

U.S. Department of Energy

Washington, D.C.

ORDER

DOE 5480.10

**RETAIN
PERMANENTLY**

6-26-85

SUBJECT: CONTRACTOR INDUSTRIAL HYGIENE PROGRAM

1. PURPOSE. To establish the requirements and guidelines applicable to Department of Energy (DOE) contractor operations for maintaining an effective industrial hygiene program to preserve employee health and well-being.
2. CANCELLATION. Chapter X, DOE 5480.1A, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION PROGRAM FOR DOE OPERATIONS, of 5-22-81.
3. SCOPE. The provisions of this Order apply to all Departmental Elements and to contractors performing work for the Department as provided by law and/or contract and as implemented by the appropriate contracting officer.
4. APPLICABILITY. The Order lists the responsibilities and authorities of Departmental Elements for policy development and overview of industrial hygiene programs at Government-owned contractor-operated (GOCO) facilities. The industrial hygiene program elements contained in this Order apply to contractor organizations performing the actual work or job-related tasks and whose contracts include the occupational safety and health contract clause specified in DOE Acquisition Regulation, 48 CFR 970.5204-2, "Safety and Health." The program elements do not apply to control of occupational exposure to ionizing radiation. The provisions of this Order do not apply to non-GOCO contractor employees doing work for the Department or the Federal employees occupational safety and health program as defined by DOE 3790.1A.
5. REFERENCES.
 - a. DOE 1324.2, RECORDS DISPOSITION, of 5-22-80, which provides guidance on maintenance of exposure records.
 - b. DOE 3790.1A, FEDERAL EMPLOYEE OCCUPATIONAL SAFETY AND HEALTH PROGRAM, of 10-22-84, which defines policy for Federal employee safety and health programs.
 - c. DOE 5480.1A, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION PROGRAM FOR DOE OPERATIONS, of 8-13-81, which provides overall environment, safety, and health policy.

DISTRIBUTION:

All Departmental Elements

INITIATED BY:

Assistant Secretary for
Environment, Safety, and Health

- d. DOE 5480.4, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION STANDARDS, of 5-15-84, which provides mandatory industrial hygiene standards and exemption procedures.
- e. DOE 5482.1A, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION APPRAISAL PROGRAM, of 8-13-81, which provides requirements for appraisals of DOE and DOE contractor industrial hygiene programs.
- f. DOE 5483.1A, OCCUPATIONAL SAFETY AND HEALTH PROGRAM FOR DOE CONTRACTOR EMPLOYEES AT GOVERNMENT-OWNED CONTRACTOR-OPERATED FACILITIES, of 6-22-83, which provides occupational safety and health protection to DOE contractor employees consistent with the protection afforded private industry employees under the Occupational Safety and Health Act.
- g. DOE 5484.1, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION INFORMATION REPORTING REQUIREMENTS, of 2-24-81, which provides incident and illness reporting requirements.
- h. Title 10 CFR 1008, Records Maintained on Individuals (Privacy Act), which provides the procedures to implement the Privacy Act of 1974 (5 U.S.C. 552a) within the Department of Energy.
- i. Title 29 CFR 1904, Recording and Reporting Occupational Injury and Illnesses, which provides criteria for recording and reporting occupational illnesses.
- j. Title 29 CFR 1910.20, Access to Employee Exposure and Medical Records, which provides criteria for allowing access to employee exposure and medical records.
- k. Title 29 CFR 1910, Subpart Z, Toxic and Hazardous Substances, which provides permissible exposure limits for toxic and hazardous materials.
- l. Title 48 CFR Chapter 9, Acquisition Regulation, which contains the occupational safety and health contract clause.
- m. "TLVs Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes," most current edition, published by the American Conference of Governmental Industrial Hygienists, which provides exposure limits for toxic chemicals and physical agents.

6. DEFINITIONS.

- a. Industrial Hygiene. The science and art devoted to the recognition, evaluation, and control of environmental factors or stresses arising in or from the workplace that may cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or those with whom they come into contact.

- b. Program Senior Official, for this Order only, is an outlay program manager which includes the Assistant Secretaries for Fossil Energy, Defense Programs, Nuclear Energy, and Conservation and Renewable Energy, and the Directors of Energy Research and Civilian Radioactive Waste Management.
 - c. Field Organization is a Departmental Element located outside the Washington, DC, geographical area.
7. POLICY. It is the policy of the Department that contractor organizations:
- a. Provide places and conditions of employment that are free from or protected against recognized hazards that cause or are likely to cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or those with whom they come into contact.
 - b. Assure that contractor employees and employee representatives have the opportunity to participate in the operation of the contractor employee industrial hygiene program.
 - c. Assure that contractors make well-defined assignments of responsibilities within their organization for the conduct of an employee industrial hygiene program.
8. RESPONSIBILITIES AND AUTHORITIES.
- a. Assistant Secretary for Environment, Safety, and Health shall:
 - (1) Develop general requirements for industrial hygiene programs that are applicable to Government-owned, contractor-operated facilities.
 - (2) Provide advisory and interpretative services on matters dealing with the policy, responsibilities, requirements, and procedures contained in this Order.
 - (3) Review, approve, or deny, as appropriate, and respond to requests for exemptions from industrial hygiene requirements as delineated by the exemption procedures for policy requirements of DOE 5480.4, Attachment 2, page 6, paragraph 3.
 - (4) Appraise the industrial hygiene performance of field organizations, and upon the request of field organizations or program senior officials conduct independent appraisals of contractor industrial hygiene programs (refer to DOE 5482.1A).
 - (5) Provide technical guidance on the evaluation and control of occupational health hazards upon the request of field organizations or program senior officials.

b. Program Senior Officials shall:

- (1) Assure that contractor industrial hygiene programs are in compliance with the requirements of this Order through appropriate field organizations.
- (2) Review, coordinate with, and submit to the Assistant Secretary for Environment, Safety, and Health, requests for exemptions from mandatory requirements as delineated by the exemption procedures for policy requirements of DOE 5480.4, Attachment 2, page 6, paragraph 3.
- (3) Identify needs to the Assistant Secretary for Environment, Safety, and Health for new guidelines to address industrial hygiene concerns.
- (4) Approve, as appropriate for facilities under their purview, proposals for additional or more stringent requirements for implementation by field organizations after consultation with the Assistant Secretary for Environment, Safety, and Health, field organizations, and other affected program senior officials.

c. Heads of Field Organizations shall:

- (1) Assure that the contractor organizations under their purview implement and maintain industrial hygiene programs in accordance with the intent and requirements of this Order.
- (2) Review, coordinate, and submit to the appropriate program senior official requests for exemptions from industrial hygiene requirements as delineated by the exemption procedures for policy requirements of DOE 5480.4, Attachment 2, page 6, paragraph 3.
- (3) Prescribe, as appropriate, additional or more stringent requirements if these are determined to be essential to the health and well-being of contractor employees or the efficiency of safety and health programs. Notify affected senior officials of additional or more stringent requirements prescribed.
- (4) Conduct appraisals of contractor industrial hygiene programs in accordance with DOE 5482.1A.
- (5) Identify needs to the Assistant Secretary for Environment, Safety, and Health for guidelines to address industrial hygiene concerns.

9. REQUIREMENTS. The manager of the contractor organization performing the actual work or job-related task shall assure compliance with the requirements of this paragraph. These requirements are necessary elements for implementing and maintaining an effective industrial hygiene program and providing protection in accordance with the standards of DOE 5480.4, Attachment 2, page 2, paragraph 2d(3).

6-26-85

- a. Directives. Internal directives or operating procedures shall be developed to implement industrial hygiene programs. These directives may be incorporated into existing documents covering safety and health programs. The directives shall clearly specify the authority and responsibilities of the organizational staff administering the industrial hygiene program. The directives shall also specify the responsibilities of other functional organizations. Topics that should be addressed are:
- (1) The Operating Organization having line safety and health responsibilities should be required to: (a) conduct operations consistent with established health and safety procedures; (b) include the industrial hygiene staff in the design review process whenever new construction or remodeling of an existing process is planned; and (c) request the industrial hygiene staff to evaluate the effectiveness of proposed environmental control equipment and approve procedures for its use.
 - (2) The Medical Organization should be required to: (a) maintain records of occupational illnesses in accordance with the recordkeeping requirements of Title 29 CFR 1904; (b) consult with the industrial hygiene staff on the need for job-related medical examinations or bioassays; (c) alert the industrial hygiene staff to all suspected occupational illnesses to facilitate early evaluations and correction of problems; and (d) include the industrial hygiene staff, if appropriate, in the investigations of occupational illnesses.
 - (3) Purchasing and Contracting Organizations should be required to: (a) participate as requested by the industrial hygiene staff to assure that potentially hazardous material or equipment being procured are adequately identified, evaluated, and controlled; and (b) require contractors or subcontractors performing potentially hazardous operations within a DOE or DOE-controlled facility to comply with the mandatory industrial hygiene standards of DOE 5480.4 and make provisions to allow the industrial hygiene staff to monitor compliance.
 - (4) First-line Supervisors should be required to: (a) maintain healthful working conditions within his or her own organization and implement industrial hygiene recommendations; (b) train employees to perform assignments in a safe manner; and (c) follow administrative procedures to allow appropriate disciplinary action to be taken when health and safety rules are violated.
 - (5) Employees should be required to: (a) observe all safety and health rules; (b) use all prescribed personal protective equipment; (c) follow established health and safety practices and procedures; and (d) notify supervisors immediately of suspected exposures to harmful agents or conditions.

6-26-85

b. Function. The industrial hygiene program shall be designed to preserve employee health and well-being. This shall be accomplished by identification, evaluation, and control of environmental factors and stresses found in the workplace. These environmental factors and stresses include: chemical (e.g., liquid, particulate, vapor, and gas); physical (e.g., electromagnetic radiation, noise, vibration, and magnetic fields); biological (e.g., agents of infectious diseases); and ergonomic (e.g., body position in relation to task, repetitive motion, and mental or physical fatigue). The contractor industrial hygiene program must have the following features:

- (1) Identification of Health Hazards. The industrial hygiene staff shall identify and document existing and potential occupational health hazards through: knowledge and assessment of the operations; periodic walk-through surveys; information provided by interorganizational communication; the review of proposed projects, facilities, engineering plan, and specifications; and maintenance of a hazards inventory or tracking system.
- (2) Hazard Evaluation. Once potential health hazards are identified, the industrial hygiene staff must determine the extent of the hazard through appropriate consultation with other professionals, sound judgment, and the application of established standards or guides and such evaluation techniques as air sampling and bioassay. A report shall be sent to the first level supervisor with the industrial hygiene staff's evaluation of whether occupational exposures are within permissible limits, together with supporting evidence. The permissible exposure limits used in hazard evaluation shall not exceed those in the mandatory industrial hygiene standards of DOE 5480.4, Attachment 2, page 2, paragraph 2d(3). When a potential health hazard is identified that has no assigned permissible exposure limit, a guideline on evaluation and control should be developed based on the best available information (refer to paragraph 10a(1)).
- (3) Control Measures. Control measures shall be implemented whenever it is determined that a potential health hazard exists sufficient to produce illness or injury or that applicable standards are not being followed. The industrial hygiene staff shall formally recommend control measures to the first level supervisor who must respond promptly. Where feasible, engineering control measures, process change, or material substitution shall be used to prevent or minimize exposure to hazards. Administrative controls and personal protective equipment should supplement engineering controls as appropriate.

6-26-85

- (4) Periodic Review. The satisfactory control of occupational health hazards shall be given continuing attention despite the imposition of control measures. Periodic monitoring is essential to assure maintenance of satisfactory conditions. The industrial hygiene staff shall determine the type and frequency of periodic monitoring. The industrial hygiene staff shall report to line management regarding the continuing adequacy of controls, the need for additional controls, or recommendations for maintenance or reemphasis of administrative controls. Employees of DOE contractor organizations shall be provided the results of the monitoring program for toxic materials or harmful physical agents, upon request.
- (5) Employee Education. The industrial hygiene staff shall assist the first level supervisor in the development of an employee information and training program whenever a potential health hazard exists requiring engineering controls, administrative procedures, or personal protective equipment. The program shall include written notification of employees of environmental monitoring results when the results indicate that the employees are exposed above permissible limits. Training should include information on operations that may lead to exposure, the potential health effects of the hazard, the content of applicable standards, and the purpose and results of environmental monitoring. Training should be updated and repeated periodically.
- (6) Medical Monitoring. The industrial hygiene staff shall inform the medical organization of potential and existing health hazards identified, the results of hazard evaluations, and other industrial hygiene information needed for operation of a medical monitoring program. The industrial hygiene staff should be available to accompany medical staff on periodic worksite visits (refer to DOE 5480.1A, Chapter VIII, paragraph 4a(2)).

c. Carcinogen Control Program

- (1) Purpose. To establish policy and requirements for the identification, evaluation, and control of occupational exposure to chemical carcinogens.
- (2) Policy. A program shall be implemented to maintain occupational exposure to chemical carcinogens as low as reasonably achievable.
- (3) Applicability. The chemical substances covered by this program shall be those regulated as carcinogens by the Occupational Safety and Health Administration (OSHA) standard, Title 29 CFR 1910, Subpart Z, and those listed as carcinogens and suspect carcinogens in Appendix A of the American Conference of Governmental Industrial Hygienists.

6-26-85

(ACGIH) TLV booklet. The program shall apply to operations where the industrial hygiene staff has determined that use of a carcinogen creates a significant potential for occupational exposure. For carcinogens with prescribed exposure limits, the program shall apply to operations where the industrial hygiene staff determines that controls are necessary to maintain occupational exposure below limits.

- (4) Requirements. For OSHA-regulated carcinogens, a program shall be implemented that, at a minimum, conforms to the requirements of applicable OSHA standards (refer to DOE 5483.1A). Exposure to carcinogen listed in the ACGIH TLV booklet shall be controlled by application of the industrial hygiene functions of identification, evaluation, control, periodic review, employee education, and medical monitoring listed in paragraph 9b, above. In addition, the following requirements shall apply to the use and/or potential exposure to carcinogens.
- (a) Safety plans, standard operating procedures, or experimental protocols shall be written describing the use of chemical carcinogen and the procedures used to control exposure. These documents shall be reviewed and approved by the industrial hygiene staff prior to the initiation of an operation.
 - (b) Regulated areas shall be established where chemical carcinogens are used. The characteristics of regulated areas shall be appropriate to assure that access is controlled and will depend on the quantity and physical properties of the material being used and on the operations being performed. A record shall be maintained of all personnel working in regulated areas.
 - (c) Engineering controls shall be the primary method used to minimize exposure to carcinogens and to prevent the release of carcinogens into the workroom environment. Provisions shall be made to assure that hazardous levels of contaminated air are not released into adjacent work areas or the outside environment. All contaminated liquid and solid waste shall be disposed utilizing approved methods (refer to DOE 5480.4, Attachment 1, paragraph 2b(11)).
 - (d) Signs warning of the presence of chemical carcinogens shall be posted at all entrances to regulated work areas. Labels should be used on all carcinogen containers to identify the chemical and to warn of the carcinogenic hazard.

6-26-85

- (e) Good hygiene shall be maintained through workpractices, such as: use of protective clothing; availability of showers and change rooms; bans on eating, drinking, and smoking in regulated areas; and use of nonpermeable work surfaces.
- (f) Procedures shall be established for emergency actions involving chemical carcinogens (e.g., cleanup of spills or accidental releases). Occurrences which could result in exposure of personnel or release to the environment shall be investigated and, if appropriate, reported (refer to DOE 5484.1).
- d. Industrial Hygiene Staff.
- (1) The staff responsible for the direction and operation of the industrial hygiene program must be professionally qualified, adequate in number, and have sufficient time and authority to design and implement the industrial hygiene program set forth in this Order.
 - (2) As an alternative to a staff industrial hygienist, consultants qualified in industrial hygiene and knowledgeable of the requirements of this Order may be retained to augment the contractor staff and perform comprehensive or specific industrial hygiene surveys as needed.
- e. Facilities, Instrumentation, and Technical Support Personnel shall be available to implement the requirements of this Order. Provisions shall be made to take and analyze air and water samples and bioassay specimens, and to test, calibrate, and maintain instruments. Where it is impractical to provide these services on-site, the services of off-site laboratory facilities and instrument services shall be retained.
- f. Recordkeeping Requirements.
- (1) An inventory of occupational health hazards shall be maintained. The inventory should be a listing of potential chemical, physical, and biological health hazards by location and/or job category of users and indicate when the hazards were present.
 - (2) The industrial hygiene staff's evaluation of potential health hazards shall be documented in written reports. If a deficiency is identified the report shall recommend corrective actions. The report, along with any response from line management and/or documentation of corrective actions, shall be retained.
 - (3) The data resulting from occupational environmental monitoring shall be easily retrievable. Monitoring data should be tabulated along with information on the location and operation monitored, the identity and job classification of the employees associated with the operation, estimated time-weighted average or short-term exposure levels, and a reference to the sampling and analytical methods used.

- (4) Records shall be retained in accordance with DOE 1324.2, RECORDS DISPOSITION.
- (5) Industrial hygiene hazard inventories, reports, and monitoring data shall be readily accessible to the medical organization responsible for operating the medical monitoring program. Records access shall be provided to employees or designated representatives of employees in accordance with OSHA Regulation 29 CFR 1910.20 and DOE Privacy Act Regulation 10 CFR 1008.17(b)(5).

10. TECHNICAL GUIDANCE. The Assistant Secretary for Environment, Safety, and Health has established an industrial hygiene advisory program. The program's objectives are to provide interim exposure guidelines, guidance, and consultation on evaluation and control of health hazards, and testing of unapproved respirators used in Department facilities.

a. Program Components.

- (1) The Toxic Material Advisory Program is directed to: (a) provide consultation support to all Departmental Elements on all aspects of hazard recognition, including toxicology; (b) develop a data base management system to share DOE contractor-developed material safety data sheets; (c) facilitate the timely development of interim exposure guidelines for chemical and physical occupational and environmental hazards associated with Departmental activities when no other guidelines exist; and (d) perform special studies as requested. The Toxic Material Advisory Program is operated for the DOE by the Brookhaven National Laboratory Center for Assessment of Chemical and Physical Hazards.
- (2) The Industrial Hygiene Task Force is directed to: (a) provide consultation support to all Departmental Elements on all aspects of evaluation and control of occupational health hazards, with telephone assistance, an information clearinghouse, and onsite assistance for short-term unique hazards; (b) develop technical guidance on monitoring methods and control technology; and (c) perform special studies as requested. The Task Force conducts industrial hygiene surveys to evaluate potential hazards at Department facilities when other industrial hygiene support is unavailable, on unique industrial hygiene problems, or when third party consulting is required. The Industrial Hygiene Task Force is operated for the DOE by the Los Alamos National Laboratory Industrial Hygiene Group.

- (3) The Respirator Studies Program is directed to test contractor developed respiratory protective devices for which the National Institute for Occupational Safety and Health (NIOSH) has no approval schedule or for which NIOSH approval is not practicable. All respirators used in Department facilities must be either approved by NIOSH or tested and accepted for use through the Respirator Studies Program. The program will also provide consultation on all aspects of respiratory protection programs. The Respirator Studies Program is operated for the DOE by the Los Alamos National Laboratory, Industrial Hygiene Group.
- b. Use of Advisory Programs. The advisory programs were established to help assure the high technical quality of all DOE and DOE contractor industrial hygiene programs. All Departmental Elements should utilize these programs to help resolve technical problems with recognition, evaluation, or control of potential health hazards.
- (1) Consultation may be obtained by directly contacting the Brookhaven National Laboratory, Center for Assessment of Chemical and Physical Hazards, or the Los Alamos National Laboratory Industrial Hygiene Group.
 - (2) Other technical support requests should be reviewed by field organizations and forwarded to the Office of Operational Safety.

BY ORDER OF THE SECRETARY OF ENERGY:



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Director of Administration