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

ORDER

DOE O 440.1B

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Chg 1 (PgChg): 8-21-12
Chg 2 (AdminChg): 3-14-13
Chg 3 (LtdChg): 9-15-2020

SUBJECT: WORKER PROTECTION PROGRAM FOR DOE (INCLUDING THE NATIONAL NUCLEAR SECURITY ADMINISTRATION) FEDERAL EMPLOYEES

1. OBJECTIVE. To establish the framework for an effective worker protection program that will reduce or prevent injuries, illnesses, and accidental losses by providing Department of Energy (DOE), including National Nuclear Security Administration (NNSA), Federal workers with a safe and healthful workplace.

2. CANCELLATION. DOE O 440.1B, *Worker Protection Program for DOE (Including the National Nuclear Security Administration) Federal Employees*, dated 03-14-13. Cancellation of a directive does not, by itself, modify or otherwise affect any contractual obligation to comply with the directive. Contractor requirements documents (CRDs) that have been incorporated into or attached to a contract remain in effect until the contract is modified to either eliminate requirements that are no longer applicable or substitute a new set of requirements.

3. APPLICABILITY.

   a. Departmental Elements. Except for the exclusions in paragraph 3c, this Order (including Attachment 1) applies to Departmental elements. (Go to http://www.directives.doe.gov/references). This list automatically includes all Departmental elements created after the Order is issued.

      The Administrator of the National Nuclear Security Administration (NNSA) will assure that NNSA employees comply with their respective responsibilities under this Order. Nothing in this Order will be construed to interfere with the NNSA Administrator's authority under section 3212(d) of Public Law (P.L.) 106-65 to establish Administration-specific policies, unless disapproved by the Secretary

   b. Contractors. None.

   c. Exclusions.

      (1) Activities conducted under the authority of the Director, Naval Nuclear Propulsion Program, as described in P.L. 98-525.

      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 Order cannot be implemented for a particular facility in a manner that does not compromise the effectiveness of such activities.

(2) Activities conducted by Bonneville Power Administration as authorized by Delegation Order No. 00–033.00A.

4. REQUIREMENTS. DOE elements must:

a. Establish and implement a written worker protection program appropriate for the facility hazards 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 4m 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;

(8) Receive results of inspections and accident investigations upon request;

(9) Have limited information on any recordkeeping log (OSHA Form 300). Access is subject to Freedom of Information Act requirements and restrictions; and

(10) Review the DOE Form 5484.3 (the DOE equivalent to OSHA Form 301) that contains the employee's name as the injured or ill worker.

g. Implement procedures to allow workers to stop work when they discover employee exposures to imminent danger conditions or other serious hazards. The procedure must 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 Occupational Safety and Health Protection for DOE Employees 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) Perform routine job activity-level hazard analyses, if appropriate for the particular work environment or task.

(3) 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 must be recorded. Documentation must 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.

(4) Evaluate workplaces and activities accomplished routinely by workers, supervisors, and managers and periodically by qualified worker protection professionals.

(5) Report and investigate accidents, incidents, injuries, illnesses and analyze related data for trends and lessons learned. Requirements for accident, injury, and illness reporting and investigation and trending and lessons-learned are contained in DOE O 231.1, current version, and DOE O 225.1, current version.

(6) Review site safety and health experience information.

(7) Consider interactions between workplace hazards and other hazards such as radiological hazards, as appropriate.

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 must be 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 must be promptly implemented, interim protective measures must be implemented pending final abatement, and workers must be protected immediately from imminent danger conditions.

(3) Hazards must be addressed when selecting or purchasing equipment, products, and services.

(4) Hazard control methods must be selected based on the following hierarchy:

(a) Substitution and/or elimination.

(b) Engineering controls.

(c) Work practices and administrative controls that limit worker exposures.

(d) Personal protective equipment.

k. Provide workers, supervisors, managers, visitors, and worker protection professionals with worker protection training. (Also see Attachment 1, paragraph 10)

l. Develop and implement occupant emergency plans and procedures, conduct training, and emergency drills according to directives and guidance issued by DOE.

m. Comply with the following worker protection requirements that are applicable to the hazards at the facility:

(1) Title 29 Code of Federal Regulations (CFR), Part 1910, *Occupational Safety and Health Standards*;

(2) Title 29 CFR 1915, Occupational Safety and Health Standards for Shipyard Employment;

(3) Title 29 CFR 1917, *Marine Terminals*;

(4) Title 29 CFR Part 1918, Safety and Health Regulations for Longshoring;

(5) Title 29 CFR Part 1926 Safety and Health Regulations for Construction;

(6) Title 29 CFR Part 1928, Occupational Safety and Health Standards for Agriculture;

(7) Title 29 CFR Sections 1904.4 through 1904.11, 1904.29 through 1904.33, 1904.44 and 1904.46, *Recording and Reporting Occupational Injuries and Illnesses*;

(8) Title 10 CFR Part 850, Chronic Beryllium Disease Prevention Program;

(9) American Conference of Governmental Industrial Hygienist (ACGIH), *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*, when the ACGIH Threshold Limit Values (TLVs) are lower (more protective) than permissible exposure limits in 29 CFR Part 1910. When the ACGIH TLVs are used as exposure limits, federal employees must nonetheless comply with the other provisions of any applicable expanded health standard found in 29 CFR Part 1910. DOE Elements must use ACGIH limits for physical hazards not covered by the Occupational Safety and Health Administration (OSHA);

(10) American National Standards Institute (ANSI) Z88.2, *American National Standard Practices for Respiratory Protection*, (for respiratory protection issues not covered by 29 CFR 1910.134);

(11) ANSI Z136.1, *Safe Use of Lasers*, (for laser hazards not covered by OSHA standards);

(12) ANSI Z49.1, *Safety in Welding, Cutting and Allied Processes*, Sections 4.3 and E4.3 of the 1999 edition or equivalent sections of subsequent editions, (for welding hazards not covered by OSHA standards);

(13) National Fire Protection Association (NFPA) 70, *National Electrical Code;*

(14) NFPA 70E, Standards for Electrical Safety in the Workplace;

(15) 42 CFR Part 73, Select Agents and Toxins;

(16) 9 CFR Part 121, Possession, Use and Transfer of Select Agents and Toxins; and

(17) 7 CFR Part 331, Possession, Use and Transfer of Select Agents and Toxins.

n. Nothing in this document must be construed as relieving a federal facility from complying with any additional specific safety and health requirement that it determines to be necessary to protect the safety and health of workers.

o. Additional requirements for applicable functional areas are contained in Attachment 1, Functional Area Requirements.

5. RESPONSIBILITIES.

a. Assistant Secretaries (and NNSA Deputy Administrators where applicable).

(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 requirements of paragraph 5b (and applicable responsibilities in the specific functional areas contained in Attachment 1) and the requirements of 10 CFR 851 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 the approving authority for exemptions to requirements contained in this Order. Approval authority for exemptions to the requirements in this Order may be delegated (except for those exemptions related to OSHA standards.)

(7) Incorporate performance elements for Federal Employee Occupational Safety and Health (FEOSH) Program into management performance elements.

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

(1) Ensure through the Contracting Officer that contractors implement the requirements of 10 CFR 851.

(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 10 CFR 851.

(5) Evaluate the need for and direct the development of formal written agreements between Departmental elements on their sites. These agreements must outline the respective roles, responsibilities, and authorities of each Departmental element as they relate to compliance with DOE worker protection requirements and the resolution of cross-cutting worker protection-related issues.

(6) Review and forward, to the Associate Under Secretary for Environment, Health, Safety and Security all exemptions, exceptions, and variances to mandatory worker protection requirements contained in this Order. Conduct an annual review of the status of all exemptions to the requirements contained in this Order to ensure that circumstances requiring the need for relief have not changed and that instituted controls are still implemented and appropriate.

(7) Provide annually to the Office of Environment, Health, Safety and Security input for the Department of Labor's FEOSH report, including status of progress in meeting established goals, new initiatives, and other requested information.

(8) Establish annually FEOSH Program goals and objectives for both promoting the program and for reducing accidents, injuries, and lost-time cases.

c. Operations Office Managers (and Heads of Field Elements, where applicable).

(1) Ensure that unannounced worker protection inspections of federal 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 ascertain that appropriate actions have been taken to preclude recurrence.

(3) Ensure that initiators of procurement requests specify therein whether requirements in 10 CFR 851 are to be applied to the resulting awards or subawards.

(4) Ensure that a FEOSH Program Manager/Coordinator is assigned the responsibility for administration of the FEOSH Program and is provided adequate training commensurate with that responsibility.

d. Associate Under Secretary for Environment, Health, Safety and Security.

(1) Establish committees as necessary to assist in the development of Departmental requirements and guidance.

(2) Review and recommend for approval any exemptions contained in this Order in accordance with DOE O 251.1, current version.

di. Contracting Officers. Require contractors to comply with the requirements of 10 CFR 851.

6. INVOKED TECHNICAL STANDARDS. The following DOE technical standards and industry standards are invoked as required methods in this Order in accordance with the applicability and conditions described within this Order. Any technical standard or industry standard that is mentioned in or referenced by this Order, but is not included in the list below, is not invoked by this Order. Note: DOE O 251.1D, Appendix J provides a definition for "invoked technical standard."

a. DOE-STD-1167-2003, *The Department of Energy Respiratory Acceptance Program for Supplied-Air Suits*, is required to be used for testing of respiratory equipment when National Institute for Occupational Safety and Health-approved respiratory protection does not exist for DOE tasks that require such equipment. See Attachment 1, Section 5.b.(11) for specific requirements.

b. DOE-STD-1212-2012, *Explosive Safety*, is required to be met for applicable explosive safety operations. See Attachment 1, Section 4 for specific requirements.

c. American National Standards Institute (ANSI) Z49.1, *Safety in Welding, Cutting and Allied Processes*, Sections 4.3 and E4.3 of the 2012 edition, is required to be used for worker protection requirements that are applicable to the hazards at the facility (for welding hazards not covered by OSHA standards). See Section 4.m. for specific requirements. Heads of Departmental Elements may authorize the use of equivalent sections of a later edition of this Standard to fulfill the requirements in this Order.

d. ANSI Z88.2, *American National Standard Practices for Respiratory Protection*, is required to be used for worker protection requirements that are applicable to the hazards at the facility. See Section 4.m. for specific requirements.

e. ANSI Z136.1, *Safe Use of Lasers,* is required to be used for worker protection requirements that are applicable to the hazards at the facility (for laser hazards not covered by OSHA standards). See Section 4.m for specific requirements.

f. ANSI/American Society of Mechanical Engineers (ASME) B.31, *Piping Code*, is required to be used for pressure vessels, boilers, air receivers, and supporting piping systems. See Attachment 1, Section 7.b. for specific requirements.

g. National Board of Boiler and Pressure Vessel Inspectors (NBBI) NB23, *National Board Inspection Code,* is required to be used for pressure vessels, boilers, air receivers, and supporting piping systems. See Attachment 1, Section 7.b. for specific requirements.

h. National Fire Protection Association (NFPA) 70, *National Electrical Code*, and NFPA 70E, *Standards for Electrical Safety in the Workplace*, are required to be used for worker protection requirements that are applicable to the hazards at the facility. See Section 4.m. for specific requirements.

7. CONTACT. 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.

BY ORDER OF THE SECRETARY OF ENERGY:

MARK W. MENEZES
Deputy Secretary

FUNCTIONAL AREA REQUIREMENTS

This attachment establishes the mandatory requirements for implementing the applicable functional areas required by paragraph 4.o. of this Order.

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. Heads of Departmental Elements, and Heads of Field Elements.

      (1) Designate a project manager for each construction project.

      (2) Ensure that project managers are provided with the training, resources, and technical support necessary to perform the duties prescribed by this Order.

      (3) Develop formal written agreements/implementing instructions as needed to delineate the respective construction safety responsibilities/duties of DOE project management and technical support staffs.

      (4) Review safety and health programs developed for site maintenance and operational activities to determine their applicability and cost effectiveness on construction projects.

      (5) 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.)

      (6) Ensure that applicable requirements of this Order are specified within construction project acquisition documents.

   b. Construction Project Managers.

      (1) Determine the necessity for requiring dedicated construction contractor safety and health personnel on project workplaces.

      (2) Ensure that construction project acquisition documents provide information or reference to existing documentation that describes known hazards to which project workers may be exposed.

      (3) Ensure that a pre-work safety meeting is conducted with the construction contractor to review project safety and health requirements.

(4) 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.

(5) 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.

(6) 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.

(7) Ensure documentation exists for all formal contract actions taken to enforce construction contractor compliance with project safety and health requirements.

2. FIRE PROTECTION. Establish and implement a comprehensive fire protection program with the objective of providing an acceptable level of safety from fire and related hazards for DOE and NNSA Federal personnel and for the public. This includes appropriate facility and site-wide protection (refer to DOE O 420.1, *Facility Safety,* current version), 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 occurrences.

a. 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 (NFPA) Codes and Standards or exceeding them (when necessary to meet safety objectives), unless explicit written relief has been granted.

b. Life Safety Code. NFPA Standard 101, *Life Safety Code*, is applicable to most DOE facilities. DOE Elements with Federal worker responsibility may determine that NFPA 101A, *Alternate Approaches to Life Safety*, can be applied to DOE facilities where an equivalent level of life safety to NFPA 101 is needed provided that such an alternative approach is determined by a qualified individual. DOE Elements with Federal worker responsibility also should determine the additional or modified exit requirements needed for toxic and explosive environments if appropriate. The exit requirements for explosives environments should reflect the criteria contained in the DOE–STD-1212, *Explosives Safety* (available by searching at http://www.hss.doe.gov/nuclearsafety/ns/techstds/standard.html). Additional fire protection features and personnel limits should be maintained where noncompliance with some NFPA Standard 101 provisions are necessary to prevent creating serious hazards, e.g. as could occur in some containment structures.

c. Fire Watches. When applicable, fire watcher requirements in NFPA 51B should be expanded to include responsibility for the safety of the welder(s) in addition to that of the facility.

3. FIREARMS SAFETY.

a. Establish firearms safety policies and procedures for security operations and training to ensure proper accident prevention controls are in place. Written procedures must address firearms safety, engineering and administrative controls, as well as personal protective equipment requirements. At a minimum, procedures must be established for:

(1) Storage, handling, cleaning, inventory and maintenance of firearms and associated ammunition;

(2) Activities such as loading, unloading, and exchanging firearms. These procedures must address use of bullet containment devices and those techniques to be used when no bullet containment device is available;

(3) Use and storage of pyrotechnics, explosives, and/or explosive projectiles;

(4) Handling misfires, duds, and unauthorized discharges;

(5) Live fire training, qualification, and evaluation activities;

(6) Training and exercises using engagement simulation systems;

(7) Training and exercises using obscurant-generating devices;

(8) Emergency responses at firearms training facilities; and,

(9) Use of firing ranges by personnel other than DOE or DOE contractor protective forces personnel.

b. Ensure that personnel 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.

c. Ensure that firearms instructors and armorers have been certified by the Safeguards and Security National Training Center. Personnel must be professionally qualified through DOE National Training Center, military, or factory training to conduct the level of activity they provide.

d. Conduct formal appraisals assessing implementation of procedures, personnel responsibilities, and duty assignments to ensure overall policy objectives.

e. Implement provisions related to firearms training, live fire range safety, qualification, and evaluation activities.

f. Personnel must successfully complete and demonstrate understanding of initial firearms safety training before being issued any firearms. Authorization to remain in armed status will continue only if the employee demonstrates the technical and practical knowledge of firearms safety semi-annually.

g. Personnel authorized to carry firearms must have access to instruction manuals or materials for each type of firearm with which they are armed while on duty.

h. Authorized armed personnel must demonstrate both technical and practical knowledge of firearms handling and safety on a semi-annual basis. This demonstration must be supported by limited scope performance tests, and the results of such testing must be documented.

i. All firearms training lesson plans must incorporate safety for all aspects of firearms training task performance standards. Lesson plans must follow the standards and criteria set forth by the Safeguards and Security Central Training Academy's standard training program.

j. Firearms safety briefings must immediately precede training, qualifications, and evaluation activities involving live fire and/or engagement simulation systems.

k. A safety analysis approved by DOE line management must be developed for the facilities and operation of each live fire range. A safety analysis must be completed and approved prior to implementation of any new training, qualification, or evaluation activity. Results of these analyses must be incorporated into procedures, lesson plans, exercise plans, and limited scope performance tests.

l. Firing range safety procedures must be conspicuously posted at all primary range facilities.

m. Live fire ranges must be properly sited to protect personnel on the range, as well as personnel and property not associated with the range. Approval for the location and use of live fire range must be obtained from the DOE field element manager.

n. Develop a safety or risk analysis for all facilities or areas in which firearms will be introduced in accordance with the local protection strategy. Such analyses must be approved by DOE line management.

o. Ensure that the transportation, handling, placarding, and storage of munitions conform to the applicable requirements of DOE-STD-1212, *DOE Explosives Safety*.

4. EXPLOSIVES SAFETY. Ensure that applicable explosives operations comply with DOE-STD-1212, *DOE Explosives Safety*. Facility management must determine the applicability of the requirements to research and development laboratory type operations consistent with the DOE level of protection criteria in the technical standard. The

administration and management of DOE-STD-1212, *DOE Explosives Safety* and any deviations from it, must follow the process specified in Chapter I of the technical standard. Revisions to the technical standard are made through established Technical Standards revision process.

5. INDUSTRIAL HYGIENE.

a. Implement a comprehensive and effective industrial hygiene program to reduce the risk of work-related disease or illness.

b. Include the following elements in industrial hygiene programs:

(1) Initial or baseline surveys of all work areas or operations to identify and evaluate potential worker health risks.

(2) Coordination with planning and design personnel to anticipate and control health hazards that proposed facilities and operations would introduce.

(3) Coordination with cognizant occupational medical, environmental, health physics, and work planning professionals.

(4) Policies and procedures to mitigate the risk from identified and potential occupational carcinogens.

(5) Professionally and technically qualified industrial hygienists to manage and implement the industrial hygiene program.

(6) Periodic resurveys and/or exposure monitoring as appropriate.

(7) Documented exposure assessment for chemical, physical and biological agents and ergonomic stressors using recognized exposure assessment methodologies and use of accredited industrial hygiene laboratories.

(8) Specification of appropriate engineering, administrative, work practice, and/or personal protective control methods to limit hazardous exposures to acceptable levels.

(9) Worker education, training, and involvement.

(10) Use of appropriate industrial hygiene standards.

(11) Use of respiratory protection equipment tested under the DOE Respiratory Acceptance Program for Supplied-air Suits (DOE Technical Standard 1167-2003) when National Institute for Occupational Safety and Health-approved respiratory protection does not exist for DOE tasks that require such equipment. For security operations conducted in accordance with Presidential Decision Directive 39, *U. S. Policy on Counter Terrorism*, use of Department

of Defense military type masks for respiratory protection by security is acceptable.

6. BIOLOGICAL SAFETY.

a. Implement and manage a program that confirms handling, transfer, use, and receipt of etiologic agents are conducted by professionally and technically qualified individuals in a manner consistent with the potential hazard.

b. Confirm that each DOE contractor performing work with etiologic agents establishes an Institutional Biosafety Committee (IBC) or equivalent, which will be responsible for recommending approval and reviewing proposals and programs for compliance with the Centers for Disease Control (CDC), Department of Agriculture, National Institutes of Health (NIH), World Health Organization (WHO), and other international, Federal, State, and local regulations or guidelines for work with etiologic agents. This review should include assessment of containment level, facilities, procedures, practices, and training and expertise of personnel. In addition, this committee should review the site's security, safeguards, and emergency management plans and procedures to ensure that they adequately address work with etiologic agents. DOE staff, with the requisite technical expertise and training, should be included as a member of the facility IBC (or equivalent).

c. Be aware of each CDC registration certificate issued to a DOE facility registered and approved to transfer, receive, and handle select agents at Biosafety Level (BSL) 2, 3, or 4 under their cognizance. The field elements must also be aware of each CDC Form EA-101, Transfer of Select Agents, for each select agent received or transferred by a registered facility under their cognizance.

d. Maintain a record of the status of etiologic agents at facilities under their authority, based on annual reports from contractors.

7. PRESSURE SAFETY. DOE Elements must implement a comprehensive pressure vessel and pressure system safety program. This program must meet, at a minimum, the following criteria:

a. Establish written and documented safety policies and procedures to ensure that all pressure vessels and systems are designed, fabricated, tested, procured, inspected, maintained, repaired, and operated by trained and qualified personnel in accordance with applicable and sound engineering principles.

b. All pressure vessels, boilers, air receivers, and supporting piping systems must conform to the following applicable code or standard in place at time of installation or significant modification:

(1) American Society of Mechanical Engineers (ASME) Design and Construction of Boiler, Air Receivers, and Pressure Vessels;

(2) American National Standards Institute/ASME B.31 Piping Code;

(3) National Board Inspection Code NB-23;

(4) Department of Transportation, 49 CFR Parts 100-199; and/or

(5) Strictest applicable state and local codes.

c. If national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), implementing measures must be established to provide equivalent protection and ensure safety equal to or superior to the intent of the ASME code. Measures must meet the following criteria:

(1) Design drawings, sketches, and calculations must be reviewed and approved by an independent design professional. Documented organizational peer review is acceptable.

(2) Qualified personnel must be used to perform examinations and inspections of materials, in-process fabrications, non-destructive tests, and acceptance tests.

(3) Documentation, traceability, and accountability must be maintained for each pressure vessel or system, including descriptions of design, pressure, testing, operation, repair, and maintenance.

d. Each pressure vessel or system, including the design, pressure ratings, traceability, inspection, testing, operations, repair, and maintenance requirements must be described and documented.

e. All components in the pressure system, especially components of pressure relief devices and control valves, must be inspected, tested, and maintained as required by the above applicable standards. Inspections, testing, and maintenance may be done according to competently developed and peer-reviewed engineering and maintenance specifications, provided that they ensure safety equal to or superior to the intent of any applicable standard. This process must be documented.

f. Qualified personnel must control the selection and use of the pressure hardware, including quality control requirements, procurement specifications, and assembly of pressure components.

g. Personnel who design, build, and operate pressure systems must be trained and qualified through documented formal classroom attendance, testing, on-the-job experience and/or training.

h. Worker Involvement/Safety Committee(s) must recommend and/or review safety policies; address unusual problems and occurrences; and provide advice and assistance in pressure safety.

8. MOTOR VEHICLE SAFETY.

a. 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).

b. Tailor the program for the individual DOE site or facility, based on an analysis of the needs of that particular site or facility, and it must address the following areas:

(1) Minimum licensing requirements (including appropriate testing and medical qualification) for personnel operating motor vehicles and powered industrial equipment.

(2) Requirements for the use of seat belts and provision of other safety devices.

(3) Training for specialty vehicle operators.

(4) Requirements for motor vehicle maintenance and inspection.

(5) Uniform traffic and pedestrian control devices and road signs.

(6) On-site speed limits and other traffic rules.

(7) Awareness campaigns and incentive programs to encourage safe driving.

(8) Enforcement provisions.

9. ELECTRICAL SAFETY. DOE Elements must implement a comprehensive electrical safety program appropriate for the activities at the facility. The program must meet the applicable electrical safety codes and standards referenced in paragraph 4m of this Order.

10. TRAINING AND INFORMATION.

a. Develop and implement a worker safety and health training and information program to ensure that all federal workers exposed or potentially exposed to hazards are provided with the training and information on that hazard in order to perform their duties in a safe and healthful manner.

b. Provide the following:

(1) Training and information for new federal workers, before or at the time of initial assignment to a job involving exposure to a hazard;

(2) Periodic training as often as necessary to ensure that federal workers are adequately trained and informed; and

(3) Additional training when safety and health information or a change in workplace conditions indicates that a new or increased hazard exists.

c. DOE must provide training and information to federal workers who have worker safety and health program responsibilities that is necessary for them to carry out those responsibilities. safety and health program responsibilities that is necessary

11. RECORDKEEPING AND REPORTING.

a. Recordkeeping.

(1) Establish and maintain complete and accurate records of all hazard inventory information, hazard assessments, exposure measurements, and exposure controls.

(2) Ensure that the work-related injuries and illnesses of federal workers and contractor/subcontractor workers are recorded and reported accurately and consistent with DOE O 231.1, *Environment, Safety and Health Reporting*, current version.

(3) Comply with the applicable occupational injury and illness recordkeeping and reporting workplace safety and health standards referenced in paragraph 4m of this Order unless otherwise directed in DOE O 231.1, current version.

(4) Ensure that any information concerning non-compliance or potential noncompliance with the requirements in this document is not concealed nor destroyed.

b. Reporting and investigation.

(1) Report and investigate accidents, injuries and illness (reference DOE O 225.1, Accident Investigations, current version; DOE O 231.1, Environment, Safety and Health Reporting, current version: and 29 CFR 1960 Subpart I.

(2) Analyze related data for trends and lessons learned (reference DOE O 225.1, *Accident Investigations*, current version.