Effective management of worker safety and health protection is a decisive factor in reducing the extent and the severity of work related injuries and illnesses. Effective management addresses all work-related hazards, including those potential hazards that could result from a change in work site conditions and practices. It addresses hazards whether or not they are regulated by government standards. It also indicates that effective management of safety and health protection improves employee morale and productivity, as well as significantly reduces workers compensation costs and other less obvious costs of work related injuries and illnesses.

1850.01 PRINCIPLES

The Department of Public Safety is dedicated to providing a safe atmosphere for all members of the University community. The institution has one full-time and one part-time Fire/Safety officers, one of which is a resident State Fire Marshal. The Deputy State Fire Marshal for this region, through inspections, assists in insuring that all areas of fire and life safety are appropriately addressed. The City of Conway and Horry County Fire Department, which is located less than 1 mile from the campus, provide fire protection. Medical emergencies are handled by local Emergency Medical Services. In the event of an emergency, the Chief of Public Safety, or his designee, will be in command of such emergencies until they are resolved or handled by another agency.

Campus buildings are inspected weekly, addressing potential hazards. Anyone can file a fire/safety complaint by contacting the Fire Safety Officer at extension 2930 or e-mail dsimmons@coastal.edu. In the event of an emergency, telephone extension 2911 from campus phones or 349-2911 from the dormitories or any other phone.

1850.02 RESPONSIBILITIES

1850.03 BASIC FACTS ABOUT HEALTH AND SAFETY

1850.04 DOCUMENTATION, RECORD KEEPING, AND COMPLIANCE

Any and all safety related topics should be documented to include the topic, items discussed, personnel participating and date. Human Resources/Equal Opportunity will maintain personnel files pertaining to regulated and job related courses.
Supervisors in each department will conduct safety meetings. Governmental and other safety topics will be scheduled and conducted by the Fire/Safety Office.

Record Keeping

Records will be maintained for the duration of employment and/or up to 30 years after employment. The Office of Human Resources and Equal Opportunity will assist in determining which documents need to be maintained.

All faculty/staff must comply with all state and federal health and safety laws, regulations and guidelines, and with Coastal Carolina University health and safety polices and procedures.

1850.05 ADMINISTRATIVE RESPONSIBILITY

1850.0501 Administration

Relating to Health and Safety standard operating procedures, the main function of the Department of Public Safety (Telephone No: 349-2930) is to assist all employees of the University--faculty, staff, and students--in providing safe and healthy conditions for work, research, and study. The Division of Public Safety alone cannot make Coastal Carolina University a safe place. Safety begins in the workplace--in the labs, offices, shops, classrooms, and dormitories where we work and live. Therefore, it is the responsibility of every employee and student at Coastal Carolina University to use common sense and to look out for his or her health and safety and the health and safety of others. Supervisors especially, both by law and by University policy, have a clear responsibility for the health and safety of those employees or students whose work or study they direct.

Health and safety programs deal with risk. While there is no such thing as “zero risk,” the University's health and safety programs are designed to minimize unreasonable risks through sound, common sense safety practices. Federal, state, and local laws, regulations, and standards have been promulgated to protect the health and safety of workers, students and, in the case of environmental laws, the populace at large. Part of the responsibility of Public Safety is to help schools, departments, and individuals at the University comply with those laws. Public Safety keeps abreast of such laws and translates them into health and safety practices and programs which fit the
unique requirements of Coastal Carolina University’s teaching, research and public service missions.

This Manual Section describes other specific kinds of help which Public Safety offers. The highest priority of Public Safety is responsiveness to the needs of faculty, students and staff as they implement good health and safety practices in the workplace!

1850.0502 Emergency Response to Hazardous Materials

The Emergency Response Team responds to incidents involving hazardous materials releases at Coastal Carolina University. Any employee or student should report a release that is health threatening, by telephoning Extension 2911 from Coastal Carolina University telephones or by telephoning 349-2911 from non University telephones.

1850.0503 Emergency Telephone Numbers

Coastal Carolina University requires that the emergency telephone numbers located below, be posted on all Health and Safety Bulletin Boards and be visible at all University telephones.

Notify University Police concerning any major emergency and provide the following:

Type of emergency (i.e., Persons injured, fire, chemical spill, assault, etc.)
Location of the emergency
Your Name
Telephone number where you are calling from
Stay on the line until the operator receives all of the information.

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Campus Emergency Telephone Number</td>
<td>349-2911</td>
</tr>
<tr>
<td>Local EMS, Fire Department</td>
<td>9-911</td>
</tr>
<tr>
<td>Building and Maintenance Department</td>
<td>349-2153</td>
</tr>
<tr>
<td>Campus Fire and Safety Officer</td>
<td>349-2930 or 349-2911</td>
</tr>
</tbody>
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If an outside service has been contacted for assistance, the caller must telephone the campus emergency number so that assistance can be given to the arriving emergency crews.
1850.0504 Types of Emergencies

Emergency An unforeseen event that calls for immediate action to protect individuals, the environment, or property.

Health Threatening Emergency An emergency in which there is a clear potential for serious injury to a person if immediate action is not taken. (If in doubt, consider the emergency health-threatening.)

Non-Health Threatening Emergency An emergency in which there is not a clear potential for serious injury to any person.

1850.0505 Non Emergency Response

If there is a release in a laboratory that is not health-threatening, telephone 349-2930 during working hours or 347-2177 during off-hours.

1850.06 LABORATORY SAFETY AND ENVIRONMENTAL PROGRAMS

The Laboratory Safety and Environmental Programs are responsible for a variety of hazardous materials safety issues and compliance matters at Coastal Carolina University. Included are:

- Support of laboratory and chemical safety groups in environmental compliance and reporting, with particular emphasis on air and water quality.

- Support of laboratory Chemical Hygiene Plans.

- Review of campus-wide environmental compliance.

Exhibit Number 1850.06-1 is a General Laboratory Inspection Form;

The telephone number for assistance with these programs is 349-2930.

1850.07 HAZARDOUS MATERIALS AND CHEMICAL INVENTORIES

Revised 7/1/99
Assistance is available by providing the following:

- Manages regulatory compliance programs for chemical storage and use.
- Schedules county health inspections and accompanies inspectors.
- Assists laboratories and shops in following through on complaints and citations.
- Controls chemical hazards information management system (material safety data sheets and life safety boxes).
- Fills Life Safety boxes with hazardous materials inventories.
- Maintains campus-wide hazardous materials inventory databases with information provided by laboratories and shops.
- Assists with design and operation of local hazardous materials databases.
- Assists with hazardous materials inventories and hazardous materials management plans.
- Answers questions regarding hazardous materials storage, classification, and compatibility and regarding materials safety data sheets.
- Maintains master set of material safety data sheets for Law Enforcement & Safety.
- Provides material safety data sheets upon request.

The telephone number for assistance with these programs is 349-2930.

1850.08  ENVIRONMENTAL PROGRAMS

Responsibilities relating to these programs include:

- Management of Industrial Wastewater Discharge Permit and National Pollution Discharge
Elimination System Permit for storm water runoff.

- Responsibility for environmental concerns regarding soil and groundwater contamination.
- Assures compliance with drinking water quality guidelines.
- Coordinates stationary source air quality management.

1850.09 BIO SAFETY

The Office of Public Safety is responsible for liaison for Laboratory Animal Care and the Administrative Panel on Radiological Safety for issues related to bio safety. These programs also educate students, faculty and staff in the proper handling and management of infectious agents and recombinant DNA. Other functions include:

- Inspects facilities and reviews plans for conformance to bio safety level 1, 2, and 3 standards.
- Develops emergency plans dealing with accidental spills and personnel contamination for investigating recombinant DNA research accidents.
- Publishes and disseminates the Bio Safety Manual.

The telephone number for assistance with these programs is 349-2930.

1850.10 SAFETY ENGINEERING

The Safety Engineer is responsible for the safety of buildings at Coastal Carolina University. All reports of unsafe conditions should be directed to 349-2930. In addition, the Safety Engineer investigates accidents, makes recommendations for corrective actions, and reviews plans for new construction projects and building renovations.

1850.11 INDUSTRIAL HYGIENE

The Industrial Hygiene Program evaluates hazards in the work environment including chemical

Revised 7/1/99
hazards, physical hazards, noise, air quality, and ergonomically-related problems and then prescribes methods to eliminate, control, or reduce such hazards. The Industrial Hygiene Program also administers Coastal's medical surveillance program.

The telephone number for assistance with these programs is 349-2930.

1850.12 FIRE SAFETY

The Fire Safety Program is responsible for planning and administering the University's fire prevention and life safety inspection programs. This includes reviewing all new building construction and renovations to ensure compliance with University fire protection standards and applicable state, local, and national fire and life safety standards. In addition, this function is responsible for investigating the causes of fires, explosions, chemical hazards, accidents, and related emergencies. Based on the investigations, personnel of this function recommend changes to effect better safety standards and to reduce recurrence of such accidents.

The telephone number for assistance with these programs is 349-2930.

1850.13 CHEMICAL WASTE

The Public Safety Chemical Waste Program develops, implements, and monitors University policies and programs for managing chemical wastes in accordance with applicable local, state, and federal regulations. Specific areas of concern include source reduction (programs or actions which may cause a net reduction in the generated hazardous waste), waste minimization (including treatment/reduction and recycling of waste chemicals already generated), and chemical waste disposal.

The Chemical Waste Technicians collect a list of waste chemicals from points of generation and transport the chemicals to a storage area. The technicians also provide procedures and guidelines and explain the specific requirements of segregation, labeling, and storage.

The telephone number for assistance with these programs is 349-2930.

1850.14 WASTE MINIMIZATION AND REDUCTION
These services translate into savings in avoided purchase/disposal costs, procurement, and taxes.

NOTE: Present permits do not allow for any in-lab treatment. These programs are in compliance with federal and state regulations.

1850.15 COMMUNICATIONS AND TRAINING

The Communications and Training Program publishes and distributes the Coastal Carolina University Safety Manual and other health and safety publications. The program also assists departments and schools with their health and safety training needs by disseminating training materials, organizing safety seminars and videos, and bringing in outside trainers.

The telephone number for assistance with these programs is 349-2930.

1850.16 HEALTH PHYSICS

The Health Physics Program is responsible for safety involving: ionizing radiation, lasers, and ultraviolet, microwave, and magnetic fields at Coastal Carolina University. Included in its functions are the following:

- Distributes all documentation related to radioactive material and radiation-producing machine authorizations/Controlled Radiation Authorizations (CRAs).
- Coordinates radiation safety training for unsealed radioisotope research project participant.

The telephone number for assistance with these programs is 349-2930.

1850.1601 Dosimetry/Radiation/Chemical Badges

Functions included are:

- Ordering, distributing, and collecting dosimeters and maintaining records of exposures.
The telephone number for assistance with these programs is 349-2930.

1850.1602 Radioactive Waste

Included in the responsibilities of this program are:

- Manages the radioactive waste program.
- Collects and processes radioactive waste from laboratories at Coastal Carolina University.
- Prepares and decontaminates rooms.

1853 GENERAL FIRE INFORMATION

Coastal Carolina University requires that employees that work on campus know the proper procedure to report an emergency and the location of fire extinguishers and fire alarm systems.

Persons who see a fire should sound the alarm system immediately and then attempt to extinguish the fire, if it can be done safely. Employees in hazardous areas should know the location of safety showers and fire blankets in the event of an emergency.

1853.01 TYPE OF EXTINGUISHERS

A. In general, dry chemical extinguishers (ABC), are common on Coastal Carolina University’s campus. ABC fire extinguishers are tri-class type which cover Class A, B, C type fires. Metal fires require a special type of extinguisher. If one may be required, contact Public Safety at Ext. 2930.
B. The responsibility of the supervisor is to ensure that all personnel are instructed in all emergency procedures and inform them of all hazards associated with their work area. Contact the Public Safety Office at Ext. 2930 if there are any questions.

C. The responsibility of every employee is to become familiar with campus emergency procedures, minimize fire hazards, and notify Public Safety of any potential fire hazards.

D. The Office of Public Safety is responsible for:
   1. Minimizing all fire risks on campus.
   2. Providing periodical inspections of all campus buildings
   3. Approving all modifications in buildings.
   4. Providing training to employees on the proper use of fire extinguishers or other types of fire protection equipment.
   5. Evaluating and approving all operational procedures involving hazardous agents and/or operations.

1853.02 EMERGENCY EVACUATION DRILLS

Emergency Evacuation Drills (sometimes referred to as fire drills) are conducted on a periodic basis at all University facilities. The purposes of these drills are to ensure an orderly and controlled building evacuation through practice, to determine the time required to complete a full building evacuation and to analyze the evacuation procedures in order to identify and address any problems.

Participation in these drills is mandatory. However, if special circumstances require your presence in the building during the drill, or if for physical reasons you cannot comply with the evacuation requirements, the department head can notify the Health and Safety Officer at 349-2930 to make special arrangements.

Although this exercise may be seen as an inconvenience, the Department of Public Safety believes the process to be an important part of emergency planning as well as providing for the well being of occupants of buildings during an actual fire emergency. Cooperation and understanding of everyone are essential.

A. Drill Procedures

When the building alarm sounds the responsibilities of each occupant are:
COASTAL CAROLINA UNIVERSITY
POLICIES & PROCEDURES MANUAL — PUBLIC SAFETY

1. Shut down any experiments, procedures, etc., that should not be left unattended. Extinguish any open flames and shut off any noxious or flammable gas supply valves.

2. Secure any valuables. Purses or wallets should be taken with the occupant when he or she leaves. Close all office or laboratory doors.

3. Leave the building via the nearest available exit as soon as possible. DO NOT ATTEMPT TO USE THE ELEVATORS, they will not work while the alarm is active.

4. Stand clear of the building by at least 50 ft.

5. DO NOT reenter the building until advised by Public Safety officers.

B. Fires and Fire Alarms

1. Report all incidents immediately to the University police and sound the building fire alarm.

2. Attempt to fight a fire ONLY if you know proper techniques and you can do so safely. Never fight a fire alone.

3. As a general rule, smoke first accumulates in a room at the ceiling. Keep low to avoid it.

4. Check all doors by touch prior to opening. If warm, do not open; there may be a fire on the other side. Close any interior doors to prevent the spread of fire and smoke.

5. DO NOT ATTEMPT to use elevators. Most are wired to automatically return to the main floor and stay there during a fire situation.

6. Report hazards (i.e., chemical, high voltage lines, structure damage, etc.) to responding emergency personnel.

Revised 7/1/99
7. Remember sounding of a building fire alarm constitutes an order to leave, even if you personally believe the alarm to be false. Violation of this policy could lead to an arrest.

1854 ASBESTOS

Asbestos is the name of a group of minerals that occur naturally in the environment. Asbestos deposits can be found throughout the world and it is still mined in Australia, Canada, South Africa and the former Soviet Union. It differs from other minerals in its crystal development, which are long, thin fibers. These fibers are very strong and resistant to heat and chemicals. For these reasons, asbestos was added to many older building materials including floor tiles, ceiling tiles, insulation on pipes and ducts, acoustical and decorative coatings, and roofing materials. These types of building materials are presumed to contain asbestos if installed before 1980, unless testing has proven otherwise.

When left intact and undisturbed, these materials do not pose a health risk to building occupants. There is a potential for exposure only when the material becomes damaged to the extent that asbestos fibers become airborne and are inhaled. Asbestos is more likely to release fibers when it is friable. The term “friable” means the material can be easily crumbled. If powdered or friable forms of asbestos are disturbed and become airborne, an inhalation hazard may result. In non-friable materials like floor tile, ceiling tiles, laboratory cabinet tops, and caulks, the asbestos fibers are tightly bound in a matrix which prevents the release of fibers to the environment unless the material is abraded, sanded or sawed.

If exposed to asbestos, several factors may influence whether harmful health effects will occur. These factors include the dose (how much), the duration (how long), and whether or not you smoke. Generally, adverse health effects from asbestos are the result of long-term exposure to high concentration of airborne fibers. According to the Environmental Protection Agency (EPA), airborne asbestos levels in buildings are typically very much lower than those identified in industrial work places where asbestos health effects have been observed.

When intact and undisturbed, asbestos building materials do not pose a health risk for building occupants. Damaged asbestos containing materials should be reported to Physical Plant, or to Public Safety, telephone number 349-2930. Specially trained personnel are available to visit the area, determine if a suspect material contains asbestos, and to perform a hazard assessment. To avoid
asbestos exposure, never attempt to handle damaged asbestos. Coastal Carolina University provides asbestos management and abatement services. All work involving removal will be performed by licensed and certified workers in accordance with Federal, State and local OSHA and EPA regulations. They will conduct repair, maintenance or cleanup of asbestos containing material. Adherence to applicable regulations is important to assure protection of workers, building occupants and the environment.

It is not necessary to remove all asbestos containing materials from a building to assure a “safe workplace.” Rather, EPA recommends a practical approach that protects the health of building occupants. This approach includes locating and identifying asbestos materials in buildings, and proper management of the material.

The following are the summaries of five major facts that EPA has presented in congressional testimony.

**FACT ONE:** Although asbestos is hazardous, human risk of asbestos disease depends upon exposure.

**FACT TWO:** Based on available data from across the nation, prevailing asbestos levels in buildings appear to be very low. Accordingly, the health risk faced by building occupants also appears to be very low.

**FACT THREE:** Removal is often not a building owner’s best course of action to reduce asbestos exposure. In fact, an improper removal can create a dangerous situation where one did not previously exist.

**FACT FOUR:** EPA only requires asbestos removal in order to prevent significant public exposure to asbestos, such as during building renovation or demolition.

**FACT FIVE:** EPA does recommend in-place management whenever asbestos is discovered. Instead of removal, a conscientious in-place management program will usually control fiber releases, particularly when the materials are not significantly damaged and are not likely to be disturbed.

For more information about Public Safety asbestos polices and services, or questions concerning
asbestos in University buildings one should contact the Fire and Safety Officer, telephone number 349-2930.

1855   ENGINEERING CONTROLS

1856   BIOLOGICAL SAFETY

1856.01   PROPER FUME HOOD USE

It is the policy of Coastal Carolina University that work involving hazardous or noxious materials which are toxic, radioactive, possess unpleasant odors, or are volatile or harmful will be conducted within a hood or exhaust system designed to contain and remove hazardous dusts and vapors from the area and protect the worker. The location, use, and maintenance of hoods and exhaust systems will follow OSHA, Coastal Carolina University, and other state-of-the-art health and safety practices.

A. Responsibility

The responsibility for a proper hood/exhaust system program is as follows:

1. Supervisor:
   a. Ensures the proper type, design, construction, and number of hoods are procured, available, and used.
   b. Ensures employees are correctly trained and knowledgeable of the use and conditions requiring the use of hoods.
   c. Requires employee compliance with the University policies.
   d. When necessary, schedules or arranges time for hood use for certain experiments as determined by conditions and the nature of the work.
   e. Requires and reviews all proposed uses of hazardous materials for correct utilization of hoods.
2. Employee:

   a. Ascertain, within reason, the correct functioning of hoods before use.
   
   b. Utilizes hoods according to OSHA regulations and University policy and good safe laboratory practices.
   
   c. Indicates hoods to be used, when pertinent, in handling hazardous materials that require written protocols.
   
   d. Suggests, advises, and assists in the selection of hoods and exhaust systems necessary to conduct his/her work safely.
   
   e. Immediately reports all malfunctioning hoods and initiates a Work Order for repair to be forwarded to Facilities Management.
   
   f. Immediately informs the Fire and Safety Officer and supervisor if hood has inadvertently or inappropriately been used for materials which could leave hazardous residues.

3. Maintenance Supervisor:

   a. Safely, properly, and routinely installs, tests, services, maintains, and repairs hoods and exhaust systems to ensure they are meeting or exceeding manufacturers’ specifications and the needs of the user as determined by the user and the Fire and Safety Officer.
   
   b. Immediately repairs malfunctioning hoods and exhaust systems and arranges for periodic cleaning and replacement of filters.

4. Fire and Safety Officer:

   a. Ensures proper utilization of hood and exhaust systems according to University policy and good health and safety work practices.
b. Quarterly inspects and monitors hood exhaust systems for compliance with requirements.

c. Coordinates with the user and Facilities Management and arranges for the servicing, decontamination, etc. necessitated by a potential hazard, thus requiring special expertise (e.g., improper use of perchloric acid).

B. Use of General Utility Hoods

1. The basic principle is to provide a capture or control face velocity to prevent generated contaminants from escaping.

2. Construction of the hood and support equipment will be from materials as corrosive resistant as required, as determined by the nature of the work for which it is intended.

3. A minimum face velocity of 200 fpm, with the sash open to the indicated height, is required for all University general utility hoods to be used for routine work; higher face velocities may be required for certain high hazard work, radioactive operations and by hoods in poor locations. These areas or conditions will be specified by the Fire and Safety Officer.

4. Are to be used for volatile, hazardous, and odoriferous materials for which special areas (e.g., high hazard rooms, etc.) are not required.

5. The user first determines, to the extent possible, that the hood and its support utilities are functioning adequately and properly.

6. Containers of hazardous materials will be opened and the containers used only in the hoods. Waste and contaminated material will be contained in a closed system (i.e., flask, jar, plastic bag, etc.) before removal from the hood.

7. At no time should hazardous material be permitted to pass into the laboratory air.

8. In the event of a hood system malfunction which lowers or eliminates worker protection, the user will immediately secure and contain all hazardous materials to
minimize exposure and inform Facilities Management and the Fire and Safety Officer. If an emergency situation exists, the area should be immediately evacuated, closed off, and posted.

9. The sash will be lowered to a height which offers maximum protection yet permits safe and efficient completion of the work.

10. Malfunctioning hood utilities (air, gas, vacuum, water) should be reported to the appropriate authorities as soon as noted and a repair work order issued. If the equipment is not required for the experiment, the hood may be used.

11. Immediately upon completion of an experiment, the hood should be cleaned and all wastes, unnecessary equipment, chemicals, etc. be removed.

12. If an experiment or equipment, chemicals, etc. must be kept in the hood longer than eight hours, all hazardous materials will be clearly and accurately labeled.

13. Unlabeled chemicals, unused equipment, materials, etc. are subject to removal and/or disposal.

14. Placement of shelves, equipment, etc. which impede the proper functioning of the hood are forbidden.

15. Hoods are not to be used for storage except for the built-in, properly vented areas of the hood designated for the purpose.

16. When more than one employee is using the same hood, steps must be taken to ensure work is done safely. If crowding or incompatible materials or reactions are to be used or run, time must be scheduled, if necessary, by the supervisor.

17. Hoods must be constructed from materials suitable and approved for use with the agent(s) to be used.

18. Air flows, design, specifications and utilities, and their accessibility must be suitable and approved by the Fire and Safety Officer, Facilities Planning, Facilities
Management, and the user.

19. All duct systems, motors and support equipment, and construction material must meet the needs of the experimenter, OSHA regulations and University requirements and be in accord with nationally-recognized standards.

1857 ERGONOMICS

1857.01 COMPUTER WORKSTATIONS

Individuals who use computers for extended periods of time may experience eye fatigue and pain or discomfort in the hands, wrists, arms, shoulders, neck or back. This is usually caused by poor work habits, poor workstation design or improper use of workstation components. In most cases, corrective measures are relatively simple and inexpensive.

1857.0101 Scope and Application

While the guidelines described in this program can benefit anyone who uses a computer, they are primarily intended for departments with individuals using desktop computers. Most of the guidelines will not apply to laptop computers, which are designed only for short-term use and cannot be sufficiently adjusted.

1857.0102 Program Description

A. Workstation Assessment

A survey of actual computer use will help supervisors determine which workstations and individuals should be targeted for further evaluation. Highest priority should be given to those individuals who experience symptoms and spend more than 2 hours per day at a computer. The workstation evaluation should be completed with the individual at the workstation following the ergonomic guidelines below.

B. Ergonomic Guidelines

The following guidelines are intended to help supervisors understand and reduce health risks
associated with computer workstations.

1. Since no two bodies are identical, different styles, models, and sizes of furniture and accessories may be needed. Since a wide variety of products are available to suit individual and departmental needs, no specific product recommendations are made here. The University Purchasing Office will provide the latest product information. The best results are usually achieved when the individual is involved in the selection process.

2. The work surface should be of sufficient area to accommodate the computer and all associated materials. There should be adequate space beneath this surface for the operator's legs and feet.

3. The keyboard and mouse should be directly in front of the operator at a height that favors a neutral posture (23 to 28 inches). When placed at standard desk height of 30 inches, they are too high for most people. Raising the chair solves this problem for some individuals. An adjustable keyboard holder with mouse deck is usually the best solution. The objective is a posture with upper arms relaxed and wrists straight in line with the forearm. Wrist rests may also help and are built into most keyboard holders. For some people alternative keyboard and mouse designs may need to be considered.

4. The monitor should be positioned at a distance of approximately arm's length and directly in front of or slightly to one side of the operator. The top of the screen should be no higher than eye level. Relocating the computer can easily lower a monitor placed on top of the computer. Stackable monitor blocks can be used to achieve the desired height. Adjustable monitor arms enable easy height adjustment for workstations with multiple users.

5. A well-designed chair will favorably affect posture and circulation, the amount of effort required to maintain good posture, and the amount of strain on the back. An adjustable seat back is best for support in the lumbar region. The user should be able to adjust seat height and seat pan angle from a seated position. Armrests are optional.
6. Additional accessories can improve operator comfort. Document holders can minimize eye, neck and shoulder strain by positioning the document close to the monitor. A footrest should be used where the feet cannot be placed firmly on the floor. Task lamps will illuminate source documents when room lighting is reduced.

7. Glare should be eliminated through methods that include reduction of room lighting; shielding windows with shades, curtains or blinds; positioning the terminal at a right angle to windows; and tilting the monitor to avoid reflection from overhead lighting. Glare screens are not normally necessary.

1857.0103 Roles and Responsibilities

A. Department

· Survey the workplace to identify individuals at risk.

· Plan ahead for workstation improvement expense in annual budgets.

· Plan for all workstation components before purchasing new or replacement computers.

· Order needed workstation components from University Purchasing Office.

B. Supervisor

· Coach computer operators on workstation adjustment and proper posture.

· Arrange workloads to provide for alternative work breaks.

· Be aware of and watch for signs and symptoms of injury.

· Refer employees with injury symptoms to Human Resources.

· Refer all students with injury symptoms to the health Nurse.
• Request help from referral sources as needed.

C. Fire and Safety Officer

• Will evaluate workstation ergonomics upon request.

• Provide group training upon request.

D. Individual

• Adjust your workstation and components to maintain a neutral posture.

• Use all accessories as recommended by the manufacturer.

• Report all workstation and physical problems to supervisor promptly.

• Provide specific product information and recommendations, when available.

1858 COMPRESSED GAS CYLINDERS

1859 ELECTRICAL HAZARDS

1860 HURRICANE SAFETY

1861 HEAT STRESS

1862 LOCK OUT/TAG OUT

Safe practices require that lock out/tag out procedures be followed when working on electrical and mechanical equipment. Lock out devices and tags are intended to protect the employees who may be working on the systems being shut down. They are not to be used to discourage tampering, to prevent unauthorized operation, or for other purposes.

Each employee who may be required to work on electrical/mechanical equipment should be given a copy of the policy and be asked to sign a copy for his or her file to record that the policy has been
read and understood.

A. Disconnect Electrical Power

When a circuit must be opened for repairs, alterations, or examinations, immediately lock it, block it open, or remove all fuses.

Attach “DANGER - DO NOT OPERATE” tags to all open devices. Sign and date the tags, stating the reason for the disconnect.

Put your own lock on the open disconnect. Use multiple locking devices where necessary.

When it is not possible to install a lock, secure the circuit by another practical and safe means and attach a completed tag.

Switches that open only the control circuit (e.g., “lock stop stations”) are not positive disconnects and will not be used for lock out protection.

Do not close an open “disconnect” unless absolutely certain that it is safe to do so, even if no tag has been attached.

Immediately report to your supervisor any equipment that does not have proper and safe disconnecting means. (The plug and receptacle of cord-connected equipment constitute adequate disconnecting means.)

Do not remove another person’s lock. See your supervisor.

Contractors will furnish and use their own locks.

B. Secure Mechanical Components

Bleed down steam, air, or hydraulic cylinders.

Block valves with chain and lock. Attach “DANGER” tag, sign it, date it, and state the reason for the isolation.
Block gears, dies, and other mechanisms.

Release coiled springs, spring-loaded devices, and securing cams.

Put blocks under equipment which might descend, slide, or fall.

Put blocks or stands under raised equipment to protect against failure of hoists, jacks, or elevating equipment.

1863 HEARING CONSERVATION PROGRAM

It has been shown that an eight-hour time weighted average exposure to eighty-five (85) decibels or greater can have unfavorable effects to hearing. The Hearing Conservation Program has been designed to reduce hearing loss at Coastal Carolina University. This program consists of:

• Hearing Protection
• Employee Training and Education
• Annual Audiogram
• Noise Monitoring
• Record keeping

A. Definitions

1. Audiogram

An audiometric test showing an individual’s hearing ability at different frequencies. This test shows if the individual has lost some hearing due to the work environment over a given period of time. An industrial hygienist will evaluate the results and make appropriate recommendations.

2. Audiologist

A professional, specializing in the study and rehabilitation of hearing, who is certified and licensed by a state board of examiners.
3. Decibel (dB)

Unit of measurement of sound volume.

4. Program Participants

Employees who experience noise levels equal to or exceeding an eight hour averaged exposure to 85 dB, and employees who perform tasks similar to those of the mentioned employees. When employees’ noise exposure levels equal an eight hour averaged exposure to 80 dB, they should receive annual audiometric examinations, personal protective equipment, and periodic training.

5. Personal Protective Equipment

Ear muffs and ear plugs approved by ANSI, and the Fire and Safety Office.

B. Supervisors Responsibility

Personal hearing protectors (approved ear muffs and ear plugs) will be provided at no cost to the employee. Managers and supervisors must give their employees a choice of at least two different protectors. The supervisor must also provide proper fitting instructions, supervise the correct use and care of all hearing protectors. Supervisors and managers can call the Public Safety Office for assistance in choosing proper hearing protection and in fit testing employees. The work areas will be posted with signs to use hearing protection in specific areas.

C. Employee Training and Education

Workers who are informed about hearing and its loss are likely to use hearing protection. Prior to working in a noisy area, employees should be trained in the basics of this Hearing Conservation Program. Requests for initial and annual training should be made to the Human Resources Office. The Public Safety Office will arrange to teach employees the effects of noise, the advantages and disadvantages of hearing protectors, and the purpose and process of audiometric testing.
D. Annual Audiogram

An audiologist will perform the audiometric test, and this is at no cost to the participating employees. The employee’s department is responsible for scheduling the initial exam (before the employee’s job assignment) and the annual exam. Questions regarding audiometric testing should be directed to the Human Resources Office or the Public Safety Office. Notification must be given to exposed employees that they must avoid loud noise for 14 hours prior to testing. This means they must not mow their lawns, discharge firearms, or perform other noisy activities during the period, unless they wear ear plugs or muffs.

E. Noise Monitoring

Monitoring will be performed by the Fire and Safety Officer, who will determine the amount of noise to which an employee is exposed. Management is required to notify employees exposed to an eight-hour average of 85 dB. Monitoring will be repeated whenever a change in protection, process, equipment, or controls increases noise exposures. However, the department must notify the Public Safety Office whenever that change occurs. An evaluation of the strategies for reducing employee exposure and the effectiveness of this program will be completed on an annual basis.

F. Record keeping

As required by law, supervisors and the Fire and Safety Office will maintain an accurate record of all employees’ noise level testing results for two years and audiometric results until workers leave the University’s employment. The audiometric test record must include:

- Name and job classification of the employee
- Date of the audiogram
- Examiner’s name
- Date of the last calibration of the audiometer
- Employee’s most recent noise monitoring test

Additional questions and comments should be directed to the Public Safety Office at Ext.
A. Application

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, will be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation, or physical contact.

B. Employee-Owned Equipment

Where employees provide their own protective equipment, the employer will be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

C. Design

All personal protective equipment will be of safe design and construction for the work to be performed.

D. Hazard Assessment and Equipment Selection

1. The employer will assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer will:

   a. Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;

   b. Communicate selection decisions to each affected employee; and
c. Select PPE that properly fits each affected employee.

2. The employer will verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

E. Defective and Damaged Equipment

Defective and damaged personal protective equipment will not be used.

F. Training

1. The employer will provide training to each employee who is required by this section to use PPE. Each such employee will be trained to know at least the following:

   a. When PPE is necessary;

   b. What PPE is necessary;

   c. How to properly don, doff, adjust, and wear PPE;

   d. The limitations of the PPE; and,

   e. The proper care, maintenance, useful life, and disposal of the PPE.

2. Each affected employee will demonstrate an understanding of the training specified in paragraph F. 1 of this section, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

3. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by
paragraph F.2 of this section, the employer will retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

a. Changes in the workplace render previous training obsolete; or

b. Changes in the types of PPE to be used render previous training obsolete; or

c. Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

4. The employer will verify that each affected employee has received and understood the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification.

1864.01 EYE AND FACE PROTECTION

A. General Requirements

1. The employer will ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

2. The employer will ensure that each affected employee uses eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g., clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

3. The employer will ensure that each affected employee who wears prescription lenses which engaged in operations that involve eye hazards wears eye protection that incorporates the prescription in its design, or wears eye protection that can be

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worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

4. Eye and face PPE will be distinctly marked to facilitate identification of the manufacturer.

5. The employer will ensure that each affected employee uses equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation. The following is a listing of appropriate shade numbers for various operations.

B. Criteria for Protective Eye and Face Devices


2. Eye and face protective devices purchased before July 5, 1994, will comply with the ANSI “USA standard for Occupational and Educational Eye and Face Protection,” Z87.1-1968, which is incorporated by reference as specified in Sec. 1910.6, or will be demonstrated by the employer to be equally effective.

1864.02 FOOT PROTECTION

A. General Requirements

The employer will ensure that each affected employee uses protective footwear when working in areas where there is a danger of food injuries due to falling or rolling objects, or objects piercing the sole, and where such employee’s feet are exposed to electrical hazards.

B. Criteria for Protective Footwear

incorporated by reference as specified in Sec. 1910.6, or will be demonstrated by the employer to be equally effective.

2. Protective footwear purchased before July 5, 1994, will comply with the ANSI standard “USA Standard for Men’s Safety-Toe Footwear,” Z41.1-1967, which is incorporated by reference as specified in Sec. 1910.6, or will be demonstrated by the employer to be equally effective.

1864.03 HAND PROTECTION

A. General Requirements

Employers will select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

B. Selection

Employers will base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

1864.04 RESPIRATORY PROTECTION

A. Permissible Practice

1. In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective will be to prevent atmospheric contamination. This will be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they re being instituted, appropriate respirators will be used pursuant to the following requirements.
2. Respirators will be provided by the employer when such equipment is necessary to protect the health of the employee. The employer will provide the respirators which are applicable and suitable for the purpose intended. The employer will be responsible for the establishment and maintenance of a respiratory protective program which will include the requirements outlined in paragraph (b) of this section.

3. The employee will use the provided respiratory protection in accordance with instructions and training received.

B. Requirements for a Minimal Acceptable Program

1. Written standard operating procedures governing the selection and use of respirators will be established.

2. Respirators will be selected on the basis of hazards to which the worker is exposed.

3. The user will be instructed and trained in the proper use of respirators and their limitations.

4. Respirators will be regularly cleaned and disinfected. Those used by more than one worker will be thoroughly cleaned and disinfected after each use.

5. Respirators will be stored in a convenient, clean, and sanitary location.

6. Respirators used routinely will be inspected during cleaning. Worn or deteriorated parts will be replaced. Respirators for emergency use such as self-contained devices will be thoroughly inspected at least once a month and after each use.

7. Appropriate surveillance of work area conditions and degree of employee exposure or stress will be maintained.
8. There will be regular inspection and evaluation to determine the continued effectiveness of the program.

9. Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician will determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance, annually).

10. Respirators will be selected from among those jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health under the provisions of 30 CFR part 11.

C. Selection of Respirators


D. Air Quality

1. Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration will be of high purity. Oxygen will meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air will meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966. Compressed oxygen will not be used in supplied-air respirators or in an open circuit, self-contained breathing apparatus that has previously used compressed air. Oxygen must never be used with air line respirators.

2. Breathing air may be supplied to respirators from cylinders or air compressors.

   a. Cylinders will be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178).

   b. The compressor for supplying air will be equipped with necessary safety
and standby devices. A breathing air-type compressor will be used. Compressors will be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in the event of compressor failure, and alarms to indicate compressor failure and overheating will be installed in the system. If an oil-lubricated compressor is used, it will have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor will be frequently tested for carbon monoxide to insure that it meets the specifications in paragraph D.1 of this section.

3. Air line couplings will be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with nonrespirable gases or oxygen.


E. Use of Respirators

1. Standard procedures will be developed for respirator use. These should include all information and guidance necessary for their proper selection, use, and care. Possible emergency and routine uses of respirators should be anticipated and planned for.

2. The correct respirator will be specified for each job. The respirator type is usually specified in the work procedures by a qualified individual supervising the respiratory protective program. The individual issuing them will be adequately instructed to insure that the correct respirator is issued.

3. Written procedures will be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies.
Personnel will be familiar with these procedures and the available respirators.

a. In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional person will be present. Communications (visual, voice, or signal line) will be maintained between both, or all, individuals present. Planning will be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of an emergency.

b. When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby persons must be present with suitable rescue equipment.

c. Persons using air line respirators in atmospheres immediately hazardous to life or health will be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atmospheres will be used. A standby person or persons with suitable self-contained breathing apparatus will be at the nearest fresh air base for an emergency rescue.

4. Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections will be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned, and maintained.

5. For safe use of any respirator, it is essential that the user be properly instructed in its selection, use, and maintenance. Both supervisors and workers will be so instructed by competent persons. Training will provide the employee an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.

a. Every respirator wearer will receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to
adjust it, and how to determine if it fits properly. Respirators will not be
worn when conditions prevent a good face seal. Such conditions may be a
growth of a beard, sideburns, a skull cap that projects under the face
piece, or temple pieces on glasses. Also, the absence of one or both
dentures can seriously affect the fit of a face piece. The worker’s diligence
in observing these factors will be evaluated by periodic check. To assure
proper protection, the face piece fit will be checked by the wearer each
time he puts on the respirator. This may be done by following the
manufacturer’s face piece fitting instructions.

b. Providing respiratory protection for individuals wearing corrective glasses is
a serious problem. A proper seal cannot be established if the temple bars
of eye glasses extend through the sealing edge of the full face piece.
Wearing of contact lenses in contaminated atmospheres with a respirator
will not be allowed. Systems have been developed for mounting corrective
lenses inside full face pieces. When a workman must wear corrective
lenses as part of the face piece, the face piece and lenses will be fitted by
qualified individuals to provide good vision, comfort, and a gas-tight seal.

c. If corrective spectacles or goggles are required, they will be worn so as not
to affect the fit of the face piece. Proper selection of equipment will
minimize or avoid this problem.

F. Maintenance and Care of Respirators

1. A program for maintenance and care of respirators will be adjusted to the type of
plant, working conditions, and hazards involved, and will include the following basic
services:

a. Inspection for defects (including a leak check),

b. Cleaning and disinfecting,

c. Repair,

d. Storage.

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Equipment will be properly maintained to retain its original effectiveness.

2. Inspection

a. All respirators will be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use will be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

b. Self-contained breathing apparatus will be inspected monthly. Air and oxygen cylinders will be fully charged according to the manufacturer's instructions. It will be determined that the regulator and warning devices function properly.

c. Respirator inspection will include a check of the tightness of connections and the condition of the face piece, headbands, valves, connecting tube, and canisters. Rubber or elastomer parts will be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

d. A record will be kept of inspection dates and findings for respirators maintained for emergency use.

3. Routinely used respirators will be collected, cleaned, and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Respirators maintained for emergency use will be cleaned and disinfected after each use.

4. Replacement or repairs will be done by experienced persons with parts designed for the respirator. No attempt will be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators will be returned to the manufacturer or to a trained technician for adjustment or repair.

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5. Storage

a. After inspection, cleaning, and necessary repair, respirators will be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

b. Respirators should be packed or stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

c. Instructions for proper storage of emergency respirators, such as gas mask and self-contained breathing apparatus, are found in “use and care” instructions usually mounted inside the carrying case lid.

G. Identification of Gas Mask Canisters

1. The primary means of identifying a gas mask canister will be by means of properly worded labels. The secondary means of identifying a gas mask canister will be by a color code.

2. All who issue or use gas masks falling within the scope of this section will see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

3. On each canister will appear in bold letters the following:

a. Canister for (Name for atmospheric contaminant)

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or

Type N Gas Mask Canister

b. In addition, essentially the following wording will appear beneath the appropriate phrase on the canister label:

“For respiratory protection in atmospheres containing not more than _____ percent by volume of (Name of atmospheric contaminant).

4. Canisters having a special high-efficiency filter for protection against radio nuclides and other highly toxic particulates will be labeled with a statement of the type and degree of protection afforded by the filter. The label will be affixed to the neck end of, or to the gray stripe which is around and near the top of, the canister. The degree of protection will be marked as the percent of penetration of the canister by a 0.3-micron-diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

5. Each canister will have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since gas mask canisters are only designed to neutralize or remove contaminants from the air.

6. Each gas mask canister will be painted a distinctive color or combination of colors indicated in the following table. All colors used will be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used will offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

7. CANISTER COLORS

<table>
<thead>
<tr>
<th>Atmospheric Contaminants to</th>
<th>Colors Assigned(*)</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Atmospheric Contaminant</th>
<th>Canister Color Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid gases</td>
<td>White</td>
</tr>
<tr>
<td>Hydrocyanic acid gas</td>
<td>White with ½-inch green stripe completely around the canister near the bottom</td>
</tr>
<tr>
<td>Chlorine gas</td>
<td>White with ½-inch yellow stripe completely around the canister near the bottom</td>
</tr>
<tr>
<td>Organic vapors</td>
<td>Black</td>
</tr>
<tr>
<td>Ammonia gas</td>
<td>Green</td>
</tr>
<tr>
<td>Acid gases and ammonia gases</td>
<td>Green with ½-inch white stripe completely around the canister near the bottom</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>Blue</td>
</tr>
<tr>
<td>Acid gases and organic vapors</td>
<td>Yellow</td>
</tr>
<tr>
<td>Hydrocyanic acid gas and chloropicrin vapor</td>
<td>Yellow with ½-inch blue stripe completely around the canister near the bottom</td>
</tr>
<tr>
<td>Acid gases, organic vapors, and ammonia gases</td>
<td>Brown</td>
</tr>
<tr>
<td>Radioactive materials, excepting tritium and noble gases</td>
<td>Purple (Magenta)</td>
</tr>
<tr>
<td>Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors</td>
<td>Canister color for contaminant, as designated above, with ½-inch gray stripe completely around the canister near the top</td>
</tr>
<tr>
<td>All of the above atmospheric contaminants</td>
<td>Red with ½-inch gray stripe completely around the canister near the top</td>
</tr>
</tbody>
</table>
Footnote (*): Gray shall not be assigned as a main color for a canister designed to remove acids or vapors.

NOTE: Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

1864.05 NON-MANDATORY COMPLIANCE GUIDELINES FOR HAZARD ASSESSMENT AND PERSONAL EQUIPMENT SELECTION

This is intended to provide compliance assistance for employers and employees in implementing requirements for a hazard assessment and the selection of personal protective equipment.

A. Controlling Hazards

Personal Protective Equipment (PPE) devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices.

B. Assessment and Selection

It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational or educational operation or process, and to match the protective devices to the particular hazard. It should be the responsibility of the safety officer to exercise common sense and appropriate expertise to accomplish these tasks.

C. Assessment Guidelines

In order to assess the need for Personal Protective Equipment the following steps should be taken:

1. Survey
Conduct a walkthrough survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

a. Impact

b. Penetration

c. Compression (roll-over)

d. Chemical

e. Heat

f. Harmful dust

g. Light (optical) radiation

2. Sources

During the walkthrough survey the Safety Officer should observe:

a. Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects;

b. Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.;

c. Types of chemical exposures;

d. Sources of harmful dust;

e. Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.;
f. Sources of falling objects or potential for dropping objects;

g. Sources of sharp objects which might pierce the feet or cut the hands;

h. Sources of rolling or pinching objects which could crush the feet;

i. Layout of workplace and location of co-workers; and

j. Any electrical hazards.

In addition, injury/accident data should be reviewed to help identify problem areas.

3. Organize Data

Following the walkthrough survey, it is necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare for an analysis of the hazards in the environment, to enable proper selection of protective equipment.

4. Analyze Data

Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards (paragraph C.1) should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

D. Selection Guidelines

After completion of the procedures above, the general procedure for selection of protective equipment is to:

1. Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e., splash protection, impact protection, etc.;
2. Compare the hazards associated with the environment, i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment;

3. Select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards; and

4. Fit the user with the protective device and give instructions on care and use of Personal Protective Equipment (PPE). It is very important that end users be made aware of all warning labels for and limitations of their PPE.

E. Fitting the Device

Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely, if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected.

F. Devices with Adjustable Features

Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Particular care should be taken in fitting devices for eye protection against dust and chemical splashes to ensure that the devices are sealed to the face. In addition, proper fitting of helmets is important to ensure that it will not fall off during work operations. In some cases, a chin strap may be necessary to keep the helmet on an employee's head. (Chin straps should break at a reasonably low force, however, so as to prevent a strangulation hazard.) Where manufacturer's instructions are available, they should be followed carefully.

G. Reassessment of Hazards

It is the responsibility of the Safety Officer to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE.
H. Selection Chart Guidelines for Eye and Face Protection

Some occupations (not a complete list) for which eye protection should be routinely considered are: carpenters, electricians, machinists, mechanics and repairers, millwrights, plumbers and pipe fitters, sheet metal workers and tinsmiths, assemblers, sanders, grinding machine operators, lathe and milling machine operators, sawyers, welders, laborers, chemical process operators and handlers, and timber cutting and logging workers. The following charts provide general guidance for the proper selection of eye and face protection to protect against hazards associated with the listed hazard “source” operations.

1. Eye and Face Protection Selection Chart

<table>
<thead>
<tr>
<th>Source Assessment of Hazard</th>
<th>Source</th>
<th>Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPACT - Chipping, grinding, machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting and sanding</td>
<td>Flying fragments, objects, large chips, particles, sand, dirt, etc.</td>
<td>Spectacles with side protection, goggles, face shields. See notes (1), (3), (5), (6), (10). For severe exposure, use face shield</td>
</tr>
<tr>
<td>HEAT - Furnace operations, pouring, casting, dipping, and welding</td>
<td>Hot Sparks</td>
<td>Face shields, goggles, spectacles with side protection. For severe exposure, use face shield. See notes (1), (2), (3).</td>
</tr>
<tr>
<td></td>
<td>Splash from molten metals</td>
<td>Face shields worn over goggles. See notes (1), (2), (3).</td>
</tr>
<tr>
<td>Source</td>
<td>Assessment of Hazard</td>
<td>Protection</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------</td>
<td>------------</td>
</tr>
<tr>
<td>High temperature exposure</td>
<td>Screen face shields, reflective face shields. See notes (1), (2), (3).</td>
<td></td>
</tr>
<tr>
<td>CHEMICALS - Acid and chemicals handling, degreasing, plating</td>
<td>Splash</td>
<td>Goggles, eyecup, and cover types. For severe exposure, use face shield. See notes (3) and (11).</td>
</tr>
<tr>
<td>Irritating mists</td>
<td>Special-purpose goggles</td>
<td></td>
</tr>
<tr>
<td>DUST - Woodworking, buffing, general dusty conditions</td>
<td>Nuisance dust</td>
<td>Goggles, eyecup, and cover types. See note (8).</td>
</tr>
<tr>
<td>LIGHT and/or RADIATION Welding: Electric arc</td>
<td>Optical radiation</td>
<td>Welding helmets or welding shields. Typical shades: 10-14. See notes (9), (12).</td>
</tr>
<tr>
<td>Welding Gas</td>
<td>Optical radiation</td>
<td>Welding goggles or welding face shield. Typical shades: 4-8, cutting 306, brazing 3-4. See note (9).</td>
</tr>
<tr>
<td>Cutting, Torch brazing, Torch soldering</td>
<td>Optical radiation</td>
<td>Spectacles or welding face shield. Typical shades 1.5-3. See</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Source</th>
<th>Assessment of Hazard</th>
<th>Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glare</td>
<td>Poor vision</td>
<td>Spectacles with shaded or special-purpose lenses, as suitable. See notes (9), (10).</td>
</tr>
</tbody>
</table>

Notes to Eye and Face Protection Selection Chart:

(1) Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.

(2) Operations involving heat may also involve light radiation. As required by the standard, protection from both hazards must be provided.

(3) Face shields should only be worn over primary eye protection (spectacles or goggles).

(4) As required by the standard, filter lenses must meet the requirements for shade designations in 1910.133(a) (5). Tinted and shaded lenses are not filter lenses unless they are earmarked or identified as such.

(5) As required by the standard, persons whose vision requires the use of prescription (Rx) lenses must wear either protective devices fitted with prescription (Rx) lenses or protective devices designed to be worn over regular prescription (Rx) eye wear.

(6) Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments may represent an additional hazard to contact lens wearers.

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(7) Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.

(8) Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.

(9) Welding helmets or Face shields should be used only over primary eye protection (spectacles or goggles).

(10) Non-side shield spectacles are available for frontal protection only, but are not acceptable eye protection for the sources and operations listed for “impact.”

(11) Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.

(12) Protection from light radiation is directly related to filter lens density. See note (4). Select the darkest shade that allows task performance.

2. Filter Lenses for Protection Against Radiant Energy

<table>
<thead>
<tr>
<th>Operations</th>
<th>Electrode Size in 1/32 in.</th>
<th>Arc Current</th>
<th>Minimum (*) Protective Shade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shielded metal arc welding</td>
<td>Less than 3</td>
<td>Less than 60</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3-5</td>
<td>60-160</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>5-8</td>
<td>160-250</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>More than 8</td>
<td>250-550</td>
<td>11</td>
</tr>
<tr>
<td>Gas metal arc</td>
<td>Less than 60</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

Revised 7/1/99
<table>
<thead>
<tr>
<th>Operations</th>
<th>Electrode Size in 1/32 in.</th>
<th>Arc Current</th>
<th>Minimum (*) Protective Shade</th>
</tr>
</thead>
<tbody>
<tr>
<td>welding and flux cored arc welding</td>
<td></td>
<td>160-250</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250-550</td>
<td>10</td>
</tr>
<tr>
<td>Gas Tungsten arc welding</td>
<td>Less than 50</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-150</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>150-500</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Air carbon Arc cutting (Light)</td>
<td>Less than 500</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Heavy)</td>
<td>500-1000</td>
<td>11</td>
</tr>
<tr>
<td>Plasma arc welding</td>
<td>Less than 20</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20-100</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100-400</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400-800</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Plasma arc cutting (Light) (***)</td>
<td>Less than 300</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Medium) (***)</td>
<td>300-400</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>(Heavy) (***)</td>
<td>400-800</td>
<td>`10</td>
</tr>
<tr>
<td>Torch brazing</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Torch soldering</td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Revised 7/1/99
3. Filter Lenses for Protection Against Radiant Energy

<table>
<thead>
<tr>
<th>Operations</th>
<th>Plate Thickness (mm.)</th>
<th>Plate Thickness (in.)</th>
<th>Protective Shade Minimum (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Welding (Light)</td>
<td>Under 1/8</td>
<td>Under 3.2</td>
<td>4</td>
</tr>
<tr>
<td>Gas Welding (Medium)</td>
<td>1/8 to ½</td>
<td>3.2 to 12.7</td>
<td>5</td>
</tr>
<tr>
<td>Gas Welding (Heavy)</td>
<td>Over ½</td>
<td>Over 12.7</td>
<td>6</td>
</tr>
<tr>
<td>Oxygen Cutting (Light)</td>
<td>Under 1</td>
<td>Under 25</td>
<td>3</td>
</tr>
<tr>
<td>Oxygen Cutting (Medium)</td>
<td>1 to 6</td>
<td>25 to 150</td>
<td>4</td>
</tr>
<tr>
<td>Oxygen Cutting (Heavy)</td>
<td>Over 6</td>
<td>Over 150</td>
<td>5</td>
</tr>
</tbody>
</table>

Footnote(*) As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

Footnote (**) These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workplace.

I. Selection Guidelines for Head Protection

All head protection (helmets) is designed to provide protection from impact and penetration.
hazards caused by falling objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts). Class B helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors (they are proof tested to 20,000 volts). Class C helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

Where falling object hazards are present, helmets must be worn. Some examples include: working below other workers who are using tools and materials which could fall; working around or under conveyor belts which are carrying parts or materials; working below machinery or processes which might cause material or objects to fall; and working on exposed energized conductors. Some examples of occupations for which head protection should be routinely considered are: carpenters, electricians, linemen, mechanics and repairers, plumbers and pipe fitters, assemblers, packers, wrappers, sawyers, welders, laborers, freight handlers, timber cutting and logging, stock handlers, and warehouse laborers.

J. Selection Guidelines for Foot Protection

Safety shoes and boots which meet the ANSI Z41-1991 standard provide both impact and compression protection. Where necessary, safety shoes can be obtained which provide puncture protection. In some work situations, metatarsal protection should be provided, and in other special situations, electrical conductive or insulating safety shoes would be appropriate.

Safety shoes or boots with impact protection would be required for carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped; and, for other activities where objects might fall onto the feet. Safety shoes or boots with compression protection would be required for work activities involving skid trucks (manual material handling carts) around bulk rolls (such as paper rolls) and around heavy pipes, all of which could potentially roll over an employee’s feet. Safety shoes or boots with puncture protection would be required where sharp objects such as nails, wire, tacks, screws, large
staples, scrap metal, etc., could be stepped on by employees causing a foot injury.

Some occupations (not a complete list) for which foot protection should be routinely considered are: shipping and receiving clerks, stock clerks, carpenters, electricians, machinists, mechanics and repairers, plumbers and pipe fitters, structural metal workers, assemblers, drywall installers and lathers, packers, wrappers, craters, punch and stamping press operators, sawyers, welders, laborers, freight handlers, gardeners and groundskeepers, timber cutting and logging workers, stock handlers and warehouse laborers.

K. Selection Guidelines for Hand Protection

Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systemic effects following dermal exposure. OSHA is unaware of any gloves that provide protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many chemicals. Therefore, it is important to select the most appropriate glove for a particular application and to determine how long it can be worn, and whether it can be reused.

It is also important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, cut hazards, flame hazards, etc. These performance characteristics should be assessed by using standard test procedures. Before purchasing gloves, the employer should request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated. Other factors to be considered for glove selection in general include:

1. As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse more expensive types; and,

2. The work activities of the employee should be studied to determine the degree of dexterity required, the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied.

With respect to selection of gloves for protection against chemical hazards:
1. The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects;

2. Generally, any “chemical resistant” glove can be used for dry powders;

3. For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials; and,

4. Employees must be able to remove the gloves in such a manner as to prevent skin contamination.

L. Cleaning and Maintenance

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision.

For the purposes of compliance with 1910.132(a) and (b), PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection. It is also important to ensure that contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

1865 TOOL AND MACHINERY

1866 POWERED INDUSTRIAL TRUCKS

When backing a vehicle, all drivers operating state-owned cars, vans, and trucks are required to:

a. When no passenger is present, circle the vehicle prior to backing.

b. When a passenger is present, station the passenger outside and behind the vehicle to guide the employee while backing the vehicle.
Drivers with passengers who back vehicles without requiring the assistance of a passenger, and passengers who fail to assist the driver in backing situations, are in violation of this policy and are subject to University disciplinary action.

Penalties for the above violations:

a. University disciplinary action.
b. The restriction or loss of their University driving privileges.
c. Required attendance at a defensive driving program.

When outside vendors are backing and are required to cross normal routes of traffic, a spotter will be placed in the road to stop traffic, to prevent unaware drivers of the vehicle backing (i.e., Campus Supply, Maintenance Supply, etc.)

1867 GOLF CART OPERATION AND SAFETY

Coastal Carolina University employees and students should maintain and operate University golf carts in a safe and responsible manner.

The responsibility for proper cart operation procedures lies with the driver, the supervisor, and with the assistance of the Fire and Safety Officer.

Driver’s Supervisor:

a. Ensures that the driver reads and understands this policy.
b. Ensures all Coastal Carolina University drivers under their control operate the golf cart consistent with this policy.

Driver:

a. Reads, understands and conforms to these procedures.

Fire and Safety Officer:

a. Ensures that these procedures are carried out.
b. Assists supervisors and drivers when necessary.

1867.01 OPERATING PROCEDURES
a. Check and ensure brakes are in good working order.
b. When driving, make sure all passengers remain seated and keep arms and legs inside the cart.
c. Ensure that the cart has the capacity to carry the load.
d. Be aware of vehicles and pedestrians at all times.
e. When the driver leaves the golf cart, set the parking brake and remove the key.
f. Golf carts will not be parked in front of doorways, sidewalks, etc., or on any designated walkways.
g. Place the batteries on charge at the end of the day.
   1. Make sure that the cart is in a well-ventilated area if the charger is to remain on charge overnight.
h. Report all maintenance problems to your supervisor or Physical Plant.
i. During the Fall and Spring terms, golf carts must give right of way to pedestrians utilizing the sidewalks, at no time are carts allowed on foot bridges.
j. Golf carts will give right of way to all motor vehicles.
k. Do not drive over curbs or items that will damage the front end and steering gears.
l. Golf carts will be operated at a safe and appropriate speed for traffic, pedestrian, and weather conditions.
m. Golf carts are not permitted on College Boulevard at any time.