

May 16, 2011

U.S. Office of Special Counsel
1730 M Street, N.W. Suite 218
Washington, D.C. 20036-1505

Attention: Kevin Wilson

Re: OSC File No. DI-10-0454

Dear Mr. Wilson,

I am in receipt of the Agency's Second Supplemental Report regarding the Whistleblower Disclosure of Asbestos Conditions in HCHB's 8th Floor/Attic. I very much appreciate the fact that your office continues to listen to me and that the Commerce Inspector General is continuing to diligently investigate this terrible matter. However, I am deeply troubled by some of the statements made by U.S. Department of Commerce's OIG.

It is apparent that Commerce does not clearly see nor understand the roles that each of the management officials that I listed played in the contamination of the HCHB. While I do agree that the main three were Fred Fanning, Jana Brooks and Mario Aquino, the others that I listed worked in tandem to ignore and neglect the building maintenance issues as well as the occupational safety and health issues that led to high levels of asbestos in the building. In addition, there was a case of asbestosis reported to Commerce. Jana Brooks had knowledge of this case from her time spent in the Occupational Safety and Health Office, as did Fred Fanning, Doug Elznic, Bill Fleming, Nancy McWilliams, Otto Wolff, David Wynn and Mario Aquino. This is a part of what prompted Fred Fanning to write the memo in the first place. All of management that I listed had knowledge. They thought it out, argued and planned. It was even referenced in a memo that was giving directions on how they planned to handle the "incident". Each official that I listed played a part. Simply put, the complaint was made and worker's compensation was involved. Worker's Compensation matters are partly dealt with by the office of Occupational Safety and Health. An investigation had to (or was supposed to) have taken place. (I don't think that it did) I am sure that Commerce is insisting that there was no asbestos that this person could have been exposed to. Had a proper investigation been conducted, the attic as well as every other part of the HCHB that was contaminated would have been noted and the areas would have been taken care of. The attic asbestos was not a "needle in a haystack"! The cause of the problem was gross mismanagement. It is unacceptable that each person in management can pick and choose which portion of their responsibility they will accept and be accountable for.

According to page 2 of the Second Supplemental Report the IG's stated that Mr. Fleming was the Dupty Director of OHRM between 2005-2010, and has been Director of OHRM since 2010.

The May 4, 2007 email sent to Bill Fleming from Jana Brooks written by GSA Regional Asbestos Manager Tim Sleeth clearly states "Access to the 8th Floor Attic should remain restricted to authorized personnel only".

In his capacity as part of the management team Mr. Fleming had a shared responsibility. In his role as Deputy Director of OHRM, the Occupational Safety and Health Division was under his supervision, as was the FOH Health Unit. This division is responsible for the safety and health of all employees housed in the Commerce building. That includes investigating and protection from "occupational exposure". This division employs health and safety specialists whose specific duty and training is in that of occupational safety and health. They are Certified Safety Professionals, Certified Industrial Hygienists and the like. Mr. Fleming neglected his duty to assure that these recommendations by GSA were carried out. The Occupational Safety and Health Division wanted no part of this responsibility. Instead, they placed their sole focus on keeping the worker's compensation case percentages from rising. This is evidenced by the fact, that having the knowledge that Fred Fanning issued the memo to several employees and contractors informing them that they "may have been exposed to asbestos", (which was a case of occupational exposure) not one person from that office made contact with me regarding my exposure. It is the duty of their office to offer worker's compensation and to stay in compliance with the Occupational Safety and Health Act as well as the Americans with Disabilities Act. In fact, further adding insult to injury, Bill Fleming, in his capacity, did not bother to check to see what procedure had been taken regarding my disability retirement until two years after my disability retirement when his office came under fire after I lodged a complaint. Moreover, his checking is evidence of a cover up. Another office in which Mr. Fleming has oversight of is Human Resources. This office took part in obtaining my medical records without my knowledge or approval after I was disability retired and sending them to FOH for review. This was to be done with my knowledge and cooperation two years prior under the supervision of David Wynn, Nancy McWilliams and Bill Fleming.

On page 2 and 3 of the Supplemental Report, OIG states “..merely to provide Mr. Fleming with a record of her work while on detail.”

Mr. Fleming did not have the responsibility to maintain or control asbestos in the HCHB, however according to the attached document, he was the director of OHRM and Director of OSH before Nancy McWilliams took the position. In his capacity it was his responsibility to be apprised of all occupational safety and health issues as well as all “hazardous materials incidents” as evidenced in the attached HR Bulletin. In this capacity, he had knowledge of the September 2006 asbestos incident as well as the 2007 incident. Jana Brooks was required to report to Mr. Fleming and the report to Mr. Fleming was not a courtesy but a matter of duty. Mr. Fleming did not appropriately cause his office to act as he was required.

According to page 3 of the IG’s Supplemental Report response they stated that Nancy McWilliams was not hired as Director for OSH until June 24, 2007, by which time 8th floor/attic air samples no longer exceeded the OSHA PEL.

Nancy McWilliam’s appointment as Director of OSH on June 24, 2007 still places her in responsibility. The 8th floor/attic was to be under restriction to trained authorized personnel with respiratory protection which it was not. The request was given by GSA, and Industrial Hygiene Firms. If Mrs. McWilliams claims no knowledge of this, then her supervisor Bill Fleming knew according to the email forwarded to him from Jana Brooks on May 4, 2007. From June 24, 2007 when she was hired until early 2008 when the 8th floor/attic was closed there was occupational exposure which was fully under her responsibility. In addition, Nancy McWilliams had knowledge because she had oversight of FOH who she herself contracted to do testing, but not until 2008. She did have knowledge of the report of the person with asbestosis. Nancy McWilliams did contract with FOH later to do testing, but she had a duty to retrieve the list of potential employees and contractors who received the memo from Mr. Fanning and follow up with each individual instead of looking the other way.

According to page 2 of the IG’s investigation OAS was referred to as whole using the term OAS officials and or managers. Despite OAS’s knowledge of damaged asbestos, no testing for airborne asbestos in the 8th floor/attic was carried out from 2003 to early 2007 and OAS management was aware of the damaged and deteriorating of the asbestos within the 8th floor/attic.

During the stated time Doug Elznic was the Associate Director for Office Space Building Management (OSBM) and Mario Aquino was the Building Manager who reported to Mr. Elznic. Doug Elznic can not blame his inaction due to lack of knowledge. Nor can he point the finger to Fred

Fanning. From 2003 to July 2006 Doug Elznic was involved and or briefed in all asbestos matters. He even personally asked an industrial hygiene firm to investigate the daycare center after receiving a report of asbestos floor tile. (Peak Safety)

On page 6 of the IG's investigation it was stated that "between February 2007 and April 2007 – and perhaps earlier than that period airborne levels in the 8th floor/attic exceeded the PEL established by OSHA regulation and, because then- OAS management did not take prompt and sufficient action, an unknown number of employees and contractors in that area, including Mr. Lee, were potentially exposed to impermissible levels of airborne asbestos." Also within the investigation on page 6 it states between 2003-2006 OAS management fails to take adequate action in response to GSA contractor reports of damaged and deteriorating asbestos. Further on page 6 in the investigation, it is stated that the subsequent reports beginning in 2003 noted that damaged and deteriorating asbestos-containing materials could become airborne and thereby elevate above the PEL. During this period there were no testing conducted within the 8th floor/attic.

The IG's stated that Fred Fanning bypassed Doug Elznic on the asbestos issues regarding the 8th floor/attic and went straight to Jana Brooks. However that statement **maybe** true between February 2007-April 2007, but it's definitely not the case between 2003-2006 because Doug Elznic was the Associate Director for Office Space Building Management (OSBM) and Mario Aquino was Building Manager who reported directly to Mr. Elznic.

- Doug Elznic was responsible for Building Management oversight. Mario Aquino and Doug Elznic had first hand knowledge of the asbestos problems in the building.
- Fred Fanning became Acting Director for Office Administrative Services on July 5, 2006 which means Doug Elznic was aware of the asbestos issues prior to Mr. Fanning coming to OAS because he was present at times when Mario Aquino contracted Peak Safety to do industrial hygiene.

On page 7 of the investigation OAS management lied to the IG investigator stating that they did not receive a copy of GSA's 2006 report. However, while reviewing a prior building manager's asbestos related records in storage in the basement, the contractor and an OAS building management specialist found the 2006 GSA report addressing the presence of damaged asbestos in the 8th floor/attic in 2007. That report has a pull date of 2007 at the bottom which proves that they knew about the report and stashed it where they thought no one would ever look.

- Doug Elznic made it his business to get a respirator fit test by the industrial hygiene contractor (Peak Safety) hired by the Office of Building Management in 2007 so he appreciated the need for one due to the asbestos in the building.
- In the May 4, 2007 email sent to Doug Elznic from Jana Brooks, Tim Sleeth, GSA Regional Asbestos Manager, clearly states "Access to the 8th Floor Attic should remain restricted to authorized personnel only". As part of the management team Mr. Elznic shared

responsibility. In addition, this was not a bypass as Mr. Elznic was clearly aware of the restriction of the attic.

- Mario Aquino was responsible for updating Doug Elznic on all building affairs which he did on April 25, 2007.

Page 9 of the investigation states: OAS management was aware of asbestos contamination risk in the 8th floor /attic and the need to take remedial measures to protect employees as yearly as 2003.

- Again as referenced on page 2 and 6 the IG's reference OAS management as a whole without specifying the potential manager(s) at fault.
- It is clear that the managers are Mario Aquino and Doug Elznic. They controlled building management as early as 2003-2006 and their neglect of the building maintenance caused the disrepair of the attic and other areas of the HCHB.
- It could not have been Fred Fanning or Jana Brooks because they were not employed with the agency at the time, however Doug Elznic was the Associate Director for OSBM.

In a memo to Fred Fanning dated July 2, 2007 from Bart Bush (GSA Assistant Regional Administrator for Public Building Service) Mr. Bush stated to Mr. Fanning that on May 31, 2007, his staff met with members of OAS office to review the proposed Asbestos Mitigation Response Actions for abating asbestos containing material (ACM) located on the 8th floor and Penthouse levels of the Herbert C. Hoover Building. At that meeting Department of Commerce (Commerce) representatives were in agreement with GSA's plan for abating the ACM's and the overall cost estimate.

- In this memo it shows that Mr. Fanning was not the only Commerce representative attending this meeting so the question is who from OAS was in this meeting with GSA representatives on May 31, 2007?
- The memo shows that Commerce was reneging on its agreement with GSA in the Cost Sharing Proposal for Asbestos Abatement at the Hebert C. Hoover Building in the amount of \$230,000.
- This memo shows that Commerce held the abatement project up for a year refusing to pay its portion of the reimbursable work authorization for \$230,000.
- Another question raises, did Commerce have their funds available at the time to pay GSA? Or, was the hold up because they spent the funds on other things.

GSA's Draft
Department Of Commerce (HCHB) Asbestos Mitigation Response

The objective for this response was to provide a safe and healthy work environment for the tenant by minimizing the risk of exposure to airborne asbestos fibers.

- On page 4 of the draft Global Consultants (Industrial Hygiene Firm) stated in the Hazard Assessment that penetrations were observed in the walls separating the attic eaves areas from access corridors. These penetrations are conduits for the migration of asbestos fibers throughout the 8th floor and penthouse levels. Sealing these openings with air tight impermeable barriers will prevent the migration of asbestos fibers. The type of penetrations in the corridor walls include door shaped openings, valve access openings, irregular shaped openings, and ventilation openings.
- On page 3 Global Test: On May 3, 2007 14 air samples were collected on the 8th floor attic. The air samples were analyzed by TEM using the NIOSH Method 7402. The results of the 14 air samples ranged from less than 0.002 to 0.010 f/cc of air. 0.01 f/cc. Amosite and chrysotile asbestos fibers were detected in 4 of the samples. The OIG's investigation Appendix A-Timeline of Key Events failed to show this test result.

Final Input on the 2nd Supplemental Report:

Prior OAS management and the officials currently still employed with the U.S. Department of Commerce should be held liable for every rule, regulation and law broken. **NO EXCEPTIONS!** These individuals have placed numerous lives in danger for no reason and all they had to do was follow the recommendations that were handed down to them by federal regulations and professional Industrial Hygiene firms. Instead, the OAS management wasted government funds by neglecting the building and disregarding the regulations as well as the information provided by the firms that they hired to give professional input and operate business their way. I must say that I am very disappointed that the OIG within the U.S. Department of Commerce is approving of the rules, regulations and laws broken by OAS officials by not punishing those responsible. I have seen that very same OIG enforce disciplinary actions on far less violations that did not contribute harm to anyone.

- The OIG removed an employee from federal service for misusing her metro checks and OIG proceeded with the prosecution procedure.
- The OIG stated in the 2nd supplemental report that those officials who are still employed had no part in the asbestos threat between February 2007 – April 2007 either because they weren't in position of authority or because it was not in their job description. These are both false and lame excuses and are unacceptable. In 2003 the potential threats of asbestos within the 8th floor attic was reported and 2008 was when the OAS officials decided to take action. The attic was never restricted until January 2008 according the investigation. The OIG's stated that

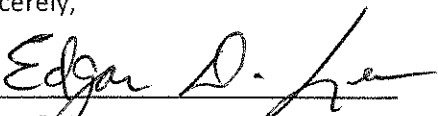
Nancy McWilliams started her employment at the agency in June 2007 which still places her within the scope of assuring that the attic was to be restricted to authorized personnel knowing that her office handles asbestos issues/occupational exposure. Not once did Nancy McWilliams or her supervisor Bill Fleming ask the question was anyone exposed? Knowing that Fred Fanning issued asbestos notification letters to some employees and contractors. Nancy McWilliams was the (Safety and Health Program Manager) assisting the William Fleming (Designated Agency Safety and Health Official). These individuals carry the title of Directors and SESer's and are being compensated for their titles, **ignorance is no excuse!**

- Those individuals get to leave and stay with the federal government advance in their careers and I was forced into disability retirement because of their actions I am the one being punished/disciplined in this action. I have suffered a great deal behind this and my punishment is I'm out a career and have health problems and their reward is that they are in.

Attachments Enclosed:

- Department of Commerce (HCHB) Asbestos Mitigation Response (Draft by GSA)
- Memo (To: Fred Fanning – From: Bart Bush)
- Matec 2003 Report
- U. S. Department of Commerce Occupation Safety and Health Manual
- 29 CFR. 1960.6 - Designation of Agency Safety and Health Officials
- Department of Commerce – Occupational Safety and Health Points of Contact
- Commerce OHRM Contacts (showing that Nancy McWilliams and her subordinate Richard Deny had responsibility in asbestos)
- HR Bulletin #07,FY06 29 CFR 1904.39

Sincerely,


Edgar D. Lee

Date: 05/16/11
May 16, 2011

**U.S. DEPARTMENT OF
COMMERCE**

**OCCUPATIONAL SAFETY AND
HEALTH MANUAL**

March 2000

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GLOSSARY

ABATE: To eliminate or reduce an unsafe or unhealthful working condition.

ACCIDENT: Any unplanned or unexpected event that results in personal injury, death, occupational illness, damage or loss of equipment or property.

ACCIDENT INVESTIGATION: The investigation of facts surrounding the cause(s) of an accident.

ACCIDENT REPORT: The formal report of an accident investigation.

ACGIH: American Conference of Governmental Industrial Hygienists.

ACTION LEVEL: A specific concentration of a substance which is less than the established PEL. Usually if exposure occurs at or above the action level, certain other criteria must be implemented. Only certain OSHA standards have an action level.

ACUTE: Sudden, severe, short duration.

ACUTE EXPOSURE: A short period of exposure to a substance which results in sudden and severe physiological changes.

ADMINISTRATIVE CONTROL: Any procedure which limits the daily exposure to toxic chemicals or harmful physical agents by control of the work schedule.

AFFECTED EMPLOYEE: An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is performed.

AGENCY: An Executive Department, as defined in 5 U.S.C 101, or any employing unit or authority of the government of the United States not within an Executive Department to which the provisions of Executive Order 12196 applies.

ANSI: American National Standards Institute, a national consensus standard-developing organization.

AREA SAFETY REPRESENTATIVE (ASR): The employee designated by a program/site manager at a headquarter's office or major field location to assist the OUSHR and RSM in implementing the Department's Occupational Safety and Health Program.

ATMOSPHERE IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH): Any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

AUDIOGRAM: A chart, graph or table resulting from an audiometric test, showing an individual's hearing threshold levels as a function of frequency.

AUDIOMETER: An instrument used to measure hearing sensitivity using pure tones.

AUTHORIZED EMPLOYEE: A person who locks or implements a tagout system procedure on machines or equipment in order to perform the servicing or maintenance on that machine or equipment. An authorized

employee and affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or equipment.

A-WEIGHTED SOUND LEVEL: Sound level in decibels as measured on a sound level meter using an A-weighted scale. This scale attempts to reflect the human ear's decreased sensitivity to low frequency sounds.

BIOHAZARDOUS AGENTS: include human and non-human blood, blood products, body fluids, organs, body parts and tissue; blood-soiled articles; carcasses and contaminated bedding of animals known to be infected with a disease that may be transmitted to humans; viruses, bacteria, fungi, and parasites; cultures and stocks of infectious agents and associated biologicals, etc.

"CAPABLE OF BEING LOCKED OUT": An energy-isolating device that is:

- a. Designed with a hasp or other attachment or integral part to which, or through which, a lock can be affixed; or
- b. Equipped with a built-in locking mechanism.

Other energy-isolating devices will also be considered to be capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device, or permanently alter its energy-control capability.

CEILING LIMIT: An exposure limit which cannot be exceeded for any length of time.

CHRONIC: Long duration, repeated (recurrent), persistent.

CHRONIC EXPOSURE: A long-term, repeated exposure to a substance.

COMPETENT PERSON: One who, through training and experience, is capable of identifying and evaluating existing hazards in the workplace and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees. This person has the authority to take, prompt corrective measures to eliminate hazards.

CONCENTRATION: The amount of a given substance in a stated unit of measure, such as per-cent by weight or volume, or weight per unit volume.

The following are examples of commonly used concentrations in occupational safety and health:

mg/m ³	milligrams per cubic meter and dusts	for vapors, gases, fumes,
PPM	parts per million	for vapors or gases
fibers/cc	fibers per cubic centimeter	for asbestos

CONTAINMENT: is referred to as the safe management of potentially biohazardous agents.

CONTAMINANT: A material or agent not normally present in the atmosphere, e.g., dust, fume, gas, mist or vapor, which can be harmful, irritating or a nuisance. **dB(A)** A sound level reading in decibels as measured on the A weighted scale of a sound level meter. (See A-weighted Sound Level)

DANGER ZONE: Any portion or component of a machine or equipment which would cause serious personal injury or death in the event of contact. Examples are chain drive and sprockets, cutting blade of a shear, in-running nip between two rollers, drive shafts, etc.

DECIBEL-dB: A unit of measurement of sound level.

DECONTAMINATE: is to render contaminated items safe to handle.

DESIGNATED AGENCY SAFETY AND HEALTH OFFICIAL (DASHO): The individual at the Assistant Secretary level who is responsible for the administration of the DOC safety and occupational health program.

DEPARTMENT'S SAFETY AND HEALTH PROGRAM MANAGER: The principal assistant to the Director for Personnel and Civil Rights and responsible for all Occupational Safety and Health Program matters.

DETECTOR TUBE: A glass tube, containing several chemicals and an inert material (e.g. silica gel), in which a color producing chemical reaction occurs when contaminated air is drawn through the tube. The length of the color stain is proportional to the concentration of the contaminant being measured.

DISABLING WORK INJURY: Any impairment resulting from an accident or occupational disease which prevents any DOC employee from performing his/her regularly established work during a 24-hour period, or more, subsequent to the day of injury.

DOSIMETER: A device for measuring cumulatively the exposure of an individual over a period of time.

DUST: Small solid particles created by the breaking up of larger particles by processes such as crushing, drilling, grinding, etc. Examples of processes that generate dust: Use of machine shop tools, paint chipping, sanding, woodworking, abrasive blasting.

EMPLOYEE: Any person employed or otherwise permitted or required to work for wages for the Department of Commerce.

EMPLOYMENT RELATED ACCIDENT: An accident occurring as a result of work performance or exposure to the work environment.

ENERGIZED: Connected to an energy source or containing residual or stored energy.

ENERGY-ISOLATING DEVICE: A mechanical device that physically prevents the transmission or release of energy, including, but not limited to, the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switch, or other control circuit type devices.

ENERGY SOURCE: Any source of electrical, hydraulic, chemical, pneumatic, mechanical, thermal, or other energy, including gravity and compressed springs.

FACILITY: A separate, individual building, structure, or other form of real property, including land.

FEDERAL OSHA OFFICIAL: An employee of the Department of Labor, Occupational Safety and Health

Administration (OSHA) with the authority and responsibility for enforcing the occupational safety and health program.

FIRST-AID TREATMENT: Any one-time treatment, or follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not usually require medical care. The one-time treatment and follow-up visit for observation is considered first-aid even though provided by a physician or registered professional personnel.

FREQUENCY: The number of sound waves produced per second, or the number of complete oscillations per second of an electromagnetic wave. Frequency is measured in units of Hertz (Hz) where one Hz is equal to one cycle per second. Frequency is related to the subjective sensation of pitch. High frequency sounds (2000, 3000, and 4000 Hz) are perceived as high pitched sounds.

FUME: Very small (10 micrometers diameter or less) solid particles formed by condensation of volatized solids, usually metals.

GAS: Formless fluid which tends to occupy an entire space uniformly at ordinary temperatures and pressures.

HARMFUL PHYSICAL AGENT: Any physical agent (stress, noise, heat, cold,) which may cause injury to the human body or which is suspected of being able to cause diseases or injury under some conditions.

HAZARD: A workplace condition that might result in injury, health impairment, illness, disease, or death to any worker who is exposed to the condition, or damage or loss to property/equipment.

HAZARD CONTROL ASSESSMENT: An objective overall assessment for measuring the relative priority of hazard abatement projects.

HAZARD, SERIOUS: A workplace condition of Category I or Category II, as defined below:

- (1) Category I - Catastrophic: The hazard may cause death or loss of a facility.
- (2) Category II - Critical: May cause severe injury, severe occupational illness, or major property damage.
- (3) Category III - Marginal: May cause minor injury, minor occupational illness or damage.
- (4) Category IV - Negligible: Probably would not affect the safety or health of the personnel, but is in violation of specific criteria.

HAZARDOUS MATERIAL: A hazardous material is a product or material that is flammable, reactive, radioactive, or toxic and whose presence or use constitutes a physical, chemical, or biological hazard.

HAZARDOUS MATERIAL: For the purpose of preparing the Material Safety Data Sheet, a hazardous material is defined as a material having one or more of the following characteristics:

- a. Has a flashpoint below 200OF (93.30C) closed cup, or is subject to spontaneous heating or is subject to polymerization with release of large amounts of energy when handled, stored and shipped without adequate control,

- b. Has a threshold limit value (TLV) below 1000 parts per million (PPM) for gases and vapors, below 500 mg/m³ for fumes, and below 30 mppcf for dusts,
- c. A single oral dose which will cause 50% fatalities to test animals when administered in doses less than 500 mg per kilogram of test animal weight,
- d. Is a strong oxidizing or reducing agent,
- e. Causes first degree burns to skin in short time exposure, or is systemically toxic by skin contact;
- f. In the course of normal operations, may produce dusts, gases, fumes, vapors, mists or smokes with one or more of the above characteristics,
- g. Produces sensitizing or irritating effects,
- h. Is radioactive, or
- i. The item has special characteristics which, in the opinion of the manufacturer, could cause harm to personnel if used or stored improperly.

HAZARDOUS MATERIAL INFORMATION SYSTEM: (HMIS) A computer based information system developed to accumulate, maintain, and disseminate important characteristics of hazardous materials which exist throughout the Department of Defense (DOD).

HAZARDOUS NOISE: Exposure to an 8-hour time-weighted average sound level of greater than 85 Db(A) or intermittent, impact, impulse noise levels of greater than 140 Db(A).

HAZARDOUS NOISE AREA: Any work area where the A-weighted sound level (continuous or intermittent) is equal to or greater than 85 Db. or where the peak sound pressure level (impulse or impact noise) exceeds 140 Db.

HEARING LEVEL: The amount in decibels (Db) by which the threshold of audition for an ear differs from zero decibels (a standard audiometric threshold derived from normal-hearing young adults), for each frequency.

HERTZ (Hz): The unit of measurement of frequency, numerically equal to cycles per second.

HIGH-EFFICIENCY PARTICULATE AIR (HEPA) FILTER: A filter capable of trapping and retaining at least 99.97 percent of 0.3 micrometer diameter monodispersed particles.

ILLNESS (OCCUPATIONAL): Any abnormal condition or disorder of the body, other than one resulting from an injury, caused by exposure to conditions associated with the occupational environment.

IMMINENT DANGER: A condition that immediately threatens an employee with loss of life, serious injury or illness.

IMPULSE OR IMPACT NOISE: Sound of a short duration, usually less than one second, with an abrupt onset and rapid decay. Also those variations in noise levels that involve maxima at intervals greater than 500 milliseconds. Where the intervals are less than 500 milliseconds, the noise is considered continuous.

INJURY: Traumatic bodily harm, such as a cut, fracture, burn or poisoning, caused by a single or one-day exposure to an external force, toxic substance or physical agent.

INFECTIOUS: defined as capable of causing infection or being communicable by infection.

INSPECTION: A comprehensive survey of all or part of a workplace in order to detect safety and health hazards.

INSTALLATION: A facility or grouping of facilities located in the same vicinity, which support particular DOC functions. Installations may include locations such as airports, shipyards, office buildings, laboratories, etc., or may be ships.

LOCKOUT: The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

LOCKOUT DEVICE: A device that uses a positive means such as a lock, either key or combination type, to hold an energy-isolating device in the safe position and prevent the energizing of machines or equipment.

MULTIPLE LOCKOUT/TAGOUT DEVICE: A device designed to accept two or more locks or Equipment Tagout Tags, and is placed on the energy-isolating device to hold it in the safe position. This device is used when more than one person is working on the machine or equipment, and cannot be removed from the energy-isolating device until all locks or tags are removed.

LOST WORK DAYS - DAYS AWAY FROM WORK: The number of days (consecutive or not) that a DOC employee would have worked but could not because of an occupational injury or illness. This category is limited to days lost as a result of an on-duty occupational illness or injury. The number of lost work days does not include the day of the injury or any days which the person was not scheduled to work, e.g. Saturdays, Sundays and holidays.

MATERIAL SAFETY DATA SHEET (MSDS): The form (OSHA Form 20 or equivalent) used to display important characteristics of a particular hazardous material.

MEDICAL TREATMENT: Treatment administered by a physician or by registered personnel under the standing orders of a physician. Medical treatment does not include first aid even though provided by a physician or registered professional personnel.

MSHA: Mine Safety and Health Administration, U.S. Department of Labor.

MIST: Finely divided liquid droplets suspended in air and generated by condensation or by atomization.

NIOSH: National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services.

NIOSH/MSHA CERTIFIED EQUIPMENT: Respirators or other equipment that have been tested by NIOSH or MSHA and jointly approved as meeting certain minimum requirements of protection against specified hazards.

NOISE EXPOSURE: Personal interaction to a combination of sound level and its duration.

NORMAL PRODUCTION OPERATIONS: The use of a machine or equipment to perform its intended production function.

NORMAL WORKING POPULATION EXPOSED TO HAZARD: The number of employees whose activities on DOC owned or leased property cause them to be exposed to the hazardous condition on several occasions during a work year; no one should be included in this estimate who is exposed to the hazard so infrequently or at such low exposure concentrations that it can be considered insignificant. For example, do not count as exposed those employees who only occasionally pass by the door where a hazard is located.

OCCUPATIONAL HEALTH: The field of general preventive medicine concerned with the prevention and/or treatment of illness induced by factors in the workplace environment. The major disciplines are: occupational medicine, occupational health nursing, epidemiology, toxicology, industrial hygiene, and health physics.

OPERATING UNITS: Bureaus, agencies, administrations, and offices which report directly to the Secretary of Commerce.

MOTOR VEHICLE: Any self-propelled mechanically or electrically powered vehicle designed to be operated principally on the highway for the transportation of property or passengers.

MOTOR VEHICLE ACCIDENT: Any occurrence involving a Federal Government owned, leased or rented motor vehicle, or privately owned motor vehicle operated on official business, which results in the death, injury or property damage of \$100 or more, regardless of who was injured (if anyone) or what property was damaged.

NON-VEHICLE PROPERTY DAMAGE ACCIDENT: Any accident, other than motor vehicle, which involves Federal property or relates to Federal operations anywhere; and which results in property damage exceeding \$100. Accidents involving special purpose vehicles used primarily off public highways, and properly parked motor vehicles, are recordable as special purpose vehicle property damage accidents.

OPERATING UNIT SAFETY AND HEALTH REPRESENTATIVE (OUSHR): The employee designated or appointed by the head of an operating unit to be responsible for implementing the Department's Occupational Safety and Health Program within the operating unit.

OSHA: Occupational Safety and Health Administration, U.S. Department of Labor.

OSHAct: The Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596, December 29, 1970.

OSHA STANDARDS: Standards issued by the U.S. Department of Labor Occupational Safety and Health Administration pursuant to Section 6 of the OSHAct.

OXYGEN DEFICIENT ATMOSPHERE: An atmosphere having an oxygen concentration which is below the minimum legal requirement (19.5 percent), but above that which is immediately dangerous to life and health. Such a deficiency is generally caused by oxidation or by the dilution/displacement of oxygen by other gases.

PARTICULATE MATTER: A suspension of fine solid or liquid particles in air, such as: dust, fog, fume, mist, smoke or spray. Particulate matter suspended in air is commonly known as an aerosol.

PEL: Permissible Exposure Limit. The maximum possible concentration of a toxic chemical or physical agent, to which the employee may be exposed.

PERSONAL PROTECTIVE EQUIPMENT: Any protective device or clothing worn, used or put in place for the safety and protection of an employee during the performance of work assignments. Examples of personal protective equipment include coveralls, hard hats, gloves, safety shoes, ear muffs/plugs, and respirators.

PROTECTIVE EQUIPMENT: A device or item put in place for the protection of employees or the public at large. Examples of protective equipment include barricades and lights.

RECORDABLE OCCUPATIONAL INJURIES OR ILLNESSES: Any occupational injuries or illnesses which result in:

- a. A fatality, regardless of the time between the injury and death, or the length of the illness; or
- b. Injury or illness cases that result in lost work days; or
- c. Non-fatal cases without lost work days which result in transfer to another job or termination of employment, or requires medical treatment (other than first-aid), or involves the loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illness which are reported to the employer but are not classified as fatalities or lost work day cases.

REGIONAL SAFETY MANAGER (RSM): The safety and health professional designated or appointed by an Administrative Support Center (ASC) Director to implement the Department's Occupational Safety and Health Program throughout the ASC service area.

REGULATED (ASBESTOS) AREA: A demarcated area established by the site manager to minimize the number of persons who might be exposed to airborne concentrations of asbestos fibers which exceed or can be expected to exceed the permissible exposure limit, threshold limit value or other accepted exposure limit.

RESTRICTED AREA: Any area where access is controlled for the purpose of excluding entry of persons of less than 140 centimeters (55 inches) in stature.

RISK ASSESSMENT CODE (RAC): A simple expression of risk which combines the elements of hazard severity and mishap probability. This assessment will be used to help prioritize abatement projects.

SAFETY OR HEALTH PROFESSIONAL: Persons who meet the Office of Personnel Management standards for Safety and Occupational Health Specialist Manager GS0018, Safety Engineer GS0803, Safety Technician GS001-9, Fire Protection Engineer GS0804, Fire Protection Specialist/Marshall GS0081, Medical Officer GS0602, Health Physicist GS1306, Industrial Hygienist GS0690, or Occupational Health Nurse GS0610.

SERIOUS PHYSICAL HARM: Permanent, prolonged, or temporary impairment of the body in which part of the body is made functionally useless or is substantially reduced in efficiency on or off the job. Examples of debilitating illnesses are silicosis, asbestosis, hearing impairment, radiation exposure and visual impairment.

SERVICING AND/OR MAINTENANCE: Workplace activities such as construction, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or start-up of the equipment or release of hazardous energy.

SETTING UP: Any work performed to prepare a machine or equipment to perform its normal production

operation.

SIGNIFICANT THRESHOLD SHIFT: A change in the hearing threshold level relative to the baseline (reference) threshold level of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

SMOKE: Carbon or soot particles less than 0.1 micrometer in size resulting from the incomplete combustion of carbonaceous materials such as coal or oil.

SOLVENT: A substance, most commonly water, but often an organic compound which is used to dissolve another substance.

SPECIAL PURPOSE VEHICLE: Any self-powered mechanically or electronically powered agricultural, construction, warehouse, material handling or other special purpose vehicle used primarily off public highways by Federal employees during the official workday. Examples include cranes, lifts, watercraft and aircraft. Accidents involving damage to motor vehicles while properly parked are included in this category.

STANDARD: A rule, established by a competent authority, which designates safe and healthful conditions or practices under which work must be performed in order to prevent injury, occupational illness or property damage.

a. **Criteria** Those parts of a standard that establish a measurable quality, e.g., specifications, inspection intervals, etc., which must be met.

b. **Equivalent Criteria** A criteria which is determined to be equivalent ("at least as effective as") to the originally established criteria which it supersedes. The determination of equivalency must be made by a competent authority and shall be a judgement based on the preponderance of information available.

STEL: (Short Term Exposure Limit) A 15-minute time weighted average exposure which should not be exceeded at any time during a workday.

SUPERVISOR: One who immediately directs the job efforts of a working group or individual.

TAGOUT: The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled cannot be operated until the tagout device is removed.

TAGOUT DEVICE: A prominent warning device, such as a commercially available tagout tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled cannot be operated until the tagout device is removed.

TLV: (Threshold Limit Value) A term used to express the airborne concentration of a substances to which most workers may be repeatedly exposed, day after day, without an adverse effect. TLVs are established by the American Conference of Governmental Industrial Hygienists (ACGIH) and are recommendations and should be used as guidelines in establishing good practices.

TOXIC SUBSTANCE: Any substance, which can cause acute or chronic injury to the human body, or which is suspected of being able to cause diseases or injury under some conditions.

TRAUMATIC INJURY: A wound or other condition of the body, caused by external force, including strain

or stress. The injury must be identifiable as to time and place of occurrence and member or function of the body affected and be caused by a specific event or incident or series of events or incidents within a single day or work shift.

TWA: Time Weighted Average. An average value weighted in terms of the actual time it exists during a given time interval.

VAPOR: Gaseous form of substances which are normally in a solid or liquid state and which can be changed to these states either by increasing the pressure or decreasing the temperature.

WORKING DAYS: Authorized days of work, normally Monday through Friday (excluding Federal holidays), or other designated days.

WORK PLACE: A place of employment (usually a single geographical location) where employees perform authorized duties in designated work areas.

WORK ENVIRONMENT: The physical location, equipment, materials processed or used, and the kinds of operations performed by an employee in the performance of his/her work, whether on or off the Department's premises.

CHAPTER 1

INTRODUCTION

01. BACKGROUND

9. The Department of Commerce (DOC) Occupational Safety and Health (OSH) Program has existed for several years. Historically, management of the occupational safety program component has been delegated to each DOC Operating Unit Head, whereas the occupational health component had been centrally managed by the Department's Director of Personnel.
- b. The OSH Program gained special prominence after the passage of the Occupational Safety and Health Act (the Act) on December 31, 1970, although the primary thrust of the Act was directed at the private sector employer. Section 19 of the Act directed Federal agencies to establish and maintain comprehensive and effective occupational safety and health programs consistent with the standards promulgated under Section 6 of the Act.
- c. On July 26, 1971, Presidential Executive Order (E.O.) 11612, entitled "Occupational Safety and Health Programs for Federal Employees" was signed. This Executive Order stated that the Federal government, as the nation's largest employer, has a special obligation to set an example for safe and healthful employment. In this regard, the head of each Federal department and agency was directed to establish an occupational safety and health program in compliance with Section 19 of the Act. Over the next three years, only moderate progress was made by many Federal agencies; consequently, the Congress received considerable criticism for a perceived double standard between the private sector and Federal agencies. As a result, E.O. 11807 was issued in 1974 to replace E.O. 11612 and more clearly define the scope, requirements and responsibilities of Federal agency programs. In addition, E.O. 11807 tasked the Secretary of Labor to issue guidelines designed to assist Federal agencies in establishing their programs. The guidelines were issued on October 9, 1974, as Title 29, Code of Federal Regulations, Part 1960, "Safety and Health Provisions for Federal Employees."
- d. As a result of questions raised concerning the regulatory authority of the Department of Labor (DOL) to issue such "guidelines," E.O. 11807 was superseded on February 26, 1980 by E.O. 12196, "Occupational Safety and Health Programs for Federal Employees." This Executive Order *requires* each agency head to *comply with all standards* issued under Section 6 of the Act, except where the Secretary approves compliance with alternative standards.

This was a major change which affected all Federal agencies and, in turn, resulted in DOL revising its "guidelines" on October 23, 1980, and reissuing them as "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters."

02. U.S. DEPARTMENT OF COMMERCE SAFETY AND HEALTH POLICY

It is DOC policy to provide safe and healthful work environments for all employees. These conditions shall be ensured through a comprehensive and effective program fully endorsed by the

Secretary of Commerce and implemented throughout the Department. The program shall include the following:

- a. Compliance with applicable standards.
- b. At least annual inspections of all work places by qualified OSH inspectors.
- c. Prompt abatement of identified hazards. To the greatest extent possible, all hazards shall be eliminated or minimized through engineering or administrative controls. Where engineering or administrative controls are not achievable, appropriate personal protective equipment shall be provided at government expense. Where hazard resources are limited, priorities shall be assigned to correct the most serious problems first. Notices shall be posted to warn employees of unabated serious hazards and to provide interim protective measures.
- d. Procedures for all employees to report suspected hazards to their supervisors and/or safety and health officials without fear of reprisal. Allegations of reprisal for such participation shall be filed within existing reporting channels. Nothing, however, shall prohibit the employee from notifying the next higher level safety and health official if appropriate abatement has not occurred.
- e. Appropriate OSH training for safety and health officials, all supervisory personnel and employees. Applicable OSH requirements shall be integrated into training programs and technical publications.
- f. Procedures for the review, in advance of procurement or construction, of facility, system and subsystem design to ensure that OSH hazards are eliminated or controlled throughout the life cycle.
- g. A thorough accident investigation process and a comprehensive OSH management information system which provides all OSH data required by upper management.

03. APPLICABILITY

The provisions of this manual apply to all DOC employees and shall be consistent with the provisions of 5 U.S.C., Sections 7901-7902 and other provisions of law providing for collective bargaining agreements and procedures.

CHAPTER 2

RESPONSIBILITIES

01. DISCUSSION

- a. The Secretary of Commerce fully supports the concept that a successful occupational safety and health program, one which truly reduces work-related risks, results when the visibility of the program penetrates every level of the organization. In support of this, the Secretary has established the maintenance of a safe and healthful work place as a top management policy within the Department. Overall responsibility for the Department of Commerce Occupational Safety and Health Program (OSH Program) rests with the Secretary of Commerce with implementation authority delegated to the Chief Financial Officer and Assistant Secretary for Administration.
- b. This Chapter describes the responsibilities at each level for implementing the OSH Program.

02. DESIGNATED AGENCY SAFETY AND HEALTH OFFICIAL (DASHO)

As Designated Safety and Health Official (DASHO), the Director for the Office of Administrative Services is responsible for the overall administration of the OSH Program, and shall:

- a. Be accountable for all OSH Program activities, including compliance with Federal regulations;
- b. Manage the development, issuance, and maintenance of the Department of Commerce Occupational Safety and Health Manual (OSH Manual) authorized in Section 4 of DAO-209-4;
- c. Ensure that periodic evaluations are conducted of the effectiveness of the OSH Program; and
- d. Chair the Department's Occupational Safety and Health Council.

03. DEPARTMENT SAFETY AND HEALTH PROGRAM MANAGER

The Department Safety and Health Program Manager, as a principal assistant to the Director for the Office of Administrative Services, shall:

- a. Oversee all OSH Program activities including evaluation of the Program's effectiveness and compliance with Federal and Departmental requirements;
- b. Develop policy, guidance and standards for the Department's OSH Program;
- c. Ensure health services are provided to Department employees and such services are administered in an effective manner. This includes:
 1. Evaluating the level of health service provided ("level" includes the extent of treatment capability at a facility in terms of available medical skill, equipment, and staff);
 2. Making recommendations to improve the service level; and
 3. Developing policy consistent with OPM and DOC requirements.

- d. Prepare the annual Occupational Safety and Health Report for submission to the Secretary of Labor, and
- e. Develop, issue, and maintain the Department's OSH Manual, addressed in Section 4 of DAO 209-4.

04. OPERATING UNITS

- a. HEADS OF OPERATING UNITS are responsible for providing a safe and healthful work place for their employees and for ensuring implementation of the OSH Program within their units. Each operating unit head shall designate an Operating Unit Safety and Health Representative (OUSHR) and re-delegate to this employee the authority to implement the OSH Program within the unit. Operating units which meet any of the following criteria shall have a full time OUSHR who meets OPM standards for Safety and Health Manager/Specialist, GS-0018; Safety Engineer, GS-0803 or Industrial Hygienist, GS-0690:
 - 1. The number of employees in the operating unit exceeds 2500;
 - 2. The employees of the operating unit work in a medium to high risk environment (e.g., research laboratories).
 - 3. The operating unit experiences fifty or more occupational accidents per year for two consecutive fiscal years.

Heads of operating units whose organizations do not meet any of the above criteria shall assign these functional responsibilities as a collateral duty to an appropriate individual within the organization.

- b. Management Officials, at the request of and in consultation with the OUSHR, will designate qualified employees to serve as Area Safety Representatives (ASRs). The designated employee may have other assigned duties at the discretion of the designating official.
- c. Operating Unit Safety and Health Representatives (OUSHR) shall:
 - 1. In consultation with program and site managers, establish and maintain a network of Area Safety Representatives (ASRs):
 - 2. Coordinate with ASRs and ASC Regional Safety Managers (RSMs) to ensure annual inspection of all work places;
 - 3. Coordinate with appropriate Department management, ASRs, and RSMs to ensure abatement of unsafe or unhealthful working conditions.
 - 4. Maintain record keeping system consistent with Department and OSHA requirements, and make reports as requested;
 - 5. Coordinate with ASRs and RSMs to ensure that employees and managers are aware of their safety and health responsibilities, and assist them in meeting those responsibilities;
 - 6. Participate as a permanent member of the Department's Occupational Safety and Health Council;

7. As necessary, develop and issue operating unit policies and procedures to supplement the Department's OSH Program;
 8. Provide required reports to the Department on the status of the operating unit's OSH Program within headquarter's offices.
- d. Area Safety Representatives (ASRs), within their designated areas of responsibility, shall:
1. Conduct inspections of all work places in accordance with 29 CFR Part 1960, Subpart D. Documentation of completed inspections shall be provided to the appropriate RSM and OUSHR in a timely manner;
 2. Coordinate with appropriate management officials and building maintenance personnel to correct unsafe or unhealthful working conditions;
 3. Maintain records and submit reports as requested to the appropriate OUSHR/RSM to support the OSH Program;
 4. Inform managers and employees of their safety responsibilities, and assist them in meeting those responsibilities; and
 5. As required, obtain technical assistance from the RSM or OUSHR to aid in the evaluation and inspection of work environments.

05. ADMINISTRATIVE SUPPORT CENTERS

- a. Each ASC Director is responsible for assisting managers at Department installations serviced by the ASC in establishing a safe and healthful work environment and ensuring full implementation of the OSH Program at these facilities. The Director shall designate an ASC Regional Safety Manager (RSM) who meets OPM standards for a Safety and Health Manager/Specialist, GS-0018; Safety Engineer, GS-0803; or Industrial Hygienist, GS-0690, and delegate to this individual the necessary authority to execute these responsibilities.
- b. Regional Safety Managers (RSMs) shall:
 1. Monitor implementation of the OSH Program at field installations;
 2. Coordinate with ASRs and OUSHRs on the inspection of all work sites within the ASC service area;
 3. Provide assistance to the ASRs for the effective implementation of the OSH Program;
 4. Conduct inspections of medium and high risk workplaces at least every three years, and report as directed;
 5. Maintain a computer-based records keeping system consistent with Department and OSHA regulations;
 6. Provide reports as required by the Safety and Health Program Manager on the status of the Program within the ASC service area;

7. Maintain copies of the Occupational Safety and Health Act of 1970, Executive Order 12196, applicable OSHA regulations contained in 29 CFR, Department Organization Orders, and Department Administrative Orders pertaining to the Program. Copies of any of these sources shall be made available to any Department employee upon request;
8. Provide technical guidance to ASC Reality Specialists in acquiring real property which meets occupational safety and health requirements;
9. Review modifications to equipment or buildings for compliance with occupational safety and health regulations;
10. Coordinate or provide training to ASRs, supervisors, and employees serviced by the ASC as required by the Program;
 - Provide assistant to site managers in establishing health services for employees at field installations; and,
12. Participate as a permanent member of the Department's Safety and Health Council.

06. SUPERVISORS (throughout the Department shall):

- a. Ensure that their employees comply with Department occupational safety and health standards, regulations, and applicable directives;
- b. Provide a place of employment which is free from recognized hazards;
- c. Initiate proper action to correct hazards and ensure compliance with safety practices;
- d. Ensure prompt investigation and reporting of all accidents involving their employees and all accidents occurring in work areas under their jurisdiction; and
- e. Where required, provide approved protective equipment to employees and ensure its proper use.

07. EMPLOYEES (throughout the Department):

- a. Shall comply with the Department occupational safety and health standards, regulations and orders applicable to their individual actions and conduct.
- b. Shall report unsafe or unhealthful conditions and practices to their supervisor or area safety representative and, if appropriate, request an inspection of the workplace;
- c. Where required, shall wear and properly maintain personal protective clothing and equipment; and
- d. Each employee has the right:
 1. To disclose information which he or she reasonably believes evidences a substantial and specific danger to public health or safety to the Inspector General of the Department; and
 2. To make the disclosure anonymously and be protected from reprisal because of any such disclosure.

CHAPTER 3

OCCUPATIONAL SAFETY AND HEALTH STANDARDS

01. DISCUSSION

- a. Heads of Federal agencies are required to establish procedures for the development of agency OSH standards. Agencies are required to comply with the standards promulgated for the private sector by the Secretary of Labor, pursuant to Section 6 of the Act.
- b. The Department of Commerce has adopted the Occupational Safety and Health Administration (OSHA) standards for use throughout the Department. In addition, DOC has adopted several supplemental standards and other regulatory OSH standards. These are addressed in Section 02. below. More stringent alternate procedures to the OSHA standards may be adopted by operating units following approval procedures addressed in Section 03. of this chapter.
- c. This chapter provides guidance and direction in the development and application of standards within the DOC OSH program.

02. DOC OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Department of Commerce Occupational Safety and Health standards shall consist of the following:

- a. DOC operating procedures (corresponding to chapters in this manual). These procedures will be based on the following:
 1. OSHA standards, including emergency temporary standards issued under the provisions of the OSH Act. Instructions based on these 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 a more stringent criteria (e.g., lower exposure limits, increased monitoring frequency, etc.). The instruction may also refer to or adopt the latest version of an OSHA reference standard;
 2. Alternate DOC standards, authorized by the Department Safety and Health Program Manager subject to Department of Labor approval;
 3. Supplementary OSH standards covering conditions in unique work places for which no OSHA standards exist;
 4. Other regulatory OSH standards, issued under the statutory authority by Federal agencies such as the Departments of Transportation and Energy, the Nuclear Regulatory Commission (NRC), the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the Federal Aviation Administration (FAA), and the Coast Guard (CG); or
 5. Special standards, rules, and regulations developed by DOC or operating units to govern on site safety and health to the unique operations, equipment, and systems.

If there is no applicable DOC operating procedure (such as a chapter in this manual or an operating unit procedure), then check for:

- b. Published OSHA standards. If there is no published OSHA standard, then

- c. Any nationally recognized source of OSH guidance such as the American Conference of Governmental Industrial Hygienists (ACGIH), the American National Standards Institute (ANSI), the National Fire Protection Association (NFPA), and the National Institute for Occupational Safety and Health (NIOSH) criteria documents.

A partial listing of current standards that apply to DOC operations below:

- 29 CFR 1910 General Industry Standards,
- 29 CFR 1915 Shipyard Industry,
- 29 CFR 1917 Marine Terminal Operations,
- 29 CFR 1918 Longshoring Industry Standards,
- 29 CFR 1926 Construction Industry Standards,
- EPA Resource Conservation and Recovery Act,
- EPA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA),
- Department of Energy and the Nuclear Regulatory Commission regulations concerning the licensing, use, storage and disposal of radioactive material, and,
- Department of Transportation regulations regarding the marking, and transportation of hazardous materials.

The Department of Commerce has not deemed it necessary to create similar standards and; therefore, is obligated to comply with the above regulations as they are written. When a conflict between Federal, State and/or local standards arises, the most stringent standard will apply.

03. ALTERNATE STANDARD APPROVAL

The head of an operating unit must determine whether modifications to a DOC OSH standard are appropriate for the operating unit. Any proposed alternate standard must provide protection at least equivalent to that afforded by the DOC OSH standard being replaced. The following procedure applies:

- a. The Operating Unit Safety and Health Representative (OUSHR) will circulate proposed alternate standard to ASC Regional Safety Managers (RSMs) and employee organizations for comment.
- b. Subsequent to the comment period, the proposal shall be submitted by the operating unit head to the Department Safety and Health Program Manager for approval. The proposal must be accompanied by: (1) a summary statement which delineates the differences between the applicable DOC OSH standard and the proposed alternate standard, (2) a justification for the change, and (3) a summary of comments received.
- c. Upon receipt of Department approval, the operating unit head will ensure copies of the alternate standard are provided to the line organizations and the RSMs for implementation at all affected facilities.

04. APPLICATION

DOC OSH standards shall be applied in all DOC activities throughout the continental United States, Hawaii, and Alaska. Foreign Commercial Service and operating unit employees serving at overseas posts shall be guided by the Department of State OSH program and applicable standards.

- a. Certain operations are subject to mandatory safety standards or rules which are derived from separate statutory authority e.g., EPA regulations relating to hazardous materials "generators" or treatment/disposal facilities (TSDf's). Provided there is no substantive conflict, the application of these special functional standards does not exempt any workplace from other DOC OSH standards which address conditions not specifically covered by the special rules.

For example, a laboratory is subject to EPA standards and is also subject to DOC OSH standards for personal protective equipment, hazard communication, etc.

- b. Where employees of different DOC operating units and other Federal agencies are collocated in the same Federal installation, the DOC manager in charge should consult with the other agencies to resolve conflicts or potential conflicts in OSH standards.

05. IMPLEMENTATION

All levels of management shall:

- a. Ensure criteria contained in DOC OSH standards are:
 1. Understood and complied with by any affected employee, and enforced by supervision. In cases of non-compliance, management should take disciplinary action as a corrective measure against the offender and the supervisor, as appropriate;
 2. Applied in the acquisition of goods and services, and during the design and construction stages of new or upgraded facilities;
- b. Ensure that all publications, instructions, manuals, specifications, technical orders, etc., which contain OSH provisions, are reviewed and updated to conform to DOC OSH standards in a timely manner.

06. STANDARDS REVIEW

The Department of Commerce will review proposed OSHA standards and NIOSH criteria documents. The priority for reviewing these documents shall be based on the potential impact of each standard on DOC's overall mission and activities. In instances where a particular DOC operating unit possesses special expertise or interest in a proposed standard, that operating unit may be assigned the review responsibility. DOC review of standards or criteria documents will be coordinated by the Department's Safety and Health Program Manager and will include:

- a. Establishing a priority of OSHA standards or NIOSH criteria documents for review;
- b. Identification of operating units, centers, laboratories, etc., which should participate in the review process; and
- c. Determine applicability and impact of proposed standards and/or criteria under review.

CHAPTER 4

COUNCILS AND COMMITTEES

01. DISCUSSION

- a. Occupational Safety and Health (OSH) Councils and Committees serve as sounding boards for multiple viewpoints and interests of various groups and individuals on matters relating to the Department's OSH program. It is their purpose to serve as functioning bodies in the DOC OSH program by identifying, defining, and assessing OSH problem areas, and by recommending corrective measures for policy discrepancies where they may exist. From these recommendations, new or revised policies and procedures may be developed. Actions can then be initiated to first, improve the effectiveness of the Department's OSH program, and second, to meet specific needs of the individuals, groups and activities individually and collectively.
- b. OSH councils and committees have three basic functions:
 1. Create and maintain an active interest in occupational safety and health;
 2. Serve as a means of communications regarding occupational safety and health; and
 3. Provide program management assistance, including proposing policy and program objectives.

02. OCCUPATIONAL SAFETY AND HEALTH COUNCILS AND COMMITTEES

- a. The Federal Advisory Council on Occupational Safety and Health (FACOSH) acts in an advisory capacity to assist the Secretary of Labor in carrying out program responsibilities. The council consists of sixteen members appointed by the Secretary and includes representatives from Federal agencies and labor organizations representing Federal employees. At least eight members shall be representatives of such labor organizations.
- b. Field Federal Safety and Health Councils sponsored by OSHA have been established in many major metropolitan areas. The councils are established to facilitate the exchange of ideas and information about occupational safety and health throughout the Federal Government. While FACOSH was originated to operate at the headquarters level, the field councils function at the local level. These councils consist of representatives from local Federal agencies and labor organizations representing Federal employees.

The Department of Commerce supports these councils, and local Commerce officials are urged to participate in their activities.

- c. The Department opted not to establish an occupational safety and health committee that conforms to the provisions of Executive Order 12196 and 29 CFR 1960. Instead, the DOC Safety and Health Council was established under provisions outlined in this chapter. This council is chaired by the Designated Agency Safety and Health Official and includes representatives from all operating units and ASCs.
- d. In operating unit field locations and at each ASC, OSH councils/committees may be established if

considered necessary or desirable. This determination will be based upon the size, organization and need of such an activity. When a council is formed:

1. Members shall be appointed by operating unit heads, and shall include ASR's, key supervisory employees and a representative from each local labor unions. Where no union exists, a representative of the employees will be designated.
2. Meetings shall be held quarterly and minutes of the meeting shall be maintained by the ASR, RSM, or OUSHR as applicable.
3. Each council will develop its own rules of operation, agenda, and action items.
4. Operating unit field locations are encouraged to organize OSH committees at the shop level. When such sub-level committees are formed, provisions shall be made for the raising of concerns and recommendations to the next higher level OSH council (if appropriate).

03. FEDERAL SAFETY AND HEALTH CONFERENCES

DOC employees shall be encouraged to participate in existing field Federal Safety Council activities and shall not be penalized for their participation. Attendance and participation by Commerce OSH personnel in regional and national OSH conferences is encouraged. Where field Federal Safety Councils sponsor regular OSH seminars, workshops, and safety training, site managers should consider the benefits to be derived from attendance by collateral duty safety personnel.

04. SAFETY AND HEALTH COUNCILS AND COMMITTEES ABOARD SHIPS

- a. Safety and health councils or committees may be formed aboard any vessel and are encouraged to do so when the ship's total crew numbers more than thirty.
- b. Where formed, it is required that:
 1. The appropriate marine center be informed prior to its formation.
 2. The executive officer of the vessel be a permanent member of the council or committee.
 3. There be equal representation by the crew, officers and union representatives.
 4. Meetings be held quarterly and minutes of the meeting be maintained by the ASR.
- c. Training for the vessels council or committee members should be coordinated through the appropriate ASC RSM.

CHAPTER 5

PREVENTION AND CONTROL OF WORKPLACE HAZARDS

01. DISCUSSION

Section 19(a) of the Occupational Safety and Health Act of 1970 (the Act) requires that all Federal employees be provided with a safe and healthful place of employment. To fulfill this requirement, the Department's Safety and Health Program Manager has been delegated the authority to establish and maintain an effective hazard control program. Hazardous conditions may be identified at the project planning and design stage, as a result of workplace inspections, or by employee reports. All recognized safety and health hazards shall be eliminated or controlled as quickly as possible, subject to priorities based on the degree of risk posed by the hazards. The preferred method of hazard abatement shall be through application of engineering controls or by substitution of less hazardous processes or materials. The use of administrative controls, possibly in conjunction with personal protective equipment, is the next preferred method. Total reliance on personal protective equipment is acceptable only when all other methods are proven to be technically and/or economically infeasible. This chapter discusses the basic principles of hazard control and assigns responsibility for implementing hazard abatement actions.

02. PRINCIPLES OF HAZARD CONTROL

Safety professionals and industrial hygienists are specialists, who, through training and experience, develop proficiency in the recognition, evaluation, and control of workplace hazards. They should be thoroughly familiar with potential hazards created by various materials, equipment, and operations used in DOC facilities, and be aware of special designs required by OSHA and DOC standards to mitigate certain hazards. Some of the principles that are applied to prevent or mitigate workplace hazards are discussed in the following sections.

- a. Substitution. The risk of injury or illness may be reduced by replacement of an existing (or intended) process, material, or equipment with a similar item having a more limited hazard potential. Examples of beneficial process changes include brush painting instead of spray painting to reduce inhalation hazards, and welding instead of riveting to reduce noise levels. Equipment changes might include the use of electric motors rather than internal combustion engines for indoor operation to eliminate potential carbon monoxide exposures, and use of safety cans in place of bottles to store flammable solvents in a manner presenting a lessened fire hazard. Examples of material substitution include switching from carbon tetrachloride to 1,1,1 trichloroethane (methyl chloroform) for solvent degreasing to reduce risk of injury to the liver and kidneys of exposed workers, and the replacement of sand with synthetic abrasives in abrasive blasting cabinets to minimize the silicosis hazard associated with exposure to free silica dust. Care must be exercised in any substitution to ensure that the substitute materials are technically acceptable and to avoid introducing a new or unforeseen hazard.
- b. Isolation. Hazards are controlled by isolation whenever an appropriate barrier or limiter is placed between the hazard and the individual who may be affected by the hazard. This isolation can be in the form of physical barriers, time separation, or distance. Examples include machine guards, electrical insulation, acoustical containment, semi-automatic equipment that does not require constant attendance (time separation), and remote controlled equipment. To ensure that appropriate hazard control techniques are applied, cognizant industrial hygienists and safety professionals shall participate in the review of plans and specifications for these projects. Recommendations should be submitted in writing. Projects that involve potential health hazards such as toxic materials, radiation,

noise, or other health hazards shall be designed in accordance with established principles of good industrial hygiene such as those published by OSHA, NIOSH, ANSI, and ACGIH.

- c. **Operating Procedures.** Standard operating procedures or similar directives that specify the manner in which work is performed shall include appropriate safety and health requirements. Integration of instructions that affect productivity with those that effect well-being of employees is necessary to achieve organization goals in both areas with minimal conflict or confusion. Originators of such directives to work with potential hazards should coordinate with the appropriate safety and health personnel prior to issuance to ensure that applicable DOC requirements have been considered. Recommendations for changes/additions to the directive for safety/health purposes should be submitted to the originator. The originator shall maintain a copy of such occupational safety/health coordination.
- d. **Purchasing Procedures.** Many hazards can be avoided by incorporating appropriate specifications for purchased equipment/ material and contracted efforts that involve work at Commerce facilities. Contracts that require work to be performed by contract personnel at Commerce facilities shall be coordinated with the appropriate safety and health personnel.
- e. **Interim Hazard Abatement Measures.** During the time needed to design and implement permanent hazard control measures, temporary measures are needed. When engineering controls are not immediately applicable, administrative controls and/or personal protective equipment are appropriate for use as interim hazard abatement measures. Interim control measures shall be noted in inspectors' reports, abatement logs, and hazard notices.
- f. **Permanent Hazard Abatement.** Engineering control methods are the best method of hazard control, followed by administrative control and personal protective equipment. Feasible engineering controls shall be used to reduce hazardous exposure, even when only partial reduction of exposure is possible through engineering methods. Two criteria may be applied to determine whether engineering controls are feasible. First, a control is technologically feasible if it is available "off the shelf" or if technology exists which can be adapted to the hazard in question. Second, a control is economically feasible if it can be shown that the cost of the control is justified by the benefit it produces. If the expected reduction of the hazard through the use of an engineering control is insignificant in terms of increased protection, and the cost of implementing the control is great, then the control is economically infeasible.

03. APPLICATION OF HAZARD CONTROL PRINCIPLES

Hazardous workplace conditions may be prevented through appropriate actions when facilities are designed, when operating procedures are developed, and when equipment is purchased. Notwithstanding these preventive measures, hazards will arise as a result of the dynamics of the workplace environment. Once hazards are identified, whether through inspection or complaint, immediate action must be taken to avoid unreasonable danger. The immediate response may differ from the permanent corrective action.

- a. **System Safety Reviews.** System safety engineering and management principles shall be selectively applied to the acquisition of systems and facilities. Safety and health assistance in performing system safety reviews shall be requested as early as possible in the research and development or procurement process. Such early reviews will minimize the possibility of future modifications/alterations as well as the costs and time losses associated with such subsequent changes.
- b. **Design Reviews.** Safety and occupational health aspects shall be considered, designed, and engineered into all facilities which are acquired or constructed for use by DOC employees. Facility design engineers in many instances are not totally familiar with all potential health hazards created by

various materials, equipment and operations used in DOC facilities, nor are they aware of the special design considerations required to control these hazards. To ensure that appropriate hazard control techniques are applied, cognizant industrial hygienists and safety professionals shall participate in the review of plans and specifications for these projects. Recommendations should be submitted in writing. Projects that involve potential health hazards such as toxic materials, radiation, noise, or other health hazards shall be designed in accordance with established principles of good industrial hygiene such as those published by OSHA, NIOSH, ANSI, and ACGIH.

- c. Operating procedures. Standard operating procedures or similar directives that specify the manner in which work is performed shall include appropriate safety and health requirements. Integration of instructions that effect productivity with those that effect well-being of employees is necessary to achieve organization goals in both areas with minimal conflict or confusion.

Originators of such directives that involve work with potential hazards should coordinate with the appropriate safety and health personnel prior to issuance to ensure that applicable DOC requirements have been considered. Recommendations for changes/additions to the directive for safety/ health purposes should be submitted to the originator. The originator shall maintain a copy of such occupational safety coordination.

- d. Purchasing Procedures. Many hazards can be avoided by incorporating appropriate specifications for equipment/material and contracted efforts that involve work at Commerce facilities. Contracts that require work to be performed by contract personnel at Commerce facilities shall be coordinated with the appropriate safety and health personnel.
- e. Interim Hazard abatement measures. During the time needed to design and implement permanent hazard control measures, immediate, temporary measures are needed. When engineering controls are not immediately applicable, administrative controls and/or personal protective equipment are appropriate for use as interim hazard abatement measures. Interim control measures shall be noted in inspectors' reports, abatement logs, and hazard notices.
- f. Permanent Hazard Abatement. Engineering control methods are the best method of hazard control, followed by administrative control and personal protective equipment. Feasible engineering controls shall be used to reduce hazardous exposure, even when only partial reduction of exposure is possible through engineering methods. Two criteria may be applied to determine whether engineering controls are feasible.

First, a control is technologically feasible if it is available "off the shelf" or if technology exists which can be adapted to the hazard in question. Second, a control is economically feasible if it can be shown that the cost of the control is justified by the benefit it produces. If the expected reduction of the hazard through the use of an engineering control is insignificant in terms of increased protection, and the cost of implementing the control is great, then the control is economically infeasible.

04. DEVELOPMENT OF HAZARD CONTROL RECOMMENDATIONS

The following possible actions should be considered when recommendations are developed for the prevention or reduction of hazards:

- a. Avoiding, eliminating, or reducing deficiencies by engineering design, material selection or substitution;

- b. Isolating hazardous substances, components, and operations from other activities, areas, personnel, and incompatible materials;
- c. Incorporating "fail safe" principles where failures would otherwise disable the system or cause a catastrophe through injury to personnel, damage to equipment, or inadvertent operation of critical equipment;
- d. Relocating equipment/components so that personnel access during operation, maintenance, repair, or adjustment shall not result in exposure to hazards such as chemical burns, electrical shock, electromagnetic radiation, cutting edges, sharp points, or toxic atmospheres.
- e. Providing suitable warning and notes of caution concerning required personnel protection in operation, assembly, maintenance, and repair instructions;
- f. Providing distinctive markings on hazardous components; equipment, or facilities;
- g. Requiring the use of personal protective equipment when other controls do not reduce the hazard to an acceptable level;
- h. Monitoring exposure to ensure that engineering controls effectively reduce the hazard; and
- i. Training employees to recognize hazards and take appropriate precautionary measures.

05. RESPONSIBILITIES

The following responsibilities are assigned for directing and supervising an effective occupational safety and health hazard control program.

- a. The Department Safety and Health Program Manager shall:
 - 1. Assist the Department's Designated Agency Safety and Health Official in carrying out the occupational safety and health program responsibilities in matters of hazard control;
 - 2. Review and evaluate the effectiveness of occupational safety and health policies and procedures;
 - 3. Perform research related to identifying and controlling health hazards related to occupational exposures; and
 - 4. Identify, on a continuing basis, equipment, facilities, and materials in the Department which may adversely affect the health and safety of all DOC employees to ensure that health or safety risks are recognized, and evaluate corrective measures taken.
- b. Heads of operating units have the inherent responsibility for the control of occupational safety and health hazards within the operating unit. To assist and ensure such control, site managers and commanding officers shall ensure that all known facets of the hazard control program, including engineering, maintenance, management policy and supervisory controls, are monitored on a continuing basis to ensure the identification and elimination of hazards. Procedures for OSH control shall be applied across the interface (design/engineering /installation/operational/maintenance/disposal) to assure the integration of a dynamic hazard control program consistent with operational and DOC OSH

requirements.

c. ASC Regional Safety Managers and Operating Unit Safety and Health Representatives shall:

1. Assist the Department's Safety and Health Program Manager and operating unit heads in carrying out program responsibilities in the area of hazard control;
2. Identify and evaluate, (in coordination with ASRs) on a continuing basis, safety and health exposure in DOC systems, equipment and materials effecting the safety and health of DOC employees.
3. Ensure that safety and occupational health problems associated with the development, production, use and disposal of new equipment and materials are recognized, and that provisions are made in the development process for their control; and
4. Ensure that systems safety engineering and management principles are complied with during research, development, test, evaluation, production/acquisition of equipment, facilities and material acquired by DOC, as appropriate.

CHAPTER 6

TRAINING

01. POLICY AND DISCUSSION

- a. Studies indicate that an individual's past occupational experience is a factor in reducing the incidence of repeated job-related accidents. However, safety and health training, when effectively provided, can substitute for certain aspects of experience. The goal of the safety and health program is to prevent accidents and illnesses. This goal can only be achieved through a well-developed and coordinated training effort which incorporates training for not only employees, but also safety officials, supervisors and management personnel.
- b. Training programs must be designed in a manner which will instruct individual employees in the performance of their work in a safe and healthful manner. Training should be appropriate to the responsibility level of the individual; however, at a minimum, it must provide personnel with sufficient information for their effective participation in the Department's Occupational Safety and Health (OSH) Program.

02. TRAINING PROGRAMS

Table 6-1 identifies recommended minimum training for all categories of personnel. Records, consisting of training provided, list of attendees, and dates of training, must be maintained for five years. Individual employee personnel records shall reflect the training received.

- a. Top Management Personnel. Top Management personnel shall receive OSH training to enable them to actively and effectively support OSH programs in their specific areas of responsibility. In addition to the coverage of appropriate statutes, regulations, and applicable DOC OSH standards, management level training shall include:
 1. An in-depth examination of management's responsibilities in relation to the DOC OSH program. The general emphasis from this aspect of management level training shall be aimed at insuring that an aggressive and continuing OSH program is implemented throughout the Department. Training topics should include an analysis of compliance procedures, the study of current accident and injury reporting procedures, and a thorough understanding of investigation/inspection procedures;
 2. A review of DOC policy on all relevant aspects of the DOC OSH program. A sound comprehension of the material addressed in this manual is essential to the implementation of an integrated OSH program at all levels throughout the Department; and
 3. A comprehensive examination and analysis of the operating unit program objectives and goals. Typical operating unit program goals include:
 - (a) The reduction of personnel exposure to hazards by abatement procedures or facilities correction;
 - (b) The promotion of an increased degree of OSH awareness throughout the work

environment through an effective training program; and

- (c) The development of plans and procedures for evaluating and improving safety program effectiveness.
- b. Supervisors. Training for supervisors and managers shall include introductory and specialized courses and materials which will enable them to recognize unsafe/unhealthful working conditions and practices in the workplace. Training shall also include the development of skills necessary to manage the Department's OSH program at the work unit level. These management skills require the eventual training and motivation of subordinates in the development of safe and healthful work practices and involve the integration of occupational safety with job training. Newly appointed supervisors are required (under the provisions of DAO 202-411) to receive OSH related training prior to completion of their probationary period.
- c. Non-Supervisory Personnel. OSH training for non-supervisory personnel shall include specialized job safety and health training appropriate to the work performed by the employees. This specialized training shall be directed to the individual's work site and shall include examination of relevant DOC standards, and analysis of material and equipment hazards associated with the work site. Employee training shall be conducted with input and direction from the workplace supervisor and shall include instructions on employee rights and responsibilities under relevant OSH statutes, regulations and the DOC OSH program. Arrangements shall be made to provide training to all new personnel as close to the time of their appointment as possible. Initial training for new employees shall include:
 - 1. Individual responsibility for safety and health;
 - 2. Employee reporting procedures for hazardous operations/conditions;
 - 3. Awareness of hazards common to the individual's work site, trade, occupation or tasks; and
 - 4. Departmental and local policy on occupational safety and health.
- d. Safety and Occupational Health Specialists. These personnel shall be trained through courses, laboratory experiences, field study and other formal experiences to prepare them to perform the necessary technical monitoring, consulting, testing, inspecting, and other tasks that are required of OSH professionals. Training and education shall be provided in accordance with professional development plans and the needs of the ASC/operating unit to support an effective OSH program. Individual development plans for each OSH professional shall be established and will include:
 - 1. On-the-job training on a continuing basis;
 - 2. Special courses of instruction, conferences, seminars, meetings and the like which are related to assigned duties when such training will contribute to their professional development, or performance of assigned duties; and
 - 3. Participation, as appropriate, in the local chapter of the Federal Field Safety and Health Council.
- e. Collateral Duty Personnel. These employees shall receive training necessary for the performance of duties specified by DOC programs within the nature and scope of the unit's operations. Training may be accomplished by attending the OSHA Training Institute course for Federal Agency Collateral Duty Safety Personnel or a course of instruction by a DOC safety professional that encompasses the same

curriculum. At a minimum, training shall include the DOC Occupational Safety and Health Program; section 19 of the Act; Executive Order 12196; 29 CFR 1960; agency procedures for the reporting, evaluation and abatement of hazards; agency procedures for reporting and investigating allegations of reprisal, the recognition of hazardous conditions and practices; identification and use of occupational safety and health standards, and other appropriate rules and regulations. Training should be completed within six months of a collateral duty safety assignment.

03. EDUCATIONAL MATERIAL

OSH educational and promotional materials such as posters, films, technical publications, pamphlets, and related materials can be beneficial in the reduction and prevention of workplace related accidents and illnesses and shall be maintained and subscribed to by DOC activities as an integral part of the DOC OSH program.

- a. Reference Library. Each operating unit and ASC shall maintain a suitable safety and health reference library appropriate to the size and functions of the activity.
- b. Video/Film Library. The ASCs maintain a safety and health video/film library located at MASC. The library consists of 16mm films and VHS format video tapes that can be checked out at no cost. The only requirement is that they be returned insured for \$500. The library is restricted for use by professional DOC safety personnel or qualified ASRS. For specific information, contact the ASR, RSM or OUSHR for your area.
- c. National Safety Council Material. Arrangements should be made to purchase National Safety Council educational and promotional materials through a Federal Supply Schedule contract and local funding.
- d. Other Material. Various periodicals (such as the "Occupational Safety and Health Reporter", published by the Bureau of National Affairs, Inc.), magazines, texts, publications and applicable portions of the Federal Register, will be helpful in updating information for training programs.

TABLE 6-1

TRAINING PROGRAMS

	New Employees Orientation, including OSH Rights and Responsibilities	Safety Program Annual Report Review	Stand-up Safety Mtgs (various topics)	Hearing Conservation (if applicable)	Hazards of Asbestos (if applicable)	Respiratory Protection (if applicable)	Occupational Health Topics (heat, chemicals etc.) (if approp.)	Professional Development
Top Management	1 hour	1 hr./yr.						
Supervisory Personnel and Employee Reps	1 hour	1 hour per year		1 hour initially 1 hour annual refresher	1 hour per year	1 hour initially 1 hour annual refresher	1/2 hour per month	
Non-Supervisory Personnel	1 hour		5 minutes every 2 weeks	1 hour initially 1 hour annual refresher	1 hour per year	1 hour initially 1 hour annual refresher	1/2 hour per month	
Collateral Duty Safety and Occupational Health Personnel	1 hour	1 hour per year						5 CEU s - or equivalent per year
Full-Time Safety & Occupational Health Professional								8 CEU s - or equivalent per year or, 1 college level course

- Continuing Education Unit (CEU)

CHAPTER 7

SIGHT CONSERVATION

01. POLICY AND DISCUSSION

- a. It shall be DOC policy that all employees working in eye hazardous areas or operations be provided with adequate eye protection at government expense. Employees shall be required to wear appropriate eye protective equipment when performing eye hazardous operations such as pouring or handling of molten metals or corrosive liquids and solids; cutting and welding; drilling, grinding, milling, chipping, and sandblasting or other dust producing operations; and work in areas where there is a likelihood of dust, cement fragments or glass shards.
- b. The design, construction, testing, and use of devices for eye protection shall be in accordance with ANSI Standard Z87.1-1979 and ANSI Z136.1-1980 or the most current edition thereof. Specifications are given for impact protection against flying objects, protection against fine dust particles or liquid splashes, and protection against glare and radiant energy. At a minimum, the protective devices shall be adequate for the hazards specified, reasonably comfortable, and fit snugly without interfering unnecessarily with movement. They must be durable, capable of being disinfected, easy to clean, and maintained in good repair.
- c. In addition, ANSI Z87.1-1979 outlines reasonable ways to select the right equipment and prescribes its safe use. It defines several terms in the eye and face protection field such as absorptive lenses, bridge size, and cover plate. It also establishes requirements for welding helmets, hand shields, and face shields, as well as eye protection designed for various purposes. The standard includes an illustrated selection chart of recommended protectors, along with an applications chart showing what equipment or combinations of equipment best suit each hazardous operation.
- d. All DOC activities which perform eye-hazardous operations shall implement a sight conservation program in accordance with the guidance established in this chapter. The sight conservation program shall include, but not be restricted to, the following program elements:
 1. Determination/evaluation of eye-hazardous areas, processes, and occupations;
 2. Operation of an employee vision screening program;
 3. Procedures for use and application of temporary protective eye wear;
 4. An effective maintenance program for eye protective devices;
 5. A training/education program; and
 6. Effective program enforcement procedures.

02. BASIC PROGRAM REQUIREMENTS

In order to establish an effective sight conservation program, eye-hazardous areas, occupations, and processes must be identified and appropriate controls implemented.

- a. Survey. A complete survey of all DOC work areas and processes shall be conducted to determine which are eye-hazardous, which require eye protection, and the type of eye protection required. In addition to the common eye hazards such as flying objects resulting from certain cutting or drilling operations, the survey shall consider eye hazards associated with exposures to various forms of electromagnetic radiation (e.g., laser, ultraviolet, infrared, and microwave radiation). This survey may be part of the workplace inspection program. A list of all areas, processes, and occupations that require eye protection shall be maintained by ASR. For those sites which fall within the geographical jurisdiction of an ASC, the ASR is urged to coordinate eye protection matters with the RSM.
- b. Posting. All areas designated as eye-hazardous shall be posted with an appropriate warning sign. Such signs shall be consistent with the requirements of 29 CFR 1910.145 and shall be located at all entrances to designated areas as practicable.
- c. Emergency Eyewash Facilities. Emergency eyewash facilities meeting the requirements of ANSI Standard Z358.1-1981 shall be provided in all areas where the eyes of any employee may be exposed to corrosive materials. All such emergency facilities shall be located where they are easily accessible to those in need. Eye wash equipment shall be capable of delivering to the eye not less than 1.5 liters per minute (0.4 gallons per minute) for 15 minutes.
- d. Special Precautions for Visually Impaired Employees. Any employee who is found to have vision in one eye which is 20/200 (corrected) or worse shall be considered visually impaired. The degree of visual impairment shall be considered in duty assignments that present a hazard to the employees' remaining vision. Protective eye wear shall be made available to the vision impaired employee regardless of his/her occupation or work station.

03. VISION SCREENING PROGRAM

All employees required to wear protective eye wear shall be enrolled in a vision screening program. The vision screening program shall consist of a vision screening test conducted annually. An employee's vision will be tested for far vision, near vision, intermediate vision, color perception, depth perception and horizontal peripheral vision. Those employees who wear corrective lenses will be tested both with and without the corrective lenses. Tests will be conducted and results evaluated by a registered nurse, nurse practitioner, or qualified optometric technician. Employees who are deemed to need correction to their current vision will be referred to the proper professionally qualified practitioner for a thorough exam and the appropriate correction.

Site managers are advised to contract for the vision screening program with the nearest U.S. Public Health Service, Federal Employee Occupational Health Office, or the office of a local professionally qualified ophthalmologist or optometrist. At site locations where the Department has a contract the U.S. with the Public Health Service, the vision screening test shall be included the services provided by the contract.

04. PROCUREMENT OF REFRACTIVE EQUIPMENT

- a. Procedures for the procurement of protective eye wear will vary with the individual operating units. The basic requirements an employee must meet are as follows:
 - 1. Work in a designated eye hazardous area and/or operation; and
 - 2. Provide (at the employee's expense) a current prescription for corrective lenses from a

professionally qualified ophthalmologist or optometrist.

- b. Where there is a sufficient number of employees requiring eye protective devices, the operating unit may seek a waiver from GSA to contract with a local, qualified optician to provide protective eye wear/safety glasses. The performance of the contract optician shall be reviewed by the cognizant safety representative. The employee shall not incur the cost of the protective eye wear/safety glasses required by his/her employment.
- c. Corrective-protective eye wear prepared for one person is not medically appropriate to reissue to another. Reclamation of such eye wear is not economically practical; therefore, corrective-protective eye wear is considered to be an expendable item.

05. MAINTENANCE OF PROTECTIVE EYE WEAR

It shall be the responsibility of the individual and his/her supervisor to ensure that personal protective eye wear is maintained in a clean and fully operational condition, and that it is used while performing eye-hazardous operations. The eye wear furnished under the sight conservation program is the property of DOC and shall be repaired or replaced if damaged in the course of employment. Damage to protective eye wear shall be reported to the employee's supervisor as soon after the fact as practicable.

- a. Lens Replacement. Replacement of prescriptive lenses shall be handled in a manner similar to that established for acquiring new corrective-protective eye wear. If the original prescription is more than two years old, a new examination shall be required.
- b. Repairs. Repairs (including frame replacements), adjustments and fittings after repair will be done locally by the refractionist or ophthalmic dispenser and shall be included as part of the contract.
- c. Enforcement. If it is determined that eye wear has been willfully damaged, altered, or lost through negligence, or that employees are not responding to the provisions of the sight conservation program, the supervisor or appropriate management official shall initiate appropriate disciplinary action.

06. TEMPORARY PROTECTIVE EYE WEAR

- a. Planes, goggles, or face shields shall be provided to employees while awaiting delivery of corrective-protective eye wear.
- b. Prevention of eye accidents requires that all persons who may be in eye-hazardous areas or who are in occupations determined to be eye-hazardous occupations wear protective eye wear. All employees, visitors, instructors, or others passing through an eye-hazardous area shall be required to wear eye protection. To provide protection for visitors to an eye-hazardous area, site managers shall procure a sufficient quantity of heavy duty goggles and/or plastic eye protectors, which meet the performance criteria for protective eye wear as contained in ANSI Z87.1-1979. Visitors who normally wear glasses shall be provided with a suitable eye protection devices to wear over the glasses.

Arrangements shall be made by the appropriate office within the operating unit for the issue, care, sterilization, and reissue of these "common use" eye protectors and goggles.

07. EDUCATION

A comprehensive education program on the need for, and use of, protective eye wear shall be conducted at all sites with eye-hazardous areas. This training shall be included in the training program for supervisors and non-supervisory personnel.

Typical topics to be covered in an education program may consist of the following points:

- a. Many jobs call for some form of eye protection against impact, splashes, sparks or glare. It is management's responsibility to provide eye protection equipment and it is the employee's responsibility to use the equipment when required;
- b. Employees who wear contact lenses are required to wear the appropriate eye protection devices at all times when working in areas designated as eye hazardous areas;
- c. Personnel working with or near potentially harmful chemicals or other corrosive materials must know the location of the nearest eyewash fountain and how to use it;
- d. No attempt should be made to remove a particle lodged in the eyeball, or to wash an eye that has been cut in any way. A clean dressing can be placed lightly over the eye until the victim gets medical help. Cold compresses should be applied to a bruised eye. Chemical burns call for immediate flushing with tepid potable water for a minimum of fifteen minutes.

08. RESPONSIBILITIES

- a. The ASR shall have the responsibility for determining eye-hazardous areas, occupations, and processes which require personal protective equipment or other safeguards to protect the eyes and conserve sight.

NOTE: In operating unit field locations, if the ASR requires assistance in determining the need for eye protection equipment, the appropriate RSM should be contacted for guidance.

Specific responsibilities in the determination of eye hazards include:

1. A complete survey of all work areas, processes, and operations to determine which are eye-hazardous, which personnel require eye protection, and whether other personnel in the workplace vicinity also require eye protective equipment;
2. Recommendations as to the type of eye protective equipment to be used, the personnel effected, and the nature of signs and warning posters needed to alert workers of the presence of an eye hazard area;
3. The re-evaluation of previously designated eye-hazardous areas after new processes are adopted, or after modifications to existing processes have been made. Annual workplace inspections and re-evaluations shall be performed to determine the continued need for eye protection;
4. The determination of the types of eye protection required in various areas for various processes, and for occupations where engineering controls are technically or economically impractical; and
5. Eye injury record retention and review as an additional check on the identification of areas, processes, and occupations where potential eye hazards may exist.

- b. Site managers are responsible for ensuring that adequate funds are available to procure sight screening examination services and safety eye wear for all employees placed in the sight conservation program.

CHAPTER 8

PERSONAL PROTECTIVE EQUIPMENT

01. POLICY AND DISCUSSION

- a. Engineering controls shall be the primary method used to eliminate or minimize hazard exposure in the work place. When such controls are not practical, personal protective equipment shall be used to reduce or eliminate exposure to hazards. However, personal protective equipment is not a substitute for administrative or engineering controls.
- b. It shall be DOC policy that personal protective equipment be provided, used, and maintained when it has been determined by competent authority that its use is required and that such use will lessen the likelihood of occupational injuries and/or illnesses. Operating units 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. Where employees provide their own protective equipment, it shall be the responsibility of the head of the operating unit to ensure its adequacy and to enforce proper equipment maintenance and sanitation procedures.
- c. It must be recognized that personal protective devices do nothing to reduce or eliminate the hazard itself. They merely establish a "last line of defense" and any equipment failure or misuse immediately exposes the employee 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 in an effective personal protective equipment program.

02. RESPONSIBILITIES

All DOC operating units shall include and enforce the following provisions concerning personal protective equipment:

- a. Evaluate workplaces, including applicable hazardous material data, to determine personal protective equipment requirements. Qualified safety personnel shall perform these evaluations. Outside of the Washington, D.C. area, the operating unit field activity shall coordinate the workplace evaluations with the appropriate RSM;
- b. Ensure that personal protective equipment conforms to DOC OSH standards;
- c. Arrange for appropriate medical evaluations to determine worker capability to perform assigned tasks when there is a reasonable expectation that the use of protective equipment may result in abnormal physiological stress. These evaluations shall normally be restricted to instances where respiratory protective equipment is required.
- d. Train personnel in the selection, use, inspection and care of personal protective equipment required for their situations and maintain records of training completed for a 5-year period;

- e. Ensure that personal protective equipment worn by employees is properly fitted;
- f. Ensure periodic equipment inspection, cleaning, disinfection, and maintenance is performed by qualified personnel;
- g. Provide proper equipment storage to protect against environmental conditions which might degrade the effectiveness of the equipment or result in contamination during storage;
- h. Ensure compliance with the prescribed use of personal protective equipment. All levels of supervision and management should become involved in this effort by personal example. In cases of non-compliance, management may take disciplinary action as a corrective measure against the offender and the supervisor, as appropriate; and
- i. Identify non-use, misuse, or malfunction of personal protective equipment which results in, or may result in, injury or occupational illness to DOC employees. These deficiencies shall be reported as causal factors with sufficient detail to permit evaluation and correction of the problem.

03. EQUIPMENT SPECIFICATIONS AND REQUIREMENTS

All personal protective clothing and equipment will be of safe design and construction for the work to be performed. Standards and specifications for the design and use of personal protective equipment and devices have been developed as a result of extensive research and testing. Only those items that have been recognized and approved shall be used, such as:

- a. Federal Specifications (GSA);
- b. American National Standards Institute (ANSI) Specifications;
- c. National Institute of Occupational Safety and Health (NIOSH); and
- d. Underwriters Laboratories, Inc. (UL).

04. EYE AND FACE PROTECTION

- a. Approved eye and face protection shall be worn when there is a reasonable probability that an injury can be prevented by the wearing of such equipment. Eye and/or face injury can be caused by flying particles and chips, splashes from liquids such as acids, caustics and solvents, operations that generate hot slag or molten metal, welding glare, etc. It shall be the responsibility of the head of the site to provide the required approved protective equipment and enforce its use.
- b. Design, construction, testing and use of devices for eye and face protection shall be in accordance with ANSI Z87.1-1979.
- c. Eye and Face protectors shall meet the following minimum requirements:
 - 1. They shall provide protection against the hazards for which they were designed;
 - 2. They shall be reasonably comfortable when worn under designated conditions;
 - 3. They shall fit snugly and shall not interfere with the movements of the wearer;

4. They shall be durable;
 5. They shall be capable of being disinfected;
 6. They shall be easy to clean;
 7. Protectors shall be kept clean and in good repair.
- d. Employees whose vision requires the use of corrective lenses and are required to wear eye protection, shall wear goggles or spectacles of one of the following types:
1. Spectacles whose protective lenses provide optical correction;
 2. Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles;
 3. Goggles that incorporate corrective lenses mounted behind the protective lenses.
 4. Non-corrective spectacles or goggles will be provided to those employees who wear contact lenses.

Additional information on the DOC OSH Sight Conservation Program is contained in Chapter 7 of this manual.

05. RESPIRATORY PROTECTION

Respiratory hazards may occur through exposure to harmful dusts, fogs, fumes, mists, gases, smoke, sprays, and vapors. The best way to protect personnel is through the use of engineering controls, e.g., local exhaust ventilation. Only when engineering controls are not practical or applicable shall personal respirator protective equipment be employed to reduce personnel exposure. However, in no case shall respiratory protective equipment be used as a substitute for engineering controls. Respiratory protection guidance is provided in Chapter 14. Additional information on the selection of respiratory protection equipment is provided in ANSI Z88.2-1980 and NIOSH certified equipment list DHHS (NIOSH) Publication #88-107.

06. HEAD PROTECTION

- a. Helmets and hats for the protection of employees from the impact of falling and flying objects and from limited electric shock and burn shall meet the specifications of ANSI Z89.1-1981.
- b. All employees required to work in areas where they are exposed to overhead hazards and falling/flying objects are required to wear head protection at all times. Helmets designed to protect against specific hazards will be issued. Head protection shall be maintained in a sanitary and reliable condition.
- c. Supervisors of operating units having employees whose job/area assignments may subject them to falling and/or flying objects are to contact their ASR so that a determination can be made if head protection may be required.
- d. Once a determination is made that head protection is required on the job, its use is considered mandatory, not at the discretion of the employee. Failure of employees to wear head protection shall be cause for disciplinary action for violation of safety regulations, instructions or prescribed safe

practices as outlined in the Table of Offenses and Penalties, DOC Administrative Order 202-751.

- e. Visitors to sites where there is a danger from overhead hazards and falling/flying objects are required to wear head protection at all times. A sufficient quantity of additional head protective devices shall be maintained at the site.

07. FOOT PROTECTION

All employees who work in designated occupational foot hazardous operations/areas shall be furnished appropriate safety shoes/ boots at government expense. The site manager, with advice from the ASR and/or RSM, shall designate local foot hazardous operations/areas and the type of foot protection required. Once it has been determined that safety-toe shoes are required on the job, their use is mandatory. Employees violating this requirement will not be allowed to work; but rather, will be placed on leave (annual leave or leave without pay) by their supervisor until such time that they show up for work wearing the required protective footwear. Failure on the part of the employee to comply with the foot protection program requirements, or failure of unit supervisors to implement the requirements, will be cause for disciplinary action as outlined the Table of Offenses and Penalties in DAO 202-751.

- a. **Foot Hazardous Operations.** Foot hazardous operations are those which have a high incidence of or potential for foot or toe injuries. Examples of trades, occupations and operations generally associated with high incidence of foot injury include construction, materials handling, maintenance, transportation, ship repair and operation, aircraft overhaul and repair, and explosives manufacturing and handling.
- b. **Foot Protective Devices.**
 - 1. Safety shoes, with a built-in protective toe box, are intended primarily to provide protection from heavy falling objects. These shoes shall conform to the requirements of ANSI Z41-1983 and be appropriately labeled.
 - 2. Some special purpose safety footwear, furnished for special hazards, are listed below:
 - (a) Semi-conductive safety shoes are used to dissipate static electricity. To be effective, the shoes must be worn on conductive surfaces, such as wet concrete, metal decks, carbon-impregnated surfaces, wet terrain, conductive linoleum, and conductive tiles.
 - (b) Molder's "Congress" style safety shoes are used for protection of personnel handling molten metal. The design is intended to prevent hazardous materials from falling inside the shoes and to allow quick removal of the shoes in case of emergency.
 - (c) Safety boots are a general purpose footwear item offering the same toe protection as the above safety shoe except in a boot designed for added support. It is not approved for use in hazardous chemical areas.
 - (d) Electrical hazard safety shoes, with a built-in protective toe box, are used to guard against electrical shock hazards when performing electrical work on live circuits not exceeding 600 volts. It should be noted, however, that these shoes only provide partial protection and additional protective measures normally employed in these environments should not be ignored. For example, all personnel working on energized circuits shall be insulated from the ground.

c. Appropriation and Distribution.

1. The primary method for providing safety shoes to employees is to issue commercial safety shoes obtained under the mandatory GSA schedule. Form CD-435 should be completed and processed through the servicing procurement office. A secondary method is reimbursement to employees who buy their own shoes. Form CD-395 should be completed when using this method. Operating units may select the method best suited to local conditions. A dollar value of \$50 is recommended for the purchase of safety shoes.
2. Safety shoes lost, damaged, or stolen due to employee negligence shall be replaced at the employee's expense.
3. Replacement of safety shoes necessitated by normal wear and tear shall be at the discretion of the supervisor after consultation with the ASR or *RSM. Except under extraordinary circumstances, safety shoes should not be replaced more than once every two years.
4. Protective footwear (safety shoes) which fits one person is not medically appropriate for reissuance to another. Reclamation of such footwear is not economically practical, therefore, protective footwear is considered an expendable item.

08. ELECTRICAL PROTECTIVE

Appropriate rubber protective equipment shall be provided for electrical workers who perform hot work. This equipment shall conform to the requirements specified below:

- a. Rubber insulating gloves - ASTM D120
- b. Rubber matting for use around electrical apparatus - ASTM D178
- c. Rubber insulating blankets - ASTM D1048
- d. Rubber insulating line hose - ASTM D*-1050
- e. Rubber insulating hoods - ASTM LD1049
- f. Rubber insulating sleeves - ASTM D1051

09. HEARING PROTECTION

See Chapter 15 for requirements

CHAPTER 9

OCCUPATIONAL SAFETY AND HEALTH INSPECTION PROGRAM

01. POLICY AND DISCUSSION

The OSH inspection program is necessary to ensure a safe and healthful work place for all DOC employees. The inspection program is designed to identify deficiencies which must be corrected to achieve the objectives of the DOC OSH program and to meet the criteria established by OSHA for Federal agencies. The overall DOC OSH inspection program consists of three levels, each fulfilling different objectives:

- a. Workplace Inspections. Workplace safety is the responsibility of each supervisor. To ensure that employees are free from safety or health hazards, each supervisor should inspect his/her workplace at least once each quarter; more frequently if the work performed involves risk (e.g., use of chemicals, radioactive materials, gases, etc.). OSHA requires the annual inspection of the workplace be conducted by qualified individuals. This requirement will be met through an annual inspection of the workplace by the designated Area Safety Representative (ASR). The results of the annual inspection shall be provided to the OUSHR (headquarters organization) or RSM (field organization).
- b. Oversight Inspection. Oversight inspections are the responsibility of the OUSHR and RSM. The purpose of the inspection is to evaluate all aspects of the DOC OSH program. It is conducted when deemed appropriate based on accident/injury statistics, occupational hazards and/or employee complaints.
- c. Occupational Safety and Health (OSH) Program Management Evaluations. OSH Program Management evaluations are the responsibility of the Department's Safety and Health Program Manager. The objectives of these evaluations are to determine the level of compliance with OSHA and DOC program requirements relating to inspections and to provide insight into program areas needing assistance.

02. QUALIFICATIONS FOR INSPECTORS

- a. A successful inspection program requires trained, qualified and competent inspectors must be thoroughly familiar with the equipment in the workplace and of the work practices used. Trained inspectors can identify the "hidden" or subtle safety hazards that routinely go unnoticed. They must be aware of the unique human, physical, and environmental elements that combine to produce hazards or unsafe conditions in the workplace. Inspectors must also be well versed in the details of OSHA and DOC standards and historical occupational safety and health problems associated with the areas they inspect.
- b. Qualifications to be met by inspectors that conduct inspections shall be based upon the degree of hazard and complexity of the areas or operations to be inspected. (Minimum Occupational Safety and Health training requirements are identified in Table 6-1.)

03. WORKPLACE INSPECTIONS

- a. All workplaces shall be inspected at least annually. High hazard areas shall be inspected more frequently. Frequency shall be based upon an assessment of the work performed, the potential for injuries, occupational illnesses, or damage to DOC property. Frequency of inspection in high hazard

areas will be jointly decided by the ASR, the OUSHR (headquarters) and the RSM (in the field).

- b. Competent safety and health personnel shall conduct the required inspections. In the event the ASR lacks the required expertise to conduct an inspection of a high risk work activity, arrangements shall be made with the appropriate OUSHR or RSM to obtain the assistance.
- c. Inspectors shall be provided with appropriate technical test equipment where required.
- d. Inspections shall be conducted in such a manner as to preclude unreasonable disruption of workplace operations. Inspections may be conducted with or without prior notice. No-notice inspections shall be conducted, when in the judgement of the inspector, they will provide a more accurate assessment of actual operating conditions and practices.
- e. Inspectors may deny the right of accompaniment to any person whose participation interferes with a fair and orderly inspection, or who lacks the required security clearance.
- f. Inspectors should discuss with employees of the workplace matters affecting their safety and health. Employees shall be given the opportunity to identify unsafe or unhealthful working conditions to the inspector while remaining anonymous, if the employee so desires.
- g. Imminent danger situations discovered during an inspection shall be brought immediately to the attention of supervisory personnel (in some cases, the site manager or the ship's captain). Affected work shall be stopped and personnel not required for abating the hazard shall be removed from the affected area. Immediate abatement action shall be initiated or the operation shall be terminated.
- h. Written reports of workplace inspections shall be provided to the management official in charge of the operation within a reasonable time, but not later than 20 working days after the inspection.

Inspection reports shall indicate when a follow-up inspection is required. The inspection report shall contain, as a minimum, the date and time of the inspection, a description of the site inspected, a description of each deficiency, the set abatement date, and whether corrective action is (1) required by law, or (2) recommended to ensure a safe and healthful work environment.

Inspection reports shall remain on file with the ASR for a period of five years and shall be made available to those persons approved by the OUSHR. In those areas serviced by an ASC, the ASC RSM shall be provided with a copy of the inspection report.

- i. Follow-up inspections shall be conducted to verify that corrections have been made or to focus on specific problem areas.

Efforts shall be made to use the advice, expertise, and assistance of safety committee, supervisors, employees and others to ensure that Occupational Safety and Health violations are corrected in accordance with accepted practices and that employees are protected from hazards during abatement periods.

- j. Inspections of areas containing classified information or materials shall be conducted following the policies outlined in the DOC Security Handbook.

04. SUPERVISORY WALK-THROUGH INSPECTIONS

The conducting of an annual inspection by the ASR is not adequate for a supervisor and/or the head of an

organizational unit to ensure their employees are provided a workplace free from safety and health hazards. Therefore, it is recommended that the supervisor or the head of the organizational unit inspect the area at least quarterly. High hazard areas should be inspected monthly. Documentation of these inspections is required. The organizational unit site manager or supervisor shall:

- a. Become knowledgeable of the safety and health standards applicable to the activities under his/her control;
- b. Conduct, or cause to be conducted, periodic workplace inspections to locate hazards and identify standards non-compliance; and
- c. Promptly initiate management action necessary to correct hazards.

At site locations where a safety committee has been established, management may elect to delegate the requirement to inspect all workplaces to the committee. The committee members conducting inspections shall have received the level of training recommended in Table 6-1.

05. SHIP WORKPLACE INSPECTIONS

Each shipboard workplace must be inspected to identify all potential safety and health hazards.

- a. A comprehensive inspection shall be conducted at least annually by a qualified ASR in order to assess potential OSH hazards in the fleet. A copy of the inspection will be forwarded to the servicing ASC RSM.
- b. OSH deficiencies identified aboard the ship shall be forwarded in writing to the Commanding Officer for corrective action.
- c. Copies of all inspection reports from industrial hygiene and safety surveys conducted by contract personnel will be forwarded to the RSM for review and retained at the servicing ASC and/or Marine Center.
- d. Oversight inspections will include examination of work practices or procedures in actual progress, examination of the occupational health medical surveillance program within the ship, and an assessment of the effectiveness of the ship's fleet DOC Safety Program.

06. OVERSIGHT INSPECTION

- a. Central to the success of an occupational safety and health program is the provision for oversight inspections covering the total DOC occupational safety and health program. The oversight inspection is designed to evaluate all aspects of the DOC OSH Program, ashore and afloat. Accordingly, the OUSHR (in Headquarters units) and the ASC RSM (in field units) are responsible for the oversight inspections ashore and afloat using the DOC Oversight Inspection format.
- b. The OUSHRs and RSMs shall conduct oversight inspections at the facility level. Selection of these inspection sites will be based on accident/illness statistics, occupational hazards, employee complaints, etc. Sites identified as high hazard sites (e.g., laboratories) will be inspected at least every three years.

07. OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT EVALUATIONS

The Occupational Safety and Health Program Manager shall ensure that OSH Management Evaluations are conducted for the purpose of evaluating ASC and operating unit implementation of OSH programs.

- a. These evaluations shall address the adequacy of the procedures used in conducting workplace inspections and the degree to which other DOC OSH program requirements are met. The evaluation should also provide for an objective assessment of the results of accident prevention efforts, as determined by an analysis of accident or illness data, records, and reports prepared pursuant to Chapter 1 1 of this manual and the workplace inspections described above.
- b. The degree of OSH Management Evaluations should be tailored to the size, mission, and organization of the activity, but shall be of sufficient depth to enable the appropriate officials to monitor the effectiveness of respective activity programs.
- c. Written reports of OSH Management Evaluations shall be forwarded to appropriate officials for action to assure correction of deficiencies. These reports shall contain:
 1. An overall evaluation of the activities in the OSH program;
 2. DOC OSH Program deficiencies observed; and
 3. Recommended corrective actions.

The reports shall be retained on file until the deficiencies have been corrected and for at least five years following the end of the calendar year to which they relate. Procedures shall be established to follow up on the correction of deficiencies identified during OSH Management Evaluations.

CHAPTER 10

EMPLOYEE REPORTS OF UNSAFE/UNHEALTHFUL WORKING CONDITIONS

01. POLICY AND DISCUSSION

- a. This chapter provides guidance in establishment of a channel of communication between DOC employees and those personnel responsible for safety and health. Active support of this channel will assure prompt response to and analysis of reports of alleged unsafe or unhealthful working conditions.
- b. Identification and reporting of potentially unsafe or unhealthful working conditions is the responsibility of all DOC employees. Since many conditions can be eliminated as soon as they are identified, an effective channel of oral and written communication is imperative in the development of a sound OSH program. The employee has the right to decline a task because of a reasonable belief that there is an imminent risk of death and insufficient time for hazard reporting and abatement actions.

02. HAZARD REPORTING

Detection of unsafe or unhealthful working conditions at the earliest possible time and prompt correction of hazards at the lowest possible working level are essential elements of the DOC's Occupational Safety and Health Program. The following procedure is set forth for the submission of employee reports of unsafe or unhealthful conditions in the workplace:

- a. All DOC employees shall be encouraged to orally report unsafe or unhealthful working conditions to their immediate supervisor who will promptly investigate the situation and take appropriate actions. Supervisors will contact the ASR, RSM, or the Operating Unit Safety and Health Representative for assistance. Supervisors will keep the reporting employee informed of all actions taken.
- b. Any DOC employee (or employee representative) may submit a written report of an unsafe or unhealthful working condition directly to the ASR, RSM or OUSHR. Form CD-351 should be used for this purpose (see attachment). If Form CD-351 is not readily available, a legible report containing the following information may be submitted.
 1. Reason for report: Safety or health hazard?
 2. Your duty station.
 3. Specific location of unsafe or unhealthful condition; (e.g., address, building number, room, etc.).
 4. Description of the hazard.
 5. Action taken by the responsible supervisor to correct hazard (if known).
 6. Employees who wish to remain anonymous shall so indicate on the written report.
- c. Upon receipt of a hazard report, the safety representative (ASR, OUSHR or RSM who receives complaint) shall contact the originator by telephone to acknowledge receipt and discuss the seriousness of the reported hazard. The safety representative shall advise the cognizant supervisor that a hazard

has been reported.

- d. The safety representative shall ensure investigation of all reports brought to their attention. Alleged imminent danger situations shall be investigated within 24 hours. Potentially serious situations shall be investigated within three days. If the reported situation involves a health hazard, as opposed to a safety hazard, the safety representative should request the assistance of a competent industrial hygienist for assistance with the investigation.
- e. The safety representative shall provide an interim or complete response in writing to the originator of the complaint (when known) within 15 working days of receipt. Interim responses should include the expected date for a complete response.

If the investigation validates the reported hazard, the complete response shall include a record of the abatement action. If no significant hazard is found, the reply shall include the basis for that conclusion.

- f. The complete response shall encourage, but not require, originator to informally contact the safety representative if he or she desires additional information or is dissatisfied with the response. Complete responses shall indicate the appropriate channels available for formal appeal. Employees may have other rights (see Section 2.07 of this manual).

03. APPEALS

- a. If the originator of a hazard report is dissatisfied with the assessment of the alleged hazard made by the safety representative or with actions taken to abate a confirmed hazard, he/she shall be encouraged to confer with the safety representative to discuss the matter further. If, after this discussion, the originator remains dissatisfied he/she may appeal the determination with the next higher level of safety management.

(See Attachment to this chapter for recommended reporting channels in the Department's Safety and Health Program.) The appeal (or report) shall be in writing and contain at least, the following information:

1. A description of the alleged hazard including its location and standards violated, if known (a copy of the original hazard report shall be sufficient);
 2. How, when and to whom the original report of alleged hazard was submitted; and
 3. What actions (if known) were taken as a result of the original report.
- b. The reviewing safety official shall respond to the originator of the appeal within 10 working days. An interim response shall suffice, if the investigation is incomplete at that time. The final response shall contain the office and address of the next higher level of appeal.
 - c. If the employee is still dissatisfied or has not received a response within 20 working days, he/she may appeal to the next higher level safety official. Subsequent appeals may be submitted if the originator is still not satisfied with the action taken as a result of the previous appeal.
 - d. The final appeal authority for DOC is the Department's DASHO. If the employee is not satisfied with the response from the DASHO, he/she may contact the local office of the Department of Labor, OSHA, and ask to file an employee complaint.

04. REPORTS TO OSHA

Procedures outlined in paragraph 02. Hazard Reporting provide a mechanism for all DOC employees to point out unsafe or unhealthful working conditions to the appropriate authority for in-house resolution. DOC employees may also submit "complaints" alleging workplace hazards directly to the Department of Labor (OSHA); however, the Secretary of Labor encourages employees to use DOC in-house hazard reporting procedures as the fastest means to achieve abatement. Complaints to OSHA may serve as the basis for an investigation or inspection by OSHA officials.

05. RESPONSIBILITIES

Managers and supervisors shall:

- a. Publicize the existence of the employee hazard reporting program and notify all employees regarding their rights and obligations in reporting hazardous situations;

NOTE: The Department of Commerce Occupational Safety and Health Program Poster includes hazard reporting as an employee responsibility.

- b. Maintain the anonymity of personnel making a report if so requested;
- c. Encourage the submission of oral reports to supervisors as the quickest and most effective method of hazard reporting;
- d. Publicize step-by-step procedures and processing channels for employee reporting of conditions believed to be unsafe;
- e. Ensure that employees are not denied access to forms CD-351;
- f. Emphasize the importance of timely and effective response to the report originator and require immediate investigation of reports of imminent danger situations;
- g. Implement safeguards to ensure that no DOC employee is subject to restraint, interference, coercion, discrimination, or reprisal by virtue of their participation in the Department's Occupational Safety and Health Program. Allegations of reprisal for such participation shall be filed in accordance with existing grievance procedures with a copy of the allegations submitted to the Department's Safety and Health Program Manager in a timely manner;
- h. Ensure that adequate recordkeeping practices are maintained and that records are retained for at least five years following the end of the calendar year in which final action on the report was undertaken; and
- i. Ensure that notices advising employees of services, unsafe/unhealthful working conditions, and interim protective measures are posted in the immediate vicinity of a hazard until it is abated.

Attachment

**DEPARTMENT OF COMMERCE
RECOMMENDED
SAFETY AND HEALTH COMPLAINTS
CHAIN OF APPEAL**

1. Local ASR
2. Servicing RSM (if serviced by an ASC) or OUSHR (if not serviced by an ASC)
3. DOC Safety and Health Program Manager
4. DOC Designated Agency Safety and Health Official (DASHO)

CHAPTER 11

INCIDENT INVESTIGATION, REPORTING, AND RECORDKEEPING

01. DISCUSSION

- a. Incidents that result in damage to DOC facilities and equipment and/or injuries and occupational illnesses among DOC personnel seriously degrade the Department's performance and waste tax dollars. Comprehensive investigations of such incidents and accurate record keeping are essential to the success of the DOC Occupational Safety and Health Program.
- b. Investigations to determine how and why an event occurred are necessary to prevent future occurrences of similar events. Accurate records are necessary to establish trends that lead to further investigations and to assess the effectiveness of the overall DOC OSH Program. Further, certain records are necessary to comply with DOL/Federal agency recordkeeping and reporting requirements.
- c. Procedures that apply to all DOC incident investigation, reporting, and recordkeeping requirements relating to the DOC Safety and Health Program are included in this Chapter. The following areas are within the scope of this reference:
 1. Accidental injuries, occupational illnesses, fatalities of all DOC employees;
 2. Motor vehicle accidents;
 3. Accidental damage to government property or equipment other than motor vehicle;
 4. Accidents that result in injury to non-DOC personnel; or
 5. Accidents which result in property damage to non-government property.

The Department is responsible for providing safe and healthful work places and conditions of employment for all employees. Prompt investigation and reporting of any accident or occupational illness involving Commerce employees or property will provide information necessary for the systematic identification and correction of safety and health hazards.

02. FORMS

The following forms are required to report recordable accident, injury, and illness data:

- a. Form CD-137, Report of Accident/Illness (Revised 5/89). The four part form shall be completed and copies distributed as follows:
 1. Pink copy to the employee;
 2. Yellow copy to the employee's supervisor;
 3. Golden Rod to the Safety Representative;

4. White copy to the Departmental Safety Manager, Office for Procurement and Administrative Services, Safety and Health Office. When the Form CD-137 is completed by an operating unit Safety Representative outside of Washington D.C. and in an area serviced by an ASC, the copy normally sent to the Departmental Safety Manager shall be sent to the ASC Safety Manager.
- b. Form CD-137 shall be used to report accidents/ incidents involving:
 1. Employee injury, illness or death;
 2. Motor vehicles;
 3. Federal property;
 4. Non-Federal person (visitors, sightseers, contractor employees, etc.) and Federal property; and/or
 5. A combination of Federal employees and non-Federal persons and/or government or non-Federal property.
 - c. Form SF-91, Operator's Report of Motor Vehicle Accident and, where appropriate, Form SF-94, Statement of Witness, may be used to record witness identity and accident/illness information, but shall not be used in place of Form CD-137.
 - d. Department of Labor Form CA-1, Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation.
 - e. Department of Labor Form CA-2, Federal Employees Notice of Occupational Disease and Claim for Compensation.

03. REPORTING RESPONSIBILITIES

- a. Employee. Each employee, or someone acting on the employee's behalf, is responsible for the prompt reporting of all accident/illness to his/her supervisor. In addition, the employee is responsible for:
 1. Completion of Items 1 through 16 of Form CA-1 for each traumatic injury sustained while in the performance of his/her job;
 2. Completion of Form CA-2 for each occupational illness or disease sustained in the performance of his/her job;
 3. Timely submission of accident/illness information and workers' compensation forms to his/her supervisor.
- b. Supervisor. Each supervisor is responsible for the timely submission of the following forms:
 1. CD-137, for each person involved in the accident/illness. Once the CD-137 is completed, it shall be distributed in accordance with paragraph 4.a. of this Chapter.

2. Completion of Items 21 through 45, Form CA-1, and obtaining witness information (where appropriate) for the completion of Items 17 through 20.
3. Department of Labor Forms CA-1 and CA-2 shall be forwarded, when completed, to the person designated by the head of the operating unit or ASC Director and assigned the responsibility for coordinating and submitting workers' compensation claims.

The servicing personnel officer should have up-to-date information about the filing of these claims to the centralized Department of Commerce Workers' Compensation Branch.

- c. Safety Representatives. The operating unit/ASC Safety Representative (as appropriate) shall enter Form CD-137 information on Form OSHA No. 200, Log of Federal Occupational Injuries and Illnesses (or a computer generated facsimile thereof). A copy of the CD-137 and Form OSHA No. 200 shall be retained by the Safety Representatives for a period of five years following the close of the accident/illness report's calendar year.
 1. Statements from witnesses, photographs, investigative and other supporting data shall be attached to the Form CD-137 and retained by the preparing Safety Representative. In those instances where a claim could be filed against the Department, a copy of the CD-137 and other investigative evidence shall be sent to the Departmental Tort Claims Officer, Departmental Office of the General Counsel, as soon as possible after the accident/illness.
 2. All Safety Representatives shall verify the accuracy of each report and, where authorized, ensure the timely electronic transmission of accident/illness data.
 3. The Department's Safety and Health Office will maintain an automated information system for data on accidents, injuries, and illnesses; analyze these data for causes and costs of accidents; and develop training programs to assist management and safety personnel in accident prevention.

04. INVESTIGATION AND REPORTING PROCEDURES

- a. The Department of Commerce is required to report, immediately, accidents of a significant nature to the Department of Labor. The Department official responsible for the injured employee(s) or damaged property shall report the following incidents, by the quickest method available, to the appropriate Safety Representative who shall inform the Departmental Office of Federal Assistance and Management Support. The Director of Federal Assistance and Management Support has designated the Chief, Health and Safety Division as the Departmental Safety and Health Program Manager. The Departmental Safety and Health Program Manager may designate a person(s) to assist in the investigation of:
 1. Any occupational accident which is fatal to one or more employees;
 2. Any occupational accident which results in the hospitalization of five or more employees or which involves property damage of \$100,000 or more;
 3. Any occupational accident involving Federal or non-Federal employees which results in a fatality or the hospitalization of five or more individuals.

- b. The report of the investigation shall include:
 - 1. Date, time and location of the accident/incident;
 - 2. Names and other identifier information of all persons involved;
 - 3. Number of deaths;
 - 4. Number and extent of injuries/illnesses;
 - 5. Extent of damage to property; and
 - 6. Any other information necessary for the completion of Form CD-137.
- c. Accidents not immediately reportable, but which result in death within six months of the date of the accident, shall be reported to the appropriate Safety Representative within 24 hours from the time the supervisor or other responsible official becomes aware of the death.
- d. All recordable accidents or incidents not subject to the immediate reporting requirements of this section are to be reported on Form CD-137 within five working days.

CHAPTER 12

ORGANIZATION AND STAFFING

01. POLICY AND DISCUSSION

This chapter provides guidance on Occupational Safety and Health (OSH) staffing, organization, and responsibilities. The development and implementation of an effective and viable DOC OSH program at all levels within the Department requires each operating unit to have an organizational element structured to provide direct consultation and liaison with upper management while concurrently serving as the activity focal point on all OSH related matters.

02. ORGANIZATION OF THE DEPARTMENT'S SAFETY OFFICES

- a. Department Level. At the Department level, the authority and responsibility for performing staff functions are vested with the Department's Safety and Health Program Manager.
- b. Administrative Support Center Level (ASC). Each ASC has a Regional Safety Manager (RSM). This safety professional, appointed by the ASC director, provides professional guidance and assistance to all area safety representatives (ASRs), supervisors, managers and employees within the geographical boundaries of the ASC.
- c. Operating Units. The Operating Unit Safety and Health Representative (OUSHR) is appointed by the head of the operating unit and provides assistance and guidance to ASRs, supervisors, managers and employees in areas not serviced by ASC operations. The OUSHR may be either a full time position or a position where the safety responsibilities are collateral to their primary job assignment.
- d. Area Safety Representatives (ASRs). ASRs are assigned or appointed by the site manager and are responsible for implementing the Department's Safety and Health Program at the site. The area of responsibility may be a small part of a building or several adjoining buildings. ASRs, although assigned their safety and health responsibilities by the operating unit site manager, have a reporting responsibility to the RSM servicing their site.

03. STAFFING LEVEL

Several factors will determine the proper level of staffing for occupational safety and health activities. Some of these factors are:

- a. Number of employees serviced;
- b. Types of potential hazards involved in performing job related activities; and
- c. Geographical area of responsibility.

Table 12-1 is a guide to assist managers, supervisors and top management officials in arriving at adequate, minimum level of staffing.

TABLE 12-1

STAFFING GUIDE FOR SAFETY OPERATIONS

Operating Units

Industrial	1 safety and health professional 1 clerical support
Non-Industrial	1 part-time safety and health professional 1 part-time clerical support

Administrative Support Centers

2 safety and health professionals
1 clerical support

Field Locations

Industrial

<20 employees	none
20-500 employees	1 collateral duty non-professional 1 part-time clerical support
501-1,500 employees	1 safety and health professional 1 clerical support
>1,500 employees	1 safety and health professional 1 clerical support plus 1 additional safety and health professional for each additional 1,000 employees and major fraction thereof.

Non-Industrial

<20 employees	none
20-500 employees	1 collateral duty non-professional 1 part-time clerical support
>1,500 employees	1 safety and health professional 1 clerical support plus 1 safety and health professional for each additional 1,000 employees and major fraction thereof.

Industrial = High hazard areas such as laboratories, ships, aircraft operations, warehouses and facilities maintenance operations.

Non-Industrial = Low hazard areas as office environments.

CHAPTER 13

ASBESTOS PROGRAM GUIDE

01. POLICY AND DISCUSSION

- a. The purpose of this chapter is to promote a general awareness of potential safety and health problems that could result from the use or disturbance of asbestos or asbestos-containing materials (ACM). An ACM is any material containing greater than 1% asbestos by weight. This chapter also outlines specific precautions and procedures designed to eliminate or control hazards associated with work involving asbestos. However, this document is a general guide only. Specific requirements to limit exposure when working with asbestos-containing materials are outlined in OSHA regulations 29 CFR 1910.1001 and 29 CFR 1926.1101. These regulations must be complied with whenever any asbestos work is performed.
- b. The requirements outlined in this chapter apply to all Department of Commerce (DOC) employees and contractors who work with ACM.
- c. Asbestos is a generic term applied to a number of naturally occurring hydrated mineral silicate fibers, including chrysotile, amosite, crocidolite, tremolite, anthophyllite and actinolite. These materials are heat and/or acid resistant and, until the early 1970's, were used widely throughout the textile, automotive and construction industries as well as places where fireproofing or thermal or acoustical insulation was required. Use of ACM has virtually been eliminated in new construction. Examples of asbestos use include insulation materials sprayed on structural members, fireproofing around ventilation ducts, insulation on exterior surfaces or air-handling ducts, and insulation on piping (primarily valves and fittings on steam and chilled water lines). In addition, such ACM as transite; Canada Board; and heat-resistant gloves, cloth, and rope have been used in the past. Even ambient air may contain a low level of asbestos "dust" from deteriorating vehicle brake linings, roadways, and building materials.
- d. The health hazards associated with exposure (inhalation or ingestion) to airborne asbestos fibers include asbestosis (a lung disorder characterized by reduced lung function and shortness of breath), lung cancer, gastrointestinal cancer, and pleural and peritoneal mesothelioma (cancer of the thoracic and abdominal cavities). The onset of these conditions varies, depending on condition, age, and accessibility of asbestos, concentration of asbestos dust, duration of exposure, fiber size and variety, and individual susceptibility. Research has shown that people who smoke cigarettes and work with asbestos have a much greater chance of developing asbestos-related diseases than non-smokers who work with asbestos.

02. REGULATIONS

- a. The Occupational Safety and Health Administration (OSHA) regulates employee exposure to asbestos fibers. OSHA's regulations are contained in 29 CFR 1910.1001 (which applies to all occupational exposure to asbestos other than during construction work) and 29 CFR

1926.1101 (which applies to all exposures during construction work). The two regulations are very similar but do contain some differences.

1. Any construction activity must comply with the provisions in 29 CFR 1926.1101. For purposes of asbestos work, construction activities include (1) demolition or salvage of structures with asbestos present; (2) removal or encapsulation of ACM; (3) construction, alteration, repair, maintenance, or renovation of structures containing asbestos; (4) installation of products containing asbestos; (5) asbestos spills/emergency clean-up; and (6) transportation, disposal, storage, or containment of ACM on or at a site where construction activities take place.
 2. OSHA has established permissible levels of exposure to asbestos:
 - (a) The **permissible exposure limit (PEL)** is the maximum level of exposure to asbestos an individual may experience over an eight-hour workday, for a 40 hour work week. THE PEL for asbestos is an eight-hour time weighted average (TWA) of 0.1 fibers per cubic centimeter of air (f/cc). No employee may be exposed to an airborne concentration in excess of this amount.
 - (b) The **excursion limit** is the maximum exposure level to asbestos an individual may experience averaged over a 30 minute period. The excursion limit standard for asbestos is 1.0 f/cc. No employee may be exposed to an airborne concentration in excess of this amount during any 30 minute period during an eight-hour workday.
 3. Criteria are also established for monitoring employee exposure levels, regulated areas, personal protective equipment, respiratory protection, housekeeping, medical surveillance, specific hygiene practices and facilities (such as negative pressure enclosures, change rooms, showers and decontamination areas), communication of asbestos hazards to employees, and specific record keeping provisions.
- b. The Environmental Protection Agency (EPA) regulates emission of asbestos fibers into the environment under Subpart M, 40 CFR, Part 61. This includes regulating: (1) the handling and disposal of ACM, (2) the manufacture and use of ACM, and (3) the elimination of friable (easily crumbled) asbestos in the public schools.
 - c. Both OSHA and EPA regulations focus on ACM in a friable form. Friable materials have a greater potential for releasing fibers into the air than non-friable materials. As a general rule, non-friable material that has not been disturbed does not need to be removed. However, ACM should be located and periodically inspected for damage to ensure that it remains non-friable.

03. CONTROL METHODS

- a. Engineering controls are the preferred method for controlling/eliminating fiber release from friable ACM. These controls include (1) removal, (2) enclosure, and (3) encapsulation. Of the three, removal is usually the best option. Other engineering controls, such as local exhaust ventilation and dust collection systems, must be used in operations and/or with tools which produce or release asbestos fibers. Engineering controls must be used to reduce exposure to the lowest possible level. Should such controls be insufficient to reduce exposure levels to less than the PEL and excursion limit, they must be supplemented by proper respiratory protection and personal protective equipment (PPE).
- b. Equally as important as engineering controls are proper work practices. Insofar as practicable,

asbestos must be handled, removed, cut, scored, drilled, or otherwise worked with in a wet state sufficient to prevent the emission of airborne fibers. Wetting agents (surfactants) are added to water to create amended water which is used to soak ACM before and during work. Amended water should be applied using an airless sprayer. Application should be made using a fine mist to minimize the release of asbestos fibers from the impact of the spray on the materials.

- c. The OSHA standards also require that all surfaces be maintained free of accumulations of dust containing asbestos. Cleaning of surfaces should be accomplished by using wet methods or with a vacuum cleaner equipped with a HEPA (high efficiency particulate air) filter. A HEPA filter is capable of removing 99.97 percent of the asbestos particles from the air. Under no circumstances should asbestos containing materials be shoveled or swept in a dry state. Compressed air or other air source shall not be used to clean surfaces.
- d. All ACM or materials contaminated with asbestos, including waste debris, scrap, bags, containers, equipment, and clothing, shall be collected and placed in impermeable bags or other impermeable containers and double bagged for disposal. For specific requirements see Section 08 Waste Disposal.

04. PERSONAL PROTECTIVE EQUIPMENT

- a. Only those employees who have received medical approval to wear respiratory equipment may work with ACM. Except for the circumstances outlined below, the OSHA standard does not permit the use of respirators as the primary method of achieving compliance with PEL. Respirators may be used to comply with PEL only under the following circumstances:
 - 1. While engineering controls and work practices are being installed and implemented.
 - 2. For situations where engineering controls and work practices are either technically not feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the PEL and excursion limit.
 - 3. In emergencies.
- b. Where a respirator is required, it shall be provided at no cost to the employee (see Table 13-1). The respirator selected shall be from among those jointly approved as being acceptable for protection by Mine Safety and Health Administration and National Institute for Occupational Safety and Health under the provisions of 30 CFR Part 11. Where respiratory protection is required, it shall be selected, used, and stored as specified in 29 CFR 1910.134 (b), (d), (e) and (f).
- c. Special clothing required for asbestos work may include coveralls or similar whole body clothing, gloves, head and foot coverings, and face shields or vented goggles. Use of these articles is required for any employee exposed to airborne concentrations of asbestos fibers above the PEL, the excursion limit or where the possibility of eye irritation exists at no cost to the employee. Where personal protective equipment is required, it shall be selected, used and stored in accordance with 29 CFR 1910.132 (a), (d) and (f). These articles are also required for specific jobs as outlined in the following section.

05. WORK PROCEDURES/REQUIREMENTS

- a. The following specific procedures/requirements apply to any person or group handling, cutting,

removing or otherwise working with ACM.

1. All ACM must be handled or worked with in a wet state unless such wetting will diminish the material's usefulness. Under no circumstances shall the materials be swept while in a dry state. Only specially designed vacuum cleaners equipped with a HEPA filter shall be used to vacuum asbestos-containing debris and scrap material. Refer to Sections 03. b. and c. above for a discussion of the use of wetting agents and specially equipped vacuum cleaners.
2. A regulated area shall be established whenever asbestos work is being conducted in an area where the airborne concentration of asbestos fibers will exceed or can reasonably be expected to exceed the PEL or excursion limit. The regulated area must be marked and entry into the regulated area must be restricted to employees performing the work, their supervisors, and safety and health professionals inspecting the work area/procedures. A negative pressure enclosure must be established whenever removal, demolition, or renovation operations are being performed in a regulated area. The enclosure must have a negative pressure ventilation system and contain a change room, equipment room, and shower. Construction of the negative pressure enclosure and control of the activities within the enclosure must be supervised by a properly trained competent person.
3. Warning signs must be displayed in regulated areas, or whenever airborne concentration of asbestos fibers may be in excess of the PEL or excursion limit. In addition, signs must be posted at such a distance so that employees may read the signs and take necessary protective steps before entering the area marked by the signs. The signs must include:

**DANGER ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

Signs are available commercially.

- b. Personal protective equipment, including respiratory protection, must be based on the potential for exposure from the anticipated work activities. It is expected that during these types of projects, engineering controls and work practice controls are either not feasible or insufficient to reduce the exposure to airborne concentrations of asbestos fibers below the PEL or excursion limit. Consequently, respiratory protection and personal protective equipment is necessary.
 1. The following types of work activity require maximum protection:
 - (a) Any removal of large amounts of asbestos-containing pipe, duct, or equipment lagging in a mechanical equipment room, laboratory, or other area in a renovation or replacement project where a complete enclosure of the pipe/duct is impossible.
 - (b) Renovation or modification work involving the removal of asbestos coverings, such as fireproofing material around clusters of exhaust and ventilation ducts.
 - (c) Removal of sprayed-on asbestos fireproofing material on ceilings, beams, and structures, any maintenance or repair activity that results in the disturbance of sprayed-on asbestos fireproofing material.

If a respirator or PPE is required in a regulated area, the warning sign above the area shall read:

**RESPIRATORS AND PROTECTIVE
CLOTHING ARE REQUIRED IN THIS AREA.**

2. The following types of work activity usually require less than maximum protection. Nevertheless, maximum protection should be used until exposure data is available which indicates the actual exposure level is below the PEL and excursion limit.
 - (a) Maintenance or repair of a single valve, flange, pipe fitting, coil, etc., that requires the removal of asbestos-containing pipe or duct lagging material.
 - (b) Work which involves the drilling, cutting (sawing), or grinding of materials containing asbestos (i.e., asbestos millboard, transite, asbestos floor/ceiling tile, etc.) in isolated instances for making certain holes/cuts.
 - (c) Fixed location (shop, lab, etc.) repetitive operations involving the cutting, drilling, grinding of ACM when the tools used are equipped with local exhaust ventilation systems.
 - (d) Vehicle brake maintenance/repair when performed using an approved local exhaust ventilation system for use with brake housing assemblies. Under no circumstance should compressed air be used to clean brake/clutch housing assemblies.
- c. The following work practices are strictly **PROHIBITED** and employees and/or supervisors found using these work practices (or any other work practices not in conformity with the requirements of Chapter 13) will be subject to disciplinary action.
 1. Procurement of ACM or products without the prior written approval of the Department Safety Program Manager, an ASC Regional Safety Manager or an Operating Unit Safety and Health Representative.
 2. Spray application of asbestos products.
 3. Dry removal of ACM.
 4. Removal of any PPE within a regulated area.
 5. Dry sweeping of asbestos containing materials, debris or dust.
 6. Cleaning of asbestos dust and debris with compressed air.
 7. Smoking, eating, or drinking within a regulated area or while wearing protective clothing or equipment.
 8. Unauthorized ACM removal or any operations or maintenance activities involving ACM.
- d. All edges of ACM that have been exposed as a result of a maintenance activity must be encapsulated immediately upon completion of the activity to ensure that asbestos fibers are not released into the work environment.

06. TRAINING

- a. All employees who work with airborne concentrations of ACM at or above the PEL or excursion limit must be trained.
- b. Training must be provided prior to or at the time of the initial assignment to a position which requires working with asbestos and at least annually thereafter.
- c. Employees must receive training in the following:
 1. The methods of recognizing asbestos.
 2. The health effects associated with asbestos exposure.
 3. The relationship between smoking and exposure to asbestos producing lung cancer.
 4. The quantity, location, manner of use, release and storage of asbestos, and the specific nature of operations which could result in exposure to asbestos.
 5. The engineering controls and work practices associated with the employee's job assignment.
 6. The specific procedures implemented to protect employees from exposure to asbestos, such as appropriate work practices, emergency and clean-up procedures, and personal protective equipment to be used.
 7. The purpose, proper use, and limitations of respirators and protective clothing, if appropriate.
 8. An explanation of the medical surveillance program and its requirements.
 9. A review of the OSHA asbestos standards including all the appendices.
 10. The names, addresses and phone numbers of public health organizations which provide information, materials, and/or conduct programs concerning smoking cessation.
 11. The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.
- d. Employees who perform housekeeping operations in an area which contains ACM or presumed ACM shall be provided at no cost to the employee an asbestos awareness training course. The course shall include:
 1. Health effects of asbestos.
 2. Locations of ACM or presumed ACM in the building/facility.
 3. Recognition of ACM and presumed ACM damage and deterioration.
 4. Requirements in the OSHA standard relating to housekeeping and proper response to fiber release episodes.

07. LABELING.

- a. Labels shall be attached to all products containing asbestos greater than 0.1 percent by weight as well as to all containers or bags containing asbestos waste materials. Where feasible, all asbestos products installed and in use shall be labeled.
- b. Labels shall have large letters with a contrasting background and shall read as follows:

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

- c. All labels shall also contain a statement warning against the hazards of breathing airborne asbestos fibers.

08. WASTE DISPOSAL

- a. All asbestos waste materials, including scrap, debris, bags, containers, equipment, contaminated clothing, and plastic sheeting, must be placed in impermeable bags or containers, labeled, and sealed closed. Waste material placed in plastic bags must be double bagged in bags **at least 6 mil thick**. Large sections of asbestos material, such as sheets of transite, may be double wrapped in plastic, taped and sealed.
- b. All disposal of asbestos waste materials must be conducted in accordance with federal EPA requirements, as well as any applicable state environmental requirements. Each state has specific regulations for the disposal of asbestos waste materials, and the applicable state requirements should be reviewed prior to arranging for disposal. Asbestos waste materials must be transported to an EPA approved and licensed landfill by an EPA approved and licensed transporter. Asbestos waste materials must be disposed of in a special landfill certified by EPA for asbestos; they cannot be disposed of in a municipal landfill. Both the landfill operator and the transporter must have current EPA identification numbers for transporting and disposing of asbestos waste. An asbestos waste shipment record must be completed for the disposal of the waste material, and a copy must be received from the landfill operator. Copies of all asbestos waste shipment records must be retained for a period of two years following the date the waste was accepted by the transporter.

09. MEDICAL SURVEILLANCE

- a. The OSHA standard requires implementation of a medical surveillance program for all employees exposed or who will be exposed to airborne concentrations of asbestos fibers at or above the TWA and/or excursion limit or who are required to wear respirators.
- b. The medical surveillance program includes a physical examination by a physician to include:
 - 1. A medical and work history;
 - 2. A complete physical examination of all systems with emphasis on the respiratory system, the cardiovascular system and digestive tract;
 - 3. Completion of the respiratory disease standardized questionnaire in Appendix D of the OSHA standard;

4. A chest X-ray;
 5. Pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV (1.0));
 6. Any additional tests deemed appropriate by the examining physician;
- c. Medical examinations must be completed in the following time frames:
1. A preplacement exam prior to assignment to an occupation requiring respirator usage, or prior to assignment to an occupation where exposure to airborne concentrations of asbestos fibers at or above the TWA and/or excursion limit is anticipated.
 2. An annual examination.
 3. Termination of employment.
 4. More frequent examinations when specified by the examining physician.

10. RECORD KEEPING

- a. The following records must be maintained:
1. Exposure monitoring records of individual employees must be kept for 30 years.
 2. Medical surveillance records of each employee must be kept for the duration of the employee's employment plus 30 years.
 3. Records of employee training must be kept for one year beyond the employee's employment with DOC.
 4. Copies of asbestos waste shipping papers (properly signed by officials of the facility disposing of the waste, transporter and final disposal site) used to dispose of asbestos waste materials must be retained for two years from the date the waste was accepted for transfer to the waste disposal facility.

11. RESPONSIBILITIES

- a. Managers and supervisors are responsible for assuring that all work involving ACM is performed in accordance with OSHA and EPA standards and requirements. This includes assuring that:
1. All work performed by DOC employees conforms to the requirements of this chapter as well as OSHA and EPA standards.
 2. All work to be performed by contract personnel includes as a part of the contract a requirement for adherence to all OSHA, EPA and local requirements for asbestos control.
 3. The COTR for such asbestos contracts monitors compliance with the requirements.
 4. Provisions are made for routine and/or emergency encounters with asbestos during maintenance operations.

- b. Employees are responsible for notifying their supervisor or area safety representative of conditions or actions that may result in unexpected exposure to asbestos. Employees must also use proper work practices and wear the appropriate PPE as required.
- c. Operating Unit Safety and Health Representative (OUSHR) and ASC Regional Safety Manager (RSM) are responsible for providing guidance to management and employees on the requirements for compliance with the asbestos standards and the proper PPE required.

TABLE 13 - 1

RESPIRATORY PROTECTION FOR ASBESTOS FIBERS

Airborne concentration of asbestos or conditions of use	Required respirator
Not in excess of 1 f/cc (10 X PEL)	Half-mask air purifying respirator other than a disposable respirator, equipped with high efficiency filters.
Not in excess of 5 f/cc (50 X PEL)	Full face piece air-purifying respirator equipped with high efficiency filters.
Not in excess of 10 f/cc (100 X PEL)	Any powered air-purifying respirator equipped with high efficiency filters or any supplied air respirator operated in continuous flow mode.
Not in excess of 100 f/cc (1,000 X PEL)	Full face piece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (1,000 X PEL) or unknown concentration	Full face piece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

CHAPTER 14

RESPIRATORY PROTECTION

01. POLICY AND DISCUSSION

- a. This chapter outlines requirements and responsibilities for the DOC respiratory protection program. Specific respiratory requirements for protection against toxic air contaminants are covered in OSHA regulation 29 CFR 1910.134.
- b. The requirements outlined in this chapter apply to all Department of Commerce (DOC) sites where operations may cause the release of harmful air contaminants. These air contaminants can be dangerous if inhaled and cause occupational diseases. Respiratory protection is mandatory whenever personnel may be exposed to harmful air contaminants and/or when oxygen deficient atmospheres exist or are likely to exist.
- c. Respiratory hazards can occur in the form of harmful dusts, fogs, fumes, mists, gases, smoke, sprays, or vapors. The best means of protecting personnel from being exposed to such potentially hazardous materials is through the use of accepted engineering control measures such as local exhaust ventilation. However, the use of engineering control measures may not always be technologically or economically feasible due to the nature and/or location of the activities. In these situations the use of appropriate respiratory protection must be used to assure personnel protection.

02. APPLICABILITY

- a. The requirements of this chapter shall apply to:
 1. Employees identified by the Area Safety Representative (ASR), Operating Unit Safety and Health Representative (OUSHR), Regional Safety Manager (RSM) and/or the DOC Safety Program Manager as requiring respiratory protection equipment due to the nature of their work or job.
 2. Any individual who must enter an area where the use of respiratory protection equipment is required, regardless of the amount of time they will be in the area.
 3. Any individual provided with respiratory protection for humanitarian and/or employee morale reasons even when such protection is not required.
- b. Appropriate respiratory protection equipment will be provided to employees at job site:
 1. Such equipment shall be provided along with instructions regarding equipment use and limitations.
 2. All individuals provided with respiratory protection will be enrolled in the Respiratory Protection Program.
 3. Any individual provided with respiratory protection for humanitarian and/or employee morale reasons even when such protection is not required.

- c. Appropriate respiratory protection equipment will be provided by the Department to these individuals.
 - 1. Such equipment shall be provided along with instructions regarding equipment use and limitations.
 - 2. All individuals provided with respiratory protection will be enrolled in the Respiratory Protection Program.

03. RESPONSIBILITY

- a. Site managers are responsible for:
 - 1. Establishing a comprehensive respiratory protection program, when required;
 - 2. Ensuring all appropriate individuals are enrolled and participate in the program;
 - 3. Appointing a qualified person to oversee the program (generally, an industrial hygienist, ASR, or OUSHR with respiratory protection training is considered qualified); and
 - 4. Ensuring that adequate funds are available to procure examination services and respiratory protection equipment for all employees placed in the respiratory protection program.
- b. Supervisors are responsible for:
 - 1. Anticipating and planning for routine and emergency use of respirators;
 - 2. Informing the ASR of job conditions that are suspected of exposing employees to respiratory hazards;
 - 3. Assuring that all employees whose jobs require the wearing of respiratory protection equipment receive instruction in the selection, use, and maintenance of such equipment;
 - 4. Ensuring employees are provided with and properly use required respiratory protection equipment; and
 - 5. Taking appropriate action to implement and enforce the respiratory protection program requirements discussed in this chapter.
- c. Employees are responsible for:
 - 1. Notifying their supervisor or ASR of conditions that could result in exposure to respiratory hazards;
 - 2. Obtaining and wearing appropriate respiratory protection equipment whenever required and in accordance with instructions and training received;
 - 3. Participating in training and fit-testing sessions provided by the ASR; and
 - 4. Reporting any malfunction of respiratory protection equipment to their supervisor and ensuring that equipment is maintained in good working order.

- d. ASRs or other qualified persons appointed to oversee the program are responsible for:
 - 1. Determining if respiratory protection is required based upon the nature and/or extent of the hazard;
 - 2. Advising supervisors and users on proper selection of respiratory protection equipment;
- NOTE: In field locations, if the ASR requires assistance in determining the need for and the selection of respirator protection equipment, the appropriate RSM or OUSHR should be contacted for guidance.
- 3. Providing training to supervisors and employees in the respiratory protection program, as required; and
 - 4. Conducting random inspections to ensure that respirators are being properly selected, used, maintained and stored.
- e. OUSHRs and RSMs are responsible for providing guidance to ASRs, managers, and employees on compliance with respiratory standards and mandatory use of personal protective equipment.

04. PROGRAM REQUIREMENTS

- a. Standard Operation Procedures (SOPs) governing the selection, care, issuance and use of respirators must be in writing at each operation which requires a respiratory protection program. Procedures must include guidance on emergency and rescue operations.
- b. Respirators must be selected on the basis of hazards to which the worker is exposed.
- c. All users must be instructed and trained in the proper use and limitations of respirators.
- d. Respirators must be regularly cleaned and disinfected. Those used by more than one worker must be cleaned and disinfected after each use.
- e. Respirators must be stored in convenient, clean, and sanitary locations.
- f. Respirators used routinely must be inspected during cleaning. Worn or deteriorated parts must be replaced.
- g. Respirators for emergency use, such as self-contained devices, must be thoroughly inspected at least once a month and after each use.
- h. Appropriate surveillance of work area conditions and degree of employee exposure or stress must be maintained.
- i. Regular inspections and evaluations must be performed to determine the continued effectiveness of the program.
- j. Persons must not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The respirator user's medical status must be reviewed at least annually.

- k. Approved or accepted respirators must be used when they are available.

05. TYPES OF RESPIRATORS

There are two basic categories or types of respiratory protective equipment: Air purifying respirators and atmosphere-supplying respirators.

- a. Air-purifying respirators use mechanical filters or sorbents (chemical cartridges) to remove harmful substances from the air. Air-purifying respirators may not be used in oxygen deficient atmosphere (less than 19.5 percent by volume) or under immediately-dangerous-to-life-or-health (IDLH) conditions. Air-purifying respirators can be classified as follows:
 - 1. Particulate removing respirators, which filter out dusts, fibers, fumes and mists. These respirators may be single-use (disposable) filter respirators or respirators with replaceable filter cartridges.
- NOTE: Surgical masks do not provide protection against air contaminants. They are never to be used in place of an air-purifying respirator. They are for medical use only.
- 2. Gas and vapor-removing respirators, which remove specific individual contaminants or a combination of contaminants by adsorption or by chemical reaction. Gas masks and chemical-cartridge respirators are examples of gas and vapor-removing respirators.
 - 3. Combination particulate/gas and vapor-removing respirators, which combine the respirator characteristics of both kinds of air-purifying respirators.
- b. Atmosphere-supplying or supplied-air respirators provide clean breathing air from a source outside the contaminated area. The breathing air may be supplied through a hose (air-line) from a cylinder, an air compressor, or another source of clean air.

Only certain types of atmosphere-supplying respirators may be used in oxygen-deficient or IDLH conditions. The breathing air supplied to these respirators must meet the requirements of Class D breathing air as outlined in 29CFR 1910.134(d). Supplied-air respirators, also called air-line respirators, are classified as follows:

- 1. Demand. This type of respirator supplies air to the user on demand (inhalation), which creates a negative pressure within the facepiece. Leakage into the facepiece may occur if there is a poor seal between the respirator and the user's face.
- 2. Pressure-demand. This type of respirator maintains a continuous positive pressure within the facepiece, thus preventing leakage into the facepiece.
- 3. Continuous flow. This type of respirator maintains a continuous flow of air through the facepiece and prevents leakage into the facepiece.

06. SELECTION AND USE

- a. All respirators selected for use must be "approved" for protection from the toxic material to which the employee is exposed. Only respirators with a NIOSH/MSHA approval shall be used. Respirators are approved as a whole unit; components may not be interchanged between respirators

- b. The selection of an appropriate respirator for the task to be performed shall be made according to guidance from the American National Standard Practices for Respiratory Protection Z88.2-1969 (ANSI Z88.2-1969). As a minimum, the following factors must be considered when selecting the appropriate respirator:
1. Whether an oxygen deficient, oxygen rich, or IDLH atmosphere exists or may be produced.
 2. The nature of the hazard, i.e., the physical and chemical properties, the physiological effects on the body, the concentration of the toxic material including the peak and average concentration expected, and the degree of protection necessary.
 3. Permissible Exposure Limit (PEL) for the contaminant(s).
 4. Whether toxic, flammable, or explosive by-products are present or may be produced.
 5. The nature, extent, frequency and duration of the duties to be performed by personnel (e.g., welding, painting, etc.) in the work area.
 6. Sorbent efficiency of cartridge or canister.
 7. Any possibilities of high heat of reaction with sorbent material in the cartridge or canister.
 8. Any possibility of shock sensitivity (explosion hazard) of the substance absorbed on cartridge or canister sorbent.
 9. The degree of protection required and the protection factor of the respirator.
- c. Table 14-1 is a flow chart which will aid in determining the proper selection of respiratory protection equipment. It is recommended that the simplest and most comfortable and convenient respirator which will adequately protect against the hazard in question be selected. Table 14-2 provides a listing of some common exposures requiring the use of respirators and the type of respirator required.
- d. A respirator user must be aware of warning signs and what action to take if there are signs of respirator failure. They are as follows:
1. Particulate Air-Purifying Respirators. Difficulty in breathing due to resistance. Usually caused by partial clogging of filter. Filter must be replaced. Disposable filter respirators must be discarded.
 2. Gas or Vapor Air-Purifying Respirators. Detection of warning properties such as odor or taste, eye irritation, or respiratory irritation. Promptly leave the area. Check equipment assembly. If no discrepancies are observed, replace the cartridge or canister. If any of the warning properties appear again, the concentration of the contaminants may exceed the cartridge or canister design specifications. When this occurs, a supplied-air respirator is required.
 3. Supplied Air Respirator. Compressor failure alarm is activated or air pressure drop is sensed. Leave the area immediately. Check equipment. Replace air supply.
- e. Service Life of Air-Purifying Respirator Canisters and Cartridges. The canisters or cartridges of air-purifying respirators are intended to be used until filter resistance precludes further use, or the chemical

sorbent is expended as signified by a specific warning property. New canisters, cartridges or filters must always be provided when a respirator is reissued. When in doubt about the previous use of the respirator, obtain a replacement canister or cartridge.

07. MEDICAL EXAMINATION

Employees assigned to tasks requiring the use of a respirator must be physically able to perform the work while wearing the respirator. Employees must be examined by a physician at least annually. The examining physician shall determine which health and physical factors are pertinent for the employee's ability to work while wearing a respirator.

Factors to be considered include a history of emphysema, chronic obstruction, bronchial asthma, hypertension, epilepsy, anemia, diabetes, claustrophobia, pneumoconiosis, or pneumomediastinum. A chest X-ray and pulmonary function test shall be part of the examination.

08. FIT TESTING

- a. All employees using respirators must be fit tested so that respirators fit properly and provide the degree of protection necessary under actual wearing conditions.
- b. A quantitative or qualitative fit test shall be performed initially, and at least annually thereafter, whenever an employee is required to wear a respirator. The type of fit test will be determined based on the degree of the hazard involved and pertinent regulations.
 1. A quantitative fit test involves exposing the employee to a test atmosphere containing an easily detectable, non-toxic, test agent and quantitatively measuring the penetration of the test agent into the respirator. During the test, the employee will be asked to perform a number of exercises which simulate the work environment and could induce leakage of the facepiece. A quantitative fit test provides the most accurate information about the respirator fit.
 2. A qualitative fit test involves the introduction of an odorous or irritating substance into the breathing zone of the respirator wearer. A subjective determination that the substance can be detected indicates an improper fit for the respirator.
- c. The results of the quantitative and qualitative fit test are used to select specific types, makes, and models of respirator facepieces which provide the best fit and which will provide the best protection against harmful substances for the individual employee. An employee must only use the specific make(s) and model(s) of respirators with which a satisfactory fit was obtained.
- d. Respirator fit testing must be documented and must include the type of respirator, brand name and model, method of test and test results, test date, and the name of the instructor/tester.
- e. Respirators shall not be worn when conditions prevent a good face seal or interfere with respirator function. Conditions which prevent a good face seal include (but not limited to) beard growth, sideburns, the absence of teeth or dentures, unusual facial configuration, temple bars on glasses, or the wearing of any object that projects under the facepiece.

09. TRAINING

- a. Employees must receive training in the proper use of the respiratory equipment and the limitations of the equipment.

The training must include instructions on fitting the respirator and how to check the facepiece-to-face seal using the qualitative field test. Prior to first using a respirator in a work situation, the employee must be given the opportunity to handle the respirator, wear it in normal air for a period of time, practice adjusting it, and become familiar with it.

- b. Training for employees should include an explanation of the following:
1. The nature of the hazard and what may happen if the respirator is not used properly and exposure occurs.
 2. Engineering controls in use, if any, and the need for the added protection of the respirator.
 3. Reasons for the selection of a particular type of respirator and the limitations of the respirator selected.
 4. The proper method of donning and wearing the respirator, checking the fit and the operation of the respirator.
 5. Proper inspection, maintenance and storage of the respirator.
 6. How to handle emergency situations that may arise while wearing the respirator.

10. CLEANING AND STORAGE

- a. Respirators shall be cleaned and disinfected after each day's use or more frequently if necessary. Cleaning may be accomplished by hand cleaning or machine cleaning. When machine cleaning is used, care must be taken to insure against excessive tumbling or extreme temperature (usually above 120° F). Disinfection is required when the respirator is used by more than one person and is not individually assigned.
- b. The most commonly used cleaning solution is warm soapy water, but commercial cleaning solutions may also be used. Disinfection solutions commonly used include a 50 PPM solution of chlorine (about 2 ml bleach to 1 liter of water) and an aqueous iodine solution (about 0.8 ml tincture of iodine in 1 liter of water). Commercial disinfection or decontamination solutions are also available. The manufacturer's instructions should be followed for all commercial solutions used.
- c. Respirators should be stored in a convenient, clean, and sanitary location, where they are protected from dust, harmful chemicals, sunlight, excessive heat or cold, and moisture. Suggested storage containers to protect the respirator from harmful agents include plastic bags capable of being sealed (such as Zip-Lock bags), plastic containers with tight fitting lids, or cans with tight fitting lids.

The respirators should be allowed to rest in a normal position in the container. Respirators must not be hung by the respirator straps.

- d. Respirators used strictly for emergency purposes should be stored in an easily accessible and well-marked location.

11. INSPECTION AND MAINTENANCE

Respirators must be inspected regularly for damage, preferably prior to each use. The condition of the

facepiece, straps, inhalation and exhalation valves, cartridges, canisters, air hoses, and air cylinder should be checked. Any damaged parts must be replaced. Respirators must be maintained in operating condition, especially emergency use respirators.

12. RECORDKEEPING

The following records must be maintained:

- a. Records of employee training.
- b. Records of employee fit test results.
- c. Records of inspection dates and findings must be kept for all respirators maintained for emergency use.

TABLE 14-1

RESPIRATORY PROTECTION

Airborne concentration of asbestos, tremolite, anthophyllite, actinolite, or a combination of these minerals	Requested respirator
Not in excess of 2 f/cc (10 x PEL).	Half-mask air-purifying respirator with high-efficiency filters.
Not in excess of 10 f/cc (50 x PEL).	Full facepiece air-purifying respirator equipped with high-efficiency filters.
Not in excess of 20 f/cc (100 x PEL).	Any powered air-purifying respirator equipped with high-efficiency filters.
OR	
	Any supplied-air respirator operated in continuous flow mode.
Not in excess of 200 f/cc (1,000 x PEL).	Full facepiece supplied-air respirator operated in pressure demand mode.
Greater than 200 f/cc (>1,000 x PEL) or unknown concentration.	Full facepiece supplied-air respirator operated in pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus.

NOTE:

1. Respirators assigned for higher environmental concentrations may be used at lower concentrations.
2. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers or larger.

TABLE 14-2

RESPIRATORY PROTECTION FOR VARIOUS OCCUPATIONAL EXPOSURES

EXPOSURE	RESPIRATOR TYPE
Nuisance Dusts	Disposable Filter
Nuisance Odors Asbestos	Chemical Cartridge* High Efficiency Filter Cartridge or Supplied-Air

RESPIRATOR

Acid Gases and Organic Vapors	Chemical Cartridge*
Dusts, Mists, Fumes (with TWA less than 0.05 mg/m ³)	Filter
Dusts, Mists, Fumes (with TWA of 0.05 mg/m ³ or greater)	High Efficiency Filter Cartridge*
Mercury Vapor	Supplied-Air Respirator
Paint Spray and Vapors	Chemical Cartridge and Refilter
Pesticides	Chemical Cartridge*
Radionuclides, Bacteria and Viruses	High Efficiency Filter Cartridge*
Welding and Metal Fumes	High Efficiency Filter Cartridge*
Hazardous Operations (welding, etc.) In confined spaces	Supplied Air
Fire Suppression, Oxygen Deficient Atmospheres, High Unknown Concentrations of Contaminants	Self-Contained Breathing Apparatus**

*These items must be used with a half-mask respirator facepiece.

**The use of self-contained breathing apparatus requires extensive training and experience. Its use is reserved for fire suppression, emergency rescue, etc., in oxygen-deficient/highly contaminated atmospheres.

CHAPTER 15

HEARING CONSERVATION AND NOISE ABATEMENT

01. POLICY AND DISCUSSION

- a. Historically, hearing loss has been recognized as an occupational hazard of certain trades such as blacksmithing and boilermaking. Modern technology has extended this risk to many other career fields including forging, aircraft and ship operations, construction, and industrial research. Exposure to high-intensity noise occurs as a result of either impulse or blast noise such as gunfire or from continuous or intermittent sounds such as jet or propeller aircraft. Hearing loss has been and continues to be a source of concern with the Department. It not only contributes to the high cost of compensation claims, but also results in a decline in productivity and efficiency.
- b. It is DOC policy that all employees working in a noise hazardous area be protected from noise levels that exceed OSHA standards. Engineering and administrative controls shall be the primary methods used to eliminate or reduce these noise exposures. When such controls are not feasible or insufficient to reduce noise levels to an acceptable level, the use of hearing protective devices is mandatory. However, in no case shall hearing protective devices be a substitute for proper engineering or administrative controls. Acceptable noise exposure levels are prescribed in Table 15-1.
- c. Hearing protective devices establish a "last line of defense," and do nothing to reduce or eliminate the source of high level noise. These protective devices may become ineffective through misuse, misapplication or improper maintenance, and expose the employee unknowingly to dangerous noise levels. Consequently, employees must receive proper training in the selection, use, and limitations of hearing protective devices. Where hearing protective devices are provided to employees, their use is mandatory. Failure to use the equipment may result in disciplinary action.
- d. Managers must ensure that all employees whose work environment has a noise level equal to or greater than 85 dBA as an 8-hour time weighted average (TWA) are enrolled in a Hearing Conservation Program. For purposes of the Hearing Conservation Program, noise levels shall be measured and noise exposure computed according to Table 15-2.
- e. The Department shall establish and maintain an Audiometric Testing Program as delineated in this chapter. This program shall be made available to all employees whose noise exposure is equal to or exceeds an 8-hour time-weighted average of 85 decibels.

02. HEARING CONSERVATION PROGRAM REQUIREMENTS

The goal of the DOC Hearing Conservation Program is to prevent occupational noise-related hearing loss to DOC personnel. The program shall include the following elements:

- a. Monitoring of employee noise exposure levels to identify employees who must be enrolled in the Hearing Conservation Program and to identify those employees for whom hearing protection is mandatory.
- b. Notification of the results of the monitoring to each employee whose exposure is at or above an 8-hour time weighted average (TWA) of 85 dBA.

- c. Provisions for observation of the monitoring by employees or employee representatives.
- d. An Audiometric Testing Program for all employees whose exposure is equal to or greater than 85 dBA as an 8-hour time weighted average, which includes provisions for establishing a baseline audiogram, annual audiograms, evaluation of audiograms by an audiologist, otolaryngologist or physician, and follow-up audiograms and procedures.
- e. Audiometric measuring instruments and audiometric test rooms which meet with specifications in 29 CFR 1910.95.
- f. Availability of hearing protective devices at no cost to the employee, and employee opportunity to select among a variety of hearing protectors.
- g. A training program for all employees enrolled in the Hearing Conservation Program and which informs employees about the effects of noise on hearing; the purpose, advantages and disadvantages of hearing protective devices; selection, fitting, use, and care of hearing protective devices; and the purpose of audiometric testing, including an explanation of the test procedures.
- h. Maintenance of employee exposure records for a period of 20 years and audiometric test records for the duration of the employee's employment.

03. PERMISSIBLE EXPOSURE LIMIT (PEL)

The PEL is the maximum level of exposure an individual may experience over an 8-hour workday. The PEL for occupational exposure to noise is listed below:

- a. Equal to or less than 90 dBA for 8 hours in any 24 hour period. Exposure at higher noise levels is permitted for short periods of time, refer to Table 15-2, as long as the TWA is equal to or less than 90 dBA.
- b. Equal to or less than 140 dB peak sound pressure level at any time for impact or impulse noise.
- c. Equal to or less than 82 dBA for a 24-hour effective exposure level [Leff (24)]. This level applies to shipboard personnel while aboard vessels.

04. NOISE MEASUREMENTS AND EXPOSURE ASSESSMENTS

- a. Noise Measurements. To effectively control noise, it is necessary that the noise be measured according to standard procedures and that the measurements be properly evaluated against accepted criteria. To achieve this, the following must be accomplished:
 - 1. A complete survey of all work areas, processes, and operations to identify potential noise hazardous areas must be performed by a properly trained person. Monitoring of noise levels is required when information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average (TWA) of 85 dBA or a dose of 50 percent.
 - 2. The sampling strategy used for monitoring must be designed to identify employees for inclusion in the Hearing Conservation Program and to help in the selection of proper hearing protective devices.

3. Where circumstances such as high worker mobility, significant variations in sound level, or a significant component of impulse noise makes area monitoring inappropriate, personal sampling must be conducted.
 4. All continuous, intermittent, and impulsive sound levels from 80 decibels to 130 decibels must be integrated into the noise measurement.
 5. Instruments used to measure noise must be calibrated to ensure accuracy of the measurements.
 6. Monitoring must be repeated whenever any significant modification or change in the work routine occurs which could alter the noise exposure level.
 7. All noise measurements taken to determine an individual's exposure level must be conducted with the microphone of the measuring instrument placed at a height which most closely approximates the position/location of the worker's ear during normal working conditions. Repeated measurements may be required during a single day and/or on different days of the week to account for the variations in noise levels produced by changes in operational schedules and procedures.
 8. Records of noise measurements must be kept for a period of 20 years and include as a minimum.
 - (a) Location and type of noise sources.
 - (b) Number and identification of personnel in the work area and their daily noise exposure and duration.
 - (c) Calibration data for the instrument used.
 - (d) Location, date and time of noise measurements.
 - (e) Noise levels measured and hazard radius.
 - (f) Name and signature of person(s) who performed the study.
- b. Exposure Assessments. The analysis of noise measurements in order to assess the hazard potential is a complex task that must be performed by an industrial hygienist or other competent person under the direction of the RSM or OUSHR. A complete analysis may require use of octave band analyzers, recorders, and other specialized acoustical instrumentation such as personal noise dosimeters.
1. The requirements outlined in this chapter, 29 CFR 1910.95, and/or DOT U.S. Coast Guard Navigation and Vessel Inspection Circular No. 12-82 shall be used to determine compliance.
 2. An area shall be designated as a "hazardous noise area" when:
 - (a) The A-weighted sound level (continuous or intermittent) in the work area is routinely equal to or greater than 85 dB; or
 - (b) The peak sound pressure level (impulse or impact noise) in the work area routinely

exceeds 140 dB.

The designation of a "hazardous noise area" shall be made by a properly trained ASR, RSM or OUSHR.

3. In the absence of an exposure assessment to the contrary, personnel exposed to sound levels equal to or greater than 85 dBA or 140 dB peak sound pressure level for impact or impulse noise must be considered at risk and be identified on a roster for inclusion in the Hearing Conservation Program. Although hearing conservation measures are required when noise levels are equal to or greater than 85 dBA, the implementation of all available measures may not be necessary in every case. For example, visitors to a hazardous noise area should be required to wear hearing protection, but would not be required 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 above 85 dBA for short durations so that the wearing of hearing protective devices may be judged impractical or unnecessary.

Decisions to waive the use of hearing protective devices must not be made arbitrarily; such professional judgments should be rendered by an industrial hygienist or other qualified professional using approved instrumentation and in consideration of all relevant factors.

05. LABELING OF HAZARDOUS NOISE AREAS AND EQUIPMENT

Designated hazardous noise areas and equipment which produce sound levels equal to or greater than 85 dBA, or 140 dB peak sound pressure level shall be appropriately labeled. Posting of an entire building as a hazardous noise environment is not recommended unless nearly all areas within the building are designated hazardous noise areas.

06. HEARING TESTING AND MEDICAL EVALUATION

All DOC employees who are required to work in designated hazardous noise areas or with equipment which produces a TWA equal to or greater than 85 dBA or a peak sound pressure level of 140 dB, shall be entered in a audiometric testing program. The testing program consists of baseline and periodic audiometric (hearing) tests with specific test requirements.

- a. Audiometric Testing Program. In order to obtain valid audiometric tests the following requirements must be met:
 1. Audiometric tests must be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation.
 2. Audiometric tests must be pure tone, air conduction hearing threshold examinations, with test frequencies including a minimum of 500, 1000, 2000, 3000, 4000, and 6000 Hz and shall be taken separately for each ear.
 3. Audiometric tests must be conducted with audiometers that meet the specifications of and are maintained and used in accordance with the most current edition of American National Standard Specification for Audiometers, S3.6-1969 and as required by Appendix C of 29 CFR 1910.95.
 4. Pulsed-tone and self-recording audiometers must meet the requirements specified in Appendix C of 29 CFR 1910.95.

5. Audiometric examinations must be administered in a room meeting the requirements listed in Appendix D of 29 CFR 1910.95.
6. The functional operation of the audiometer must be checked before each day's use by testing a person with known stable hearing thresholds and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds.

Deviations of 10 decibels or greater require an acoustic calibration.

- a. Audiometer calibration must be checked acoustically at least annually in accordance with Appendix E of 29 CFR 1910.95. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.
- b. An exhaustive calibration must be performed at least every two years in accordance with the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.
- c. Reference (Baseline) Hearing Tests. Any employee whose job assignment involves routine exposure to a TWA equal to or greater than 85 dBA must receive a baseline audiogram within six months of assignment. Subsequent audiograms will be compared to this baseline.
 1. An exception to this rule is where mobile test vans are used. In such cases, the employer must obtain a valid baseline audiogram within one year of the employee's first exposure at or above a TWA of 85 dBA. These employees must wear hearing protective devices until the baseline audiogram is obtained.
 2. Testing to establish a baseline audiogram must be preceded by at least 14 hours without exposure to workplace noise. This requirement may be met by wearing the appropriate hearing protective device.
 3. Employees must be notified of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.
- d. Periodic Hearing Tests.
 1. Each DOC employee whose exposures equal or exceed an 8-hour TWA of 85 dBA for shore operations and 82 dBA for shipboard operations must receive hearing test at least annually for as long as the employee is assigned to a noise hazardous environment.
 2. Each employee's annual audiogram must be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. The comparison may be done by a qualified technician.
 - (a) If the annual audiogram shows that an employee has suffered a standard threshold shift, the employee must obtain a retest within 30 days and may consider the results of the retests of the annual audiogram.
 - (b) When a standard threshold shift occurs, unless the physician determines that it is not work related or aggravated by occupational noise exposure, the following steps shall be followed:

- (1) The employee shall be informed in writing, within 21 days, of the test results.
 - (2) An employee not using hearing protectors shall be fitted with such protection, trained in its use and care, and required to use it.
 - (3) An employee already using hearing protection shall be refitted and retained in its use.
 - (4) The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is deemed necessary by the physician.
 - (5) The employee is informed of the need for an otological examination if the physician finds a non work-related medical pathology.
- (c) The physician shall review problem audiograms and determine whether there is need for further evaluation. All pertinent medical data shall be considered when making this evaluation, i.e., hearing conservation requirements, baseline audiogram, recent audiogram, sound pressure levels, and audiometer calculations.
- (d) An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist or physician who is evaluating the audiogram:
- (1) The standard threshold shift revealed by the audiogram is persistent; or
 - (2) The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

In these cases a revised baseline audiogram is indicated. In addition, it should be noted that all audiograms must be retained for length of employment of the affected employee.

07. PERSONAL HEARING PROTECTIVE DEVICES

- a. Hearing protective devices must be worn by all personnel when they enter or work in an area where the operations generate noise levels of:
1. Equal to or greater than 90 dBA sound level;
 2. Equal to or greater than 140 dB peak sound pressure level ; or
 3. A TWA equal to or greater than 85 dBA or a dose of 50 percent.

NOTE: There may be unique situations where noise levels rise unpredictably above 85 dBA for short durations so that the wearing of hearing protective devices may be judged impractical or unnecessary. Decisions to waive the use of hearing protective devices must not be made arbitrarily. Such professional judgments must be rendered by an industrial hygienist or other competent person considering all relevant factors.

- b. A combination of insert type and circumaural type (ear muffs) hearing protective devices (double

protection) must be worn in all areas where noise levels can not be attenuated to an acceptable level using a single type.

- c. All personnel exposed to gunfire in training situations or to artillery firing under any circumstances, must wear hearing protective devices.
- d. The determination of which hearing protective device or combination of devices, suitable for use in each situation, is the responsibility of the industrial hygienist or other competent person under the direction of an industrial hygienist, RSM or OUSHR. Every effort must be made to issue personal hearing protective devices suited to the location and duration of usage, following the guidance contained in Table 15-3. Personal hearing protective devices must reduce effective sound levels to less than 85 dBA or 140 dB peak.
- e. In cases where hearing protective devices do not provide sufficient attenuation to reduce the employee's effective exposure level below 85 dBA, administrative control of exposure time will be necessary.

08. PROCUREMENT OF EAR PROTECTIVE DEVICES

- a. Procedures for the procurement of hearing protective devices will vary among operating units. Hearing protective devices such as ear plugs and ear muffs must be made available at no cost to the employee and must be replaced as necessary, depending on the type and durability of the individual device.
- b. Audiometric testing services, to comply with the provisions of the Hearing Conservation Program must be procured in the most cost effective manner available. Where the Department has a contract with the U.S. Public Health Service for clinical services, the audiometric tests shall be included as part of the contract. At other locations, site managers are encouraged to contract for the audiometric tests with the nearest U.S. Public Health Service, Federal Employee Occupational Health Office, or the office of a local professionally qualified and certified audiologist, audiology technician, otolaryngologist, or physician.

09. EDUCATION AND TRAINING

- a. A comprehensive training program on the effects of noise on hearing and on the need for, and use of, hearing protective devices must be conducted at all sites with significant noise levels and where employees are enrolled in the Hearing Conservation Program. This training must be included in the training program for supervisors and non-supervisory personnel. All employees working in noise hazardous areas and/or who are required to wear hearing protective devices must be included in the training.
- b. The education program must be repeated annually for each employee enrolled in the Hearing Conservation Program.
- c. Each employee must receive training on the following:
 - 1. The effects of noise on hearing.
 - 2. The purpose of hearing protective devices and the advantages and/or disadvantages of various types.
 - 3. Instructions on the selection, fitting, use, and care of hearing protective devices.

4. The purpose of the audiometric testing, and an explanation of the test procedures.
- d. Copies of the OSHA standard 29 CFR 1910.95 and informational materials pertaining to the standard must be made available to all employees.

10. RECORDKEEPING

- a. Accurate records of all employee exposure measurements must be maintained for a period of 20 years following exposure measurements.
- b. Audiometric test records of employees must be maintained for the duration of the employee's employment. The audiometric test record must include the following information:
 1. Name and job classification of the employee.
 2. Date of the audiogram.
 3. The examiner's name.
 4. Date of the last acoustic or exhaustive calibration of the audiometer.
 5. The employee's most recent noise exposure measurement.
 6. Accurate records of the measurements of the background sound pressure levels in the audiometric test rooms.
- c. All records required by this chapter must be provided upon request to employees, former employees, the employee's representative, and safety and health personnel.

11. NOISE ABATEMENT PROGRAM

The primary means of protecting DOC employees from hazardous noise must 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 must be the permanent solution only when engineering or administrative controls are considered to be infeasible or cost prohibitive.

- a. Preventive Measures. It is much 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. To accomplish this, site plans, architectural designs and procurement of equipment must be reviewed and/or purchased to ensure sound levels of less than 85 dBA are achieved whenever possible.
- b. Abatement of Existing Noise Hazards. Abatement of hazardous noise levels shall be undertaken, 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,