

Chapter 2 – Safety and Health Training

2.1 Scope

This chapter establishes policy and procedures and assigns responsibilities for safety training of Glenn employees. It describes the minimum requirements for the various certification levels for personnel involved in potentially hazardous operations, and provides guidance for Glenn officials responsible for ensuring NASA contractor comply with personnel safety training and certification.

2.2 Applicability

The procedures, responsibilities, and requirements as set forth in this chapter applies to Glenn employees, to all NASA contractors in accordance with the terms of the contract, and to other Government agency employees who support operations at Lewis Field, Plum Brook Station, and other facilities under Glenn Research Center (GRC) cognizance.

This Chapter *does not apply* to personnel who operate a test rig or facilities requiring a safety permit. The certification of qualified facilities operators is specified in Chapter 1a, Section 1.5; Safety Permit System.

This Chapter *does not apply* to personnel engaged in skill operations, such as soldering, brazing, crimping, and potting, already certified by quality assurance organizations or to personnel performing inspections with dye penetrate magnetic particles, ultrasound, radiography, magnaflux, and comparable operations.

Specific training for certifications is dependent on the task being conducted, and all applicable codes, standards and practices contained within the operation apply.

2.3 Authority

The authority for these policies and procedures derives from Executive Order No. 12196; 29 CFR 1960, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters," Subpart H; NASA Procedural Requirements (NPR) 8715.3 NASA Safety Manual and Glenn Research Center, Procedure No. GRC-P3.3.1, Training and Career Development.

2.4 Policy

It is the policy of GRC to administer its operations so as to ensure that personnel at Glenn are trained to perform their work in accordance with applicable safety and health standards and to employ safe and healthy methods of operation, thus ensuring high standards of reliability and protecting the Center's mission.

It is NASA policy to make all operations, even potentially hazardous testing as safe as possible through design, engineering or administrative control, or through training and use of personal protective equipment.

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2.5 Responsibilities

2.5.1 Line Managers

Line managers are primarily responsible for providing personnel with a safe working environment, recognizing potential hazards in their areas, and budgeting resources for special training for workplace employees.

2.5.2 Employees

Employees are responsible for conducting their work in compliance with all applicable, health, and safety laws and regulations, exercising common sense with reasonable care and caution in the safe performance of their work assignments and in the conduct of any activity at Glenn; possessing knowledge of and implementing Glenn safety and health policies; following safe operating procedures and emergency procedures affecting their individual work area and work assignments; reviewing the Building Evacuation Plan for each building they work in.

2.5.3 Safety, Health, and Environmental Training Committee

The Safety, Health, and Environmental, Training Committee (SHETC), which includes representatives from the Safety Health and Environmental Division (SHED), the Organization Development and Training Office (ODOT), Security Management and Safeguards Office (SMSO) provides guidance and advocacy to line management through the Systems for Administration Training and Educational Resources for NASA (SATERN):

Coordinating occupational safety and health training needs

Overseeing training efforts by identifying safety and health related training needs

Determining budget requirements

Developing safety and health related training courses

Ensuring training records reflect employee safety training

2.6 Training Process

Training may be obtained through a variety of sources, including a single onsite and offsite training course, an academic instruction, or a conference, and, On the Job Training.

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The Organization Development and Training Office (ODTO) coordinate and schedules a number of onsite safety courses including courses from the NASA Safety Training Center. Visit the ODTO at: <http://www.grc.nasa.gov/WWW/ODT/>.

Obtaining the required or desired training is dependent on several factors including; organizational and individual needs, type and complexity of research or equipment operation, availability of courses and instructors, and budget constraints.

To determine required training needs the following process should be followed:

1. Employees complete the Annual Safety and Health Training Needs Assessment at: **<http://odto-survey.grc.nasa.gov/index.cfm>**
2. The supervisor reviews the results of their employees training requirements, and deletes a course the supervisor does not deem to be a requirement.
3. The Organization Development and Training Office schedules and announce the courses on the ODT Website at: <http://www.grc.nasa.gov/WWW/ODT/>
4. The employee is responsible for applying for the required course when available or for locating and completing an off-site training course.
5. The supervisor is responsible for ensuring the employee registers for required training.
6. To register for onsite training courses, in SATERN, go to **<https://satern.nasa.gov/elms/learner/logout.do>** and register.
7. The Organizational Development and Training Office publish a training calendar which shows dates of upcoming safety and occupational health related training. Managers and employees should view calendar to determine current schedule of training: <http://webevent.grc.nasa.gov/cgi-bin/webevent.cgi?cmd=cmd=openca&cal=cal32>

2.7 Safety Training

2.7.1 Target Groups

Appropriate instruction and job-related safety information are required for all employees, with additional emphasis for:

Managers and supervisors

Collateral duty safety personnel and Area Safety Committee members (See Glenn Safety Manual Chapter 1 A)

Employee representatives

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2.7.2 Target Group Training Needs

Managers and Supervisors: Occupational safety training for managers and supervisors will be provided so that they can identify and report safety hazards in their work areas and identify and strive to eliminate unhealthful and unsafe work behaviors by employees. The training will help to develop requisite skills for implementing safety programs within the work units, including training and motivating employees toward safe work practices and making them aware of their specific responsibilities in the programs.

Collateral Duty Safety Personnel and Safety Committee Members: Upon appointment to a collateral duty safety position or to a Safety Committee, an employee will be provided with appropriate training commensurate with the scope of the assigned responsibilities. Training shall include NASA procedures for reporting, evaluating and abating hazards; NASA procedures for reporting, evaluating, and abating hazards; NASA procedures for reporting and investigating allegations of reprisal; recognition of hazardous conditions and environments; identification and use of occupational safety standards; and other appropriate rules and regulations.

Employee Representatives: Glenn personnel who are representatives of employee groups, such as recognized bargaining units, will receive training information and materials that enable such groups to ensure safe working conditions and practices in the workplace.

Workplace Employees: Managers and supervisors are responsible for recognizing potential hazards in work areas and arranging for special training for workplace employees. Training must include general information on the NASA safety programs, the Glenn safety programs, and the employees' roles and rights, and specific training relating to hazards in their particular workplace.

All New Employees: Two courses are mandatory for all new employees: "Glenn New Employee Safety Orientation" and "Federal Hazard Communications Training." They are available in Systems for Administration Training and Educational Resources for NASA (SATERN).

Certified Personnel: Individuals performing certain tasks may require training over and above minimal safety/health awareness. These tasks include, but are not limited to; hearing conservation, respiratory protection, and cranes, forklift drivers, etc. Additional tasks may require specific certification requirements dependent on national or state standards.

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2.7.3 Training Areas

The safety and health training program are structured to ensure, at a minimum, that the following information is provided to all Glenn employees and to others as applicable:

Essential features of Public Law 91-596, the "Occupational Safety and Health Act (1970)"

Essential features of Executive Order 12196, "Occupational Safety and Health Programs for Federal Employees"

Requirements of 29 CFR 1960.59, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters"

NASA's and Glenn's Occupational Safety and Health Programs

Individual employee rights and responsibilities regarding safety and health

Specific job-related safety and health information such as hazards of the job; safe work practices; hazards of the work environment; use and care of personal protective equipment; first aid procedures; and reporting of injuries, illnesses, and hazardous conditions

2.8 Categories of Potentially Hazardous Operations

2.8.1 Category I

Category I hazardous operations are those tasks that potentially have a high degree of immediate hazard to the operator or user, other employees, NASA equipment, facilities, or the public. Additional Category I tasks can be designated by a certifying authority or his/her appointee in a task area. The following personnel are involved in Category I tasks:

- a. Air crew members (FAA licensing may not be sufficient)
- b. Centrifuge subjects and operators
- c. Critical lift crane operators (critical to be determined by the installation in accordance with the replacement value, uniqueness of the material lifted, and the hazards involved)
- d. Propellant or explosives users
- e. Propellant or explosives handlers
- f. Rescue personnel
- g. Self-contained atmospheric protective ensemble (SCAPE) users
- h. Self-contained underwater breathing apparatus (SCUBA) divers and other underwater divers

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2.8.2 Category II

Category II operations are those tasks that, if not done correctly, could create a severe hazard to the operator or user, other personnel, and/or property. Category II operations can be designated by each of the certifying authorities; the following personnel are involved in Category II tasks:

- a. Altitude chamber operators
- b. Heavy equipment operators (e.g., forklift)
- c. High-pressure liquid/vapor/gas system operators (above 150 psig)
- d. High-voltage electricians (above 110 V)
- e. Confined space monitors
- f. Hyperbaric chamber operators
- g. Explosive-actuated tool operators
- h. Radiation (ionizing and non-ionizing) workers
- i. Tank farm workers
- j. Wind tunnel operators (if not covered by Safety Permit)
- k. Welders
- l. Hazardous material users (unless covered above in Category I)
- m. Crane operators (other than critical lift)
- n. Riggers for hoisting operations

2.8.3 Category III

Category III hazardous operations pertain strictly to operations of handling, transporting, or packaging hazardous materials without otherwise disturbing the basic, properly packaged shipping container that holds the hazardous material. Operations that involve the reduction of palletized, or otherwise combined, items of packaged hazardous materials qualify as handling.

2.9 Certification Requirements

All personnel engaged in potentially hazardous operations at the Category I, II, or III level, as determined by line management, the Environmental Management Branch (EMB), or Safety Branch (SB), will be certified as capable to operate the equipment or perform their jobs in a safe manner if they meet the standards set forth here.

2.9.1 Category I

For Category I hazardous jobs, the following are minimum requirements for certification:

- a. Physical examination (see Sec. 2.9.4)
- b. On-the-job training
- c. Classroom training (for initial certification and as needed)

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- d. Written and/or hands-on examination (as needed)
- e. Annual retraining that will include review of emergency response procedures and first aid procedures
- f. Periodic Category I recertification as determined by the certifying authority and SB (not to exceed a 4-year interval)

2.9.2 Category II

For Category II hazardous jobs, certification requirements should be similar to those of Category I (Sec. 2.9.1) except for appropriate reductions in the levels of examination, training, and testing, to be consistent with the lower potential hazard levels of Category II jobs. Certification requirements are left to the discretion of each certifying authority, with the approval of the SB.

2.9.3 Category III

For Category III hazardous jobs, the following are minimum requirements for certification:

- a. Specific training in Federal, NASA, and local rules for preparing, packaging, marking, and transporting hazardous materials associated with the job
- b. Examination by written test to determine the adequacy and retention of the training
- c. Issuance of a card or license (to be carried on person) listing name, date, materials for which certification is valid, signature of certifying official, and date of expiration
- d. Periodic Category III recertification as determined by the EMB and SB, in the absence of any state or Federal requirements

2.9.4 Need for Physical Examination

Unless otherwise specified, the need for physical examinations for Category I and II jobs, either as a means to determine fitness for duty or to assist in establishing a baseline for occupational exposure level, will be determined by the Glenn Medical Officer and will be in compliance with the applicable codes, regulations, and standards covering the particular occupation or environment. The need for fitness-for-duty examinations should be based on the hazardous consequences if an employee should be unable to perform the job correctly because of physical or mental deficiencies. Glenn Safety Manual

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2.10 Bibliography

- Executive Order 12196. U.S. Code Congressional and Administrative News. 1980. Occupational Safety and Health Programs for Federal Employees.
- NPG 8715.5 NASA Safety Manual Procedures and Guidelines. * Public Law 91-596, 84 stat. 1589. 1970. Occupational Safety and Health Act (OSHA), 1970.
- Title 29, Code of Federal Regulations, Pt. 1960. Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters.
- Title 49, Code of Federal Regulations, Pt. 172, Sec. 101. Hazardous Materials Tables, Hazardous Materials Communications Requirements, and Emergency Response Information Requirements. Purpose and Use of Hazardous Materials Table.
- ---Subch. C, Pt. 171, Sec. 8. Hazardous Materials Regulations. General Information, Regulations, and Definitions.
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