

U.S. Department of Energy
Washington, D.C.

ORDER

DOE O 440.1

Approved: 09-30-95
Review Date: 09-30-97
Chg 1: 10-26-95
Chg 2: 10-21-96

**SUBJECT: WORKER PROTECTION MANAGEMENT FOR DOE FEDERAL AND
CONTRACTOR EMPLOYEES**

1. OBJECTIVE. To establish the framework for an effective worker protection program that will reduce or prevent accidental losses, injuries, and illnesses by providing DOE Federal and contractor workers with a safe and healthful workplace.
2. CANCELLATION. Cancellation of an Order does not, by itself, modify or otherwise affect any contractual obligation to comply with such an Order. Canceled Orders that are incorporated by reference in a contract shall remain in effect until the contract is modified to delete the reference to the requirements in the canceled Orders. The following Orders are canceled:
 - a. DOE 3790.1B, FEDERAL EMPLOYEE OCCUPATIONAL SAFETY AND HEALTH PROGRAM, of 1-7-93, except Chapter VIII, "Federal Employee Occupational Medical Program."
 - b. Attachment 2, paragraph 2c, 2d(2)-(3), 2e(1)-(8); and Attachment 3, paragraph 2c, 2d(2)-(3), 2e(1)-(7), of DOE 5480.4, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION STANDARDS, of 5-15-84.
 - c. DOE 5480.7A, FIRE PROTECTION, of 2-17-93.
 - d. DOE 5480.8A, CONTRACTOR OCCUPATIONAL MEDICAL PROGRAM, of 6-26-92.
 - e. DOE 5480.9A, CONSTRUCTION PROJECT SAFETY AND HEALTH MANAGEMENT, of 4-13-94.
 - f. DOE 5480.10, CONTRACTOR INDUSTRIAL HYGIENE PROGRAM, of 6-26-85.
 - g. DOE 5480.16A, FIREARMS SAFETY, of 3-4-94.
 - h. DOE 5483.1A, OCCUPATIONAL SAFETY AND HEALTH PROGRAM FOR DOE CONTRACTOR EMPLOYEES AT GOVERNMENT-OWNED CONTRACTOR-OPERATED FACILITIES, of 6-22-83.

Vertical line denotes change.

DISTRIBUTION:

All Departmental Elements

INITIATED BY:

The Office of Human Resources
and Administration

3. APPLICABILITY.

- a. DOE Elements. Except for the exclusions in paragraph 3c, this Order (including Attachment 1) applies to all DOE Elements.
- b. Contractors. Except for the exclusions in paragraph 3c, Attachment 2, Contractor Requirements Document (CRD), sets forth requirements that shall be applied to all contractors awarded contracts and subcontracts for performing work for DOE on DOE-owned or -leased facilities.
Contractor compliance with the CRD will be required to the extent set forth in a contract. Contractors shall be directed to continue to comply with the requirements of Orders canceled by this Order until their contracts are modified to delete the reference to the requirements of the canceled Orders.
- c. Exclusions.
 - (1) Activities conducted under the authority of the Director, Naval Nuclear Propulsion Program, as described in Public Law 98-525.
 - (2) Activities conducted under the Nuclear Explosives and Weapons Safety Program relating to the prevention of accidental or unauthorized nuclear detonations to the extent a requirement under this part cannot be implemented for a particular facility in a manner that does not compromise the effectiveness of such activities.

4. REQUIREMENTS. DOE Elements shall:

- a. Implement a written worker protection program that:
 - (1) provides a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees; and
 - (2) integrates all requirements contained in paragraphs 4a through 4l of this Order; program requirements, contained in Title 29 Code of Federal Regulations (CFR) Part 1960, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters"; applicable functional area requirements contained in Attachment 1; and other related site-specific worker protection activities.
- b. Establish written policy, goals, and objectives for the worker protection program.
- c. Use qualified worker protection staff to direct and manage the worker protection program.
- d. Assign worker protection responsibilities, evaluate personnel performance, and hold personnel accountable for worker protection performance.
- e. Encourage the involvement of employees in the development of program goals, objectives, and performance measures and in the identification and control of hazards in the workplace.
- f. Provide workers the right, without reprisal, to:

- (1) accompany DOE worker protection personnel during workplace inspections;
 - (2) participate in activities provided for in this Order on official time;
 - (3) express concerns related to worker protection;
 - (4) decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious bodily harm to that individual, coupled with a reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures established in accordance with this Order;
 - (5) have access to DOE worker protection publications, DOE-prescribed standards, and the organization's own worker protection standards or procedures applicable to the workplace;
 - (6) observe monitoring or measuring of hazardous agents and have access to the results of exposure monitoring;
 - (7) be notified when monitoring results indicate they were overexposed to hazardous materials; and
 - (8) receive results of inspections and accident investigations upon request.
- g. Implement procedures to allow workers, through their supervisors, to stop work when they discover employee exposures to imminent danger conditions or other serious hazards. The procedure shall ensure that any stop work authority is exercised in a justifiable and responsible manner.
- h. Inform workers of their rights and responsibilities by appropriate means, including posting the appropriate DOE Worker Protection Poster in the workplace where it is accessible to all workers.
- i. Identify existing and potential workplace hazards and evaluate the risk of associated worker injury or illness.
- (1) Analyze or review:
 - (a) designs for new facilities and modifications to existing facilities and equipment;
 - (b) operations and procedures; and
 - (c) equipment, product, and service needs.

- (2) Assess worker exposure to chemical, physical, biological, or ergonomic hazards through appropriate workplace monitoring (including personal, area, wipe, and bulk sampling), biological monitoring, and observation. Monitoring results shall be recorded. Documentation shall describe the tasks and locations where monitoring occurred, identify workers monitored or represented by the monitoring, and identify the sampling methods and durations, control measures in place during monitoring (including the use of personal protective equipment), and any other factors that may have affected sampling results.
- (3) Evaluate workplaces and activities accomplished routinely by workers, supervisors, and managers and periodically by qualified worker protection professionals.
- (4) Report and investigate accidents, injuries, and illnesses (reference DOE O 231.1, ENVIRONMENT, SAFETY AND HEALTH REPORTING; DOE O 232.1, OCCURENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION; and DOE O 225.1, ACCIDENT INVESTIGATIONS) and analyze related data for trends and lessons learned (reference DOE O 210.1, PERFORMANCE INDICATORS PROGRAM AND ANALYSIS OF OPERATIONS).
- (5) Implement suspect/counterfeit item (S/CI) controls that accomplish the following objectives:
 - (a) Ensure that items in safety systems comply with design and procurement documents (safety systems are those systems, components, or structures whose failure could adversely affect the environment, safety, or health of the public or the health or safety of workers).
 - (b) Maintain current, accurate information on suspect/counterfeit items and associated suppliers using all available sources within government and industry. Disseminate relevant information on suspect/counterfeit items to field organizations and contractors as appropriate;
 - (c) Identification and disposition of S/CIs located in safety

- systems and applications that create potential hazards;
- (d) Report discoveries and disseminate information about S/CIs;
 - (e) Train and inform managers, supervisors, and workers of S/CIs controls, including prevention, detection and disposition of S/CIs.
- j. Implement a hazard prevention/abatement process to ensure that all identified hazards are managed through final abatement or control.
- (1) For hazards identified either in the facility design or during the development of procedures, controls are incorporated in the appropriate facility design or procedure.
 - (2) For existing hazards identified in the workplace, abatement actions prioritized according to risk to the worker are promptly implemented, interim protective measures are implemented pending final abatement, and workers are protected immediately from imminent danger conditions.
 - (3) Hazards are addressed when selecting or purchasing equipment, products, and services.
 - (4) Hazard control methods are selected based on the following hierarchy:
 - (a) Engineering controls.
 - (b) Work practices and administrative controls that limit worker exposures.
 - (c) Personal protective equipment.
- k. Provide workers, supervisors, managers, visitors, and worker protection professionals with worker protection training.
- l. Comply with the following worker protection requirements.
- (1) American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices" (most recent edition), when ACGIH Threshold Limit Values (TLVs) are lower (more protective) than Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits. [When ACGIH TLVs are used as exposure limits, DOE operations shall nonetheless comply with the other provisions of any applicable OSHA-expanded health standard.] The TLVs for exposures to laser emissions in the ACGIH Indices are excluded from this requirement.

- (2) American National Standards Institute Z136.1, *Safe Use of Lasers*. [Only the exposure limits and technical requirements apply. Programmatic components of American National Standards Institute Z136.1 do not apply.]
 - (3) American National Standards Institute Z88.2, *Practices for Respiratory Protection*.
- m. Additional requirements for specific functional areas are contained in Attachment 1, Functional Area Requirements for DOE Elements.

5. RESPONSIBILITIES.

a. Assistant Secretaries.

- (1) Ensure that program-specific worker protection goals and objectives are developed and resources are provided.
- (2) Ensure that worker protection policies and requirements are effectively implemented.
- (3) Develop or participate in recognition programs that encourage the improvement of worker protection programs.
- (4) When contractors report directly to the Cognizant Secretarial Officer or an Assistant Secretary, ensure that the responsibilities of paragraph 5b (and applicable responsibilities in the specific functional areas contained in Attachment 1) and the requirements of the CRD (Attachment 2) are implemented.
- (5) Assist in the resolution of significant worker protection issues and the improvement in cost effectiveness and efficiency of worker protection programs.
- (6) Review and be approving authority for exemptions to requirements contained in this Order. Requests for exemptions to all requirements except those exemptions related to OSHA standards imposed on contractors by this Order may be delegated.

b. Heads of Departmental Elements and Heads of Field Elements.

- (1) Ensure through the Contracting Officer that contractors implement effective worker protection programs.
- (2) Review contractor worker protection program budgets and provide recommendations to the funding official on the appropriateness of the budget request.

- (3) Provide contractors with technical direction on and criteria for the development of contractor goals, objectives, and performance measures.
 - (4) Hold DOE line personnel accountable for providing technical direction to contractors that is consistent with the requirements contained in this Order.
 - (5) Evaluate the need for and direct the development of formal written agreements between organizations on their sites. These agreements shall outline the respective roles, responsibilities, and authorities of each organization as they relate to compliance with DOE worker protection requirements and the resolution of cross-cutting worker protection-related issues.
- c. Operations Office Managers (and Heads of Field Elements, where applicable).
- (1) Ensure that unannounced worker protection inspections of contractor workplaces are conducted at least annually.
 - (2) Ensure immediate and effective remedial actions are taken for imminent danger situations discovered during worker protection inspections to ensure employees are removed from the hazard or the hazard is eliminated; conduct an inspection as soon as possible after an imminent danger situation has been corrected to ensure that appropriate actions have been taken to preclude recurrence.
 - (3) Determine whether adequate protection can most effectively be achieved by continuing to operate under the terms of existing contracts requiring compliance with old Orders or by modifying the contract to incorporate the CRD (Attachment 2) requirements.
 - (4) Ensure that initiators of procurement requests specify therein whether requirements in the CRD (Attachment 2) are to be applied to the resulting award or subawards.
- d. Associate Deputy Secretary for Field Management. Facilitate resolution of conflicting worker protection programs, policies, and procedures among Heads of Departmental Elements and field organizations.
- e. Assistant Secretary for Environment, Safety and Health. Establish committees as necessary to assist in the development of Departmental requirements and guidance.

- f. Contracting Officers. Require contractors to comply with worker protection requirements as identified by paragraph 3b or otherwise identified in procurement requests.

6. CONTACTS.

- a. For additional information or technical interpretation of this Order, contact the Office for Worker Health and Safety (EH-51) at (301) 903-6456.
- b. For technical interpretations of DOE-prescribed worker protection standards, consult the DOE Technical Information Services database, or call the DOE Response Line at (800) 292-8061.
- c. Consult the DOE Directives Checklist for current Implementation Guides and Safety Manuals associated with this Order. This checklist is available from the Office of Organization and Management (HR-6) at (202) 586-4716.

BY ORDER OF THE SECRETARY OF ENERGY:



ARCHER L. DURHAM
Assistant Secretary for
Human Resources and Administration

FUNCTIONAL AREA REQUIREMENTS FOR DOE ELEMENTS

1. CONSTRUCTION SAFETY. The following requirements and responsibilities apply for construction projects above the monetary threshold established by the Davis-Bacon Act (40 U.S.C. 276a) at Government-owned or -leased facilities where the contract clause "Safety and Health (Government-Owned or -Leased Facility)" applies.
 - a. Requirements. See Attachment 2, Contractor Requirements Document, for construction safety requirements related to contractors.
 - b. Responsibilities.
 - (1) Heads of Departmental Elements and Heads of Field Elements.
 - (a) Designate a project manager for each construction project.
 - (b) Ensure that project managers are provided with the training, resources, and technical support necessary to perform the duties prescribed by this Order.
 - (c) Develop formal written agreements/implementing instructions as needed to delineate the respective construction safety responsibilities/duties of DOE project management and technical support staffs as well as affected site contractors.
 - (d) Review safety and health programs developed for site maintenance and operational activities to determine their applicability and cost effectiveness on construction projects.
 - (e) Direct the development and implementation of a system for evaluating the effectiveness of construction contractor safety and health programs on fixed-price construction projects and apply this system to the determination of bidder responsibility on future construction projects. (Refer to Federal Acquisition Regulation (FAR) 36.201.)
 - (f) Ensure that applicable requirements of this Order are specified within construction project acquisition documents.
 - (2) Construction Project Managers.
 - (a) Determine the necessity for requiring dedicated construction contractor safety and health personnel on project workplaces.

- (b) Ensure that construction project acquisition documents provide information or reference to existing documentation that describes known hazards to which project workers may be exposed.
 - (c) Ensure that a prework safety meeting is conducted with the construction contractor to review project safety and health requirements.
 - (d) Ensure that the project safety and health plan is approved prior to any on-site project work and that required hazard analyses are completed and approved prior to start of work on affected construction operations.
 - (e) Ensure that project safety and health plans and hazard analyses are revised, as necessary, to address identified deficiencies in project safety and health performance or changes in project operations, contractors, or personnel.
 - (f) Through personal on-site involvement and/or formal delegation to support staff and/or the construction manager, perform frequent and regular documented on-site reviews of construction contractor safety and health program effectiveness.
 - (g) Ensure documentation of all formal contract actions taken to enforce construction contractor compliance with project safety and health requirements.
2. FIRE PROTECTION. Implement a comprehensive fire protection program with the objective of providing an acceptable level of safety from fire and related hazards for DOE Federal personnel and for the public. This includes appropriate facility and site-wide fire protection (refer to DOE O 420.1, FACILITY SAFETY), fire alarm notification and egress features, and access to a fully staffed, trained, and equipped fire department that is capable of responding in a timely and effective manner to site emergencies. An acceptable fire protection program includes those fire protection criteria and procedures, analyses, hardware and systems, apparatus and equipment, and personnel that comprehensively ensure that the above objective is met. This includes meeting applicable building codes and National Fire Protection Association Codes and Standards or exceeding them (when necessary to meet safety objectives), unless explicit written relief has been granted by DOE.
3. FIREARMS SAFETY.

a. Requirements.

- (1) Establish firearms safety policies and procedures to ensure proper accident prevention controls are in place. Written procedures shall address safety concerns and the personal protective equipment required. As a minimum, procedures must be established for:
 - (a) storage, handling, cleaning, and maintenance of firearms and associated ammunition;
 - (b) activities such as loading, unloading, and exchanging firearms;
 - (c) use of pyrotechnics and/or explosive projectiles;
 - (d) handling misfires and duds;
 - (e) live fire operations; and
 - (f) training and exercises using engagement simulation systems.
- (2) Ensure that staff members responsible for the direction and operation of the firearms safety program are professionally qualified and have sufficient time and authority to implement the established program. Firearms instructors and armorers shall be Safeguards and Security Central Training Academy-certified to conduct the level of activity provided.
- (3) Conduct formal appraisals assessing implementation of procedures, personnel responsibilities, and duty assignments to ensure overall policy objectives and performance criteria are being met by qualified safety personnel.
- (4) Implement safety provisions related to firearms safety training, qualification, or requalification.
 - (a) Personnel shall successfully complete and demonstrate understanding of initial firearms safety training before being issued any firearms.
 - (b) Personnel authorized to carry firearms shall have access to

instruction manuals for each type of firearm with which they are armed while on duty.

- (c) Authorized armed personnel shall demonstrate both technical and practical knowledge of firearms handling and safety on a semi-annual basis. This demonstration shall be supported by limited scope performance tests and the results of such testing shall be documented.
 - (d) All firearms training lesson plans shall incorporate safety for all aspects of firearms training task performance standards. Lesson plans shall follow the standards and criteria set forth by the Safeguards and Security Central Training Academy's standard training program. Safety briefings shall be conducted before any live fire training commences.
 - (e) A safety analysis approved by the Operations Office Manager shall be developed for the facilities and operation of each live fire range. A safety analysis shall be completed and approved prior to implementation of any new training. Results of these analyses shall be incorporated into procedures, lesson plans, exercise plans, and limited scope performance tests.
 - (f) Site-specific firing range safety procedures shall be conspicuously posted at all ranges.
 - (g) Live fire ranges shall be properly sited to protect personnel on the range, as well as personnel and property not associated with the range.
- (5) Ensure that the transportation, handling, placarding, and storage of munitions conform to the applicable requirements of DOE M 440.1-1, DOE EXPLOSIVES SAFETY MANUAL (Formerly DOE/EV/06194).

b. Responsibilities.

(1) Operations Office Managers.

- (a) Ensure effective implementation and control of the firearms safety program.

- (b) Approve the location and use of the contractor's live fire ranges.
 - (2) Office of Security Affairs. Approve the location of live fire ranges for the Safeguards and Security Central Training Academy.
4. EXPLOSIVES SAFETY. Ensure that applicable explosives operations comply with DOE M 440.1-1, DOE EXPLOSIVES SAFETY MANUAL (Formerly DOE/EV/06194). Facility management shall determine the applicability of the requirements to research and development laboratory type operations consistent with the DOE level of protection criteria in the manual. The administration and management of the Explosives Safety Manual and any deviations from it shall follow the process specified in Chapter I, Sections 3 and 4, of the manual. Revisions to the manual are made through concurrence of the DOE Explosives Safety Committee.
5. INDUSTRIAL HYGIENE. Implement a comprehensive and effective industrial hygiene program to reduce the risk of work-related disease or illness at affected facilities. Industrial hygiene programs shall include the following elements:
- a. Initial or baseline surveys of all work areas or operations to identify and evaluate potential worker health risks.
 - b. Coordination with planning and design personnel to anticipate and control health hazards that proposed facilities and operations would introduce.
 - c. Periodic resurveys and/or exposure monitoring as appropriate.
 - d. Documented exposure assessment for chemical, physical, and biological agents and ergonomic stressors using recognized exposure assessment methodologies and use of accredited industrial hygiene laboratories.
 - e. Specification of appropriate engineering, administrative, work practice, and/or personal protective control methods to limit hazardous exposures to acceptable levels.
 - f. Worker education, training, and involvement.
 - g. Coordination with cognizant occupational medical, environmental, health physics, and work planning professionals.
 - h. Use of DOE-accepted respiratory protection when National Institute of Occupational Safety and Health-approved respiratory protection does not

exist for DOE tasks.

- i. Policy and procedures to mitigate the risk from identified and potential occupational carcinogens.
- j. Use of appropriate industrial hygiene standards.
- k. Professionally and technically qualified industrial hygienists to manage and implement the industrial hygiene program.

6. PRESSURE SAFETY REQUIREMENTS.

a. Requirements.

- (1) Ensure that all pressure vessels, boilers, air receivers, and supporting piping systems conform to:
 - (a) the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Safety Code;
 - (b) the American National Standards Institute/ASME B.31 Piping Code; and/or
 - (c) the strictest applicable State and local codes.
- (2) When national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), implement measures to provide equivalent protection and ensure safety equal to or superior to the intent of the ASME code. Measures shall include the following:
 - (a) Design drawings, sketches, and calculations shall be reviewed and approved by an independent design professional. Documented organizational peer review is acceptable.
 - (b) Qualified personnel shall be used to perform examinations and inspections of materials, in-process fabrications, non-destructive tests, and acceptance tests.
 - (c) Documentation, traceability, and accountability shall be maintained for each pressure vessel or system, including descriptions of design, pressure, testing, operation, repair, and maintenance.

7. MOTOR VEHICLE SAFETY. Implement a Motor Vehicle Safety Program to protect the safety and health of all drivers and passengers in Government-owned or -leased motor vehicles and powered industrial equipment (i.e., fork trucks, tractors, platform lift trucks, and other similar specialized equipment powered by an electric motor or an internal combustion engine). The Motor Vehicle Safety Program shall be tailored for the individual DOE site or facility, based on an analysis of the needs of that particular site or facility, and shall address the following areas.
- a. Minimum licensing requirements (including appropriate testing and medical qualification) for personnel operating motor vehicles and powered industrial equipment.
 - b. Requirements for the use of seat belts and provision of other safety devices.
 - c. Training for specialty vehicle operators.
 - d. Requirements for motor vehicle maintenance and inspection.
 - e. Uniform traffic and pedestrian control devices and road signs.
 - f. On-site speed limits and other traffic rules.
 - g. Awareness campaigns and incentive programs to encourage safe driving.
 - h. Enforcement provisions.

8. Implement S/CI controls as part of DOE's quality assurance program to the extent commensurate with the risks posed by the facility and its work and which contributes to a hazard-free workplace for workers.
- a. Management systems shall include:
- (1) Assurance that items meet the requirements for their intended use;
 - (2) Mechanisms to continually update information on S/CIs and associated suppliers;
 - (3) Procurement controls that preclude the introduction and use of S/CIs; no S/CIs shall be used or introduced intentionally unless found acceptable through the disposition process;
 - (4) Identification and disposition of S/CIs in safety systems and applications that create potential hazards;
 - (5) Communicating and sharing of S/CI information;
 - (6) Training and informing managers, supervisors, and workers of S/CI controls, including prevention, detection and disposition of S/CIs;
 - (7) Assurance that the standards and methods used in determining the acceptability of items is based on consensus standards and/or commonly accepted industry practices, unless inconsistent with applicable law or otherwise impractical; and
 - (8) Aggressive pursuit of legal remedies, civil and criminal, to protect DOE resources, employees, and mission.

- b. S/CI controls shall include:
- (1) Engineering involvement in the procurement process, particularly in development of specifications during inspection and testing, and when replacing, maintaining or modifying equipment.
 - (2) Implementation of procurement procedures that preclude the introduction of S/CIs by:
 - (a) Identifying technical and quality assurance requirements in procurement specifications;
 - (b) Only accepting items that comply with the procurement specifications; and
 - (c) Removing and destroying S/CIs from inventory and storage areas.
 - (3) Development and implementation of procedures for inspection, identification, evaluation, and disposition of S/CIs installed in safety systems. Engineering evaluations of S/CIs installed in safety systems or in applications that create potential hazards shall consider potential risks to the public and worker, cost/benefit considerations, and include a schedule for replacement, if replacement is required.
 - (4) Routine maintenance cycles and/or inspection activities for non-safety systems shall include provisions for the identification of S/CIs. S/CIs identified during these activities shall be reported, evaluated, and dispositioned.
 - (5) Prior to destroying of S/CIs, the IG shall be consulted to determine whether there is need to retain them in the event of litigation.
 - (6) Testing of procured or in place S/CIs as necessary. Testing methods shall be approved by engineering personnel.
 - (7) Reporting S/CIs to the responsible program office and the IG shall be in accordance with DOE O 231.1, DOE O 232.1 and DOE 2030.4B.
 - (8) Conducting trend analysis and issue lessons learned for use in improving all S/CIs activities.
 - (9) Collect and disseminate to other Federal agencies and private industry information of S/CIs.

CONTRACTOR REQUIREMENTS DOCUMENT

WORKER PROTECTION MANAGEMENT FOR DOE CONTRACTOR EMPLOYEES

The contractor shall comply with the requirements contained herein.

1. Implement a written worker protection program that:
 - a. provides a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees; and
 - b. integrates all requirements contained in this attachment and other related site-specific worker protection activities.
2. Establish written policy, goals, and objectives for the worker protection program.
3. Use qualified worker protection staff to direct and manage the worker protection program.
4. Assign worker protection responsibilities, evaluate personnel performance, and hold personnel accountable for worker protection performance.
5. Encourage employee involvement in the development of program goals, objectives, and performance measures and in the identification and control of hazards in the workplace.
6. Provide workers the right, without reprisal, to:
 - a. accompany DOE worker protection personnel during workplace inspections;
 - b. participate in activities provided for herein on official time;
 - c. express concerns related to worker protection;
 - d. decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious bodily harm to that individual, coupled with a reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures established in accordance with the requirements herein;
 - e. have access to DOE worker protection publications, DOE-prescribed standards, and the organization's own worker protection standards or procedures applicable to the workplace;
 - f. observe monitoring or measuring of hazardous agents and have access to the results of exposure monitoring;
 - g. be notified when monitoring results indicate they were overexposed to hazardous materials; and

- h. receive results of inspections and accident investigations upon request.
- 7. Implement procedures to allow workers, through their supervisors, to stop work when they discover employee exposures to imminent danger conditions or other serious hazards. The procedure shall ensure that any stop work authority is exercised in a justifiable and responsible manner.
- 8. Inform workers of their rights and responsibilities by appropriate means, including posting the appropriate DOE Worker Protection Poster in the workplace where it is accessible to all workers.
- 9. Identify existing and potential workplace hazards and evaluate the risk of associated worker injury or illness.
 - a. Analyze or review:
 - (1) designs for new facilities and modifications to existing facilities and equipment;
 - (2) operations and procedures; and
 - (3) equipment, product, and service needs.
 - b. Assess worker exposure to chemical, physical, biological, or ergonomic hazards through appropriate workplace monitoring (including personal, area, wipe, and bulk sampling); biological monitoring; and observation. Monitoring results shall be recorded. Documentation shall describe the tasks and locations where monitoring occurred, identify workers monitored or represented by the monitoring, and identify the sampling methods and durations, control measures in place during monitoring (including the use of personal protective equipment), and any other factors that may have affected sampling results.
 - c. Evaluate workplaces and activities (accomplished routinely by workers, supervisors, and managers and periodically by qualified worker protection professionals).
 - d. Report and investigate accidents, injuries, and illnesses, and analyze related data for trends and lessons learned (reference DOE O 210.1).

Vertical line denotes change.

- e. Implement S/CI controls as part of the contractor's quality assurance program to the extent commensurate with the risks posed by the facility and its work and which contribute to a hazard-free workplace.

(1) Management systems shall include:

- (a) Assurance that all items meet the requirements for their intended use;
- (b) Mechanisms to continually update information on S/CIs and associated suppliers;
- (c) Control of the introduction and use of S/CIs through design, procurement, and inspection/maintenance. No S/CI shall be used or introduced intentionally unless found acceptable through the disposition process.
- (d) Identification and disposition of S/CIs in safety systems and applications that create potential hazards;
- (e) Communicating and sharing of S/CIs information;
- (f) Training and informing managers, supervisors, and workers of S/CI controls, including prevention, detection and disposition of S/CIs; and
- (g) Assurance that the standards and methods used in determining the acceptability of items is based on consensus standards and/or commonly accepted industry practices, unless inconsistent with applicable law or otherwise impractical.

- (2) S/CI controls shall include:
- (a) Engineering involvement in the procurement process, particularly in development of specifications during inspection and testing, and when replacing, maintaining or modifying equipment.
 - (b) Implementation of procurement procedures that preclude the introduction of S/CIs by:
 - 1 Identifying technical and quality assurance requirements in procurement specifications;
 - 2 Only accepting items that comply with the procurement specifications; and
 - 3 Removing and destroying S/CIs from all inventory storage areas.
 - (3) Development and implementation of procedures for inspection, identification, evaluation, and disposition of S/CIs installed in safety systems. Engineering evaluations of S/CIs installed in safety systems or in applications that create potential hazards shall consider potential risks to the public and worker, cost/benefit considerations, and include a schedule for replacement, if replacement is required.
 - (4) Routine maintenance cycles and/or inspection activities for non-safety systems shall include provisions for the identification of S/CIs. S/CIs identified during these activities shall be reported, evaluated, and dispositioned.
 - (5) Prior to destroying of S/CIs, the IG shall be consulted to determine whether there is need to retain them in the event of litigation.
 - (6) Testing of procured or in place S/CIs as necessary. Testing methods shall be approved by engineering personnel.
 - (7) Reporting S/CIs to the responsible program office and the IG shall be in accordance with DOE O 231.1, DOE O 232.1, and DOE 2030.4B.
 - (8) Conduct trend analysis and issue lessons learned for use in improving all S/CIs activities.

Vertical line denotes change.

10. Implement a hazard prevention/abatement process to ensure that all identified hazards are managed through final abatement or control.
- a. For hazards identified either in the facility design or during the development of procedures, controls are incorporated in the appropriate facility design or procedure.
 - b. For existing hazards identified in the workplace, abatement actions prioritized according to risk to the worker are promptly implemented, interim protective measures are implemented pending final abatement, and workers are protected immediately from imminent danger conditions.
 - c. Hazards are addressed when selecting or purchasing equipment, products, and services.
 - d. Hazard control methods are selected based on the following hierarchy.
 - (1) Engineering controls.
 - (2) Work practices and administrative controls that limit worker exposures
 - (3) Personal protective equipment.
11. Provide workers, supervisors, managers, visitors, and worker protection professionals with worker protection training.
12. Comply with the following worker protection requirements.
- a. Title 29 of the Code of Federal Regulations (CFR), Part 1910, "Occupational Safety and Health Standards."
 - b. Title 29 CFR, Part 1915, "Shipyard Employment."
 - c. Title 29 CFR, Part 1917, "Marine Terminals."
 - d. Title 29 CFR, Part 1918, "Safety and Health Regulations for Longshoring."
 - e. Title 29 CFR, Part 1926, "Safety and Health Regulations for Construction."
 - f. Title 29 CFR, Part 1928, "Occupational Safety and Health Standards for Agriculture."

Vertical line denotes change.

- g. American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices" (most recent edition, as specified in the contract), when ACGIH Threshold Limit Values (TLVs) are lower (more protective) than Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits. [When ACGIH TLVs are used as exposure limits, DOE operations shall nonetheless comply with the other provisions of any applicable OSHA-expanded health standard.] The TLVs for exposures to laser emissions in the ACGIH Indices are excluded from this requirement.
- h. American National Standards Institute Z136.1, *Safe Use of Lasers*. [Only the exposure limits and technical requirements apply. Programmatic components of American National Standards Institute Z136.1 do not apply.]
- i. American National Standards Institute Z88.2, *Practices for Respiratory Protection*.

Requirements for specific functional areas are contained in paragraphs 13 through 20 and only apply if the contract is involved in these activities.

13. CONSTRUCTION SAFETY.

- a. The following requirements and responsibilities apply for construction projects above the monetary threshold established by the Davis-Bacon Act (40 U.S.C. 276a) at Government-owned or -leased facilities where the contract clause "Safety and Health (Government-Owned or -Leased Facility)" applies.
 - (1) Hazard Analyses. For each construction operation presenting hazards not experienced in previous project operations or for work performed by a different subcontractor, the construction contractor shall prepare a hazard analysis and have it approved prior to commencement of affected work. These analyses shall identify foreseeable hazards and planned protective measures, provide drawings and/or other documentation of protective measures that a Professional Engineer or other competent person is required to prepare, and define the qualifications of competent persons required for workplace inspections.
 - (2) Worker Hazard Awareness. Workers shall be informed of foreseeable hazards and the required protective measures described within the approved hazard analysis prior to commencement of work on the affected construction operation.
 - (3) Workplace Inspections and Hazard Abatement. During periods of active construction, the construction contractor shall have a designated representative on site at all times. This individual shall conduct and document daily inspections of the workplace to identify and correct hazards and instances of noncompliance with project safety and health requirements. If immediate corrective action is not

possible or the hazard falls outside of project scope, the construction contractor shall immediately notify affected workers, post appropriate warning signs, implement needed interim control measures, and notify the construction manager of actions taken.

- (4) Project Safety and Health Plan. The construction contractor shall prepare and have approved prior to commencement of any on-site project work a written project safety and health plan that provides a proposal for implementing the above requirements. The construction contractor shall also designate the individual(s) responsible for on-site implementation of the plan, specify qualifications for those individuals, and provide a list of those project operations for which a hazard analysis is to be performed.
14. FIRE PROTECTION. Implement a comprehensive fire protection program with the objective of providing an acceptable level of safety from fire and related hazards for DOE contractor personnel and for the public. This includes appropriate facility and site-wide fire protection, fire alarm notification and egress features, and access to a fully staffed, trained, and equipped fire department that is capable of responding in a timely and effective manner to site emergencies. An acceptable fire protection program includes those fire protection criteria and procedures, analyses, hardware and systems, apparatus and equipment, and personnel that comprehensively ensure that the above objective is met. This includes meeting the applicable building code and National Fire Protection Association Codes and Standards or exceeding them (when necessary to meet safety objectives), unless explicit written relief has been granted by DOE.
15. FIREARMS SAFETY.

 - a. Establish firearms safety policies and procedures to ensure proper accident prevention controls are in place. Written procedures shall address safety concerns and the personal protective equipment required. As a minimum, procedures must be established for:

 - (1) storage, handling, cleaning, and maintenance of firearms and associated ammunition;
 - (2) activities such as loading, unloading, and exchanging firearms;
 - (3) use of pyrotechnics and/or explosive projectiles;
 - (4) handling misfires and duds;
 - (5) live fire operations; and

- (6) training and exercises using engagement simulation systems.
- b. Ensure that staff members responsible for the direction and operation of the firearms safety program are professionally qualified and have sufficient time and authority to implement the established program. Firearms instructors and armorers shall be Safeguards and Security Central Training Academy-certified to conduct the level of activity provided.
- c. Conduct formal appraisals assessing implementation of procedures, personnel responsibilities, and duty assignments to ensure overall policy objectives and performance criteria are being met by qualified safety personnel.
- d. Implement safety provisions related to firearms safety training, qualification, or requalification.
 - (1) Personnel shall successfully complete and demonstrate understanding of initial firearms safety training before being issued any firearms.
 - (2) Personnel authorized to carry firearms shall have access to instruction manuals for each type of duty firearms with which they are armed while on duty.
 - (3) Authorized armed personnel shall demonstrate both technical and practical knowledge of firearms handling and safety on a semi-annual basis. This demonstration shall be supported by limited scope performance tests, and the results of such testing shall be documented.
 - (4) All firearms training lesson plans shall incorporate safety for all aspects of firearms training task performance standards. The lesson plans shall follow the standards and criteria set forth by the Safeguards and Security Central Training Academy's standard training programs. Safety briefings shall be conducted before any live fire training commences.
 - (5) A safety analysis approved by the Operations Office Manager shall be developed for the facilities and operation of each live fire range. A safety analysis shall be completed and approved prior to implementation of any new training. Results of these analyses shall be incorporated into procedures, lesson plans, exercise plans, and limited scope performance tests.
 - (6) Site-specific firing range safety procedures shall be conspicuously posted at all ranges.
 - (7) Live fire ranges shall be properly sited to protect personnel on the range, as well

as personnel and property not associated with the range. Request approval from the DOE Operations Office for the location and use of a live fire range.

- e. Ensure that the transportation, handling, placarding, and storage of munitions conform to the applicable requirements of DOE M 440.1-1, DOE EXPLOSIVES SAFETY MANUAL (Formerly DOE/EV/06194).
16. EXPLOSIVES SAFETY. Ensure that applicable explosives operations comply with DOE M 440.1-1, DOE EXPLOSIVES SAFETY MANUAL (Formerly DOE/EV/06194). Contractor facility management shall determine the applicability of the requirements to research and development laboratory type operations consistent with the DOE level of protection criteria in the manual. The administration and management of the Explosives Safety Manual and any deviations from it shall follow the process specified in Chapter I, Sections 3 and 4, of the manual. Revisions to the manual are made through concurrence of the DOE Explosives Safety Committee.
17. INDUSTRIAL HYGIENE. Implement a comprehensive and effective industrial hygiene program to reduce the risk of work-related disease or illness at affected facilities. Industrial hygiene programs shall include the following elements:
- a. Initial or baseline surveys of all work areas or operations to identify and evaluate potential worker health risks.
 - b. Coordination with planning and design personnel to anticipate and control health hazards that proposed facilities and operations would introduce.
 - c. Periodic resurveys and/or exposure monitoring as appropriate.
 - d. Documented exposure assessment for chemical, physical, and biological agents and ergonomic stressors using recognized exposure assessment methodologies and use of accredited industrial hygiene laboratories.
 - e. Specification of appropriate engineering, administrative, work practice, and/or personal protective control methods to limit hazardous exposures to acceptable levels.
 - f. Worker education, training, and involvement.
 - g. Coordination with cognizant occupational medical, environmental, health physics, and work planning professionals.
 - h. Use of DOE accepted respiratory protection when National Institute of Occupational Safety and Health-approved respirator protection does not exist for DOE tasks.

- i. Policy and procedures to mitigate the risk from identified and potential occupational carcinogens.
- j. Use of appropriate industrial hygiene standards.
- k. Professionally and technically qualified industrial hygienists to manage and implement the industrial hygiene program.

18. OCCUPATIONAL MEDICAL.

a. Integration.

- (1) The establishment of a contractor occupational medical program shall be a basic worker protection requirement.
- (2) A formal, written contractor occupational medical program detailing the methods and procedures used to implement the occupational medical requirements necessary for worker protection and the promotion of a healthful work environment shall be established, maintained, reviewed, and updated.
- (3) The contractor occupational medical program shall provide occupational health services to contractor employees. The goal of these services shall be the earliest possible detection and mitigation of occupational illness and injury.
- (4) To carry out this goal, the contractor occupational medical professional staff shall participate as members of a worker protection team.

b. Implementation. The physician responsible for delivery of medical services shall be responsible for the planning and implementation of the occupational medical program.

c. Maintenance of a Healthful Work Environment.

- (1) Occupational medical physicians and selected medical staff shall:
 - (a) Coordinate with other safety and health professionals (industrial hygienists, health physicists, safety specialists/managers) to identify work-related or work site hazards and their possible health risks to employees;
 - (b) Possess a current knowledge of actual or potential work-related hazards (physical,

chemical, biological);

- (c) Perform targeted examinations based on an up-to-date knowledge of work site risk;
 - (d) Identify potential or actual health effects resulting from work site exposures; and
 - (e) Communicate the results of health evaluations to management and to those responsible for mitigating work site hazards.
- (2) Contractor management shall provide to the physician responsible for delivery of medical services:
- (a) Employee job task and hazard analysis information;
 - (b) Summaries of potential work site exposures of employees prior to mandatory health examinations; and
 - (c) The opportunity to participate in worker protection team meetings and committees.
- d. Employee Health Examinations.
- (1) Health examinations shall be conducted by an occupational health examiner under the direction of a licensed physician in accordance with current sound and acceptable medical practices.
 - (2) The content of health examinations shall be the responsibility of the physician responsible for the delivery of medical services.
 - (3) The following classes of examinations are required for the purpose of providing initial and continuing assessment of employee health as determined by the physician responsible for delivery of medical services:
 - (a) preplacement in accordance with the Americans with Disabilities Act,
 - (b) qualification examinations,
 - (c) fitness for duty,
 - (d) medical surveillance and health monitoring,

- (e) return to work health evaluations,
 - (f) termination examinations.
- (4) The occupational medical department shall be informed of all job transfers and shall determine whether a medical evaluation is necessary.
- (5) The physician responsible for the delivery of medical services or his/her designee shall inform contractor management of appropriate employee work restrictions.
- e. Monitored Care.
- (1) The occupational medical program shall be responsible for the review of all monitored care of ill and injured employees to maximize their recovery and safe return to work, and to minimize lost time and its associated costs.
 - (2) Contractor management shall notify the physician responsible for the delivery of medical services or his designee when an employee has been absent because of an injury or illness for more than 5 consecutive workdays or experiences excessive absenteeism.
- f. Employee Counseling and Health Promotion. The physician responsible for delivery of medical services shall:
- (1) review and approve the medical aspects of contractor-sponsored or -supported employee assistance, alcohol, and other substance abuse rehabilitation programs;
 - (2) approve and coordinate all contractor-sponsored or -supported wellness programs; and
 - (3) ensure that immunization programs for blood-borne pathogens and biohazardous waste programs conform to OSHA regulations and Centers for Disease Control guidelines for those employees at risk to these forms of exposure.
- g. Medical Records.
- (1) An employee medical record shall be developed and maintained for each employee for which medical services are provided.
 - (2) The confidentiality of all employee medical records shall be observed.
 - (3) Employee medical records shall be adequately protected and stored permanently.

h. Emergency and Disaster Preparedness.

- (1) The physician responsible for the delivery of medical services shall be responsible for the medical portion of the site emergency and disaster plan.
- (2) The plan shall be integrated with the overall site plan and with the surrounding community emergency and disaster plan.

i. Organizational Staffing.

- (1) The physician responsible for the delivery of medical services shall be a graduate of a school of medicine or osteopathy who meets the licensing requirements applicable to the location in which the physician works.
- (2) Occupational medical physicians, occupational health nurses, physician's assistants, nurse practitioners, psychologists, and other occupational health personnel shall be graduates of accredited schools and shall be licensed, registered, or certified as required by Federal or State law where employed.

19. PRESSURE SAFETY.

a. Ensure that all pressure vessels, boilers, air receivers, and supporting piping systems conform to:

- (1) the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Safety Code;
- (2) the American National Standards Institute/ASME B.31 Piping Code; and/or
- (3) the strictest applicable state and local codes.

b. When national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), implement measures to provide equivalent protection and ensure safety equal to or superior to the intent of the ASME code. Measures shall include the following.

- (1) Design drawings, sketches, and calculations shall be reviewed and approved by an independent design professional. Documented organizational peer review is acceptable.
- (2) Qualified personnel shall be used to perform examinations and inspections of materials, in-process fabrications, non-destructive tests, and acceptance tests.

- (3) Documentation, traceability, and accountability shall be maintained for each unique pressure vessel or system, including descriptions of design, pressure, testing, operation, repair, and maintenance.
20. MOTOR VEHICLE SAFETY . Implement a Motor Vehicle Safety Program to protect the safety and health of all drivers and passengers in Government-owned or -leased motor vehicles and powered industrial equipment (i.e., fork trucks, tractors, platform lift trucks, and other similar specialized equipment powered by an electric motor or an internal combustion engine). The Motor Vehicle Safety Program shall be tailored for the individual DOE site or facility, based on an analysis of the needs of that particular site or facility, and shall address the following areas.
- a. Minimum licensing requirements (including appropriate testing and medical qualification) for personnel operating motor vehicles and powered industrial equipment.
 - b. Requirements for the use of seat belts and provision of other safety devices.
 - c. Training for specialty vehicle operators.
 - d. Requirements for motor vehicle maintenance and inspection.
 - e. Uniform traffic and pedestrian control devices and road signs.
 - f. On-site speed limits and other traffic rules.
 - g. Awareness campaigns and incentive programs to encourage safe driving.
 - h. Enforcement provisions.
21. Ensure that subcontractors performing work on DOE-owned or -leased facilities comply with this Contractor Requirements Document and the contractor's own site worker protection standards (where applicable).