore respiratory protection program. Reference 15-1 covers respiratory protection for forces afloat.

b. Many occupational activities expose personnel to air contaminants that can be dangerous, if inhaled. The best means of protecting personnel from exposure to potentially hazardous materials is to eliminate the air contaminant at its source. When elimination of the air contaminant is not possible, the preferred protection method is engineering controls. Activity work center personnel shall use respirators where neither elimination of the air contaminant, nor use of engineering controls is wholly effective.

1502. Applicability

a. The provisions of this chapter shall apply where employees are required to wear respiratory protection equipment due to the nature of their work or job.

b. The provisions of this chapter do not apply to:

(1) Contractors. They are responsible for providing their own respiratory protection programs and respiratory protective equipment.

(2) Personnel wearing respiratory protection for the sole purpose of protection against airborne radioactive contamination associated with the Naval Nuclear Propulsion Program, which is governed by reference 15-2.

1503. General Requirements

a. Whenever respiratory protection is required, activities shall establish and maintain a respiratory protection program per this chapter and reference 15-3. The commanding officer or officer in charge shall appoint a trained respiratory protection program manager (RPPM) who shall implement program requirements. Section 1512 contains minimum RPPM training requirements.

b. Activities shall provide appropriate equipment to personnel, such as employees, inspectors, and visitors who must enter an area where the use of respiratory protection is required. These personnel shall use this equipment regardless of stay time.

c. Activities shall fit test, issue, and train personnel to wear respirators and ensure personnel are medically qualified. The Navy does not require medical approval for visitors and personnel not assigned to the work areas where activities provide escape-only respirators for potential emergencies. However, they shall be briefed in the use of the escape respirator and shall be escorted at all times by activity personnel who are trained in the use of the respirator and who can guide and assist them in emergencies.

d. The RPPM shall maintain a listing of employees who require respiratory protection and shall authorize those employees who meet the requirements of 1513.a to wear respiratory protective equipment. The activity shall provide appropriate respiratory protection to these individuals, and additional personal protective equipment (PPE) if warranted by the operation.

e. Per reference 15-3, "The employer shall not permit respirators with tight-fitting facepieces to be worn by employees who have:

(1) Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or

(2) Any condition that interferes with the face-to-facepiece seal or valve function.

(3) If any employee wears corrective glasses or goggles or other eye and face protection, the employer shall ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user."

f. Activity programs shall only permit the issuance of respiratory protection for:

(1) Workers in areas known to have contaminant levels requiring the use of respiratory protection or in which contaminant levels requiring the use of respiratory protection may create a hazard without warning (e.g., emergency purposes such as hazardous material spill responses).

(2) Workers performing operations documented as an inhalation hazard and workers in the immediate vicinity where operations generate hazardous levels of contaminants.

(3) Workers in suspect areas or performing operations suspected of being health hazardous but for which adequate sampling data does not exist.

(4) Workers performing operations for which the Occupational Safety and Health Administration (OSHA) requires respiratory protection.

(5) Workers performing operations where OSHA permits the employee to choose to use a respirator (i.e., lead).

(6) Any other worker for whom the use of respiratory protection is deemed appropriate by the RPPM - for humanitarian or morale use (voluntary respirator use).

g. Voluntary Respirator Use. When respirators are not required, voluntary use of respiratory protection is allowed if the respirators are issued and controlled by the RPPM and the following criteria are met. Voluntary respirator use is defined/described in detail in the glossary (see Voluntary Respirator Use).

(1) National Institute for Occupational Safety and Health (NIOSH) approved filtering facepieces (dust masks) may be issued without medical screening and fit testing. Annually provide respirator users with the information contained in appendix D of reference 15-3

and the limitations stated on the respirator approval label. Personnel may not supply their own respirators.

(2) For any other voluntary respirator use, elastomeric facepiece respirators will be issued and all elements of the respiratory protection program must be met. NIOSH or NIOSH/Mine Safety Health Administration (MSHA) approved respirators must be selected appropriately for the perceived hazard.

(3) Issuance of voluntary use respirators shall not be used as a justification for avoiding further evaluation of health hazards.

1504. Types of Respirators

The three basic types of respirators are air purifying, supplied-air, and self-contained. Personnel sometimes group supplied-air respirators and self-contained breathing apparatuses together as atmospheric supplying respirators. This instruction lists them separately for clarity. Detailed descriptions of respirators are found in chapter 9 of reference 15-4.

a. Air-Purifying Respirator. These respirators remove air contaminants by filtering, absorbing, adsorbing, or chemically reacting with the contaminants as they pass through the respirator canister or cartridge. Personnel shall only use this respirator where adequate oxygen (19.5 to 23.5 percent by volume) is available. This category also includes battery-powered air purifying respirators.

NOTE:

Authorization for military gas masks, such as the MCU-2A/P, is only for chemical, biological, and radiological (CBR) warfare, CBR warfare training, and nuclear accidents when used according to DOD 3150.8M of 1 December 1999.

b. Supplied-Air Respirators. These respirators provide breathing air independent of the environment. Personnel shall use these respirators in place of chemical cartridge, air purifying respirators when:

- (1) A cartridge change out schedule has not been established and implemented;
- (2) There are no appropriate end-of-service life indicator respirators; or
- (3) The contaminant is of such high concentration or toxicity that an air-purifying respirator is inadequate.

c. Self-Contained Breathing Apparatus (SCBA). This type of respirator allows the user complete independence from a fixed source of air and offers the greatest degree of protection but is also the most complex. Training and practice in its use and maintenance is essential.

(1) The Navy oxygen breathing apparatus (OBA) is a uniquely designed SCBA respirator. Its only authorized use is for damage control, firefighting operations aboard ships, and during firefighting training ashore.

(2) Shipboard personnel undergoing shore firefighting training are not required to obtain medical qualification or respirator fit testing for SCBAs, including the OBA, prior to reporting for training.

(3) Wearing SCBAs during shipboard firefighting or other emergencies, including ashore training for these emergencies, is military-unique. Therefore, fit-testing and medical surveillance are not required prior to wearing SCBAs for these scenarios.

1505. Respirator Cartridges and Gas Mask Canisters

Navy policy no longer permits reliance on odor thresholds and other warning properties as the sole basis for determining that an air-purifying respirator will afford adequate protection against exposure to gas and vapor contaminants.

a. Activities shall:

(1) Implement a change-out schedule for chemical canisters/cartridges based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. Activities must describe this data, along with the logic for relying on the change schedule, in their respirator programs. The change schedule should be included in written standard operating procedures (SOPs).

(2) Change chemical canisters/cartridges according to manufacturer's directions, or based on objective data obtained as indicated in reference 15-4.

(3) Chemical cartridge/canister air-purifying respirators may be used (up to their maximum use concentration) for protection against substances without good warning properties, including isocyanates, if a cartridge change out schedule is developed and implemented.

(4) Identify respirator cartridges, canisters and filters by the information provided on the approval labels as well as the color-coding required by reference 15-5.

NOTE:

Some foreign (European/EU) respirator cartridges use a color-coding system that differs from American (ANSI) standards. Where local situations may have the potential for use of EU or other local national standards, training and supplemental labeling must be provided.

1506. Breathing Air Requirements

a. Breathing air or sources of breathing air for supplied air respirators or SCBAs shall meet at least the minimum Grade D breathing air requirements of references 15-3 and 15-6.

b. Activities shall conduct monitoring of the breathing air quality at least quarterly. Test results shall be provided to the OSH office. Records of such air quality monitoring shall be maintained by the OSH office for five years.

NOTE:

Monitoring does not apply to ambient air breathing apparatus.

c. In addition to quarterly air quality monitoring to ensure Grade D breathing air, activities shall equip compressor systems with either-high temperature or continuous carbon monoxide monitor and alarm systems or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the activity shall monitor the air supply at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm. Activities shall equip all new and/or upgraded air compressor systems with continuous carbon monoxide monitor and alarm systems. Calibrate monitor and alarm systems on compressors used for supplying breathing air according to the manufacturer's instructions.

d. Activities purchasing breathing air from outside sources shall comply with reference 15-3.

1507. Respirator Selection Considerations

a. Activities shall only use respirators that are currently approved by NIOSH or NIOSH/MSHA. References 15-7 and 15-8 provide general respirator selection guidance.

NOTE:

Host countries may require respiratory protection that meets standards and certifications they establish for foreign national employees. Where foreign legislation applies, activities shall issue respiratory protection to the employees that meet the host nation criteria.

b. The Defense Supply Center, Philadelphia (DSCP) issues specific national stock numbers (NSNs) for NIOSH or NIOSH/MSHA approved respirators. Specific NSNs are assigned to each manufacturer's approved respirator so that activities are assured they will receive the same respirator each time they order it by its NSN. Activities can order equipment on line from the DSCP website at: <http://www.dscp.dla.mil/qi/>. Respirators may also be purchased through the General Services Administration website: <https://www.gsaadvantage.gov/>.

c. As a minimum, the RPPM shall consider the following factors to correctly assess the nature of the hazard requiring respiratory protection and the type of respirator to be used:

(1) The current workplace evaluation conducted by the cognizant industrial hygienist.

(2) The chemical, physical, and toxicological properties of the contaminant such as:

(a) Warning properties of the contaminant gas or vapor (smell, taste, eye irritation, or respiratory irritation).

- (b) Whether employees can absorb the contaminant through the skin.
- (c) Whether any of the contaminants are immediately dangerous to life or health (IDLH) or whether the contaminant would produce injurious effects after prolonged exposure.
- (3) Concentration of the contaminant in the atmosphere. Where the activity cannot identify, or reasonably estimate the employee exposure, it shall consider the atmosphere to be IDLH.
- (4) Occupational exposure limits (OELs) for the contaminant(s).
- (5) Whether an oxygen-deficient or oxygen-rich atmosphere exists or may be created.
- (6) Whether toxic, flammable, or explosive by-products are present or may be produced.
- (7) The nature, extent, and frequency of the duties personnel will be performing (e.g., welding, painting, etc.) in the work area.
- (8) Sorbent efficiency and service life of cartridge or canister.
- (9) Any possibilities of high heat reaction with sorbent material in the cartridge or canister.
- (10) Any possibility of shock sensitivity (explosion hazard) of the substances absorbed on the cartridge or canister sorbent.
- (11) The assigned protection factor or degree of protection provided.

The RPPM shall select respiratory protection equipment using the assigned protection factors listed in chapter 9 of reference 15-4.

d. Respirators for Entry into IDLH Atmospheres. Should it become necessary to enter an oxygen deficient atmosphere (<19.5 percent oxygen) or an IDLH atmosphere, personnel shall only use the following types of respirators:

- (1) Full facepiece, open circuit; pressure-demand SCBA with an air cylinder rated for at least 30 minutes.
- (2) Full facepiece, closed circuit; pressure-demand SCBA (the lowest rated service life of these devices is 60 minutes).
- (3) A full facepiece combination pressure-demand supplied-air respirator equipped with an auxiliary self contained air supply of 15 minutes to ensure escape from the IDLH area. Personnel shall only use the auxiliary self-contained air supply for egress purposes.

If the self-contained air supply (15 minute supply) is insufficient to ensure escape, then personnel must use an SCBA.

e. **Firefighting.** Full facepiece, pressure demand SCBA approved by NIOSH and meeting National Fire Protection Association (NFPA) requirements (see glossary) that is equipped with an air cylinder rated for at least 30 minutes.

f. **Respiratory Protection for Medical Personnel.** Medical personnel who wear respirators shall comply with this chapter.

g. For safe entry procedures into IDLH atmospheres, and for interior structural fire fighting, refer to reference 15-3.

1508. Medical Evaluations

Activities shall not fit test personnel or assign them to work in, or permit them to enter, areas requiring respiratory protection unless they have been medically evaluated per the Medical Surveillance Procedures Manual/Medical Matrix reference 15-9 which meets the requirements of the OSHA Respirator Standard, reference 15-3.

Military personnel, who have been confirmed by their region or activity as "Fit for Full Duty" based on their current periodic military physicals (Manual of the Medical Department (P-117), and their annual Preventive Health Assessment (OPNAVINST 6120.3)) are considered qualified to wear any type of respiratory protection. Shipboard personnel undergoing shore firefighting training are not required to obtain medical qualification or respirator fit testing for SCBAs, including the OBA, prior to reporting for training.

1509. Respirator Fit Testing

a. **Fit Testing.** Activities shall fit test each individual required to use a respirator with a tight-fitting facepiece, at the time of initial fitting and annually thereafter. Activities shall perform fit testing according to references 15-3 and 15-10.

b. All tight-fitting positive and negative pressure respirators shall be either qualitatively or quantitatively fit tested by activities initially and annually. To wear full face, negative pressure, air purifying respirators in atmospheres up to their assigned protection factor of 50, personnel must be quantitatively fit tested and the respirator must achieve a fit factor of at least 500, which equates to a safety factor of 10.

c. **Record keeping.** The RPPM shall document respirator fit testing and include make, model, style, and size, method of test and test results, strip chart recording or other recording of test results for quantitative fit test, test date, and the name of the instructor/fit tester. This information is required to be established and retained per reference 15-3.

1510. Inspection and Cleaning of Respirators

Only personnel who have received training through the RPPM shall perform the cleaning, inspection, and maintenance of respiratory protective equipment per reference 15-3.

1511. Respiratory Protection Training

The activity shall ensure proper respirator use by providing all employees required to use respirators with training per reference 15-3. Activities shall train supervisors, persons issuing respirators, and emergency rescue teams per reference 15-7. Activities shall document that training occurs in a manner that is understandable to the respirator wearer and that respirator wearers can demonstrate knowledge of at least the following aspects of respiratory protection:

- a. The nature and degree of respiratory hazards.
- b. Respirator selection based on specific hazards.
- c. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- d. The limitations and capabilities of the respirator.
- e. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- f. How to inspect, put on and remove, use and check the seals of the respirator.
- g. The procedures for maintenance and storage of the respirator.
- h. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- i. Wearing contact lenses in contaminated atmospheres with respiratory protection is permitted.
- j. Know when to change chemical cartridges/canisters according to the established change out schedule.
- k. The general requirements of the respiratory standard.

1512. RPPM Training

a. Because of the large variation in quality of respiratory protection training available for RPPMs, and because of the complexity of respiratory protection, the Navy has defined minimum acceptable training for RPPMs.

b. The RPPM shall pass one of the following training courses before activities appoint them as the RPPM:

- (1) The OSHA Training Institute Course 2220 or 2225.

- (2) The NIOSH Course 593.
- (3) The Navy RPPM course, Respiratory Protection Program Management (A-493-0072).
- (4) Any respiratory protection course that has at least 32 hours of training including, but not limited to, the topics listed below:
 - (a) Respiratory hazards.
 - (b) Federal standards applicable to respirators.
 - (c) Minimum respiratory protection program requirements and administration.
 - (d) Respirator types, selection, certification, and limitations.
 - (e) Respirator cleaning, maintenance, and inspection.
 - (f) Qualitative and quantitative fit testing of respirators, including actual laboratory fit testing.
 - (g) Breathing air quality.
 - (h) Medical considerations.
 - (i) Respirator training.
 - (j) Confined spaces/IDLH atmospheres.
 - (k) Special problems in program administration (facial hair, lens fogging, and communication).
 - (l) Standard operating procedures.
 - (m) Cartridge change out schedules.
- c. For current respiratory protection information, consult sources such as the Navy Environmental Health Center (NEHC), OSHA and NIOSH home pages.
- d. The Navy requires a course certificate from the OSHA, NIOSH, or Navy course as proof of training. If employees attend another course, the Navy requires both the course certificate and a course syllabus specifying training topics and number of hours as proof of training.
- e. The Navy does not require assistant or alternate RPPMs to comply with section 1512b; however, those assisting with respirator program training, fit testing, or other program

implementation, shall receive training appropriate to the responsibilities assigned. For example, the RPPM can provide on-the-job training, or the command might require the assistant to complete formal training, but in all cases must receive training appropriate to perform the tasks assigned by the RPPM. Personnel assigned by the RPPM to conduct respirator fit testing should be trained and evaluated according to clause 5 and Annex A1 of reference 15-10 (ANSI Z88.10-2001).

1513. Responsibilities

a. Commanders, Commanding Officers, and Officers in Charge shall establish a comprehensive respiratory protection program and appoint a qualified RPPM in writing. The Navy encourages small activities with few employees utilizing respirators to negotiate with host commands for RPPM service. As a minimum, commanders shall ensure that the respiratory protection program provides:

(1) A centrally located facility staffed to maintain and issue respiratory protection equipment. The program shall provide one or more centrally located facilities at an activity depending on its nature and size. Facility personnel shall:

(a) Ensure that activities issue only respirators approved by NIOSH or jointly by NIOSH/MSHA.

(b) Maintain all respiratory protection equipment in a sanitary and serviceable condition.

(c) Store all respiratory protection equipment in a designated clean area.

(2) Written SOPs governing the selection, care, issue, and use of respirators. Activities shall also develop and post worksite SOPs in the general area. SOPs shall include emergency and rescue guidance, as necessary. SOPs shall include cartridge change out schedules as appropriate.

(3) Respiratory protection training per reference 15-3 and section 1511, for all respirator users and their supervisors and personnel who issue and/or maintain respirators.

(4) Procedures to ensure that all employees have received medical evaluations required by section 1508.

(5) A completed appendix 15-A for each civilian employee requiring a medical examination for respirator use.

(6) Fit testing per section 1509.

(7) Procedures to ensure that all sources of breathing air meet the requirements cited in section 1506.

(8) An annual audit of the program by the RPPM. The BUMED Industrial Hygiene periodic review of the respiratory protection program does not fully meet this requirement but may provide data used in the evaluation.

(9) Arrangements for fit testing and respiratory protection program support to ships in port that have a collateral duty safety officer by either the supporting tender, by Navy Environmental and Preventive Medicine Units or by shore support activities (command safety offices or medical activities).

(10) For RPPMs to successfully complete required training.

(11) Establishment and implementation of cartridge change out schedules and describes the objective information or data on which they are based in the written respirator program.

b. Chief, Bureau of Medicine and Surgery (BUMED) shall:

(1) Ensure the medical qualification requirements of the Respiratory Protection Program agree with section 15-8. A physician, or the following individuals under the supervision of a physician, may conduct the medical evaluation: a nurse practitioner, an occupational health nurse, a physician's assistant, a preventive medicine technician, or an independent duty hospital corpsman. Reference 15-9 details the required medical evaluation protocols for respirator users. The health care professional must return the completed appendix 15-A containing the medical written recommendation to the worker and command RPPM. The medical recommendation shall provide the following information:

(a) The worker's ability to wear the respirator.

(b) Any limitations on respirator use, or recommendations for a different respirator based on the worker's medical condition or relating to the workplace conditions in which the respirator will be used.

(c) The requirement, if any, for the worker to report back to the medical facility for follow-up medical evaluations.

(d) A statement that the health care professional has provided the worker with a copy of the written recommendation.

(2) In support of the RPPM, BUMED shall:

(a) Provide RPPMs with a written evaluation on the effectiveness of their program based on occupational medicine and industrial hygiene reviews. These reviews shall occur, at a minimum, at the frequencies listed in appendix 8-B.

(b) Make occupational health professionals available to the RPPM for consultation on all aspects of the respiratory protection program.

(c) Provide activities with direct assistance and service in conducting their training and fit testing programs.

(d) Provide an evaluation of respiratory hazards.

(3) In support of afloat commands, BUMED shall provide fit testing and respiratory protection program support to ships in port that have a collateral duty safety officer by either the supporting tender, by Navy Environmental and Preventive Medicine Units or by shore support activities (command safety offices or medical activities).

c. Employees shall obtain the respiratory protection equipment selected by the RPPM, and inspect, use, and maintain such equipment per the instructions and training received. At a minimum, employees shall:

(1) Inspect the respiratory protection equipment before and after each use per reference 15-3 and return the equipment to the central respirator facility when its use is no longer required or when any malfunction is noted

(2) Perform user seal checks per the manufacturer's instruction or per reference 15-3. If a successful user seal check cannot be performed, the employee will not wear the respirator.

(3) Report any malfunction of the respirator to their immediate supervisor. If the respirator requires repair or replacement, return it to the respirator facility.

(4) Guard against damage to or loss of respiratory protection equipment.

(5) Change respirator cartridges/canisters according to established change out schedule.

Chapter 15

References

- 15-1. OPNAVINST 5100.19D CH-1 of 30 Aug 01 Navy Occupational Safety and Health (OSH) Program Manual for Forces Afloat. http://neds.daps.dla.mil/Directives/5100.19d_CH-1.pdf.
- 15-2. NAVSEA 389-0288, Radiological Controls.
- 15-3. 29 CFR 1910.134 Respiratory Protection (as amended)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=12716.
- 15-4. Industrial Hygiene Field Operations Manual, of Oct 03, NEHC Technical Manual, NEHC-TM6290.91-2, , <http://www-nehc.med.navy.mil/ih/ihfom.htm>.
- 15-5. American National Standards Institute (ANSI), Z88.7-2001, American National Standard for Color Coding of Air-Purifying Respirator Canister, Cartridges, and Filters (NOTAL), <http://www.ansi.org>.
- 15-6. Compressed Gas Association, Inc. Commodity Specification for Air, Pamphlet G-7.1-1997, (NOTAL) <http://www.cganet.com>.
- 15-7. American National Standards Institute (ANSI), Z88.2-1992, American National Standard, Practices for Respiratory Protection, (NOTAL), <http://www.aiha.org>.
- 15-8. NIOSH Respirator Selection Logic 2004, NIOSH Publication 2005-100.
<http://www.cdc.gov/niosh/docs/2005-100/default.html>.
- 15-9. NEHC Technical Manual OM 6260 of 1 Feb 01, Occupational Medical Surveillance Procedures Manual and Medical Matrix edition 7
http://www-nehc.med.navy.mil/downloads/Occmed/Medical_matrix_Feb_2001.pdf.
- 15-10. American National Standards Institute (ANSI), Z88.10-2001 American National Standard for Respirator Fit Testing Methods, (NOTAL), <http://www.ansi.org>.

Appendix 15A
RESPIRATOR USE QUESTIONNAIRE
FOR OFFICIAL USE ONLY (WHEN FILLED IN)

EMPLOYEE	SSN	POSITION	
SUPERVISOR	PHONE	CODE	DEPARTMENT

CIRCLE THE TYPE OF RESPIRATOR(S) TO BE USED:

- | | |
|------------------------------|---|
| AIR-SUPPLIED (tight-fitting) | AIR-PURIFYING (powered) (tight-fitting) |
| AIR-SUPPLIED (hooded) | AIR-PURIFYING (powered) (hooded) |
| OPEN-CIRCUIT SCBA | COMBINATION AIRLINE/SCBA |
| CLOSED-CIRCUIT SCBA | AIR-PURIFYING (non-powered): (Specify) |
| | Filtering facepiece or elastomeric |
| | N,P,R, 95,99,100 |
| | Type Chemical Cartridge _____ |

WORK EFFORT: (CIRCLE ONE)

Light Moderate Heavy Strenuous

EXTENT OF USAGE: (CIRCLE ONE)

1. On a daily basis
2. Occasionally - but more than once a week
3. Rarely - or for emergency situations only

LENGTH OF AVERAGE WORK DAY IN RESPIRATOR:

SPECIAL WORK CONDITIONS: (i.e., confined spaces, high places, temperature/humidity extremes, hazardous materials, other protective clothing worn, climbing, etc.)

MEDICAL WRITTEN EVALUATION SUMMARY

1. No restrictions on the respirators circled above
2. Respirator use with some restrictions
3. No respirator use allowed
4. Alternate respirator recommended

Comments/Restrictions _____

Routine Follow-up medical evaluation required: 5 yrs 2 yrs 1 yr (under 35)(35-45)(over 45)

Or due to medical findings return: Date _____
Employee has been given a copy of this recommendation.

Health care professional's Signature _____
Sections 133, 1071-87, 3012, 5031, and 8012, Title 10
USC & Exec. Order 9397 (Privacy Act of 1974) Apply

_____ Date

CHAPTER 16

OCCUPATIONAL SAFETY AND HEALTH STANDARDS

1601. Discussion

a. Heads of Federal agencies must establish procedures for the development of agency occupational safety and health (OSH) standards. Agencies must also comply with the standards issued for the private sector by the Secretary of Labor, under Section 6 of the Occupational Safety and Health Act (OSH Act).

b. The Department of Defense (DOD) and Navy follow the Occupational Safety and Health Administration (OSHA) standards; however, reference 16-1 contains provisions for alternates to the OSHA standards, supplemental standards, other special standards and exceptions for military unique equipment, systems and operations.

c. This chapter provides guidance and direction for the development and application of standards within the Navy Occupational Safety and Health (OSH) program.

1602. OSH Standards

OSH standards consist of the following:

a. OPNAV instructions and Chief of Naval Operations CNO (N09F)-approved instructions issued by commands having specific technical cognizance or assigned technical responsibility in reference 16-2. OSH standards include national consensus and proprietary standards referenced in the instructions. OPNAV instructions based on OSHA standards may simply refer to a specific OSHA standard (e.g., 29 CFR 1910.95) or may paraphrase, transpose or otherwise adopt the standard without altering the basic criteria (unless the alteration applies to more stringent criteria, such as lower exposure limits, increased monitoring frequency, etc.). The OPNAV instruction may also refer to or adopt the latest edition of an OSHA reference standard. See appendix 16-A for a current listing of approved OSH standards not elsewhere invoked. See reference 16-3 for OSH standards for forces afloat.

b. OSHA standards, including emergency temporary standards OSHA issues under the provisions of the OSH Act. This includes national consensus standards specifically referred to in OSHA standards.

NOTE:

When both the Navy and OSHA have standards applicable to a given situation, regions and activities shall use the more stringent of the two.

c. Navy occupational exposure limits (OEL) for chemical contaminants that include:

(1) 1989 OSHA permissible exposure limits (PELs) found in reference 16-4 at: <http://www-nehc.med.navy.mil/ih/ihfom.htm>.

(2) Substance specific regulations issued by OSHA under section 6(b) of the Occupational Safety and Health Act of 1970.

(3) Navy developed standards. When there is no OSHA PEL or Navy developed standard, the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) shall be used as the Navy OEL. When the OEL is based on a limit derived from the OSHA Z-1, Z-2 or Z-3 Tables, reports of data shall include the ACGIH TLV as additional guidance.

d. Alternate OSHA standards that the Deputy Under Secretary of Defense (Environmental Security) (DUSD(ES)) authorizes, subject to Department of Labor (DOL) approval. See appendix 16-A for a current listing of approved alternative standards.

e. Special DOD or Navy standards, rules and regulations or technical publications that govern the on-the-job safety and health applicable to military unique equipment, systems and operations.

f. Nationally recognized sources of OSH guidance (such as the ACGIH, the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA)) will be used when there is no OPNAV instruction or OSHA standard.

NOTE:

National Institute for Occupational Safety and Health (NIOSH) criteria documents are proposals only and not mandatory unless adopted by one of the sources listed above.

1603. Alternate Standard Approval

OSHA Alternate Standards should only be considered when compliance with an OSHA standard cannot be achieved, and alternate standard will be at least equally protective, and the cognizant headquarters command, CNO (N09F)/COMNAVSAFECEN, and Secretary of the Navy (DASN (S)) agree that an alternate standard should be requested from OSHA via DUSD (ES).

NOTE:

Regions or activities shall not submit OSH standards developed according to section 1602e to DUSD(ES) for approval.

The following procedures apply:

a. The headquarters command shall submit the proposed alternate standard to CNO (N09F), who in turn, shall submit the alternate standard to DUSD(ES) for approval, through the Deputy Assistant Secretary of the Navy (Safety) (DASN(S)).

b. Prior to forwarding to DUSD(ES) and CNO (N09F) shall forward alternate standards proposals to the Deputy Assistant Secretary of the Navy (DASN) (CP/EEO). DASN will forward the proposed standard to civilian employee organizations having national consultation rights with the Navy for review and comment.

c. After receipt of comments from employee organizations, or after a 45-day response period has elapsed, CNO (N09F) will forward the alternate standard to DUSD(ES) through DASN(S). The alternate standard shall include a summary statement that delineates the differences between the applicable OSH standard and the proposed alternate standard, a justification for the change and a summary of comments from civilian employee organizations.

1604. Application

Regions and activities shall apply OSH standards in Navy workplaces, worldwide, with the following exceptions:

a. In the case of uniquely military equipment, systems and operations, regions and activities shall apply Navy rules and regulations consisting of specialized standards, specifications and procedures to minimize hazards and prevent mishaps. The Navy shall review and strengthen these special rules and regulations continuously, and include appropriate provisions of the OSH standards consistent with military design configuration and the requirement to develop and maintain combat capability.

b. Certain operations are subject to mandatory safety standards or rules derived from separate or specific statutory authority (e.g., explosive safety standards issued under the authority of 10 U.S.C. 172 (1970) and Nuclear Safety and Health Standards issued under the authority of 42 U.S.C. Sections 2012, 2021, 2121(b), and 2201(b) (1976)). Provided there is no substantive conflict, the application of these special functional standards does not exempt any workplace from other OSH standards that address conditions not specifically covered by the special rules. For example, a naval weapons station is subject to special explosive safety standards and is also subject to OSH standards for machine guarding, eye protection, etc.

c. In overseas workplaces, where status of forces agreements (SOFAs) specify different standards, those standards take precedence, subject to the same limiting rationale set forth in paragraph 1604b.

d. Where personnel of different DOD components, or of DOD components and other Federal agencies work in the same installations, host-agency standards shall govern the DOD components and other Federal agencies involved. When other agency standards conflict with OSHA standards, DOD components shall refer the matter to DUSD(ES).

Chapter 16

References

16-1. DODI 6055.1 of 19 Aug 1998, DOD Occupational Safety and Health Program
http://www.dtic.mil/whs/directives/corres/pdf/i60551_081998/i60551p.pdf.

16-2. OPNAVINST 5100.8G of July 1986, Navy Safety and Occupational Safety and Health Program http://neds.daps.dla.mil/Directives/5100_8g.pdf.

16-3. OPNAVINST 5100.19D CH-1 of Aug 2001, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat.

16-4. Industrial Hygiene Field Operations Manual, NEHC Technical Manual, NEHC-TM6290.91-2 of Oct 03, <http://www-nehc.med.navy.mil/ih/ihfom.htm>

Appendix 16-A
Approved SOH Standards from Headquarters Commands
Having Technical Cognizance

<u>Document</u>	<u>Governing Area</u>
SPAWARINST 5100.9D	Electronic Safety Ashore
OPNAVINST 5100.27	Navy Laser Hazards Control Program http://neds.daps.dla.mil/Directives/5100_27a.pdf
MIL-HDBK 1025/10	Safety of Electrical Transmission and Distribution Systems
OPNAV P-45-117-6-98 PNAVP-45-117-6-98.pdf	Electrical Safety Field Guide http://www.safetycenter.navy.mil/instructions/osh/O

Approved SOH Alternative Standards

NAVSEA S6740-AA-SAF-010	Alternative standard for certification of gas-free engineering used in maintenance operations.
NAVFAC P-307	Management of Weight Handling Equipment Alternative standard for third party certification cranes used in long shoring. http://ncc.navfac.navy.mil/crane/307JUN03.pdf

CHAPTER 17

ASBESTOS CONTROL

1701. Applicability

a. The provisions of this chapter apply to industrial and construction activities and supplement the Department of Labor (DOL) Standards references 17-1 through 17-3.

b. Shore activities shall conduct shipboard work per this chapter and reference 17-3. Chapter B1 of reference 17-4 describes the asbestos control program for forces afloat.

c. Whether State and local requirements in asbestos removal and disposal work are applicable depends on whether the workers are Federal or contract workers and if the requirements originate from State and local occupational safety and health (OSH) or from Clean Air Act requirements. Applicability is a complex legal issue that should be decided by qualified legal counsel familiar with the particular jurisdictions in question. Appendix 17-A provides assistance to legal counsel in determining applicability of state and local requirements.

1702. Discussion

a. This chapter provides guidance for controlling or eliminating the exposure of Navy personnel to asbestos during the use, removal, and disposal of asbestos-containing materials (ACM).

b. Navy policy is to eliminate asbestos hazards by substitution with asbestos free material or, where this is not possible, through the use of engineering, administrative controls and respiratory protection. Do not remove installed asbestos containing materials, which are in good condition, for the sole purpose of eliminating asbestos.

Commands shall use only suitable asbestos substitute materials approved through identification and testing. Commands shall not use existing supplies of ACM whenever there are acceptable substitutes.

Navy personnel worldwide shall strictly enforce and adhere to the standards and controls discussed in this chapter.

c. Asbestos is a general term that applies to a variety of naturally occurring mineral silicates, e.g., chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos or any products composed of these minerals.

Asbestos is generally a fibrous material that is incombustible and possesses high tensile strength, good thermal and electrical insulation properties, and moderate to good chemical resistance. The beneficial properties of asbestos make it ideal for many diverse uses such as:

(1) Application of ACM Thermal System Insulation (TSI) to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat energy transfer or water condensation

(2) Surfacing. ACM is sprayed on, troweled on, or otherwise applied to surfaces such as acoustical plaster on ceilings, fireproofing materials on structural members or other materials on surfaces for fireproofing, acoustical, or other purposes.

(3) Miscellaneous. ACM that is not TSI or surfacing (such as brakes, clutches, floor covering, gaskets, roofing, and cementitious materials).

d. Asbestos is now known to be a major health hazard. Inhalation of asbestos fibers may cause asbestosis, pleural thickening, lung cancer and mesothelioma and also may cause cancer of the gastrointestinal tract. If exposure is combined with smoking, the risk of developing lung cancer is increased dramatically.

e. The extended latency period of asbestos-related disease, lack of adequate past exposure data, effects of other carcinogens, and the variability of human response make safe levels of exposure difficult to determine. Between the first asbestos exposure and the appearance of symptoms, latency periods of 20 to 40 years have been observed.

1703. Permissible Exposure Limit and Excursion Limit

a. Permissible Exposure Limit (PEL). The PEL for asbestos is 0.1 fibers per cubic centimeter (f/cc) of air, calculated as an 8-hour time-weighted average (TWA) exposure. Fibers are particles having a length-to-width ratio of three (or more) to one (3:1), and 5 micrometers or longer.

b. Excursion Limit (EL). The EL is 1.0 f/cc averaged over a 30-minute sampling period. Personnel using the PEL shall also consider the EL.

c. Employee Notification. Affected employees shall receive notice of exposure, in writing per references 17-1, 17-2 and/or 17-3.

1704. Control of Asbestos in the Workplace Environment

Chapter 5 discusses the basic principles for controlling hazards in the occupational environment, including substitution with less hazardous material (HM), engineering controls (e.g., isolation, ventilation), and the use of personal protective equipment (PPE). Prepare written asbestos control procedures, which set forth these engineering and work practice controls and review and update, as necessary. References 17-1, 17-2, and 17-3 require specific work practices and engineering controls based on the type of ACM and type of work. Commands shall train project personnel per reference 17-5 and prohibit administrative controls, such as employee rotations, as a means of keeping the exposure below the PEL.

a. General Workplace Control Practices

(1) Cognizant headquarters activity will approve non-asbestos-containing substitute materials, which shall replace ACM. Replacement or substitution of friable ACM, such as asbestos thermal insulation and sprayed on asbestos, is of primary concern because friable ACM are loosely bound and can easily crumble or be pulverized.

(2) Whenever practicable, handle, mix, apply, remove, cut, score, or otherwise work asbestos in a wet state sufficient to prevent the emission of airborne fibers in excess of the PEL. Do not remove asbestos cement, mortar, coating, grout, or similar material containing asbestos from its container (e.g., bag, box, etc.) without wetting, enclosing or ventilating to prevent any airborne release of asbestos. When wetting decreases its usefulness, use enclosures or ventilation to reduce the emission of airborne fibers. Do not apply materials containing asbestos by spray methods, under any circumstances.

(3) Establish regulated areas as required by section (e) of references 17-1, 17-2, and 17-3. Do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics when involved in asbestos-related work activities in the regulated area.

(4) Establish procedures to minimize the accumulation of asbestos-laden waste, dust, and scrap materials. Institute specific procedures for the containment of asbestos dust and handling of ACM to minimize the possibility of secondary air contamination. Promptly clean up and dispose of wastes and debris contaminated with asbestos in leak-tight containers. Adequately wet material and use high efficiency particulate air (HEPA) filtered vacuum cleaning for removal, clean up and disposal of debris. Prohibit dry sweeping, shoveling, or other dry clean-up of asbestos-containing dust and debris at all times.

(5) Collect and dispose of asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing (consigned for disposal) which may produce, in any foreseeable way, airborne concentrations of asbestos fibers in sealed, impermeable bags, or other impermeable containers labeled per paragraph references 17-1, 17-2 and 17-3. Color code containers to ensure easy recognition. Double bag and dispose of asbestos waste per the procedures outlined in paragraph 1706.

(6) Control the spread or increase of airborne concentrations of asbestos by minimizing the effects of environmental conditions, such as wind, ventilation systems, or high traffic conditions. Enclosures or temporary curtains may be used for this purpose.

(7) To minimize exposure potential, perform asbestos removal operations, to the extent feasible, during the second or third shifts or on weekends and holidays.

(8) Strictly adhere to good housekeeping procedures and dust control measures to minimize the release of asbestos fibers during removal/rip-out of ACM. These are the most important and effective means of reducing downtime before reoccupying a workspace after asbestos abatement operations. Always conduct a visual inspection after clean-up. Thoroughly clean and inspect work areas prior to air sampling and releasing asbestos-controlled areas for unrestricted access per reference 17-6.

(9) A "Qualified" or "Competent" person, as defined in references 17-2 or 17-3, shall supervise all asbestos work performed in a regulated area.

b. Lunch areas. Provide and maintain lunch areas per references 17-1, 17-2 and 17-3 as applicable to the work being performed.

c. Ventilation. Use local exhaust ventilation to ensure that atmospheric levels of asbestos do not exceed the PEL. General requirements for the design and use of ventilation to reduce exposures are listed below.

(1) Local exhaust ventilation requirements below apply to both permanent and temporary systems.

(a) Provide fixed local exhaust ventilation, equipped with pre-filters and HEPA filters, at the point of airborne fiber generation. Capture velocities shall be high enough, under the specific environmental conditions, to move any generated asbestos fibers to the air collection/filtration device. In addition, duct transport velocities shall be high enough to prevent accumulation of fibers in the duct. Provide clean out points for necessary periodic maintenance. Do not directly exhaust ventilation systems used to control asbestos exposures or emissions, to another regulated area or outside environment unless the ventilation system has HEPA filters. Each ventilation unit (e.g., fixed system, air mover or vacuum cleaner) to be used for asbestos work must be approved by the cognizant industrial hygienist. Each work site ventilation set up must be approved by the competent or qualified person. Prohibit routine recirculation of filtered air from asbestos operations. Use the design criteria in reference 17-7 for facilities with permanent asbestos operations.

(b) Design, construct, install and maintain local exhaust ventilation, and dust collection systems per references 17-7 and 17-8. Position local exhaust ventilation in a regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter.

(c) Provide a HEPA-filtered local exhaust ventilation system for all hand-operated and power-operated tools that may release asbestos fibers in excess of the PEL.

(d) Maintain exhaust filtration systems to prevent performance degradation of the ventilation systems as a whole. Perform such maintenance work under the provisions of this chapter.

(e) Where negative pressure enclosures are required, maintain a minimum negative pressure of 0.02 inches water gauge within an enclosure. A minimum of four air changes per hour are required. Direct air movement, in a negative pressure enclosure (NPE), away from employees performing asbestos work within the enclosure, and toward a HEPA filtration or a collection device.

(2) The following requirements are applicable for permanent ventilation systems only:

(a) Test permanent ventilation systems every 3 months or within 5

days of a process or control change that may result in changes to employee exposure. Maintain test records indefinitely. Alternatively, in cases where ventilation systems are equipped with continuous monitoring devices such as pressure taps, manometers, or pitot tubes, log the gauge readings each day the system is used. Also, note non-use days.

(b) Design the system for ease of maintenance and accessibility per references 17-7 and 17-8. Evaluate each system component including hoods, ductwork, clean-out hatches, exhaust fans and air pollution control devices (APCD). Locate the exhaust fan after the APCD. Locate the exhaust fan and APCD in a protected or restricted room. Treat this as a regulated area. Use bag-in bag-out housing on all filtration systems.

d. Personal Protective Clothing and Related Facilities

(1) Personnel handling ACM during abatement actions, or where the concentration of airborne fibers is likely to exceed the PEL, shall wear, as a minimum, the protective clothing listed below:

(a) Full body, one-piece disposable coveralls (use of breathable coveralls is permitted in cases where employees will need to shower. An attached hood is highly desirable).

(b) Hoods (head covering) that extend beyond the collar of the coverall, completely protecting the neck area.

(c) Medium weight rubber gloves and a thin cotton under-glove to absorb perspiration.

(d) Slip-resistant plastic shoe covers, or heavy polyethylene shoe covers with slip-resistant soles, or lightweight rubber boots;

(e) Face shields, vented goggles, or other appropriate protective equipment whenever the possibility of eye irritation exists.

NOTE:

The proper use of protective clothing requires that all openings be closed and that garments fit snugly about the neck, wrists, and ankles.

Accordingly, tape the wrist and ankle junctions, as well as the collar opening on the outer disposable coveralls to prevent contamination of skin and underclothing without restricting physical movement. Employees shall not wear personal clothing under the coveralls.

(2) Establish decontamination areas adjacent and connected to the regulated area, for Class I work (as defined in the glossary) involving more than 25 linear or 10 square feet of TSI or surfacing ACM or presumed asbestos containing material (PACM). Decontamination areas shall consist of an equipment room, shower area, and clean room in series. Use a remote shower and clean room where it is not feasible to locate the shower

between the equipment room and the clean room, where the work is performed outdoors, or when the work takes place on board a ship. When using remote facilities, employees shall remove contamination from their work suits with a HEPA vacuum and don clean suits in the equipment room. Employees shall then proceed to a remote shower and clean room to complete the decontamination process.

(3) Establish decontamination areas adjacent to the regulated area for Class I work involving less than 25 linear or 10 square feet of TSI or surfacing ACM or PACM and for Class II and Class III asbestos work operations where exposures exceed the PEL, or where no negative exposure assessment has been produced. The decontamination area shall consist of an equipment room or area that is covered by an impermeable drop cloth on the floor/deck or horizontal working surface. This area shall be of sufficient size that equipment can be cleaned and personnel may remove their protective equipment without spreading contamination beyond the area. Employees shall proceed to a shower and clean room that may be remote from the regulated area.

(4) Activities shall launder asbestos-contaminated clothing to prevent release of airborne asbestos fibers in excess of the PEL. Contracts governing the laundering of asbestos-contaminated clothing shall specifically require that contractors comply with the precautions specified in references 17-1 through 17-3 as applicable. Contracts shall include specific notice of the asbestos-related hazards and require that the contractor notify his/her personnel of the associated hazards. Seal asbestos-contaminated clothing in impermeable bags and transport in containers that have the required warning labels.

e. Respiratory Protection

(1) General Guidance

(a) Employ engineering control measures and work practices to control and contain airborne asbestos fibers to the lowest feasible level. Do not achieve compliance with the PEL by employee rotation. Do not achieve compliance with the PEL by the use of respirators alone except under the following conditions:

1. During the time period necessary to commence engineering control measures
2. In work situations in which the feasible control methods are not sufficient to maintain the airborne concentration of asbestos fibers below the PEL
3. In work situations where engineering and workplace controls have been implemented, but no industrial hygiene monitoring data exists to verify that such controls have reduced exposure levels below the PEL
4. During emergencies.

(b) Establish a respiratory protection program per chapter 15 of this manual.

(2) Types of Respirators. Select only respirators approved for protection against exposure to asbestos by the National Institute for Occupational Safety and Health (NIOSH). Collect asbestos air sampling data under section 1709b to determine the level of respiratory protection per references 17-1, 17-2, and 17-3.

(a) Do not use disposable respirators for protection against airborne asbestos fibers. The minimum respirator shall be a half facepiece, air-purifying respirator with high efficiency particulate air filter(s) (P100 filters).

(b) For 8-hour TWA exposures of up to 10 times the PEL, use a half face air-purifying respirator with high efficiency particulate air filter(s) (P100 filters) to reduce the concentration of respirable airborne asbestos fibers below the PEL. Use of this respirator for Class I work must comply with paragraph 1704e(3)(a)1.

(c) For 8-hour TWA exposures greater than 10 but not exceeding 50 times the PEL, use a full facepiece air-purifying respirator with high efficiency particulate air filter(s) (P100 filters) to reduce the concentration of respirable airborne asbestos fibers in the respirator below the PEL. Use of this respirator for Class I work must comply with paragraph 1704e(3)(a)1. Refer to paragraph 1704f(2) for fit testing requirements.

NOTE:

Provide personnel with a tight fitting powered air-purifying respirator in lieu of any negative pressure respirator if it is requested and provides adequate protection.

(d) For 8-hour TWA concentrations greater than 50, but not exceeding 100 times the PEL, use a tight fitting powered air purifying respirator equipped with high efficiency particulate air filter(s) or a supplied air respirator operated in a continuous flow mode to reduce the concentration of respirable airborne asbestos fibers in the respirator below the PEL. Use of this respirator for Class I work must comply with paragraph 1704e(3)(a)1.

(e) For 8-hour TWA concentrations of greater than 100, but not exceeding 1000 times the PEL, use a full facepiece supplied air respirator operated in a pressure demand mode to reduce the concentration of respirable airborne asbestos fibers in the respirator below the PEL. Use of this respirator for Class I work must comply with paragraph 1704e(3)(a)1.

(f) If the 8-hour TWA concentration exceeds 1000 times the PEL, or is unknown, use a full facepiece supplied air respirator operated in pressure demand mode equipped with an auxiliary positive pressure, self-contained breathing apparatus (SCBA) to reduce the concentration of respirable airborne asbestos fibers in the respirator below the PEL.

(3) Respirator Requirements

(a) In addition to selecting respirators per references 17-1, 17-2 and 17-3, wear respirators during the following:

1. All Class I asbestos work requires respirators. For all Class I work above 1 f/cc as an 8-hour TWA, use a full face, pressure-demand supplied air respirator equipped with either an auxiliary self-contained air supply or HEPA egress cartridges. For all Class I work between 0.1 and 1 f/cc as an 8-hour TWA, use a tight-fitting powered air-purifying respirator equipped with HEPA filters. For Class I work below 0.1 f/cc as an 8-hour TWA, use any respirator approved for asbestos.

2. Class II and III asbestos work usually requires a half-mask air purifying respirator, other than a disposable respirator, equipped with high efficiency particulate air filter(s) (P100 filters). Refer to appropriate sections in references 17-2 and 17-3 on roofing work.

3. Class IV workers shall wear the same respiratory protection as other workers in the regulated area.

(b) Employees who wear respirators may leave the regulated area to wash their faces and respirator face pieces whenever necessary to prevent skin irritation associated with respirator use.

(c) Do not assign personnel to tasks requiring the use of respirators if, based upon his/her most recent medical evaluation, it is determined that the employee will be unable to function normally while wearing a respirator or that the safety or health of the employee or other personnel will be impaired by his/her use of a respirator.

f. Respirator Fit Testing

(1) Per chapter 15, fit test all Navy personnel issued respirators, equipped with tightly fitting face pieces (including pressure demand respirators) for protection against airborne asbestos fibers in the negative pressure mode.

(2) Perform either quantitative or qualitative fit tests at the time of initial fitting and at least annually thereafter. Conduct fit testing per chapter 15. Qualitative fit testing is acceptable for both half mask and full-face respirators worn as protection against asbestos concentrations that are less than 10 times the PEL.

g. Communication of Hazards

(1) Communicate asbestos hazards with warning signs and labels to all potentially exposed personnel as indicated in references 17-1, 17-2 and 17-3.

(2) The National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations also contain specific labeling requirements for waste disposal. Off-site disposal requires the name of the waste generator and location where the waste was generated, as specified in reference 17-9.

1705. Asbestos Clearance Level Criteria

The asbestos clearance level, as defined here, provides quality control following asbestos abatement operations. Perform all asbestos abatement operations with strict adherence to good housekeeping procedures and adequate control measures to minimize, to the greatest extent feasible, the release of asbestos fibers to the environment. All asbestos abatement projects shall undergo a thorough visual inspection. Thoroughly clean any visible dust or debris per reference 17-6. Clearance air sampling is required of all regulated areas for which a negative exposure assessment has not been made. As a minimum, perform air sampling as described below:

a. Sample the air inside the regulated area to determine if airborne fibers are less than 0.01 f/cc using the NIOSH 7400 method. The minimum sample volume is 1200 liters. Use aggressive air sampling where required by law, to perform clearance air sampling. The necessary number of samples may vary significantly, and therefore, should be determined locally on a case-by-case basis. Criteria used to determine if the abatement project is considered complete are listed below for both buildings and ships:

(1) For buildings, the project is considered complete if all samples collected are less than 0.01 f/cc.

(2) For ships, the project is considered complete if samples collected are no greater than 0.01 f/cc or background, whichever is greater, as measured prior to starting the non-emergency asbestos abatement but never greater than 0.1 f/cc.

(a) Reference 17-10 and NIOSH 7400 method provides technical guidance for sampling and analysis.

(b) Personnel who are not industrial hygienists (IHs), industrial hygiene technicians, or certified exposure monitors, shall complete a formal course, per appendix 17-B, prior to performing asbestos sampling. In addition, on the job training (OJT) is required under the direction of the cognizant IH. The cognizant IH will certify, in writing, as competent, those individuals who successfully complete the OJT.

1706. Disposal Procedures

In preparation for disposal, adequately wet asbestos wastes prior to double bagging in heavyduty plastic bags (at least 6 mils thick) or other suitable impermeable containers (see section 1712 (Environmental Protection)). Mark all bags or containers with standard asbestos warning labels. Distinctively color code asbestos waste containers, such as bags, trash cans, dumpsters, etc., to ensure easy recognition. Label dumpsters ASBESTOS WASTE ONLY or otherwise mark per paragraph 1704g. Exercise care to prevent bags and other containers from rupturing when being moved to a dumpster or other suitable vehicle for transport to a proper disposal site.

1707. Asbestos Management Program Ashore

The program objective is to provide a long-term solution that will eliminate personnel exposure to airborne asbestos fibers in occupied Navy buildings and workspaces through cost effective management of ACM. The program contains three key elements:

- a. Survey and material evaluation
- b. Operations and maintenance (O&M) program
- c. Design and abatement. Centrally managed Hazard Abatement funds are available for design and abatement of high priority asbestos projects.

The asbestos program manager (APM) shall be appointed in writing by the activity commanding officer to implement the activity's Asbestos Management Program. The APM may be located in the public works department, safety and health department, or the environmental department. Smaller activities, with host-tenant relationships, may use the building manager or facilities representative to act as the liaison with the host, when a written agreement exists specifying that the host is responsible for carrying out the APM's duties. When such a written agreement exists, training requirements for the activity representative will be as mutually agreed. The protection of employees and program elements of appendix 17-C are thereby met. Appendix 17-C provides details of the program and division of responsibilities.

1708. Training

Follow training and certification requirements of appendix 17-B. Maintain training records per chapter 6. Make copies of references 17-1, 17-2 or 17-3 and other handout type training materials available to employees upon request at no charge.

1709. Industrial Hygiene

a. Exposure Monitoring Plan. Establish an exposure monitoring plan to characterize exposures for every employee with occupational exposure to asbestos. In this regard, perform both personal (employee) air sampling and environmental (area) monitoring. Collect personal air samples in the breathing zone of the employee. Give the employee or designated employee representative the opportunity to observe sampling or monitoring. Within a class or category of similar operations, conduct sampling with a frequency and pattern to accurately and reproducibly represent the airborne levels produced by a typical operation within the class or category. Sampling, of all areas where repetitious asbestos work is performed, is at the discretion of the cognizant IH per references 17-1, 17-2, and 17-3. Sample each non-repetitious asbestos removal operation at least once to determine the maximum exposure potential of that operation. Personnel performing personal air sampling to determine exposure to airborne asbestos, who are not IHs, industrial hygiene technicians, or certified exposure monitors, shall complete a formal course in asbestos sampling per appendix 17-B. In addition, on the job training is required under the direction of the cognizant IH. The cognizant IH will certify in writing as competent those individuals who successfully complete the OJT.

b. Method of Sampling. Collect breathing zone air samples, which are representative of the 8-hour TWA exposure of each employee for comparison to the PEL, and breathing zone air samples, which are representative of the 30-minute short term exposure for comparison to the EL, per appendix A of references 17-1, 17-2 and 17-3. Collect environmental air samples using the current revision of the NIOSH 7400 method along with any additional guidance from local requirements. The Industrial Hygiene Field Operations Manual provides additional information on sampling (reference 17-10).

c. Method of Measurement. Analyze asbestos air samples using personnel who have successfully completed the NIOSH 582 or an equivalent course. Perform analysis of samples by the appropriate method, ORM or NIOSH, and specify the laboratory results. .

d. Monitoring Records and Retention. Complete documentation on the Industrial Hygiene Air Sampling Survey form (NEHC 5100/13) at: <http://www-nehc.med.navy.mil/ih/ihfom.htm>, or computerized equivalent. Record and retain exposure data as indicated in Chapter 8.

1710. Asbestos Medical Surveillance Program (AMSP)

a. General. The AMSP is designed to identify signs and symptoms of asbestos related medical conditions as early as possible through periodic medical evaluations. The program also provides for identification of medical conditions which may increase the employee's risk of impairment from asbestos exposure and for counseling of workers on medical conditions related to asbestos exposure.

b. Criteria for Inclusion of Personnel in the AMSP Include personnel who meet the exposure criteria defined in references 17-1, 17-2, and 17-3 in the AMSP. These persons must remain in the program for the duration of current exposure. Civil service employees may be required to complete medical examinations related to asbestos exposure per reference 17-11.

c. Criteria for Removal of Personnel from the AMSP

(1) Give an employee in the AMSP who changes to a job either without asbestos exposure, or at a level below the current exposure criteria, a termination evaluation to meet requirements per references 17-1, 17-2, and 17-3. The Chief, Bureau of Medicine and Surgery (BUMED) has a program for persons previously in the AMSP, or with significant past exposure, to continue receiving medical evaluations on a voluntary basis. The details of this program are contained in references 17-12 and 17-13.

(2) When an employee enrolled in the AMSP is being removed from the potential exposure assignment, and has never met the exposure criteria in references 17-1, 17-2, and 17-3, termination evaluation is not required (for example, persons assigned to work on asbestos removal teams who have not been exposed at or above the current exposure levels). Document the health record (HR) when the employee is removed from the AMSP, and forward the employee's name and social security number to Navy Environmental Health Center (NEHC) stating the employee never met the applicable exposure criteria.

(3) When an employee has been inappropriately enrolled in the AMSP, accomplish administrative removal only by the responsible occupational health care professional (with occupational medical physician consultation as needed). Remove an employee from the program if review of the records indicate the employee did not meet the OSHA criteria for inclusion in the program, and there is no medical evidence (based on AMSP medical parameters) to warrant inclusion in the AMSP. Clearly document the HR with the reason(s) for removal, and forward the employee's name and social security number to NEHC stating the employee should not have been placed in the AMSP.

(4) Provide information and counseling on the value of continuing medical evaluations to employees upon termination of employment.

(a) Upon termination of Navy employment, civilian personnel are no longer eligible for health care in Navy clinics and cannot be followed up in the Navy AMSP. Encourage employees to obtain a copy of their health record for follow-up with their private physician.

(b) Retired military personnel may continue to be seen in Navy clinics for AMSP evaluations, subject to the conditions listed in reference 17-14. Guidelines and protocols for entry in the AMSP based on past exposure are found in references 17-12 and 17-13.

d. Medical Personnel Performing Medical Surveillance Evaluations. Perform medical evaluations by, or under the supervision of a credentialed physician. Nurse practitioners, physician assistants, independent duty corpsmen and occupational health nurses authorized to provide health assessments under the BUMED Quality Assessment and Improvement Program may provide AMSP medical evaluations using approved medical protocols. The health care provider shall have a copy of this chapter, including references 17-1, 17-2, and 17-3.

e. Situational Medical Evaluations. Conduct situational evaluations in response to a specific incident for which a hazardous overexposure is suspected. Personnel are not enrolled in the AMSP on the basis of a one-time exposure to asbestos or a one-time medical evaluation for actual or potential asbestos exposure unless the criteria per references 17-1, 17-2, and 17-3 are met. When exposure does not meet the criteria for enrollment in the AMSP, use AMSP HR forms to document situational evaluations for asbestos exposures, and mark the outside of the HR ASBESTOS per reference 17-15. Do not forward AMSP forms to NEHC unless the employee is placed in the AMSP.

f. Content of Medical Evaluation. Reference 17-12 contains the medical protocols for the AMSP employees in compliance per references 17-1, 17-2, and 17-3.

(1) Physical Evaluation. Reference 17-13 lists the forms required for documenting the review and update of medical and occupational history and evaluation.

(2) Pulmonary Function Test. Follow the spirometry testing requirements found in reference 17-13.

(3) Chest X-ray. The local radiologist shall read the posterior/anterior chest X-ray required per references 17-1, 17-2, and 17-3, and follow procedures in reference 17-13. This must be forwarded for a reading using the International Labor Organization (ILO) 1980 Classification for Pneumoconioses (generally known as B readings).

(4) Medical Evaluation Counseling. Counsel all personnel on the AMSP regarding the results of the medical evaluation. Complete and distribute A Physician's Written Opinion per references 17-1, 17-2, and 17-3. Include information from the local radiologist's official interpretation of the chest X-ray as part of the medical evaluation; if the B reading results

received subsequently provide new information, inform the employee of those findings.

g. Documentation of Medical Evaluations. Document AMSP medical data in the HR and maintain the data in accordance with reference 17-16. Prominently mark the exterior of the HR and x-ray jackets ASBESTOS as described in reference 17-15.

h. Medical Records Including Chest X-rays. Reference 17-17 requires all medical information collected for occupational health purposes, including all AMSP medical data, to be maintained in the HR.

(1) Transfer, Retention and Retirement of Health Records. Forward HRs, per reference 17-15, when the active duty member or civilian employee transfers to another location or retires. Original chest x-rays are a permanent part of the HR and the medical clinic shall maintain them, per references 17-1, 17-2, and 17-3. If the civilian transfers to an agency outside the Navy, the Navy medical clinic shall maintain the chest films and retire them per current directives.

(2) Access to Medical Data. Refer to chapter 8 along with references 17-15 and 17-18 to implement the Federal regulations relating to the access and privacy of medical data.

(3) Central Asbestos Medical Surveillance Program Registry. The Navy's mechanism for reporting occupational diseases is via the safety chain of command to the Naval Safety Center. The NEHC maintains a central database registry containing selected information related to persons in the Asbestos Medical Surveillance Program. This is used to track the number of persons routinely being evaluated for potential asbestos-related disease and health record information related to asbestos medical evaluations for program management purposes.

1711. Work Performed by Private Contractors

For shore activities, each contract for work to be performed by a private contractor in Navy facilities and ships in the United States and abroad shall comply with appropriate OSHA and EPA regulations. Use reference 17-19 to design asbestos actions in Navy facilities. Invoke reference 17-20 in contracts for the control of asbestos operations on board Navy ships undergoing construction and/or repair.

1712. Environmental Protection

a. General

(1) All Federal, State and local requirements, including emission standards and the provisions of this chapter shall be met. For additional information, contact the cognizant IH and the activity environmental coordinator.

(2) Technical assistance for air pollution control is available upon request from the COMNAVFACENGCOM Engineering Field Divisions (EFDs).

b. Properly contain and dispose of asbestos materials in an approved landfill.

NOTE:

Some States may require asbestos materials to be disposed of in specially designated landfills. Consult with the activity environmental coordinator prior to any disposal. Where State or local agencies regulate asbestos as a hazardous waste (HW), the Navy may be responsible for the management of all administrative and disposal requirements as the generator of the waste. The landfill operator will record specific locations within landfills used for the disposal of asbestos materials and the cognizant naval facility will retain a copy per reference 17-1, 17-2, 17-3 and 17-9. This practice should reduce the possibility of future unearthing and rupturing of disposal containers.

c. Application of National Emission Standards for Asbestos

(1) The National Emission Standards for Asbestos are contained in references 17-9 and 17-21. The standards include:

(a) Demolition and renovation of ACM in facilities and ships. Prior to renovation or demolition of facilities, conduct a thorough re-inspection for ACM by an asbestos inspector qualified per appendix 17-B.

(b) Spray application of materials containing 1 percent or more asbestos is prohibited for buildings, structural members, pipes, and conduits.

(c) Fabrication, installation, and disposal of waste asbestos. Specific requirements shall be met for these processes. Procedures for the handling, transporting, and disposing of asbestos waste are prescribed in the standards (reference 17-1, 17-2, and 17-3). Wet down waste asbestos or asbestos-contaminated material and place in impermeable containers prior to transporting for disposal. Label the containers as prescribed in this chapter. In addition label transport vehicles during loading and unloading in conformance to reference 17-9.

(2) The activity shall ensure that written notification to the EPA and/or cognizant State or local agencies is done per reference 17-9 and State and local regulations. Guidance on notification requirements is found in appendix 17-D.

1713. Responsibilities

The following responsibilities are assigned to provide an effective asbestos exposure control program throughout the Navy.

a. Echelon 2 Commands shall:

(1) Ensure that asbestos containing materials are not procured or specified when a suitable substitute exists per paragraph 1702 b.

(2) Review and purge current military specifications, technical manuals, contract guide specifications, and any other document or specification under Navy cognizance of requirements for asbestos-containing materials where suitable non-asbestos substitutes exist.

(3) Provide advice and technical assistance, in coordination with BUMED, to define appropriate engineering and work practice controls, and identify acceptable non-asbestos-containing substitute materials.

(4) Ensure program support by providing the resources required to meet the regulatory standards for the control of asbestos as prescribed by this chapter.

b. The Chief, Bureau of Medicine and Surgery (BUMED) shall:

(1) Centrally manage the AMSP.

(2) Provide professional, technical, and training assistance to commands for the purpose of evaluating the potential for asbestos exposure.

(3) Manage the asbestos fiber counting and identification program, including laboratory quality control.

(4) Establish the AMSP Medical Surveillance Program Control Database and provide data analysis and trend analysis to CNO (N09F) at least semiannually.

c. The Commander, Naval Facilities Engineering Command shall:

(1) Provide technical oversight of the facility Asbestos Management Program Ashore.

(2) Maintain guide specifications in accordance with current regulations.

d. The Commander, Naval Sea Systems Command shall maintain reference 17-20 in accordance with current regulations.

e. Commanding officers of shore activities shall:

(1) Apply control measures, monitoring procedures, O&M plans prescribed in this chapter, to processes using asbestos or ACMs.

(2) Comply with the National Emission Standard for Asbestos per Section 1712.

(3) Budget resources in order to meet these asbestos control requirements.

(4) Appoint an APM, in writing, to implement the requirements of section 1707 and appendix 17-C.

(5) Maintain a current copy of applicable State and local asbestos

requirements.

Chapter 17

References

- 17-1. Title 29 Code of Federal Regulations (CFR) section 1910.1001, OSHA Asbestos Standard, latest revision, http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9995
- 17-2. Title 29 Code of Federal Regulations (CFR) section 1926.1101, OSHA Asbestos Construction Standard, latest revision, http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10862
- 17-3. Title 29 Code of Federal Regulations (CFR) section 1915.1001, Asbestos Exposure in all Shipyard Employment Work, latest revision, http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10287
- 17-4. OPNAVINST 5100.19D CH-1 of 30 Aug 01, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat <http://www.safetycenter.navy.mil/instructions/afloat/510019D.htm>
- 17-5. Title 40 Code of Federal Regulations (CFR) 763 Chapter I-EPA Appendix C Subpart E, Asbestos Model Accreditation Plan, latest revision, <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=a03ef02f6a5a36138cb6fa9c3c58a9c8&rqn=div5&view=text&node=40:29.0.1.1.18&idno=40 - 40:29.0.1.1.18.2.1.17.4>
- 17-6. American Society for Testing and Materials (ASTM) Standard Practices for Visual Inspection of Asbestos Abatement Projects (E1368-90) <http://www.astm.org/>.
- 17-7. American Conference of Governmental Industrial Hygienists, Inc., Committee on Industrial Ventilation, Industrial Ventilation A Manual of Recommended Practice (NOTAL) <http://www.acgih.org/home.htm>.
- 17-8. American National Standards Institute (ANSI) Z9.2-2001, American National Standard for Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems, (NOTAL) <http://www.ansi.org/>.
- 17-9. Title 40 Code of Federal Regulations (CFR) Part 61 of July 1997, Subpart M, <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=474f779beade290997e4611971d078f4&rqn=div5&view=text&node=40:8.0.1.1.1&idno=40 - 40:8.0.1.1.1.13>
- 17-10. NEHC Technical Manual, Industrial Hygiene Field Operations Manual, latest revision <http://www-nehc.med.navy.mil/ih/ihfom.htm>.

- 17-11. Title 5 Code of Federal Regulations (CFR) 339.205 and 339.301, Medical Qualification Determination, http://www.access.gpo.gov/nara/cfr/waisidx_02/5cfr339_02.html.
- 17-12. NEHC Technical Manual, Medical Surveillance Procedures Manual and Medical Matrix, latest revision http://www-nehc.med.navy.mil/downloads/Occmed/Medical_matrix_Feb_2001.pdf.
- 17-13. NEHC Technical Manual, Occupational Medicine Field Operations Manual, latest revision <http://www-nehc.med.navy.mil/od/Documents/FOM.PDF>.
- 17-14. NAVMEDCOM 6320.3B Medical and Dental Care for Eligible Persons at Navy Medical Department Facilities.
- 17-15. NAVMED Publication P-117, Manual of the Medical Department (NOTAL) <http://www-nmcp.med.navy.mil/HMTraining/index.asp>.
- 17-16. SECNAV Manual M-5210.1 Department of the Navy Management Manual.
- 17-17. Title 29 Code of Federal Regulations (CFR) 1910.1020 Subpart Z, Access to Employee Exposure and Medical Records, http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10027
- 17-18. SECNAVINST 5211.5D of 17 July 92, Department of the Navy Privacy Act (PA) Program http://neds.daps.dla.mil/Directives/5211_5d.pdf.
- 17-19. Naval Facilities Engineering Command Guide Specifications (NFGS) -13281
- 17-20. NAVSEA STANDARD ITEM NO 009-10, of 2 July 93, Control of Shipboard Asbestos Containing Material (ACM)
- 17-21. 42 U.S.C. Section 7401 et seq., of Nov 25 90, (PL 101-549), Clean Air Act, http://www.epa.gov/oar/oaq_caa.html.

Appendix 17-A
Determining Applicability of State and Local Requirements
on Asbestos Removal and Disposal

<u>Asbestos Workers</u>	<u>Federal OSHA</u>	<u>State/Local OSHA</u>	<u>Federal CAA</u>	<u>State/Local CAA</u>
<u>Federal (On Base)</u>				
Removal	Yes ²	No	Yes	Yes
Disposal	Yes ²	No	Yes	Yes
<u>Federal (Off Base)</u>				
Removal	Yes ²	No	Yes	Yes
Disposal	Yes ²	No	Yes	Yes
<u>Contractor (On Base)</u>				
Removal	Yes	No (Exclusive Juris)	Yes	Yes
		Yes (Concurrent Juris)	Yes	Yes
Disposal	Yes	No (Exclusive Juris)	Yes	Yes
		Yes (Concurrent Juris)	Yes	Yes
<u>Contractor (Off Base)</u>				
Removal	Yes	Yes	Yes	Yes
Disposal	Yes	Yes	Yes	Yes

OSHA - Occupational Safety and Health Administration
CAA - Clean Air Act

¹ Material in this appendix was provided by the Navy Office of General Counsel

² under E.O.12196

Appendix 17-B

ASBESTOS TRAINING AND CERTIFICATION REQUIREMENTS
LISTED BY TYPE OF OPERATION

TYPE OPERATION	TYPE PERSONNEL	TYPE ACCREDITATION REQUIRED *	INITIAL TRAINING REQUIREMENT	ANNUAL RECERT OR REFRESH R & LENGTH	REGULATORY CITATION
DESIGN OF PROJECTS WHICH INVOLVE REMOVAL OF ACM OR WORK IN PROXIMITY OF ACM/PACM	ARCHITECTS, ENGINEERS, PLANNERS, ESTIMATORS (P&Es) & APMs	ABATEMENT PROJECT DESIGNER	3-DAY ABATEMENT PROJECT DESIGNER COURSE	YES 1 DAY	** 40 CFR 763.92
REVIEW OF PROJECTS TO DETERMINE ADEQUACY OF CONTROL	ENGINEERS, INDUSTRIAL HYGIENISTS, SAFETY PERSONNEL & APMs	ABATEMENT PROJECT DESIGNER	3-DAY ABATEMENT 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, QUALIFIED PERSON,	ASBESTOS ABATEMENT CONTRACTOR/ SUPERVISOR	5-DAY ASBESTOS ABATEMENT CONTRACTOR/ SUPERVISOR TRAINING 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

TYPE OPERATION	TYPE PERSONNEL	TYPE ACCREDITATION REQUIRED *	INITIAL TRAINING REQUIREMENT	ANNUAL RECERT OR REFRESH R & LENGTH	REGULATORY CITATION
	ROICC PERSONNEL				
PERSON RESPONSIBLE FOR MAINTENANCE AND HOUSEKEEPING (CLASS III AND IV ASBESTOS WORK)	MAINTENANCE AND HOUSEKEEPING SUPERVISORS, COMPETENT, QUALIFIED PERSON	NONE	2-DAY OPERATIONS AND MAINTENANCE TRAINING	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 I.D.	SAFETY PERSONNEL INDUSTRIAL HYGIENIST, P&Es, & FACILITY INSPECTORS	ASBESTOS INSPECTOR	3-DAY ASBESTOS INSPECTOR COURSE	YES 1 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, SAFETY PERSONNEL & IHs	ASBESTOS MANAGEMENT PLANNER	2-DAY ASBESTOS MANAGEMENT PLANNER COURSE	YES 1 DAY	** 40 CFR 763.92

* 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

** APPLIES TO PUBLIC AND COMMERCIAL BUILDINGS

TYPE OPERATION	TYPE PERSONNEL	TYPE ACCREDITATION REQUIRED *	INITIAL TRAINING REQUIREMENT	ANNUAL RECERT OR REFRESH R & LENGTH	REGULATORY CITATION
			(INSPECTOR ACCREDITATION REQUIRED AS PREREQUISITE)		
LABORATORY ANALYSIS OF AIRBORNE SAMPLE	INDUSTRIAL HYGIENE, SAFETY PERSONNEL	PROFICIENCY ANALYTICAL TESTING (PAT) ROUNDS	5-DAY NIOSH 582 COURSE OR EQUIVALENT	ES (PAT)	29 CFR 1910.1001 APP. A 29 CFR 1915.1001 APP. A 29 CFR 1926.1101 APP. A
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 TRAINING 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	ABATEMENT	NONE	8-HOUR ASBESTOS	YES	29 CFR 1915.1001(k)(9)

* 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

** APPLIES TO PUBLIC AND COMMERCIAL BUILDINGS

TYPE OPERATION	TYPE PERSONNEL	TYPE ACCREDITATION REQUIRED *	INITIAL TRAINING REQUIREMENT	ANNUAL RECERT OR REFRESHER & LENGTH	REGULATORY CITATION
WORK ONLY	WORKERS		TRAINING REQUIREMENTS ARE RELAXED WHEN ONLY ONE GENERIC CATEGORY OF BUILDING MATERIAL IN CLASS II WORK IS DONE.	NOT SPECIFIED	29 CFR 1926.1101(k)(9)
PERSONNEL WHO ENGAGE IN CLASS III OPERATIONS ONLY	MAINTENANCE WORKERS	NONE	16-HOUR OPERATIONS & MAINTENANCE REQUIREMENTS ARE RELAXED WHEN ONLY ONE GENERIC CATEGORY OF BUILDING MATERIAL IN CLASS III WORK IS DONE.	YES NOT SPECIFIED	29 CFR 1915.1001(k)(9) 29 CFR 1926.1101(k)(9)
PERSONNEL WHO	MAINTENANCE	NONE	2-HOUR	YES	29 CFR

* 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

** APPLIES TO PUBLIC AND COMMERCIAL BUILDINGS

TYPE OPERATION	TYPE PERSONNEL	TYPE ACCREDITATION REQUIRED *	INITIAL TRAINING REQUIREMENT	ANNUAL RECERT OR REFRESH R & LENGTH	REGULATORY CITATION
ENGAGE IN CLASS IV OPERATIONS ONLY AND HOUSEKEEPING WHERE ACM OR PACM IS PRESENT	& CUSTODIAL WORKERS		ASBESTOS AWARENESS TRAINING	2 HOURS	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	YES 1 DAY	RECOMMENDED TRAINING

* 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

** APPLIES TO PUBLIC AND COMMERCIAL BUILDINGS

TYPE OPERATION	TYPE PERSONNEL	TYPE ACCREDITATION REQUIRED *	INITIAL TRAINING REQUIREMENT	ANNUAL RECERT OR REFRESH R & LENGTH	REGULATORY CITATION
			PREREQUISITE)		
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 NOT SPECIFIED	29 CFR 1910.1001(j)(7)

* 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

** APPLIES TO PUBLIC AND COMMERCIAL BUILDINGS

Appendix 17-C

Asbestos Management Program Ashore

The Navy Asbestos Management Program Ashore consists of the following three elements: operations and maintenance (O&M) program, survey and material assessment, and design and abatement. These elements are the key components of an activity's asbestos program to protect personnel from asbestos exposure. The cornerstone of the program is the O&M program. The first step in the process is to designate an asbestos program manager (APM) per paragraph 1707. The APM is responsible for overseeing all aspects of the asbestos management program.

1. Operations and Maintenance Program

a. Objective. Ensure that personnel are properly trained and protected from asbestos exposure caused by inadvertent disturbance of asbestos-containing material (ACM). Provide a living document to manage and record all asbestos-related actions.

b. Scope. The O&M program provides the framework for an activity to manage and document all asbestos actions. An active and aggressive O&M program protects personnel by ensuring that any ACM or presumed asbestos containing material (PACM) is tested before maintenance or repair operation disturbs it, and that proper work practices are employed whenever ACM is disturbed. An O&M program includes: notification, work requests and controls, inventory and periodic surveillance, work practices, record keeping, training, and worker protection. The APM will incorporate elements of the O&M program into the activity's existing work request and control system to the greatest extent possible. Additionally, the APM will ensure the examining physician possesses the information required by references 17-1, 17-2 and 17-3. Guidance for developing an O&M program is given in Naval Facilities Engineering Service Center (NFESC) 70.2-010.1, "Model Operations and Maintenance Program for Buildings Containing Asbestos" and the National Institute of Building Sciences (NIBS), "Guidance Manual: Asbestos Operations & Maintenance Work Practices. Include each building with ACM in the O&M program until no ACM remains.

c. Responsibility. Activity.

d. Method. APM, COMNAVFACENGCOM Engineering Field Divisions (EFD), Public Works Center (NAVFACENGCOMS), other Navy sources, or contract.

e. Funding Source. Activity.

f. Support. EFDs will maintain open-ended reimbursable contracts for developing O&M plans, or assist with tailoring NFESC generic O&M plan to meet activity requirements.

2. Survey and Material Assessment

a. Objective. Locate, identify, and assess the condition of all types of ACM and PACM in shore facilities. Provide a record of survey results to determine the degree of hazard. A survey is extremely helpful in carrying out an asbestos O&M plan; however, the inventory can

be developed, building by building, as needed, under the O&M program. If materials are not sampled, presume all suspect material contains asbestos until laboratory analysis proves otherwise.

b. Scope. Inspect facilities to identify, locate, and assess the condition of all suspect friable and non-friable ACM. Inspectors will be trained by an EPA or State accredited asbestos building inspectors course. Assess the condition of the material to identify potential hazards and prioritize abatement actions. As a minimum, take identification samples of damaged and significantly damaged homogeneous areas. Guidance for survey and material assessment is defined in NFESC 70.2-010, "Asbestos Facility Inventory/Assessment Protocol." Prepare NAVOSH Deficiency Abatement Program/ Management Information System (DAP/MIS), form NEESA 3900/12, project formats, with cost estimates outlining recommended abatement actions for damaged and significantly damaged materials, per chapter 12 of this manual.

c. Responsibility. Activity.

d. Methods. In-house, NAVFACENGCOMS, other Navy sources, or contract. Forward DAP/MIS project formats to the EFDs, via chain of command outlined in NAVFACINST 5100.14A (NOTAL), for entry into the hazard abatement database.

e. Funding Source. Budget submitting office (BSO) or activity.

f. Support. COMNAVFACENGCOM EFDs will maintain open-ended reimbursable contracts for conducting surveys and material assessments.

3. Design and Abatement

a. Objective. Develop and execute plans and specifications for hazard abatement projects to eliminate hazardous conditions caused by damaged or significantly damaged ACM. If ACM is removed, replace with asbestos-free materials, if available.

b. Scope. Develop abatement projects to remove, encapsulate, or enclose damaged or significantly damaged ACM. Project designers and contractors will be trained by an EPA, or State-accredited asbestos project designer course. The projects will abate hazards, ensure worker and building occupant protection, and include proper procedures for final inspection, acceptance, and asbestos waste disposal.

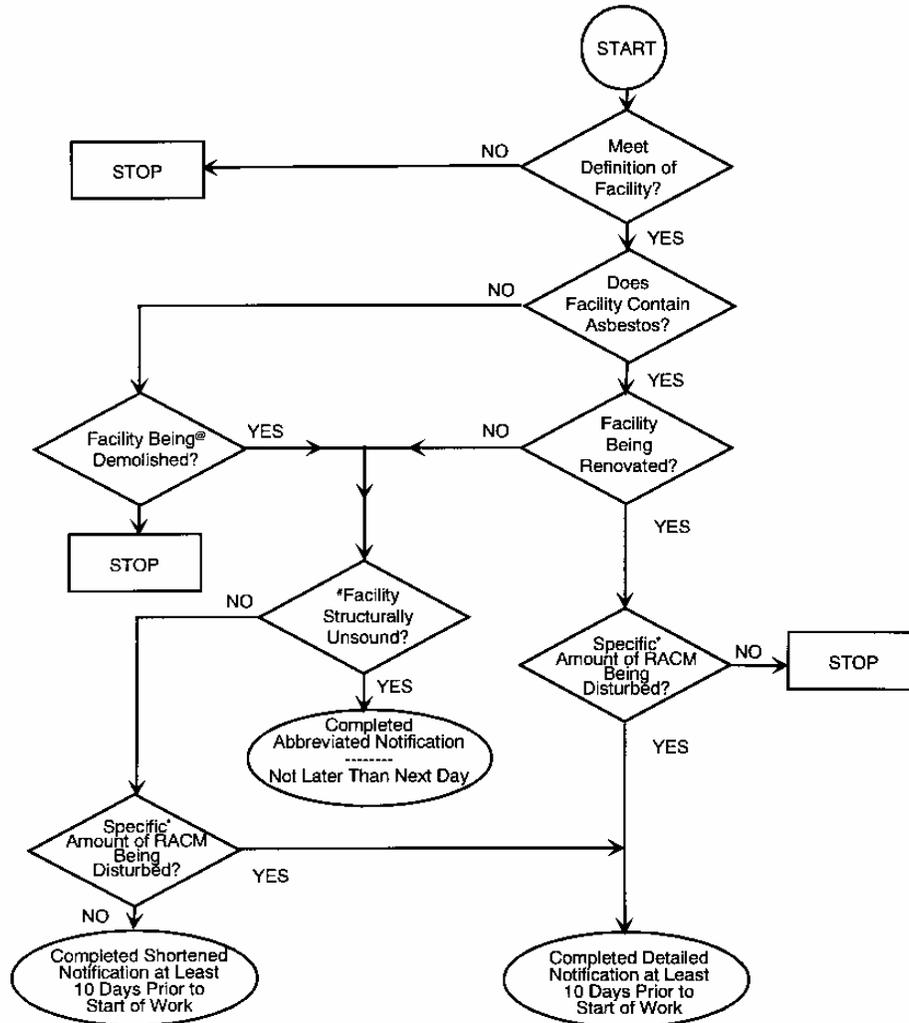
c. Responsibility. Activity.

d. Method. In-house, NAVFACENGCOMS, other Navy sources, or contract.

e. Funding Source. COMNAVFACENGCOM centrally managed hazard abatement account, budget submitting office, and activity.

f. Support. COMNAVFACENGCOM EFDs will maintain open-ended reimbursable contracts for developing hazard abatement projects.

Appendix 17-D
17-Information from NESHAP Asbestos Regulations



* Specific - At least 260 ft, 160 ft², or 35 ft³ of RACM
Under Order of State or Local Government Agency Because Facility is Unsafe or in Danger of Imminent Collapse

(40CFR61, Nov 1990)

Decision Logic to Determine Notification Requirements

- * Specific - At least 260 ft, 160 ft², or 35 ft³ of RACM
- # Under Order of State or Local Government Agency Because Facility Is Unsafe or in Danger of Imminent Collapse
- @ The term "demolished" means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

For further information, consult the following in 40 CFR61:

Detailed Notification: Paragraph 61.145

Shortened Notification: Paragraphs 61.145(b)(1), (2), (3)(i) and (iv), and (4)(i) through (vii) and (4)(ix) and (4)(xvi).

Abbreviated Notification: Paragraphs 61.145 (b)(1), (2), (3)(iii), (4) (except (viii)), (5), and (c)(4) through (c)(9).

SAMPLE NOTIFICATION OF DEMOLITION AND RENOVATION

Operator Project #		Postmark	Date Received	Notification #
I. TYPE OF NOTIFICATION (O - Original R - Revised C - Canceled):				
II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)				
OWNER NAME:				
Address:				
City:		State:	Zip:	
Contact:			Tel:	
REMOVAL CONTRACTOR:				
Address:				
City:		State:	Zip:	
Contact:			Tel:	
OTHER OPERATOR:				
Address:				
City:		State:	Zip:	
Contact:			Tel:	
III. TYPE OF OPERATION (D - Demo O - Ordered Demo R - Renovation E - Emerg Renovation):				
IV. IS ASBESTOS PRESENT? (Yes/No):				
V. FACILITY DESCRIPTION (Include building name, number, and floor or room number)				
Bldg. Name:				
Address:				
City:		State:	County:	
Site Location:				
Building Size		# of Floors:	Age in Years:	
Present Use:			Prior Use:	
VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:				
VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING: 1. Regulated ACM to be removed 2. Category I ACM Not Removed 3. Category II ACM Not Removed		RACM to be removed	Nonfriable Asbestos Material Not to be Removed	
			Cat I	Cat II
			UNIT	
Pipes			LnFt:	Ln m:
Surface Area			SqFt:	Sq m:
Vol RACM Off Facility Component			CuFt:	Cum:
VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: Complete:				
IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: Complete:				

NOTE: States may require the use of state modified forms in place of the forms provided in this Appendix.

SAMPLE NOTIFICATION OF DEMOLITION AND RENOVATION (Cont'd)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:		
XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATIONS SITE:		
XII. WASTE TRANSPORTER #1		
Name:		
City:	State:	Zip:
Contact Person:		Telephone:
WASTE TRANSPORTER #2		
Name:		
Address:	State:	Zip:
Contact:		Telephone:
XIII. WASTE DISPOSAL SITE		
Name:		
Location:		
City:	State:	Zip:
Telephone:		
XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:		
Name:	Title:	
Authority:		
Date of Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY):	
XV. FOR EMERGENCY RENOVATIONS		
Date and Hour of Emergency (MM/DD/YY):		
Description of the Sudden, Unexpected Event:		
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLER, PULVERIZED, OR REDUCED TO POWDERED.		
XVI. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation)		
		(Signature of Owner/Operator)
		(Date)
XVII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.		
		(Signature of Owner/Operator)
		(Date)

SAMPLE RECORD OF VISIBLE EMISSION MONITORING

Date of inspection (mo/day/yr)	Time of inspection (a.m./p.m.)	Air cleaning device or fugitive source designation or number	Visible emissions observed (yes/no), corrective action taken	Daily operating hours	Inspector's initials

SAMPLE AIR CLEANING DEVICE INSPECTION CHECKLIST

- 1. Air cleaning device designation or number _____
- 2. Date of inspection _____ _____ _____
- 3. Time of inspection _____ _____ _____
- 4. Is air cleaning device operating properly? (Yes/No) _____ _____ _____
- 5. Tears, holes, or abrasions in fabric filter? (Yes/No) _____ _____ _____
- 6. Dust on clean side of fabric filters? (Yes/No) _____ _____ _____
- 7. Other signs of malfunctions or potential malfunctions? (Yes/No) _____ _____ _____
- 8. Describe other malfunctions or signs of potential malfunctions _____

- 9. Describe corrective actions taken. _____

- 10. Date and time corrective action taken _____ _____ _____

11. Inspected by

_____	_____	_____	_____
(Print/Type Name)	(Title)	(Signature)	(Date)
_____	_____	_____	_____
(Print/Type Name)	(Title)	(Signature)	(Date)

SAMPLE WASTE SHIPMENT RECORD

Generators	1. Work site name and mailing address		Owner's Name		Owner's telephone no.	
	2. Operator's name and address				Operator's telephone no.	
	3. Waste disposal site (WDS) name, mailing address, and physical site location				WDS phone no.	
	4. Name and address of responsible agency					
	5. Description of materials		6. Containers No.		7. Total quantity m ³ (yd ³)	
			Type			
	8. Special handling instructions and additional information					
	9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.					
Printed/typed name and title		Signature		Month Day Year		
Transporter	10. Transporter 1. (Acknowledgement of receipt of materials)					
	Printed/typed name and title		Signature		Month Day Year	
	Address and telephone no.					
	11. Transporter 2. (Acknowledgement of receipt of materials)					
Printed/typed name and title		Signature		Month Day Year		
Address and telephone no.						
Disposal Site	12. Discrepancy indication space					
	13. Waste disposal site owner or operator: Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.					
	Printed/typed name and title		Signature		Month Day Year	

Instructions

Waste Generator Section (Items 1-9)

1. Enter the name of the facility at which asbestos waste is generated and the address where the facility is located. In the appropriate spaces, also enter the name of the owner of the facility and the owner's phone number.
2. If a demolition or renovation, enter the name and address of the company and authorized agent responsible for performing the asbestos removal. In the appropriate spaces, also enter the phone number of the operator.
3. Enter the name, address, and physical site location of the waste disposal site (WDS) that will be receiving the asbestos materials. In the appropriate spaces, also enter the phone number of the WDS. Enter "on-site" if the waste will be disposed of on the generator's property.
4. Provide the name and address of the local, state, or EPA regional office responsible for administering the asbestos NESHAP Program.
5. Indicate the types of asbestos waste materials generated. If from a demolition or renovation, indicate the amount of asbestos that is:
 - a. Friable asbestos material
 - b. Non-friable asbestos material.
6. Enter the number of containers used to transport the asbestos materials listed in Item 5. Also, enter one of the following container codes used in transporting each type of asbestos material (specify any other type of container used if not listed below).
 - a. DM - Metal drums, barrels
 - b. DP - Plastic drums, barrels
 - c. BA - 6 mil plastic bags or wrapping
7. Enter the quantities of each type of asbestos material removed in units of cubic meters (cubic yards).
8. Use this space to indicate special transportation, treatment, storage, or disposal or Bill of Lading information. If an alternate WDS is designated, note it here. Emergency response telephone number or similar information may be included here.
9. The authorized agent of the waste generator must read and then sign and date this certification. The date is the date of receipt by transporter.

NOTES:

The waste generator must retain a copy of this form.

Transporter Section (Items 10-11)

10. & 11. Enter name, address, and telephone number of each transporter used, if applicable. Print or type the full name and title of person accepting responsibility and acknowledging receipt of materials as listed on this waste shipment record for transport. Enter date of receipt and signature.

NOTES:

The transporter must retain a copy of this form.

Disposal Site Section (Items 12-13)

12. The authorized representative of the WDS must note in this space any discrepancy between waste described on this manifest and waste actually received, as well as any improperly enclosed or contained waste. Any rejected materials should be listed and destination of those materials provided. A site that converts asbestos-containing waste material to non-asbestos material is considered a WDS.

13. The signature (by hand) of the authorized WDS agent indicates acceptance and agreement with statements on this manifest except as noted in item 12. The date is the date of signature and receipt of shipment.

NOTES:

1. The WDS must retain a completed copy of this form. The WDS must also send a completed copy to the operator listed in Item 2.

2. The waste must be delivered to the landfill within 35 days of the date in Item 9.

CHAPTER 18

HEARING CONSERVATION AND NOISE ABATEMENT

1801. Discussion

a. Hearing loss has been, and continues to be, a source of concern within the Navy, both ashore and afloat. Occupational hearing loss resulting from exposure to hazardous noise, the high cost of related compensation claims, and the resulting drop in productivity and efficiency highlight a significant problem that requires considerable attention. Noise control and hearing conservation measures contribute to operational readiness by preserving and optimizing auditory fitness for duty in Navy personnel.

b. Reference 18-1 contains the hearing conservation program for forces afloat.

c. Reference 18-2 describes the Department of Defense (DOD) hearing conservation requirements. Reference 18-3 is a Navy Environmental Health Center technical manual. It provides supplemental guidance concerning medical department procedures in support of the Hearing Conservation Program.

1802. Hearing Conservation Program Introduction.

The goal of the Navy hearing conservation program is to prevent occupational hearing loss and ensure auditory fitness for duty in the military and civilian workforce. The program includes the following:

a. Noise Measure and Analysis. Survey work environments to identify potentially hazardous noise levels and personnel at risk.

b. Engineering Control. Reduction of noise at the source is in the best interest of the Navy and its personnel. Environments that contain or equipment that produces potentially hazardous noise will, whenever it is technologically and economically feasible, be modified to reduce the noise level to acceptable levels as established by this chapter. Section 1810 of this chapter provides specific guidance on noise abatement.

c. Hearing Protective Devices. The use of personal hearing protective devices to limit noise exposure should only be an interim protective measure while implementing engineering controls. Where engineering controls are not feasible, regions and activities shall employ administrative controls and/or the use of hearing protective devices.

d. Audiometry. The cognizant medical treatment facility shall conduct periodic hearing tests that will allow regions or activities, as appropriate, to monitor the effectiveness of the hearing conservation program. Early detection of temporary threshold shifts allows further protective action to be taken before permanent hearing loss occurs. Necessary follow-up evaluation will be conducted to ensure appropriate referral, treatment and early return to duty.

e. Education. Individuals exposed to hazardous noise, their supervisors, and people providing hearing conservation services (i.e., training, monitoring, hearing protection, etc.) will receive training. Training these individuals is vital to the overall success of a hearing

conservation program. An understanding of the permanent nature of noise-induced hearing loss, its negative effects on operational readiness and individual fitness for duty, the command's hearing conservation program, and the individual's responsibilities under the program are all essential for program effectiveness. Also, regions and activities shall encourage all Navy employees to use hearing protective devices when exposed to hazardous noise during off-duty activities, e.g., from lawn mowers, chain saws, firearms, etc.

1803. Navy Occupational Exposure Limit (NOEL)

The following section gives the NOEL for occupational exposure to noise:

- a. For an 8-hour time-weighted average (TWA) of 84 decibels on the A-weighted scale (dB(A)) for frequencies of 20 to 16,000 Hertz (Hz)).
- b. For periods of less than 16 hours in any 24-hour period, calculate the NOEL from the following equation:

$$T = \frac{16}{2^{\left(\frac{L-80}{4}\right)}}$$

Where:

- T = time in hours (decimal)
- L = effective sound level in dB(A)

NOTE:

When two or more periods of noise exposure of different levels comprise the daily noise exposure, their combined effect must be considered. If the sum of the following expression exceeds unity (i.e., >1), then the mixed exposure exceeds the NOEL.

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \dots + \frac{C_n}{T_n}$$

Where C indicates the total time of exposure at a specified noise level and T represents the time of exposure permitted at that level.

- c. For impact or impulse noise 140 dB peak sound pressure level.
- d. When TWA exposures are greater than 84 dB(A), regions and activities shall include personnel in the Navy's Hearing Conservation Program.

1804. Noise Measurements and Exposure Assessments

In order to effectively control noise, it is necessary to accurately measure noise according to standard procedures and properly evaluate the measurements against accepted criteria.

a. Noise measurements shall be taken as part of the industrial hygiene survey.

(1) An IH, industrial hygiene technician, exposure monitor, occupational audiologist or other individual suitably trained by an IH is authorized to take noise measurements.

(2) Sound level meters shall conform, as a minimum, to the Type II requirements cited in reference 18-2. Suitably trained personnel shall use an acoustical calibrator, accurate to within plus or minus one decibel, to calibrate the instrument before each survey and to revalidate the calibration at the conclusion of the survey. Suitably trained personnel shall calibrate sound level meters and sound level calibrators electro-acoustically annually.

(a) Suitably trained personnel shall measure continuous or intermittent steady state noise with a sound level meter set for dB(A) scale, slow response.

(b) Suitably trained personnel shall measure impact or impulse noise as dB peak sound pressure level with an impact noise analyzer.

(3) In cases where circumstances such as high worker mobility, significant variations in sound levels, or a significant component of impulse noise make area monitoring generally inappropriate, suitably trained personnel shall use personal dosimeters for measurements. Personal noise dosimeters shall meet the requirements in reference 18-2.

Work environments where ultrasound is produced and hearing protection is not already used shall conform to the ultrasound exposure limits set forth in reference 18-2.

(4) Work environments found to have noise levels greater than 84 dB(A) (continuous or intermittent), or 140 dB peak sound pressure level for impact or impulse noise, shall be analyzed to determine the potential hazard and shall be resurveyed within 30 days of any significant modifications or changes in work routine which could impact/alter the noise intensity/exposure level.

(5) Suitably trained personnel shall conduct all noise measurements taken to determine an individual's exposure with the microphone of the measuring instrument placed at a height that most closely approximates the position/location of the worker's ear during normal working conditions. Work-centers may require repeat measurements during a single day and/or on different days of the week to account for the variations in noise level due to changes in operational schedules and procedures.

(6) The record of noise measurements shall be retained per the requirements of chapter 8 of this manual and include, as a minimum:

(a) The number, type and location of the noise sources.

(b) Number and identification of personnel in the work area and their daily noise exposure and duration.

(c) Type, model, serial number of test equipment and calibration data.

- (d) Location, date and time of noise measurements.
- (e) Noise levels measured and hazard radius.
- (f) The name and signature of the person(s) who conducted the study.

(7) Personnel will record noise survey data on NEHC Forms 5100/17 and 5100/18 available at: <http://www-nehc.med.navy.mil/ih/ihfom.htm>, or use a computer-generated facsimile containing all the data fields of these forms.

b. TWA noise exposure assessments shall be determined for all personnel routinely working in hazardous noise areas and performing hazardous noise operations. These assessments are complex tasks that shall be performed by an IH or other person that an IH or audiologist judges to be competent. A complete analysis may require the use of octave band analyzers, recorders, and other specialized acoustical instrumentation such as personal noise dosimeters. The exposure assessment will identify which work areas, processes, and equipment produce hazardous levels of noise, determine the type of hearing protection necessary, and identify personnel at risk so they can be included in the hearing conservation program.

(1) Paragraph 1803 outlines the criteria used to determine the degree of compliance with applicable standards.

(2) Designate hazardous noise areas based on the following criteria:

(a) Any work area where the A-weighted sound level (continuous or intermittent) is or is reasonably expected to be greater than 84 dB(A).

(b) Any work area where the peak sound pressure level (impulse or impact noise) exceeds or is reasonably expected to exceed 140 dB peak.

(3) In the absence of a qualified professional's assessment and documentation to the contrary, regions and activities shall consider personnel at risk if routinely exposed to sound levels greater than 84 dB(A), or for impact or impulse noise, 140 dB peak sound pressure level. These individuals shall be identified on a roster or equivalent database for inclusion in the hearing conservation program. Although this chapter requires hearing conservation measures when noise levels are greater than 84 dB(A), the implementation of all available measures may not be necessary in every case. For example, regions and activities shall require visitors to a hazardous noise area to wear protection, but would not require visitors to have their hearing tested or be included on a roster of noise-exposed personnel. There may also be unique situations where sound levels rise unpredictably to greater than 84 dB(A) or above for short durations so that the wearing of hearing protective devices may be judged impractical or unnecessary. Regions and activities shall document decisions to waive the use of hearing protective devices; such professional judgments shall be rendered by an IH or other qualified professionals, using approved instrumentation and considering all relevant factors.

(4) Determinations to exclude individuals who are already included in a hearing conservation program will be made only by professionals qualified to provide or evaluate noise exposure assessments. In no case will regions or activities exclude individuals already included in a program based upon exposure assessment alone without concurrence from an audiologist or physician trained in occupational hearing loss. Such concurrence is necessary to avoid exclusion of personnel who are noise susceptible or at exceptional risk due to pre-existing hearing loss. Personnel who use hearing aids shall not use them in place of approved hearing protectors. Hearing aids may not be used in conjunction with hearing protective devices except as approved by an audiologist or otolaryngologist on a case-by-case basis.

(5) Region or activity follow-up of exposure assessments shall include, as a minimum, the following elements:

(a) Identification of those responsible for designating work areas or equipment as noise hazardous.

(b) Identification of individuals exposed to hazardous levels of noise. This roster shall be updated at least semi-annually.

(c) Identification of the medical facility responsible for audiometric monitoring.

(d) Identification of those responsible for training personnel in the elements of the hearing conservation program.

(6) Regions and activities shall notify each employee exposed to an 8-hour TWA of greater than 84 decibels of the results of the exposure assessment. See paragraph 0803.a for requirements on documentation in each employee's medical record.

1805. Labeling of Hazardous Noise Areas and Equipment

Regions and activities shall label designated hazardous noise areas and equipment that produce sound levels greater than 84 dB(A) or 140 dB peak sound pressure level. NAVMED 6260/2, Hazardous Noise Warning Decal, 8"x10.5" - NSN: 0105-LF-004-7200, and the NAVMED 6260/ 2A, Hazardous Noise Labels (displayed on hand tools), 1"x1.5"- NSN: 0105-LF-004-7800, are the approved decals and labels for marking hazardous noise areas or equipment. Equipment and/or power tools may be individually and permanently marked via a stencil (painted) or engraved with the words "Produces Hazardous Noise" or via the NAVMED 6260/2A, Hazardous Noise Warning Decal. To minimize foreign object damage, flight line tools may be stenciled as noise hazardous in lieu of the approved label.

a. Regions and activities shall not post an entire building as a hazardous noise environment unless nearly all areas within the building are designated hazardous noise areas.

b. Military combatant equipment is excluded from this labeling requirement. Personnel operating and maintaining combat equipment, however, must be made fully aware of hazardous noise exposure conditions.

c. Regions and activities shall have the option of using additional means to alert employees to noise hazard operations. These may include posting barriers or using flashing lights to indicate hazardous noise conditions exist.

1806. Hearing Testing and Medical Evaluation

Regions and activities shall enter all Navy personnel, military and civilian, except those specifically excluded under paragraph 1804b, who are required to work in designated hazardous noise areas or with equipment which produces or is reasonably expected to produce exposure levels at or above an 8-hour TWA of greater than 84 dB(A) or with impulse exposures exceeding 140 dB peak sound pressure levels, into a hearing conservation program. Hearing conservation measures and medical evaluations of hearing tests shall be per the detailed procedures set forth in reference 18-3.

a. (Baseline) Hearing Tests

(1) All military personnel shall receive a reference-hearing test, recorded on a DD 2215, upon entry into naval service. Hearing tests performed at Military Entrance Processing Stations shall not be used as reference audiograms. All civilian personnel being considered for employment in an occupational specialty or area that involves routine exposure to hazardous noise shall receive a reference hearing test. All reference hearing tests shall be preceded by at least 14 hours without exposure to hazardous noise. This requirement may not be met by wearing the appropriate hearing protective device. Reference hearing tests will not be conducted if there is evidence of a transient medical condition that would affect hearing thresholds.

(2) Navy employees presently in service who do not have a reference audiogram filed in their health record shall not be assigned to duty in a designated hazardous noise area involving exposure to hazardous noise until a reference-hearing test has been performed.

b. Monitoring Hearing Tests

(1) All personnel routinely exposed to noise in excess of the NOEL, and others determined to be at risk, shall also be included in the hearing conservation program, have a reference (DD 2215) hearing test in their record and receive periodic monitoring hearing tests. "Routinely exposed" is described in reference 18-3. Hearing tests shall be conducted at least annually thereafter for as long as the employee remains in a noise hazardous environment. Monitoring hearing tests shall also be conducted when there are individual complaints of hearing difficulties, e.g., difficulties in understanding conversational speech or a sensation of ringing or fullness in the ear(s). Follow-up evaluation shall be provided to assure appropriate referral, treatment and early return to duty.

(2) The monitoring audiogram shall be compared with the reference audiogram to determine if a significant threshold shift (STS) has occurred relative to the reference audiogram.

c. Exclusion From Future Noise Exposure. Regions/Activities shall consider individuals who exhibit a progressive series of permanent threshold shifts to be at high risk for

further hearing deterioration. Accordingly, such personnel must be given special consideration under the hearing conservation program.

(1) Individuals monitored under the hearing conservation program who have their reference audiogram redefined due to worsening hearing on three separate occasions, or have hearing loss in both ears in which the sum of thresholds at the frequencies of 3000, 4000 and 6000 Hz exceeds a total of 270 dB, must obtain clearance from an audiologist, otologist or occupational medicine physician before returning to duties involving hazardous noise. A Fitness For Duty evaluation must be performed on these individuals.

(2) If such clearance is inappropriate, the audiologist or medical officer in charge of the hearing conservation program will make specific recommendations to the individual's command. These may include the advisability of restriction from noise hazardous work, appropriate placement of the worker and/or the need for stricter enforcement of hearing protection policies.

d. Disposition Following Monitoring Hearing Tests. The amount of threshold shift considered to be significant is defined as a change in hearing threshold relative to the current Reference Audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz, in either ear. A change of 15 dB or greater in either ear at any test frequency from 1000 to 4000 Hz will be considered an early warning of potential future STS, requiring verbal counseling and assurance of appropriate hearing protection for the individual, but will not require follow-up testing. The 10 dB average STS may be positive (poorer hearing) or negative (better hearing) Additionally, STS's are considered OSHA recordable when an audiologist, otologist, or occupational medicine physician confirms the shift is toward deteriorated hearing, is permanent, is consistent with an occupational origin, and exceeds an average of 25 dB or more above audiometric zero, in the same ear at 2000, 3000, and 4000 Hz. The individual and their supervisor shall be notified when either an STS or an OSHA recordable STS occurs. The activities are to report only those STS's that are OSHA recordable on their OSHA 300 Log. (See Chapter 14 paragraph 1409 for additional details on reporting STS.).

Example 1. An individual may be employed by the Navy with 0 dB hearing loss at 2000, 3000, and 4000 Hz on their Baseline Audiogram. The same individual five years later demonstrates hearing thresholds of 5 dB at 2000, 15 dB at 3000 and 25 dB at 4000 Hz, average change of 15 dB hearing at these frequencies. This would be a Navy STS that is required to be reported to the individual and the activity that employs this individual, but would not be an "OSHA recordable" hearing loss that would need to be included on the OSHA 300 Log, i.e. the hearing loss does not exceed 25 dB at the required frequencies. The individual in this example would have to lose an average of 25 dB at 2000, 3000, and 4000 Hz before they would be included on the OSHA 300 Log.

Example 2. An individual started employment with the Navy with a pre-existing hearing loss such as 15 dB at 2000, 20 dB at 3000, and 25 dB at 4000 Hz. Five years later their hearing is now 20 dB at 2000, 30 dB at 3000, and 40 dB at 4000 Hz, an average change of 10 dB with average hearing threshold levels now of 30 dB. This would be considered a Navy STS **AND** an "OSHA recordable" STS and would need to be recorded on the activities OSHA 300 Log using WESS.

e. Termination Hearing Test. Military personnel shall receive a hearing test upon termination of Navy service. Civilian personnel, who have been routinely exposed to hazardous noise or have previously demonstrated a significant threshold shift, shall receive a hearing test upon termination of employment. Additionally, all personnel dropped from the hearing-testing program due to removal from hazardous noise duties will have a termination test to document auditory status at the time of reassignment.

1807. Personal Hearing Protective Devices

a. Hearing protective devices shall be worn by all personnel when they enter or work in an area where the operations generate:

- (1) Sound levels greater than 84 dB(A).
- (2) 140 dB peak sound pressure level or greater.

b. A combination of insert type and circumaural types of personal hearing protectors (double protection) shall be worn when sound levels exceed 104 dB(A), or 165 dB, unless an occupational audiologist, IH, or occupational medicine physician has determined that single protection is adequate for the anticipated duration of exposure.

c. All personnel exposed to gunfire in a training situation or to artillery or missile firing, under any circumstances, shall wear hearing protective devices.

d. The determination of which single hearing protective device, or a combination of devices is suitable for use in each situation, is the responsibility of the IH, audiologist, occupational medicine physicians or other competent personnel, under their supervision. Appendix 18-A contains information on hearing protection devices and selection criteria. Every effort shall be made to issue personal hearing protective devices suited to the location and duration of usage. Personal hearing protective devices used singly or in combination, should reduce effective sound levels to less than 84 dB(A) or 140 dB peak. Appendix 18-A lists recommended hearing protective devices available through the Navy supply system. The Navy Environmental Health Center (NEHC) website (currently at <http://www-nehc.med.navy.mil/>) identifies additional hearing protectors that have been tested by DOD activities, and are approved for open purchase. Regions/Activities desiring to use hearing protective devices not specified in appendix 18-A or cited by NEHC shall submit a sample of the device with a request for evaluation to the Chief, Bureau of Medicine and Surgery (BUMED). BUMED will review manufacturers' test data and conduct additional evaluation as necessary to determine suitability for use.

e. In cases where hearing protection devices alone do not provide sufficient attenuation to reduce the employee's effective exposure at or below an 8-hour TWA of 84 dB(A), administrative control of exposure time will be necessary. Appendix 18-B contains a table of noise exposure limits.

f. Personnel may use custom earplugs only if they cannot be properly fitted with approved hearing protectors or if special circumstances require a custom hearing device. Flight line, flight deck operations and personnel exposed to hazardous aircraft noise have the option to use custom hearing protection to effectively reduce excessive noise exposure and maintain

communication ability. Regions/Activities shall provide preformed or custom molded musician's earplugs to service band members. Only audiologists, otolaryngologists or trained medical technicians may take impressions of the ear necessary to make custom earplugs.

g. The use of portable musical devices such as radio headphones, CD players, Walkman cassette/CD players, etc. is prohibited in industrial areas and in work areas where high noise hazards have been identified. Region/activity policy regarding the use of these devices during on-base recreational activities must be consistent with the Navy Traffic Safety Program, OPNAVINST 5100.12.

1808. Training

a. Personnel identified for inclusion in the hearing conservation program must receive initial and refresher training per appendix 6-A. Initial training will be provided before assignment to duty in a designated noise hazardous area involving exposure to hazardous noise. Refresher training can be given by local medical personnel at the time of the annual audiogram. The cognizant medical activity shall document the training in the medical record with appropriate notification to the OSH office. The region or activity OSH office shall maintain records of such training per chapter 6.

b. All Navy personnel included in the hearing conservation program shall receive appropriate instruction in:

- (1) The elements of and rationale for a hearing conservation program.
- (2) Proper wearing and maintenance of hearing protection devices.
- (3) The command program and individual responsibilities.
- (4) Off-duty practices which will aid in protecting their hearing.
- (5) Individuals responsibility in protecting their own hearing.
- (6) How hearing loss affects employability, retention, job performance and career progression.

c. Regions or activities shall provide instruction to all personnel upon reassignment to a new job that is noise hazardous.

1809. Recordkeeping

a. Regions or activities shall record results of hearing tests performed for hearing conservation purposes, as well as exposure documentation, and these records shall become a permanent part of an employee's health record. The medical department shall retain the original reference audiogram as a permanent part of an employee's health record along with all disposition results and referral notations. The medical department shall record all hearing test results on DD 2215, *Reference Audiogram*, or DD 2216, *Hearing Conservation Data*, as appropriate. The medical department shall place the original in the health record and upload a digitized copy to the Defense Occupational Environment and Health Readiness System-Data

Repository (DOEHRS-DR). Those few medical departments that do not have DOEHRs equipment should contact NAVENVIRHLTHCEN for guidance. NAVENVIRHLTHCEN will no longer accept hard copy forms.

b. The medical department shall retain all noise measurement data, as well as audiometric records and information in an employee's health record per the provisions of Chapter 8, and record the results of noise exposure assessments in the work location block on the DD 2215s and 2216s.

1810. Noise Abatement Program Introduction.

The primary means of protecting Navy personnel from hazardous noise shall be through the application of engineering controls. Administrative controls (i.e., the adjustment of work schedules to limit exposure) are also effective but often result in some loss in productivity. Personal protective equipment (PPE) (ear plugs, muffs, etc.) shall be the permanent solution only when regions or activities determine engineering or administrative controls infeasible. Chapter 5 discusses general hazard (including noise) control techniques in more detail; therefore, this chapter will address only specific concepts.

1811. Preventive Measures

It is less costly to eliminate potential noise problems in the design or procurement stage for new processes, equipment, and facilities than it is to make retrofits or modifications after the fact. References 18-3 through 18-8 provide guidance to meet this objective.

1812. Abatement of Existing Noise Hazards

a. Abatement Methods. The region or activity shall undertake the abatement of hazardous noise levels, to the extent possible or practicable, by one or more of the following methods:

- (1) By engineering design to eliminate or reduce the noise levels of machinery, equipment and other operating devices/facilities to acceptable levels.
- (2) By damping the noise by means of lamination, mufflers, mountings, couplings, supports, insulation or application of acoustic materials.
- (3) By acoustical enclosure of the noise producer.
- (4) By isolation of the noise producer to a point where the noise will affect fewer personnel.
- (5) By substitution of a less hazardous process.
- (6) By administrative controls which limit exposure (i.e., control of work schedules).

b. Engineering control feasibility studies. Regions or activities shall initiate studies for those areas where continuous noise levels exceed 100 dB(A) and personnel are exposed for

4 hours or more even though protected by hearing protective devices. Only when regions or activities determine that the methods outlined above are infeasible shall they consider the utilization of personal hearing protective devices a permanent means of control. Regions or activities shall support such determinations by appropriate documentation signed by the cognizant IH and the cognizant engineer and maintain records of such determinations. See chapter 1 for a discussion of exceptions for military unique equipment and operations.

1813. Responsibilities

The Navy assigns the following responsibilities to provide sound and effective occupational noise control and hearing conservation throughout the Navy.

a. The Chief, Bureau of Medicine and Surgery (BUMED) shall:

- (1) Centrally manage the hearing conservation program and periodically update the program to maintain currency and effectiveness.
- (2) Provide audiometric support to all military and civilian personnel.
- (3) Provide subject matter expertise and technical review, and provide/document refresher hearing conservation training in conjunction with the annual audiogram.
- (4) Provide appropriate professional and technical hearing conservation guidance and assistance to the Naval Education and Training Command (NETC) and/or Naval Personnel Development Command (NPDC).
- (5) Develop guidelines and issue certification for:
 - (a) Personnel conducting sound level measurements.
 - (b) Personnel performing hearing conservation audiometry.
 - (c) Audiometric test chambers.
 - (d) Audiometers.
- (6) Establish and maintain a hearing conservation database to measure program effectiveness and use prevalence of hearing loss to provide input to noise control engineering decisions.
- (7) Support a research and development effort in the medical aspects of hearing conservation.
- (8) Provide assistance in the identification and quantification of noise hazard sources.

b. Headquarters Commanders shall:

(1) In coordination with BUMED, provide technical assistance and engineering guidance to subordinate commands per section 1810.

(2) Consider, design, and engineer noise control features into all (both existing and future) ships and aircraft, weapons and weapon systems, equipment, materials, supplies and facilities.

(3) Provide appropriate technical and engineering control methodology guidance and assistance to NETC/NPDC.

c. Regional Commanders and/or Commanding Officers for shore activities shall:

(1) Label all Navy areas, worksites, and equipment under their cognizance, identified as noise hazardous and where necessary, ensure suitably trained personnel conduct surveys and assessments.

(2) Institute a hearing conservation program where a potential noise hazard has been identified per section 1804 and maintain a roster of personnel placed in the program.

(3) In cooperation with the cognizant medical treatment facility, annually evaluate hearing conservation program effectiveness as specified in 18-2.

(4) Eliminate or reduce hazardous noise levels through the use of engineering controls. Guidance to determine who has the responsibility (i.e., region or activity) is provided in paragraph 1202.

(5) Regions and activities provide personal hearing protective devices, and ensure proper usage by personnel where administrative or engineering controls are infeasible or ineffective.

(6) Provide instruction per this chapter to all military and civilian personnel, whose duties entail exposure to potentially hazardous noise.

(7) Emphasize leadership by example regarding the wearing of hearing protective devices. Regions and activities shall enforce policy, including the initiation of disciplinary measures for repeated failure to comply with the requirements of the hearing conservation program.

(8) Regional Commanders and/or Commanding Officers for shore activities shall utilize a "Buy Quiet" policy when feasible/applicable when procuring tools and equipment.

Chapter 18

References

18-1. OPNAVINST 5100.19D CH-1 of 30 Aug 01, Navy Occupational Safety & Health (OSH) Program Manual for Forces Afloat http://ned.s.daps.dla.mil/Directives/5100.19d_CH-1.pdf.

- 18-2. DODI 6055.12 of 5 Mar 04, Hearing Conservation Program
http://www.dtic.mil/whs/directives/corres/pdf/i605512_030504/i605512p.pdf.
- 18-3. NEHC Technical Manual, NEHC-TM OEM 6260.51.99-2 of Sept 04, Navy Medical Department Hearing Conservation Program Procedures, http://www-nehc.med.navy.mil/downloads/occmcd/TechManualHCPfinal9_22allcomments.pdf.
- 18-4. NAVFAC P-970 of 15 Jun 78, Environmental Protection Planning in the Noise Environment.
- 18-5. UFC 3-600-01 of 17 Apr 03, Fire Protection for Facilities (NOTAL).
- 18-6. Army TM-5-805-4 of May 95, Noise and Vibration Control
<http://www.usace.army.mil/inet/usace-docs/armytm/tm5-820-1/>.
- 18-7. NIOSH Pub. No. 79-117, Industrial Noise Control, latest edition
<http://www.cdc.gov/niosh/79-117pd.html>.
- 18-8. 18-8. MIL-STD-1472F, of 31 Mar 98, Human Engineering Design Criteria for Military Systems, Equipment and Facilities, latest edition, (NOTAL) <http://hfetag.dtic.mil/docs-hfs/mil-std-1472f.pdf>.

Appendix 18-A
Hearing Protective Devices

Manufacturer's Nomenclature/NSN Nomenclature	Type of Protector	Federal
Ear Defender V-51R 6515-00-442-4765 6515-00-467-0085 6515-00-467-0089 6515-00-442-4807 6515-00-442-4813	Insert Earplug (sized) 24's (sized) 24's (sized) 24's (sized) 24's (sized) 24's	Plug, Ear, Noise Protection (X-Small) (White) (Small) (Green) (Medium) (Int'l Orange) (Large) (Blue) (X-Large) (Red)
Comfit, Triple Flange 6515-00-467-0092 6515-00-442-4818 6515-00-442-4821	Insert Earplug (sized) 24's (sized) 24's (sized) 24's	Plug, Ear, Noise Protection (Large) (Blue) (Regular) (Orange) (Small) (Green)
Silaflex (Blister Pack) 6515-00-133-5416	Non-Hardening Silicone	Plug, Ear, Noise Protection Cylindrical, Disposable 200's
EAR or Deci-Damp 6515-00-137-6345	Foam Plastic Insert	Plug, Ear, Noise Protection Universal Size, Yellow 200 pr
Straightaway Muffs 4240-00-759-3290 4240-00-674-5379 4240-00-979-4040	High Performance Circumaural Muffs For 9 AN/2 For 9 AN/2	Aural Protector Sound 372-9 AN/w Replacement Filter, Dome Replacement Seal, Dome
Ear Plug Cases 6515-01-212-9452 6515-01-100-1674	Non-reflective	Case, Earplug 12's Case, Earplug 20's
Sound-Ban 6515-00-392-0726	Headband, Earcaps	Plug, Ear, Hearing Protection, Universal Size
Circumaural Muff 4240-99-691-5617	Type I Overhead Headband	Aural Protector, Sound
Circumaural Muff 4240-00-022-2946	Type II Napeband (for use with hard hat)	Aural Protector, Sound

POSITIVE AND NEGATIVE FEATURES OF HEARING PROTECTION DEVICES

Type	Positive	Negative	Duration
<u>Insert</u> V-1R Triple Flange	After adaptation can be used for long periods. Relatively inexpensive.	Individual fittings by medical personnel required. Frequent fitting causes irritation.	Long-term (3 - 4 hours)
<u>Disposable</u> Silaflex, EAR or Deci-Damp	Comfortable. Individual fitting not required. Relatively inexpensive	Molded by hand. Easily Soiled. Difficult to clean.	Infrequent use. Transitory noise exposure.
<u>Circumaural Muffs</u> Type I and II 372-9 and AN/2	May be worn over plugs. Most efficient universal device.	Expensive. Heavy. Difficult to carry. Hair or eyeglasses may reduce effective ness.	Long or short term

One single type of hearing protective device will not meet the needs of all personnel in a hearing conservation program. Regions and activities shall select the appropriate type of hearing protection device based upon a consideration of the factors listed above in addition to the degree of attenuation required in a particular situation. The most convenient method of making this determination is the Noise Reduction Rating (NRR) developed by the Environmental Protection Agency (EPA). The NRR is usually shown on the hearing protector package. The NRR is then related to an individual worker's noise environment in order to assess the adequacy of the attenuation of a given hearing protector.

Since there are a wide variety of noise measuring instruments in use, personnel conducting sound level measurements shall use one of the following methods. In each case, they should take a sufficient number of measurements to achieve a representative noise sample.

- a. When using a dosimeter that is capable of C-weighted measurements:
 - (1) Obtain the C-weighted dose for the entire work shift, and convert to TWA sound level (see dosimeter instruction manual for conversion table).
 - (2) Subtract the NRR from the C-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

- b. When using a dosimeter that is not capable of C-weighted measurements, the following method may be used:
 - (1) Convert the A-weighted dose to TWA (see dosimeter instruction manual).
 - (2) Subtract 7 dB from the NRR value.
 - (3) Subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

- c. When using a sound level meter set to the A-weighting network:
 - (1) Obtain the A-weighted TWA.
 - (2) Subtract 7 dB from the NRR and subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.
- d. When using a sound level meter set on the C-weighting network:
 - (1) Obtain a representative sample of the C-weighted sound levels in the environment.
 - (2) Subtract the NRR from the C-weighted average sound level to obtain the estimated A-weighted TWA under the ear protector.

This manual considers the effectiveness of any combination of insert plugs with circumaural muffs (double protection) to be at least 30 dB. If a region or activity determines the result of subtracting the estimated reduction value of a particular device or combination of devices from the measured workplace sound level is at or below 84 dB(A), the protection is adequate. However, should the value exceed 84 dB(A) or 140 dB peak, regions and activities shall institute administrative controls to reduce personnel exposure to acceptable levels.

Appendix 18-B
Administrative Control of Noise Exposure
with Hearing Protective Devices
(Stay Time)

Limiting time (hr:min per 24 hour day)

Sound Level (dB ^(*))	Hearing Protector Noise Reduction (dB)			
	<u>10</u>	<u>20</u>	<u>30</u>	<u>40</u>
90	16	--	--	--
94	8	--	--	--
98	4	--	--	--
102	2	11:18	--	--
106	1	5:39	--	--
110	0:30	2:49	16	--
114	0:15	1:25	8	--
118	—	0:42	4	--
122	—	0:21	2	11:18
126	—	—	1	5:39
130	—	—	0:30	2:49
134	—	—	0:15	1:25
138	—	—	—	0:42

NOTE: Values other than those given above may be calculated using the formula:

$$T = \frac{16}{2^{\left(\frac{L-80}{4}\right)}}$$

Where: T = time in hours (decimal)

L = effective sound level in dB(A)

* Sound levels may be measured in either dB (A) or dB (C). However, as noted in appendix 18-A, if dB (A) is used, the NRR must be reduced by 7 dB.

Intermediate values may be interpolated by adding or subtracting the decibel difference to the appropriate column.

CHAPTER 19

SIGHT CONSERVATION

1901. Discussion

All Navy regions and activities with personnel having exposure to eye hazardous operations shall implement a sight conservation program per the guidance established in this chapter and chapter 20. The region/activity sight conservation program shall include, but not be limited to, the following program elements:

- a. Identification and evaluation of eye hazardous areas, processes, and occupations.
- b. Prescription protection eyewear program.
- c. Provision and maintenance of appropriate personal protective equipment (PPE) at government expense.
- d. An employee training, promotion and emphasis program.
- e. Effective program enforcement.

1902. Basic Program Requirements

Emergency Eyewash Facilities. The responsibility for managing eyewashes rests with the owner of the work process that requires eyewashes (e.g., region, activity, etc.). Regions or activities shall provide emergency eyewash facilities meeting the requirements of reference 19-1 in all areas where the employees' eyes may be exposed to corrosive materials. All such emergency facilities shall be located where they are easily accessible to those in need. Work centers shall activate plumbed eyewash units weekly for a period long enough to verify operation and flush the line. During annual inspection, verification of the weekly eyewash activation is recommended. Quarterly verification, typically by the safety office is recommended. Activation may be required more frequently if the region's/activity's safety and/or occupational health staff determine it is necessary to ensure proper functioning and performance of the eyewash station. Inspection and maintenance tags should be placed on self-contained eyewash units to document most current inspection/maintenance.

Regions or activities shall service pressurized and non-pressurized self-contained eyewash units quarterly, as a minimum, or per the manufacturer's recommendations, whichever is more frequent. Periodic maintenance shall include cleaning of the unit, replacement of water (depending on manufacturer's recommendation), and checking for proper operation. Where an additive is used in a self-contained eyewash unit, regions or activities shall use additives specified by the manufacturer, and change fluid at an interval recommended by the manufacturer of the additive. Work centers shall maintain written, dated and signed maintenance records for a period of one year.

Regions and activities should only use self-contained eyewash units on a temporary basis until permanent emergency eyewash facilities are installed or at remote locations where water is not readily available. Regions and activities shall not use personal eyewash units for work with corrosives. For other work operations not involving corrosives, personal eyewash units can only be used on a case-by-case basis with approval from the region/activity OSH staff.

1903. Occupational Eye Care Services and Equipment

The region/activity OSH office shall consult with supply officers and the cognizant medical activity to determine the most suitable procurement procedures when prescription protective eyewear is required. It is a civilian employee's responsibility to obtain an eye refraction exam and secure an accompanying prescription for safety glasses (comprehensive vision examinations are a personal health responsibility and are strongly recommended in conjunction with an eye refraction examination). Regional and/or activity commanding officers shall establish procedures for obtaining prescription safety eyewear through contracts, reimbursement, cognizant medical activity, or other methods. Such procedures shall comply with provisions of Labor Management Relations covered under 5 USC Chapter 71, other provisions of law providing for collective bargaining agreements and procedures, and any agreements entered into under such provisions.

Vision screening (e.g., visual acuity, visual fields, color vision) is required to evaluate whether employees (or employee applicants) meet essential job elements. Functional requirements or medical surveillance/certification requirements are covered under the Occupational and Environmental Services in 0805.

When Navy medicine provides these services, all medical forms and evaluations must be documented according to the Bureau of Medicine and Surgery Manual of Medical Department, NAVMED P117.

1904. Temporary Protective Eyewear

Where protective corrective eyewear is necessary, regions/activities shall provide planos or goggles to visitors, instructors and others who must enter or pass through eye hazardous areas. In addition, they shall be provided to employees awaiting delivery of corrective-protective eyewear.

Chapter 19

References

19-1. American National Standards Institute (ANSI) Standard Z358.1-2004, Emergency Eyewash and Shower Equipment, (NOTAL) <http://www.ansi.org/>.

CHAPTER 20

PERSONAL PROTECTIVE EQUIPMENT

2001. Discussion and Policy

a. The best means of protecting personnel from hazard exposure in the workplace is to eliminate the hazard. When this is not possible, engineering controls shall be the method of choice to eliminate or minimize hazard exposure in the workplace. When neither of these methods can be employed, activities shall implement a personal protective equipment (PPE) program to reduce or eliminate personnel exposure to hazards.

b. Navy policy is that activities provide, use and maintain PPE when competent authority determines that its use is necessary and that such use will lessen the likelihood of occupational injuries and/or illnesses. Activities shall provide necessary protective equipment where there is a reasonable probability that the use of the equipment will prevent or reduce the severity of injuries or illnesses. PPE procurement and enforcement of proper use and maintenance is the responsibility of the activity.

c. Activities must recognize that personal protective devices do nothing to reduce or eliminate the hazard itself. They merely establish a last line of defense, and any equipment breakdown, failure or misuse immediately exposes the worker to the hazard. Many protective devices, through misapplication or improper maintenance, can become ineffective without the knowledge of the wearer and can have potentially serious consequences. For this reason, proper equipment selection, maintenance, employee training (including equipment limitations) and mandatory enforcement of equipment use are key elements of an effective PPE program.

2002. Basic Program Requirements

Each activity shall ensure that an assessment of all workplaces is conducted to determine if hazards are present that necessitate the use of PPE. If such hazards are present, or likely to be present, activities shall accomplish the following actions:

a. Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment.

b. Communicate selection decisions to each affected employee.

c. Document that the required workplace hazard assessment has taken place with a written certification, identifying the workplace evaluated, the person performing the evaluation and the date(s) of the hazard assessment. Activities shall retain this document as proof of hazard assessment.

NOTE:

Reference 20-1 contains an example of procedures that would comply with the requirement for a hazard assessment.

2003. Equipment Specifications and Requirements

All personal protective clothing and equipment shall be of safe design and construction for the work to be performed. Federal agencies and standards organizations have developed standards and specifications for the design and use of PPE and devices. Activities shall only use those items that have been recognized and approved. This approval can be met through the use of:

- a. Federal specifications.
- b. American National Standards Institute (ANSI) specifications.
- c. Recognized approval authority, such as Underwriter's Laboratories (UL), Factory Mutual (FM), or American Society of Testing and Materials (ASTM).

2004. Eye and Face Protection

Employees shall wear approved eye and/or eye and face protection when there is a reasonable probability that wearing such equipment will prevent injury. They shall use eye protection at all times in a designated eye hazard area. Flying particles and chips; splashes from liquids such as acids, caustics and solvents; and operations that generate hot slag or molten metal, welding glare, etc., can cause eye and/or face injury. The activity shall provide the required approved protective equipment and enforce usage as recommended by their hazard assessment. Reference 20-2 provides the requirements for design, construction, testing and use of devices for eye and face protection. Chapter 19 of this manual contains additional information on the sight conservation program.

2005. Hearing Protection

See chapter 18 for hearing protection requirements.

2006. Respiratory Protection

See chapter 15 for respiratory protection requirements.

2007. Head Protection

Helmets and hats for the protection of Navy employees from the impact of falling and flying objects and from limited electric shock and burn shall meet the specifications of reference 20-3. Employees shall wear head protection at all times in a designated hardhat area.

2008. Foot Protection

a. Foot Hazardous Operations. Foot and toe hazardous operations are those that have a high incidence of, or potential for, foot or toe injuries. Examples of trades or ratings generally associated with foot or toe hazardous operations are construction, materials handling, maintenance, transportation, ship repair and operation, aircraft overhaul and repair and explosives manufacturing and handling. Employees shall wear foot and toe protection at all times in a designated foot hazard area.

b. Foot Protective Devices

(1) Safety shoes, with a built-in protective toe box, primarily provide protection from heavy falling objects. These shoes shall conform to the requirements of reference 20-4, and be appropriately labeled per reference 20-4. General-purpose safety shoes (Chukka style) are available through normal supply channels. In cases where standard stock general-purpose safety shoes do not properly fit the employee, the Navy authorizes procurement from commercial sources.

(2) Employees shall wear the following special-purpose safety footwear, furnished for special hazards:

(a) Semi-conductive safety shoes are used to dissipate static electricity. To be effective, employees must use the shoes on conductive surfaces, such as wet concrete, metal decks, carbon-impregnated surfaces, wet terrain, conductive linoleum and conductive tiles. These brown shoes shall conform to Specification CID-A-A-50359 (Shoe, Conductive Series). This shoe was formerly procured under MIL-B-3794.

(b) Molder's "Congress" style safety shoes or boots for protection while handling molten metal. The design allows quick removal of the shoes, if necessary, to minimize injury if molten materials fall inside. (MIL-S-82245, Shoe, Molders).

(c) Electrical hazard safety shoes, with a built-in protective toe box, to guard against electrical shock hazards when performing electrical work on live circuits not exceeding 600 volts. Employees should note, however, that these shoes only provide partial protection and should not ignore additional protective measures normally employed in these environments, (i.e., all personnel working on energized circuits shall insulate themselves from the ground (MIL-S-43860 Shoes, Electrical Hazards Protective).

(3) Safety boots are general-purpose footwear items offering the same toe protection as the above safety shoes except in a boot designed for added support. The Navy does not approve these boots for use in areas where hazardous chemicals are used. (MIL-B-87067, Boot, Safety Series).

c. Appropriation and Distribution. The following procedures apply to the issue of protective footwear for military and civilian employees.

(1) Activities shall provide military personnel with standard stock safety shoes when required by their work. When safety shoes exhibit wear, such that safety protection is no longer afforded, the command shall provide replacement standard stock safety shoes as organizational clothing (similar to coveralls or foul weather gear).

(2) The primary method for providing safety shoes to civilians is: issue of standard stock items or reimbursement to individuals who buy their own shoes. A secondary method is to issue safety shoes that activities obtain under a local purchasing contract. Activities may select the method best suited to local conditions. Activities must absorb the cost of safety shoes within local operating funds (Defense Capital Working Fund (DCWF), research development, test, and evaluation (RDT&E), operation and maintenance, Navy (O&M, N). Activities purchasing safety shoes under either local reimbursement or local contracting

procedures shall ensure that they are appropriately labeled, and meet the requirements of reference 20-4. Activities shall determine the amount of the reimbursement by taking into consideration the usual cost in the local area for shoes of the type and quality specified in paragraph 2008b. Activities must document cases where medical considerations require specialized safety shoes (orthopedic safety shoes) with a written statement from a physician who treats foot disorders.

(a) Activities shall provide Navy U.S. civilian employees overseas (including foreign nationals) with safety shoes, as required, from standard stocks, unless their cognizant headquarters command grants specific approval for alternate purchasing methods. Foreign national indirect hires, being provided safety shoes under an existing labor agreement, will continue to use the reimbursement procedures contained in the applicable agreement.

(b) Activities shall provide non-appropriated funded civilian employees with safety shoes under provisions of this policy except that the funding and paying sources for required safety shoes will be non-appropriated.

2009. Hand Protection

a. Activities shall select, provide and require appropriate hand protection whenever employees' hands are exposed to, or are likely to be exposed to, such hazards as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasion; punctures; chemical irritants; thermal burns; and harmful temperature extremes.

b. Activities shall base selection of hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use and the hazards and potential hazards identified by the Safety Office.

2010. Electrical Protective Devices

Navy activities shall provide appropriate rubber protective equipment for electrical workers who perform work on energized or potentially energized electrical systems. Equipment shall conform to references:

American Society for Testing and Materials (ASTM) D 120-87, Specifications for Rubber Insulating Gloves.

ASTM D 178-88, Specification for Rubber Insulating Matting.

ASTM D 1048-88, Specification for Rubber Insulating Blankets.

ASTM D 1049-88, Specification for Rubber Insulating Covers.

ASTM D 1050-90, Specification for Rubber Insulating Line Hose.

ASTM D 1051-87, Specification for Rubber Insulating Sleeves.

2011. Safety Clothing. Special clothing may consist of flameproof coveralls, disposable coveralls, impervious chemical spill coveralls, personal floatation devices (PFDs), welding leathers, and chemical aprons.

a. Activities shall base selection of special, protective clothing on an evaluation of the performance characteristics of the clothing relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified by the Safety Office.

b. Navy activities shall provide appropriate special protective clothing whenever employees are exposed to, or are likely to become exposed to, such hazards as those from skin absorption of harmful substances, chemical irritants, thermal burns, and harmful temperature extremes.

c. Whenever personnel are required to wear life jackets in open sea operations, the life jackets must be inherently buoyant. Jacket-type life preservers may be used in lieu of inherently buoyant PFDs, by personnel in exposed pier locations, when working over the side, working on floating camels or barges, and during tug and small boat operations

2012. Personal Fall Protection Equipment.

Fall protective equipment is discussed in Chapter 13.

2013. Training

a. Activities shall provide training to each employee who is required to use PPE to include at least the following:

- (1) When PPE is necessary.
- (2) What PPE is necessary.
- (3) How to properly don, doff, adjust and wear PPE.
- (4) The limitations of the PPE.
- (5) The proper care, maintenance, useful life, storage and disposal of the PPE.
- (6) Ability to recognize that defective or damaged PPE shall not be used.

b. Each affected employee shall demonstrate an understanding of the training specified in paragraph 2011a, and the ability to use PPE properly before being allowed to perform work requiring the use of PPE.

c. When a supervisor has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by paragraph 2011b above, the supervisor shall ensure retraining is accomplished for each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

- (1) Changes in the workplace render previous training obsolete.

(2) Changes in the types of PPE to be used render previous training obsolete.

(3) Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

d. Activities shall maintain documentation verifying that each affected employee has received and understands the required training. Documentation shall be in accordance with paragraph 0605 of chapter 6.

2014. Responsibilities

Commanders, Commanding Officers, and Officers in Charge shall include and enforce the following provisions concerning PPE:

a. Ensure the evaluation of workplaces, including applicable hazardous material data and industrial hygiene survey reports, to determine PPE requirements. Qualified safety and occupational health personnel shall perform these evaluations. Commands shall use the results of these evaluations to designate appropriate work conditions and work areas as requiring PPE. The command shall establish effective means of communicating these PPE requirements to employees.

b. Ensure that PPE conforms to OSHA standards and Navy Safety policy.

c. Arrange for appropriate medical evaluations to determine worker capability to perform assigned tasks using the prescribed PPE.

d. Train personnel in the selection, use, inspection and care of PPE required for their work situations and maintain records of such training.

e. Ensure protective equipment worn by personnel fits properly.

f. Ensure designated personnel perform periodic equipment inspection, cleaning, disinfection and maintenance.

g. Provide proper equipment storage to protect against environmental conditions that might degrade the effectiveness of the equipment or result in contamination during storage.

h. Ensure compliance with the prescribed use of PPE.

i. Identify non-use, misuse or malfunction of PPE that results, or may result, in injury or occupational illness to Navy personnel.

Chapter 20

References

20-1. Title 29 Code of Federal Regulations (CFR) 1910 Subpart I, Appendix B, Non-mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment, latest

revision,

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10120.

20-2. American National Standards Institute (ANSI) Z87.1-1989 (R-1998), American National Standard Practice for Occupational and Educational Eye and Face Protection, (NOTAL) <http://www.ansi.org/>.

20-3. American National Standards Institute (ANSI) Z89.1-1997, American National Standard for Industrial Head Protection, (NOTAL) <http://www.ansi.org/>.

20-4. American National Standards Institute (ANSI) Z41-1999, American National Standard for Personal Protection-Protective Footwear, (NOTAL) <http://www.ansi.org/>.