

K. National Fire Protection Association (NFPA) 70, *National Electrical Code*.

L. National Fire Protection Association 70E, *Electrical Safety Requirements for Employee Workplaces*.

M. Appropriate etiologic agents guidelines and best practices. See most current edition of U.S. Department of Health and Human Services Centers for Disease Control and Prevention (CDC) Publication 93-8395, *Biosafety in Microbiological and Biomedical Laboratories*; National Institutes of Health (NIH) publication *Guidelines for Research Involving Recombinant DNA Molecules*; and World Health Organization (WHO) publication *Guidelines for the Safe Transport of Infectious Substances and Diagnostic Specimens*.

II. Safety and Health Programs

A. Construction Safety

1. For each construction operation presenting hazards not experienced in previous project operations or for work performed by a different subcontractor, the construction contractor prepares a task analysis (job hazard analysis) and has it approved prior to commencement of affected work. These analyses 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. Inform workers of foreseeable hazards and the protective measures described within the approved task analysis prior to beginning work on the affected construction operation.

3. During periods of active construction, the construction manager has a designated representative on site at all times to 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 immediately notify affected workers, post appropriate warning signs, implement needed interim control measures, and notify the construction manager of actions taken.

4. The construction contractor prepares and has approved prior to beginning any on-site project work a written project safety and health plan that gives a proposal for implementing the above information. The construction contractor also designates 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 task analysis is to be performed.

B. Fire Protection

1. Implement a comprehensive fire protection program that 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.

2. An acceptable fire protection program includes those fire protection criteria and

procedures, analyses, hardware and systems, apparatus and equipment, and personnel. This also includes meeting the applicable building code and National Fire Protection Association Codes and Standards or exceeding them (when necessary to meet safety objectives), unless DOE has granted explicit written relief.

3. Fire watcher requirements in National Fire Protection Association (NFPA) 51B, Section 3-3.3 (of the 1994 edition or equivalent section of subsequent editions), are expanded to include responsibility for the safety of the welder(s) in addition to that of the facility.

C. Firearms Safety

1. Establish firearms safety policies and procedures to address safety concerns and the personal protective equipment required. Establish procedures for: storage, handling, cleaning, and maintenance of firearms and associated ammunition; activities such as loading, unloading, and exchanging firearms; use of pyrotechnics and/or explosive projectiles; handling misfires and duds; live fire operations; and training and exercises using engagement simulation systems.

2. 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 are 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 provisions related to firearms safety training, qualification, or re-qualification. Personnel successfully complete and demonstrate understanding of initial firearms safety training before being issued any firearms.

(a) Personnel authorized to carry firearms have access to instruction manuals for each type of duty firearms with which they are armed while on duty. Authorized armed personnel demonstrate both technical and practical knowledge of firearms handling and safety on a semi-annual basis. This demonstration supported by limited scope performance tests, and documents the results of such testing.

(b) All firearms training lesson plans incorporate safety for all aspects of firearms training task performance standards. The lesson plans follow the standards and criteria set forth by the Safeguards and Security Central Training Academy's standard training programs. Conduct safety briefings before any live fire training commences, in accordance with DOE M 473.2-1, *Firearms Qualification Courses Manual*.

(c) Develop a safety analysis and have approved by the Operations Office Manager for the facilities and operation of each live fire range. Complete and have approved a safety analysis prior to implementation of any new training. Incorporate the results of these analyses into procedures, lesson plans, exercise plans, and limited scope performance tests.

(d) Post site-specific firing range safety procedures at all ranges.

(e) Request approval from the DOE Operations Office for the location and use of a live fire range.

5. Transportation, handling, placarding, and storage of munitions conform to the applicable requirements of DOE M 440.1-1, *DOE Explosives Safety Manual*.

D. Explosives Safety

Applicable explosives operations comply with DOE M 440.1-1. Contractor facility management determines 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 follows 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.

E. Industrial Hygiene

Industrial hygiene programs include the following elements:

1. Initial or baseline surveys of all work areas or operations to identify and evaluate potential worker health risks and periodic resurveys and/or exposure monitoring as appropriate.

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

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

4. Specification of appropriate controls based on the following hierarchy: engineering; work practices; and personal protective equipment to limit hazardous exposure to acceptable levels. Use of respiratory protection equipment tested under the DOE Respirator Acceptance Program when National Institute for Occupational Safety and Health-approved respiratory protection does not exist for DOE tasks. For security operations conducted in accordance with Presidential Directive Decision 39, U.S. Policy on Counter Terrorism, use of Department of Defense military type masks for respiratory protection by security personnel is acceptable.

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

F. Occupational Medicine

1. The earliest possible detection and mitigation of occupational illness and injury is the goal of these services. The physician responsible for delivery of medical services is responsible for the planning and implementation of the occupational medical program.

2. Maintenance of a Healthful Work Environment.

(a) The responsible physician performs targeted examinations based on an up-to-date knowledge of work site risk; identify potential or actual health effects resulting from worksite exposures; and communicate