University of Houston
Clear Lake

Safety and Health Program Manual

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SAFETY AND HEALTH PROGRAM
UNIVERSITY OF HOUSTON-CLEAR LAKE

1. Policy

1.1 The University of Houston Clear Lake cares about the health and safety of each employee and citizen served. Every employee is responsible for safety in each work function. The University of Houston-Clear Lake shall comply with its policies as well as state and federal requirements.

1.2 Accident prevention is of primary importance in all phases of operation and administration. The intention of the University of Houston-Clear Lake’s management is to provide safe and healthy working conditions and to establish and insist upon safe practices at all times by all employees. To the greatest degree possible, management will provide mechanical and physical protection required for personal safety and health. Each supervisor shall make the safety of all employees an integral part of his or her regular management function. It is the duty of each employee to accept and follow established safety regulations and procedures.

1.3 The objectives of the program are to provide for protection of employee health, the environment and to identify and eliminate hazards and correct unsafe practices. The program shall ensure that waste materials are handled in accordance with established procedures and that safety guidelines are established and adhered to. Informational systems as well as operational policies shall be implemented throughout the University.

2. Procedures

2.1 Departments shall provide regular training and awareness sessions. Employee attendance records shall be kept. A Safety Meeting Record of Instruction form, (A1-A2) is utilized to record attendance. The Safety Meeting Record of Instruction forms are kept in the Office of Environmental Health and Safety. Supervisors conducting safety meetings will report in writing on the topics discussed and provide a copy of the Safety Meeting Record of Instruction form to the Office of Environmental Health and Safety.
2.1.1 Supervisors must inform employees (including contracted workers) of hazardous chemicals encountered on their job, hazards the chemical can cause, and actions to be taken to protect themselves from the hazards. The Safety Officer will provide information to new or newly assigned employees before they work with, or in an area containing hazardous chemicals.

2.1.2 The Hazard Communication Act is a federal law. Texas passed The Texas Hazard Communication Act (THCA) in 1985. The THCA is a worker and community Right to Know Law. This act mandates determination of hazardous chemicals, labeling, warnings, Material Safety Data Sheets (MSDS) and a written Hazard Communication Program.

2.2 Injuries and hazardous conditions must be reported to the Office of Environmental Health and Safety.

2.2.1 Injuries occurring on the job must be reported immediately. Except for emergency trips to the hospital, no employee shall leave the work-site without reporting an injury. A Texas Workers’ Compensation Commission 121 (TWCC 121) form, (A3-A12) is to be utilized by the immediate supervisor to investigate the accident. It is the immediate supervisor’s responsibility to forward the completed form to the Office of Environmental Health and Safety for review.

2.2.2 Employees or students noting unsafe conditions or potential hazards will complete a Report of Safety or Health Hazard form, (A13) and forward it to the Environmental Health and Safety Officer. Report of Safety or Health Hazard forms are available at the Police Department, the Health Center, Student Life, the Delta Building, the Arbor Building, the Central Services Building, and the Office of Environmental Health and Safety.

2.3 Safety inspections are performed by supervisors of shops, labs, or other work areas as appropriate. Deficiencies noted require that corrective action be taken or planned and listed on the Safety Inspection Checklist form (A14). The completed form will be submitted to the Safety and Health Committee for review and retention. A copy of the form is retained by the supervisor to use as an aid in performing the next inspection. The Environmental
Health and Safety Officer will review the form and ascertain that prior discrepancies have been corrected.

2.4 Investigations of work-related accidents and injuries are performed by the employee's immediate supervisor. Supervisors shall obtain a full and complete understanding of work-related accidents so that corrective actions can be taken to prevent recurrence. The supervisor will complete the Texas Workers' Compensation Commission 121 (TWCC 121) form(A3-A12), retain one copy for the employee's file, forward one copy to the department head and one copy to the Office of Environmental Health and Safety.

2.5 The Office of Environmental Health and Safety maintains a Chemical Hygiene Plan (CHP). Where applicable, every department in conjunction with the Office of Environmental Health and Safety is responsible for maintaining and adhering to the CHP. The methods of compliance for maintaining exposures to hazardous chemicals below permissible exposure levels (PELs) must be identified in the plan. To be effective, this CHP must also include the work practices, procedures, and policies that ensure employee and student protection from all potentially hazardous chemicals in the University environment.

2.6 Hazardous materials must be managed. The Office of Environmental Health and Safety will maintain Material Safety Data Sheets (MSDS) in the office. Proper management of chemicals requires that they be ordered in the smallest quantity needed, named upon receipt, dated and stored by hazard class in approved containers. Chemical waste generated must be disposed of properly. Where applicable, departments must maintain a chemical list and update this list yearly. Notify the Office of Environmental Health and Safety if an emergency arises or for assistance with management of departmental materials.

2.7 Programs for inspecting, testing, and servicing equipment and systems for prevention of fire will be reviewed by the Environmental Health and Safety Officer. All areas should be generally clean and free of combustible materials.

3. Responsibilities

The Environmental Health and Safety Officer is responsible
for the development and implementation of programs and procedures enabling a hazard-free environment for faculty, staff, and students within the guidelines of federal, state and university regulations. Faculty and staff employees are responsible for the performance of their tasks in a manner that ensures their safety and health as well as their co-workers and students. Specific responsibilities are delegated and defined as follows:

3.1 The Vice President for Administration and Finance, will:

3.1.1 Provide visible top management involvement and support in implementing the Safety and Health Program, so that all will understand that management is committed.

3.1.2 Appoint an Environmental Health and Safety Officer.

3.1.3 Adopt an employee safety and health policy and authorize appropriate safety procedures, standards and regulations to support the policy.

3.1.4 Provide a budget to carry out the program.

3.2 The Environmental Health and Safety Officer will:

3.2.1 Review, coordinate, maintain, and evaluate all aspects of the Safety and Health Program.

3.2.2 Assist employees to develop and implement safe work practices for all operations.

3.2.3 Order the immediate cessation of activities where significant danger is perceived.

3.2.4 Serve as a chairperson of the Safety and Health Committee.

3.2.5 Process Report of Safety or Health Hazard forms and provide assistance, as required, to satisfy safety concerns.

3.2.6 Provide resources or information to safety coordinators to assist in the planning and implementation of safety meetings.

3.2.7 Serve as the liaison for the University on issues relating to safety, waste generation and management, environmental health, air quality, housekeeping, and other matters.
3.2.8 Maintain the Material Safety Data Sheet files and provide copies during work hours and after hours through the Police Department.

3.2.9 Provide updated information on application of federal, state, and local statutes. Interpret and advise on application of federal safety, occupational health, and distribution standards.

3.2.10 Initiate action in the development of standards and procedures for safety, fire protection, occupational health and the safe distribution of hazardous materials.

3.2.11 Ensure the coordination of emergency management programs.

3.2.12 Monitor specific measurable goals and objectives to reduce the frequency and severity of employee accidents, injuries, and occupational disease.

3.2.13 Support incorporation of safety concepts and practices into all program operations of the agency.

3.2.14 Establish a safety climate that encourages employees to fully participate in the program.

3.2.15 Report abnormalities to the Vice President for Administration and Finance.

3.3 The Department Heads will:

3.3.1 As appropriate, provide employees with procedures, regulations and requirements pertaining to environmental, health and safety.

3.3.2 Inform employees of changes and additions to regulatory requirements as appropriate.

3.3.3 Ensure that all employees are cognizant of the benefits provided by an effective Safety and Health Program and informed of their responsibilities in connection with the program.

3.3.4 Perform periodic inspections to ensure compliance with program requirements.

3.3.5 Provide necessary support to correct unsafe practices and conditions in the workplace, labs or other areas.

3.3.6 Attend departmental safety meetings as appropriate.
3.3.7 Appoint a departmental safety coordinator.

3.4 The Safety Coordinators will:

3.4.1 Monitor their area for unsafe acts or conditions.

3.4.2 Establish a contact person for the Office of Environmental Health and Safety.

3.4.3 Conduct periodic safety meetings.

3.4.4 Post and ensure employee familiarity of evacuation procedures.

3.5 The first line managers (Asst. Directors, Assoc. Dean, etc.) will:

3.5.1 Integrate employee safety and health concepts into the everyday procedures of an employee’s job.

3.5.2 Provide active support to the department’s safety coordinators and Safety and Health Program.

3.5.3 Attend safety meetings as appropriate.

3.5.4 Provide necessary support of safety related activities as directed by the department head.

3.6 The supervisors, faculty, etc. will:

3.6.1 Be responsible for instructing employees under their direction in the proper operational procedures for the job being performed.

3.6.2 Monitor and maintain in safe conditions the facilities and equipment under their jurisdiction.

3.6.3 Explain to all new employees/students, safety regulations that are relevant to their specific work duties and enforce their compliance.

3.6.4 Establish safe work methods and procedures.

3.6.5 Reinforce safe behavior.

3.6.6 Train and observe employees/students in safe performance prior to beginning work.

3.6.7 Review procedures, regulations and requirements concerning safety.
3.6.8 Inform employees and students of protection requirements pertinent to their activities and ensure that proper tools, handling devices and equipment are supplied for performance of their duties or required course work.

3.6.9 Monitor activities of employees and students to ensure compliance with regulations.

3.6.10 Initiate corrective actions immediately when unsafe activities or conditions are found or reported.

3.6.11 Plan and conduct safety meetings in accordance with departmental schedules.
   Note: The scheduled formal safety meetings do not preclude the need for instructing employees whenever necessary.

3.6.12 Perform safety inspections and accident investigations as required.

3.6.13 Ensure that awareness programs are communicated to faculty, staff, and students.

3.7 The Safety and Health Committee will:

3.7.1 Act as an advisory committee to the administration and Facilities Resource Committee (FRC), be responsible for the oversight of planning, implementation, assessment of safety conditions on the University of Houston-Clear Lake campus, and other duties as charged by the FRC by-laws.

3.7.2 Review accident reports and reports of safety concerns or unsafe conditions.

3.7.3 Assist in conducting building inspections for the purpose of making health and safety recommendations.

3.7.4 Make recommendations to FRC on actions of this committee, which involve policies, new resources, space planning and re-use, or mediation of disputes.

4. Safety Rules for All Employees

Safety is a cooperative undertaking requiring an ever-present safety consciousness on the part of every employee. To carry out this policy, employees shall follow the safe practices and rules contained in this manual and such other rules and practices communicated on the job. All employees will:
4.1 Report unsafe conditions or practices to their supervisor. If corrective action is not taken immediately, contact the Environmental Health and Safety Officer.

4.2 Practice good housekeeping in the work area. Clean up waste and eliminate dangers in the work area.

4.3 Use protective equipment and clothing when appropriate or required.

4.4 Participate in safety meetings.

4.5 Report any employee under the influence of alcoholic beverages or illegal substances, also including prescription drugs which might impair motor skills and judgment. Such employees will not be allowed on the job.

4.6 Avoid horseplay, scuffling, and other acts which tend to have an adverse influence on safety or well-being of other employees.

4.7 Follow safety directions in the handling of heavy materials and while using equipment.

4.8 Not consume alcoholic beverages or illegal substances on the job.

4.9 Be alert that all protective devices are in proper places and adjusted, and report deficiencies promptly to the supervisor.

4.10 Not handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their job unless so directed by their supervisor.

4.11 Report all injuries to the supervisor so that arrangements can be made for medical or first-aid treatment.

4.12 Use the large muscles of the leg instead of the smaller muscles of the back when lifting heavy objects.

4.13 Not throw things, especially material and equipment.

4.14 Dispose of all waste properly and carefully.

4.15 Not undertake a job that appears to be unsafe.
4.16 Report any work-related injury or illness to management at once.

5. Safety and Health Training

Education and training of employees is a key element in the prevention of injury and illness. State and federal regulations, and university policies require certain types of safety training and orientation for all employees at UHCL. Such training is designed to enable employees to learn their jobs properly, bring new ideas to the workplace and reinforce existing safety policies.

5.1 Each employee shall participate in a general safety training orientation program available from the Office of Environmental Health and Safety at the start of employment.

5.2 An in-depth safety training program will be established and maintained for employees working in high risk situations.

5.2.1 The Office of Environmental Health and Safety and the School of Natural and Applied Sciences will establish guidelines concerning training for biological and chemical safety.

5.2.2 The School of Natural and Applied Sciences will establish radiation safety training policies and procedures relating to employees who work in or frequent any area where sources of radiation are used.

5.2.3 The Office of Environmental Health and Safety will review and establish guidelines for general safety and other specific safety training not currently covered by other specialized committees.

5.3 Department Heads shall be responsible for ensuring that employees receive safety training commensurate with the degree of risk in their work environment.

5.3.1 The Office of Environmental Health and Safety will assist in development of safety training in-service sessions.

5.3.2 In-service training session attendance shall be documented, including signature of the employee, date, title of the program, and the instructor’s name. This documentation should be maintained by the employee’s supervisor or on a departmental level and copies submitted to the Office of Environmental
Health and Safety.

5.4 The content of each in-service training session will vary, but in each session, supervisors will attempt to teach the following:

5.4.1 An attitude of personal commitment. The success of the University of Houston-Clear Lake’s prevention of injury and illnesses depends on the actions of individual employees as well as a commitment by the University.

5.4.2 Safety procedures for specific jobs. Each employee’s immediate supervisor will review the safe work procedures unique to that employee’s job to protect against risk and danger.

5.4.3 Specific task risks. A Job Safety Analysis (JSA) should be performed on each distinct job to target the specific critical tasks that have an inherent risk of injury, illness, or disease to employees. The JSA evaluates specific job tasks associated with performing various duties. The Office of Environmental Health and Safety has JSA available upon request.

5.4.4 Use of protective equipment. Each employee will be trained in the requirement, use and maintenance of personal protective equipment.

5.4.5 Emergency Procedures. Each employee will learn what to do in case of emergencies occurring in the workplace.

5.5 Safety education requires employee participation. The following are employee responsibilities:

5.5.1 No employee is expected to undertake a job until he or she has received adequate safety instructions and is authorized by their supervisor to perform the task.

5.5.2 No employee should use chemicals without fully understanding their properties and without the knowledge required to work with these chemicals safely.

5.5.3 Employees must know about and keep protective devices in place.

5.5.4 Employees must become knowledgeable about and use personal protective equipment when and where
6. Hazard Identification and Abatement

This section sets out a system for identifying workplace hazards and correcting them in a timely fashion.

6.1 Safety inspections of work sites will be conducted. Workplace safety depends on workplace observation. Both supervisors and employees are responsible for inspecting the working area. Each day, before beginning work, employees should inspect the area for dangerous conditions. Supervisors should be informed of significant dangers.

6.1.1 A thorough inspection by the various departments on campus should be completed once a year. UHCL employees are encouraged to use the enclosed Safety Inspection Checklist (A14). The sections that apply to that department should be completed. This checklist should be routed to employees to determine if they are aware of any potential hazards. Once an item is on the checklist, appropriate action must be taken.

6.1.2 Workplace safety inspections will occur more frequently when conditions change, or when a new process or procedure is implemented by individual areas.

6.1.3 Employees may be given written or oral communications regarding unsafe conditions or serious concealed dangers. Employees should review and understand this communication and then adjust workplace behavior to avoid any danger or hazards.

6.1.4 Managers must provide written notice to employees of any serious concealed dangers of which they have actual knowledge. In addition to providing written notice of all serious concealed dangers to employees, managers are required to report serious concealed dangers to the Environmental Health and Safety Officer.

6.2 The following are provided for emergencies arising in the workplace.

6.2.1 In the event of a fire, all employees must exit the facility immediately in a safe manner, unless specifically trained and assigned to fight a fire.
6.2.2 Campus buildings will have evacuation diagrams showing the most logical exits. FIRE DOORS MAY NEVER BE LOCKED FROM THE INSIDE. Obstruction to egress routes should be reported to work supervisors immediately. If the obstruction is not cleared, a Report of Safety or Health Hazard form should be submitted to the Environmental Health and Safety Officer.

6.2.3 It is every employee’s responsibility to know the locations of the first-aid stations that have been placed throughout the facilities. The locations of the first-aid stations are as follows:

**Arbor** (room 190, 161, 145)

**Central Services** (FMC break room, warehouse, and supply room)

**Delta Building** (room 213, and 161)

**Bayou Building** (Health and Disability Services room 1406, OEHS room 1117, after hours, Police Department room 1636)

6.3 A system will be developed and implemented to report a safety or health hazard. UHCL shall provide and encourage the use of a reliable system for employees, without fear of reprisal, to notify management about conditions that appear hazardous.

6.3.1 In the case of a serious hazard, call the Office of Environmental Health and Safety for immediate assistance.

6.3.2 Any employee may submit the Report of Safety or Health Hazard form (A13). Complete the form in its entirety to assist in determining the severity of the problem and forward to the Office of Environmental Health and Safety.

6.3.3 The Environmental Health and Safety Officer will investigate the reported safety or health hazard and recommend an action plan. Recommendations will be given to the responsible party for implementation and an estimated completion date will be determined.

6.3.4 The Environmental Health and Safety Officer will present all reports of safety or health hazards to the Safety and Health Committee for further input. Once the committee has reviewed and approved the recommended plan of action, a copy of the Report of Safety or Health Hazard form will be returned to the initiating department.
6.3.5 The Environmental Health and Safety Officer will perform a follow-up investigation after the estimated completion date to ensure the problem is resolved.

7. Work-Related Accidents

This section contains information that assists supervisors and employees in dealing effectively with work-related accidents and the subsequent investigations. The prompt reporting of work-related accidents will ensure that employees are afforded medical care and timely workers’ compensation benefits as appropriate. Information gained from accident investigations is used to inform the administration as to work-related accident trends in order to determine the effectiveness of safety programs and to aid in the prevention of recurrences.

7.1 Specific responsibilities are delegated and defined in the case of work-related accidents as follows:

7.1.1 The Office of Environmental Health and Safety:

a. Investigates work-related accidents at UHCL.
   b. Tracks work-related accidents.
   c. Presents accident reports to the Safety and Health Committee.
   d. Sends a Texas Workers’ Compensation Commission 121 (TWCC 121) form (A3-A12) to the immediate supervisor of the injured employee.
   e. Forwards any recommendations from the Safety and Health Committee to the immediate supervisor.

7.1.2 The supervisor:

a. Ensures that employees are aware of all work-related accident reporting policies.
   b. Reports all work-related accidents that occur in their area of responsibility to Health and Disability Services.
   c. Investigates work-related accident causes and take corrective action.
   d. When applicable, completes Supervisor’s Investigation of Employee Accident/Incident form (TWCC 121).

7.1.3 The employee:

a. Reports work-related accidents to Health and Disability Services and supervisors as soon as possible.
   b. Reports suspected exposures to radiation,
chemicals, or diseases to their supervisor as soon as possible.
c. Reports injury to the Office of Personnel Services within 2 hours.
d. Abides by the guidelines set forth in 7.3 and any additional departmental procedures.

7.1.4 The Police Department:

a. Investigates work-related accidents and ensures first aid is provided.
c. Assists employees, students, and visitors with medical emergencies when Health and Disability Services is closed.
d. Provides security in and around an accident site.

7.1.5 The Office of Personnel Services:

a. Interfaces with the Office of Environmental Health and Safety to develop and make available complete and accurate information on work-related accidents.
b. If appropriate, completes an Injury Statistical Report form.
d. If appropriate, prepares paperwork, submits a claim to the Texas Workers’ Compensation Commission and maintains records.

7.1.6 Safety and Health Committee:

Reviews and makes recommendations concerning work-related accidents, safety concerns and incidents.

7.1.7 Health and Disability Services:

b. If appropriate, administers first-aid and/or refers the employee for medical treatment.

7.2 Work-related accident/injury or work related illness reporting procedures are as follows:

7.2.1 Regular working hours (non-emergency):

a. The employee reports immediately to their
supervisor or next higher supervisor.
b. The supervisor sends the employee to Health and Disability Services for treatment and/or referral.
d. The employee reports the injury to the Office of Personnel Services within 2 hours.
e. The Office of Personnel Services forwards a copy of the Injury Statistical Report form to the Office of Environmental Health and Safety.
f. If appropriate, the Office of Personnel Services prepares paperwork and submits a claim to Texas Workers’ Compensation Commission.

7.2.2 Regular working hours (emergency):

a. The employee reports immediately to their supervisor or next higher supervisor.
b. The supervisor sends or takes the employee to Health and Disability Services (extension 2626) for treatment and/or referral.
c. Health and Disability treats employee and/or refers employee for treatment, completes the Injury Statistical Report form and takes a copy to the Office of Personnel Services within 2 hours.
e. If Health and Disability Services refers employee to physician or hospital, the employee (or representative) must contact the Office of Personnel Services within 24 hours. Contact may be made by phone. If necessary, the Office of Personnel Services staff may go to the hospital or employee’s home to obtain signatures required to continue processing the claim.
f. The Office of Personnel Services submits the claim to the Texas Workers’ Compensation Commission.

7.2.3 Evening, night, or weekend work hours:

a. The employee reports immediately to their supervisor or next higher supervisor. In the absence of a supervisor, contact the Police Department.
b. The employee or supervisor reports the injury to the Police Department (extension 2222) immediately.
c. The Police Department completes an incident report and refers the employee for medical treatment or may assist in obtaining treatment if necessary.
d. The Police Department forwards a copy of the incident report to the Office of Personnel Services and the Office of Environmental Health and Safety during the next regular work day or upon completion.
e. The employee (or representative) must contact the Office of Personnel Services during the next regular work day.
f. The Office of Personnel Services completes the Injury Statistical Report form and forwards a copy to the immediate supervisor and the Office of Environmental Health and Safety.
g. If appropriate, the Office of Personnel Services prepares paperwork, submits a claim to the Texas Workers’ Compensation Commission and maintains records.

7.3 Reporting procedure are as follows:

7.3.1 The Office of Personnel Services acts as a “control center” when employees are missing work because of a work-related injury or illness. Based on the employee’s regimen of treatment and schedule for seeing the doctor, the Office of Personnel Services requires periodic reports and forwards relevant details to the employing department.

7.3.2 Failure, by the employee, to contact the Office of Personnel Services to provide periodic reports as required, may result in disciplinary action. Notice of Disciplinary Action, when appropriate, will be sent to the employee and the employing department by the Office of Personnel Services.

7.4 Upon returning from a workers’ compensation injury, procedures are as follows:

7.4.1 The employee reports to the Office of Personnel Services before reporting to work site with a release letter to return to work from attending physician.

a. If modified duty is specified, advance notification is required and return to work may be delayed until the Office of Personnel Services and employing department work out modified duty assignment details.
b. If the employee is released to return to full
duty, the Office of Personnel Services sends the employee to his/her department with a copy of the release letter.

7.4.2 The Office of Personnel Services retains the original release letter and prepares required reports for the Texas Workers’ Compensation Commission.

8. **Fire Safety Rules for all Employees**

Fire is one of the worst enemies of any facility. Smoking is not allowed in campus buildings. No open flames are allowed in any campus building. No open flame candles are permitted in any campus offices or suites. The exceptions of open flames are permitted on a case by case basis by the Office of Environmental Health and Safety (this is in reference to certain functions held on campus).

The following fire safety rules should be followed by all employees:

8.1 Locate the nearest fire alarm pull station.

8.2 Know your exits and an alternate exit.

8.3 Do not use the elevator in the event of a fire.

8.4 Listen and follow all instructions from the public address system in the event of any emergency.

8.5 Report any fires to the Police Department.

8.6 Report the smell of smoke to the Police Department.

8.7 Observe the no-smoking rules.

8.8 Know the location of the fire extinguishers and learn how to use one properly. Only attempt to extinguish a small fire.

8.9 Know the location of the Evacu-Tracs. They are located in the Bayou Building on the second and third floor center stairwells number four and five. The Delta Building also has an Evacu-Trac located on the center stairwell.

8.10 Learn how to use the Evacu-Trac properly. The Office of Environmental Health and Safety has a training video which can be borrowed with instructions on how to use the Evacu-Trac.
9. UHCL Evacuation Plan

9.1 Purpose

9.1.1 The University of Houston-Clear Lake recognizes the need for an orderly plan to evacuate its facilities in emergency situations occurring inside buildings, such as fire, explosion, chemical spills, or bomb threats.

9.1.2 This evacuation plan will provide for a timely and effective exit of campus facilities in the event of such an emergency.

9.1.3 This plan is a working document that will be continually reviewed and updated.

9.2 Definitions

9.2.1 University Safety Officer is the Environmental Health and Safety Officer, Jessie Zapata, Room B1117, telephone 283-2106.

9.2.2 Audible Alarm System—a system of low- and high-pitched alarms, accompanied by strobe lights for the hearing impaired, located in hallways and bathrooms in campus buildings.

9.2.3 Area coordinator—an individual designated to be in charge of the evacuation of personnel from a block of suites, classrooms, or similar work areas. Alternate area coordinators should also be appointed and trained in advance to assume the duties of the area coordinator if necessary.

9.2.4 Evacu-Trac—a device used to enable operators to transport disabled individuals down flights of stairs in a seated position. Located on the second and third floor center stairwells number 4 and number 5 of the Bayou Building, and on the second floor near the center stairwell in the Delta Building.

9.2.5 Primary evacuation route—the quickest and most accessible safe route from an individual’s location when the emergency is announced to a designated safe area outside the building. Evacuation route diagrams (pages 26-33) will be strategically located throughout the buildings. These diagrams will indicate by a red dot your location on the building map. Exits and stairwells will be indicated in red.
9.2.6 Secondary evacuation route - the next closest safe route to a designated safe area if the evacuation route cited in 9.2.5 is announced or seen to be unsafe for use.

9.2.7 Work area leader - an individual designated for each work area to coordinate the evacuation of personnel from that suite and to account for the return of personnel to the suite when the emergency is resolved. The work area leader for a classroom is the faculty member in charge of the class. Each work area leader or alternate, shall make a reasonable effort to assure that disabled personnel receive assistance to exit the building.

a. A work area leader has the option to request volunteers from either the class or the work area to assist in the evacuation. If a work area leader is for any reason unable to perform the evacuation duties, he/she should request further assistance from the Police Department. Questions pertaining to evacuation of disabled students or employees may be directed to the Coordinator of Disability Services, Bayou Room 1402, extension 2627.

b. Faculty members as work area leaders will inform the class of evacuation routes when needed and will coordinate a plan for the evacuation of any students needing assistance. Students needing this assistance will inform the Coordinator of Disability Services, Bayou Room 1402, extension 2627, and the faculty member at the beginning of the semester. Work area leaders are responsible to ensure that all employees and students in the work area are informed about the exit plan for the area.

9.2.8 Alternate - an individual designated to perform the duties of the work area leader if that individual is not present during the emergency. Alternates are also responsible to ensure that all employees in the work area are informed about the exit plan for their area.

9.2.9 Designated safe area - a site safely away from the building where personnel should wait until the emergency is resolved. Designated safe areas for Bayou Building occupants shall be either lot "V" for personnel exiting from the rear of the building or lot "R" for personnel exiting from the front of the building.
The designated safe area for the Arbor Building is the grassy area between the sidewalk and University Drive and the sidewalk between the Arbor and Delta Buildings.

The designated safe area for the Delta Building is the outside part of the parking lots which are located by the front and rear entrances.

The designated safe area for the Central Services Building is the grassy area just past the parking lot in front of the Central Services Building.

9.2.10 "All Clear"—an oral announcement that it is safe to return to the building. This announcement will be made by a University Police Officer who may either be on foot or operating a public address system from a police vehicle.

9.2.11 Emergency command center—The University Police Department office, Room B1636. The command center may temporarily assume a stationary or mobile location either inside or outside the building, depending on the nature of the emergency. The University Police Department is authorized to issue an "All Clear" announcement when the building(s) have been declared safe by the proper authority.

9.3 Policy

9.3.1 The university attempts to provide a safe learning and working environment for students, employees, and visitors. An evacuation plan, to be used in the event of an emergency, is an integral part of this environment. UHCL Executives and Administrators will ensure that this policy and its procedures are observed by employees under their purview.

9.3.2 The emergency evacuation procedures described in this document will be observed in any situation requiring the evacuation of personnel from campus buildings. Deliberate violations of these guidelines will be cause for disciplinary action as follows:

a. Such misconduct by a student will be grounds for disciplinary action through student life policies and procedures;

b. Such misconduct by a staff employee will be grounds for disciplinary action though the staff
discipline and dismissal policy and procedures;

c. Such misconduct by a faculty employee will be grounds for disciplinary action through faculty discipline and dismissal policies and procedures;

d. In addition, such misconduct by any person may be grounds for criminal charges against the individual in a court of law.

9.3.3 Fire and evacuation drills may be conducted on an "as needed" basis. The same provisions apply during a drill as would apply during a real emergency requiring building evacuation.

9.4 Policy Provisions

9.4.1 Responsibility

a. The University Safety Officer is responsible for implementing the evacuation plan, assessing its effectiveness, updating the plan to achieve increased safety or efficiency, and for training personnel in the use of the plan.

b. The area coordinator is responsible for facilitating and assisting the safe exit of any employees, students, or visitors from a block of work areas or classrooms at the time the notice of evacuation is received. The area coordinator is responsible for directing personnel under his/her supervision to the nearest evacuation area via the nearest safe evacuation route. If an area coordinator becomes unable to serve, an immediate replacement should be designated and the University Safety Officer should be notified to assure that the replacement receives adequate training.

c. The work area leader is responsible for assuring that personnel in a designated office or facility evacuate the area in accordance with procedures when a notice to evacuate is received. If a work area leader becomes unable to serve, an immediate replacement should be designated and the University Safety Officer should be notified to assure that the replacement receives adequate training.

d. The President is responsible for officially closing the university when the situation warrants and authorizing employees to leave the
campus under "Administrative Leave" provisions. If the President is unavailable during such an emergency, this responsibility rests with the Senior Vice President and Provost, or in that official's absence, the Vice President for Administration and Finance. If none of these officials are present during an emergency situation, this responsibility rests with the Director of University Police or his designated representative.

e. Unapproved absences from work resulting from or associated with a building evacuation may be cause for disciplinary action, and will be considered on a case-by-case basis.

9.4.2 Notice to evacuate

a. Notice to evacuate any building will be received via the audible or visual alarm systems. In an emergency situation, the public address system may also be activated to provide oral instructions. If the alarm systems and public address system are disabled, University Police officials will provide the notice to evacuate by verbal commands.

b. When the audible alarm system is activated, the occupants of the building must evacuate, observing the procedures listed in Section 9.4.3.

9.4.3 Evacuation Procedures

a. Stop what you are doing and walk, do not run, to the nearest stairwell and proceed down the stairwell to the first floor, and from the first floor to the designated safe area for your group. If you are working in an area away from your regular work station, follow the instructions or the work area leader and area coordinator for the area in which you are working when you learn of the emergency. Do not attempt to return to your regular work area if an emergency is announced.

b. Do not use elevators in any emergency situation.

c. Take personal belongings, such as purse, coat, and car keys if they are within easy reach and can be collected quickly.

d. Office doors should be closed but not locked when
personnel exit.

e. Listen to instructions from work area leaders and area coordinators or those provided via the public address system. Follow these instructions.

f. Regroup with your co-workers or classmates in the designated safe area so that your presence can be accounted for. Because of the possibility of flammables, do not smoke in designated safe areas until the “All Clear” notice is received.

g. Do not re-enter the building until the “All Clear” signal is announced by University Police officials.

h. Return to your work area via stairwells.

9.5 Exhibits

9.5.1 UHCL building diagrams (26-33).

9.5.2 Evacu-Trac operating instructions (34-39).
Bayou Building
3rd Floor
GARAVENTA
EVACU-TRAC

INSTRUCTIONS FOR USE
2 Terminology

- Handle
- Brake Lever
- Safety Strap
- Leg Support Pad
- Safety Strap
- Locking Mechanism (behind)
- Kick-stand
- Rear Track Roller
- Footrest
- Braking Mechanism
- Auxiliary Wheels
- Track
3 Operating Instructions

INTRODUCTION

To ensure the safety of the passenger and operator, read these operating instructions carefully and view the Operator Training video. Practice sessions should be held on a regular basis (monthly is recommended) to maintain operator proficiency. In addition, building occupants for whom the Evacu-Trac is provided should be familiar with and comfortable in using Evacu-Trac.

The maximum descent speed is limited to 1.1 m/sec (3.6 ft/sec) for a 109 kg (240 lbs) passenger. Descent speeds for lighter or heavier passengers will vary slightly. If your passenger is heavy and you feel the descent speed is too fast, or if your passenger is light and you wish to increase the speed, you can adjust the track tension accordingly. Refer to Chapter 5, Service.

SET-UP AND LOADING

1. Grasp and lift the Handle. When it is upright, lift the Leg Support pad as shown while pushing outward on the Handle.

2. Ensure Evacu-Trac is locked open.
3. Lower the Kick-stand and transfer the passenger.

4. Fasten the Safety Straps. If you cannot be certain that the passenger’s arms will remain in his or her lap, the arms should be wrapped inside the upper Safety Strap.

5. Raise the Kick-stand.

Keep both hands on the Handle when the Kick-stand is raised, since the weight of the passenger is balanced over the rear Auxiliary Wheels. Evacu-Trac may tip over backwards if not supported by the operator.

OPERATING ON STAIRS

Use footwear with flat soles.

1. To turn on a flat surface, press down on the Handle and pivot Evacu-Trac on the rear Auxiliary Wheels.
2. Position Evacu-Trac at the top of the stairs, at a right angle (90°) to the stairway, with the passenger facing towards the stairs. Operating Evacu-Trac near the inner core of a stairway will keep the stairway clear for pedestrians, facilitate turning corners at landings, and provide the passenger with an added feeling of comfort.

3. Push Evacu-Trac forward until the front Auxiliary Wheels drop off the top step. At this point Evacu-Trac will stop. Lift the Handle and incline Evacu-Trac forward.

4. To descend the stairs, grasp the Brake Lever. Descent speed can be reduced by "feathering", or using very light pressure when grasping the Brake Lever.

5. To stop on the stairs, release the Brake Lever.

6. When approaching the base of the stairs press the Handle down, toward the landing, to move Evacu-Trac onto the flat surface. Do not attempt to lift Evacu-Trac upwards.
7. Lower the Kick-stand and remove the passenger.

8. Unlock the Handle and fold Evacu-Trac closed.
10. Hazard Communication Program

10.1 Purpose

The purpose of the Hazard Communication Program is to ensure that the hazards of all chemicals used on the University of Houston-Clear Lake campus are evaluated and information concerning their hazards is transmitted to employees.

10.2 Scope

10.2.1 This program applies to:

a. Any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.
b. Work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use (warehouse).

10.2.2 This program does not apply to:

a. Laboratories  
b. Hazardous waste  
c. Tobacco or tobacco products  
d. Wood or wood products  
e. Foods, drugs, cosmetics intended for personal consumption

10.3 Responsibilities

10.3.1 The Office of Environmental Health and Safety (OEHS) is responsible for:

a. The oversight of the Hazard Communication Program along with an annual review and update of the program.  
b. Annual training to all employees who, as part of their normal job duties, will come in contact with hazardous chemicals for the following areas:
   i. Facilities Management and Construction employees  
   ii. Print-shop employees  
   iii. Support staff employees  
c. Maintaining training session records.

10.3.2 The Department Heads are responsible for:

a. Developing and maintaining an inventory listing
of all hazardous chemicals present within all
their facilities and work areas, providing a copy
to OEHS, and ensuring that the list is accessible
to all employees.

b. Ensuring that all hazardous chemicals are
properly labeled.

c. Documenting that orientation of all new
employees to the Hazard Communication Program,
and the training of all employees assigned to new
or non-routine tasks.

d. Continuing training (and documentation thereof)
of all employees on the hazards involving work
area chemicals to which they could become
exposed.

e. Providing a hazard briefing to (or qualified
escorts for) any other person who may be
temporarily present in their facilities or areas.

10.3.3 Employees who are engaged in activities using
hazardous chemicals must share responsibility for
becoming aware of the hazards of the materials they
work with and take the necessary precautions to
protect themselves from these hazards.

10.4 Training

10.4.1 The Hazard Communication training shall include:

a. Any locations in their work area where hazardous
chemicals are present.

b. Methods and observations that may be used to
detect the presence or release of a hazardous
chemical in the work area (such as monitoring
conducted by the employer, continuous monitoring
devices, visual appearance or an odor of
hazardous chemicals when being released).

c. The physical and health hazards of the chemicals
present in their work area.

d. General safety instructions on handling, cleanup
and disposal of hazardous chemicals.

e. The measures employees can take to protect
themselves from these hazards, including specific
procedures the employer has implemented to
protect employees from exposure to hazardous
chemicals, such as appropriate work practices,
emergency procedures, and personal protective
equipment to be used.

f. The details of this Hazard Communication
Program, including an explanation of the labeling
system and the Material Safety Data Sheets, and
how employees can obtain and use the appropriate
hazard information.
10.4.2 New employees (including part-time, hourly and student employees) and graduate students of any form on stipend from the University must complete an initial orientation program prior to working with hazardous chemicals.

10.4.3 Other employees will receive an orientation program and specific information and training on hazards and hazardous chemicals present within their work areas within 45 days of adoption of this standard.

10.4.4 Students who work with or around hazardous chemicals should receive a briefing on this program and on the hazards and hazardous chemicals present within their work area during one of the first three class sessions, during which potential exposures could occur.

10.4.5 Any employees assigned to new duties, a new work area or non-routine tasks for which previous hazard information and training was inadequate, must be instructed on new hazards prior to beginning the new duty.

10.4.6 Other individuals (contractors, maintenance workers, visitors, etc.) who will be present in area where they could become exposed to potentially dangerous chemicals should be briefed on those hazards, on how danger can be avoided or detected, and of emergency actions which could be required. NOTE: Detailed instruction is not required whenever these individuals remain under direct control of a qualified escort.

10.4.7 The employees required to work around or with hazardous chemicals must receive periodic retraining (at least annually) to refresh their knowledge of this program, the hazards of their jobs and work areas, and on the chemicals to which they could become exposed.

10.4.8 Employing departments must develop and arrange for the maintenance of records on individual training given in support of this standard. Records must be maintained on current and former employees for a minimum of 5 years. A copy of the training materials and list of individuals receiving this training must be sent to the OEHS. Student hazard communication orientation and training must be maintained by departments responsible for areas where exposures may occur.
10.5 Contractors

10.5.1 Contractors having employees working in an area containing hazardous chemicals shall be given or provided a listing of any MSDS’s on chemicals to which they or their employees could become exposed. This is in addition to any required briefings.

10.5.2 Contractors shall provide their University contact or coordinator a listing of all hazardous chemicals and copies of related MSDS’s prior to bringing the materials into any location where University personnel could become exposed. The contract coordinator will ensure that the Police Department, OEHS and occupants who could become exposed are briefed on the hazards of these materials.

10.6 Material Safety Data Sheets (MSDS)

10.6.1 Purchase orders should identify the Hazard Communication Act and instruct vendors to forward a copy of the MSDS to the purchaser and OEHS.

10.6.2 Each area receiving hazardous chemicals is responsible for insuring that MSDS’s are available to employees and up to date.

10.7 Container Labeling

All containers containing hazardous materials are required to be labeled by law. Labels must not be removed or defaced. The purpose of the label is to alert users of hazards associated with the chemical. The label must identify:

a. The chemical name
b. The name and address of the chemical manufacturer
c. The emergency phone number of the chemical manufacturer
d. The physical and health hazards
e. Any important storing or handling instructions
f. The recommended personal protective equipment and procedures to use
APPENDIX A
# APPENDIX

## REFERENCE FORMS

<table>
<thead>
<tr>
<th>Form</th>
<th>Page</th>
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<tbody>
<tr>
<td>Safety Meeting Record of Instruction</td>
<td>A1-A2</td>
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<tr>
<td>Supervisor's Investigation of Employee's Accident/Incident (TWCC 121)</td>
<td>A3-A12</td>
</tr>
<tr>
<td>Report of Safety or Health Hazard</td>
<td>A13</td>
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<td>Safety Inspection Checklist</td>
<td>A14</td>
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<tr>
<td>Contact List</td>
<td>A15</td>
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<tr>
<td>Executive Order</td>
<td>A16-A17</td>
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</tbody>
</table>
SAFETY MEETING
RECORD OF INSTRUCTION

INSTRUCTOR: ___________________ CLASS TITLE: ___________________

DATE/TIME OF TRAINING: _______________________

LOCATION: ______________________

AUDIOVISUALS USED: ______________________

HANDOUTS USED: ______________________

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<thead>
<tr>
<th>EMPLOYEE NAME</th>
<th>DEPARTMENT</th>
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SAFETY MEETING
RECORD OF INSTRUCTION CONTINUED

CLASS TITLE: ____________________________

DATE: ________________________________

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<tr>
<td>1. Ongoing/modified under unsafe conditions</td>
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<td>2. Lockout/Tagout violation</td>
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<tr>
<td>3. Improper ventilation</td>
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<td>4. Electrical hazard (ungrounded, overvoltage, etc.)</td>
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<td>5. Fire hazards (burning material, etc.)</td>
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<tr>
<td>6. Contact with electrical source (tool, device, wire, etc.)</td>
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<td>7. Handling equipment without proper safeguards</td>
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<td>8. Failure to use protective equipment (PPE)</td>
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<tr>
<td>9. Exposure to hazardous substances</td>
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<tbody>
<tr>
<td>1. Unsafe footwear</td>
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<td>2. Unsafe equipment</td>
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<td>3. Unsafe material</td>
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<td>4. Unsafe vehicle</td>
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<thead>
<tr>
<th>K DID THE STATE OR THE UNIT HAVE A SAFETY RULE, REGULATION, OR STANDARD THAT WOULD HAVE PREVENTED THE OCCURRENCE?</th>
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<tr>
<td>☐ 01 Yes ☐ 02 No</td>
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<tr>
<th>L WAS THE RULE, REGULATION, OR STANDARD VIOLATED?</th>
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<td>☐ 01 Yes ☐ 02 No</td>
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<tr>
<th>M ACTION(S) TAKEN OR PLANNED TO PREVENT RECURRENT OCCURRENCE</th>
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<tbody>
<tr>
<td>☐ 01 Action taken with employee for violating rules, regulations or procedures</td>
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<tr>
<td>☐ 02 All employees were made aware of the occurrence cause, consequence, and action taken to prevent recurrence</td>
</tr>
<tr>
<td>☐ 03 Employee given basic training</td>
</tr>
<tr>
<td>☐ 04 Employee given refresher or remedial training</td>
</tr>
<tr>
<td>☐ 05 Existing rule, regulation or standard (SOR) enforced</td>
</tr>
<tr>
<td>☐ 06 Existing rule, regulation or standard (SOR) revised</td>
</tr>
<tr>
<td>☐ 07 New rule, regulation or standard prepared</td>
</tr>
<tr>
<td>☐ 08 Physical hazard(s) corrected</td>
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<tr>
<td>☐ 09 Other positive action taken</td>
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<tr>
<th>N DESCRIBE BRIEFLY IN NARRATIVE FORM THE CIRCUMSTANCES THAT LED TO AND CAUSED THIS OCCURRENCE</th>
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<table>
<thead>
<tr>
<th>INJURED'S IMMEDIATE SUPERVISOR (print)</th>
<th>SIGNATURE</th>
<th>DATE</th>
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<tr>
<th>P.1 SECTION/DEPARTMENT/DIVISION ADDITIONAL DUTY SAFETY OFFICER COMMENT:</th>
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<tr>
<th>P.2 SECTION/DEPARTMENT/DIVISION HEAD COMMENT:</th>
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<thead>
<tr>
<th>P.3 AGENCY OR FACILITY SAFETY MANAGER</th>
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<tbody>
<tr>
<td>A) Repeat occurrence: ☐ 01 No ☐ 02 Yes, total incidents: ☐ 03 Two ☐ 04 Three ☐ 05 Four ☐ 06 Five ☐ 07 Over Five</td>
</tr>
<tr>
<td>B) Were three (3) or more workers injured in this accident? (if so, complete a separate form for each employee): ☐ 01 Yes ☐ 02 No</td>
</tr>
</tbody>
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<table>
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<th>DATE</th>
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</table>
### Supervisor’s Investigation of Employee’s Accident/Incident

**A. Extent of Injury (Check one only)**
- [ ] 0. No injury (accident only)
- [ ] 02. Injury not requiring a TWCC
- [ ] 03. Medical
- [ ] 04. Lost time only (more than one day)
- [ ] 05. Medical and lost time
- [ ] 06. Fatality

**B. Category (Check one only)**
- [ ] 01. Occupational injury (accident)
- [ ] 02. Occupational injury (aggresive behavior)
- [ ] 03. Occupational illness/disease

**C. Specific Location of Occurrence (Check one only)**

**INDOORS:**
- [ ] 01. Auditorium
- [ ] 02. Bath/Toilet area
- [ ] 03. Boiler room
- [ ] 04. Cabinet/Seck bar
- [ ] 05. Cell block
- [ ] 06. Classroom
- [ ] 07. Closet
- [ ] 08. Day room
- [ ] 09. Dormitory/Living room
- [ ] 10. Elevator
- [ ] 11. Food service area/Dining/Kitchen
- [ ] 12. Garage
- [ ] 13. Gymnasium/Recreation
- [ ] 14. Hallway/Corridor
- [ ] 15. Hospital/Drug/Dispersary
- [ ] 16. Laboratory
- [ ] 17. Laundry
- [ ] 18. Library
- [ ] 19. Nursing station
- [ ] 20. Office areas
- [ ] 21. Program areas
- [ ] 22. Ramp
- [ ] 23. Sales stores/Outlet
- [ ] 24. Reception room
- [ ] 25. Sleeping room
- [ ] 26. Steps/Stair/Stairway
- [ ] 27. Storage area
- [ ] 28. Waiting room
- [ ] 29. Workshop/Technical trades
- [ ] 30. Other (specify)

**OUTDOORS:**
- [ ] 31. Athletic Field
- [ ] 32. Campus/Grass
- [ ] 33. Groves/Orchard
- [ ] 34. Highway/Road/Street
- [ ] 35. Loading dock
- [ ] 36. Park or recreation area
- [ ] 37. Parking lot
- [ ] 38. Pool
- [ ] 39. Sidewalk
- [ ] 40. Steps/Stair/Stairway
- [ ] 41. Storage area
- [ ] 42. Swimming pool area
- [ ] 43. Tower
- [ ] 44. Other (specify)

**D. Activity Engaged in by Injured at Time of Injury (Check one only)**
- [ ] 01. Bidding
- [ ] 02. Buffing
- [ ] 03. Carrying
- [ ] 04. Cleaning
- [ ] 05. Climbing
- [ ] 06. Cutting
- [ ] 07. Descending
- [ ] 08. Digging
- [ ] 09. Dressing
- [ ] 10. Driving
- [ ] 11. Eating
- [ ] 12.Exercising
- [ ] 13. Feeding
- [ ] 14. Grooming
- [ ] 15. Grocery shopping
- [ ] 16. Grooming
- [ ] 17. Jumping
- [ ] 18. Lifting
- [ ] 19. Loading
- [ ] 20. Mapping
- [ ] 21. Mowing
- [ ] 22. Opening
- [ ] 23. Pulling
- [ ] 24. Pushing
- [ ] 25. Reaching
- [ ] 26. Radiating
- [ ] 27. Restraining
- [ ] 28. Running
- [ ] 29. Sending
- [ ] 30. Saving
- [ ] 31. Scavenging
- [ ] 32. Securing
- [ ] 33. Sitting
- [ ] 34. Standing
- [ ] 35. Stepping
- [ ] 36. Turning
- [ ] 37. Walking
- [ ] 38. Welding
- [ ] 39. Other (specify)

**E. Body Part Injured (Most serious)**
- [ ] 01. Ankle
- [ ] 02. Arm
- [ ] 03. Back
- [ ] 04. Buttocks
- [ ] 05. Chest
- [ ] 06. Ear
- [ ] 07. Eye
- [ ] 08. Foot
- [ ] 09. Finger/Thumb
- [ ] 10. Forehead
- [ ] 11. Groin
- [ ] 12. Hand
- [ ] 13. Hip
- [ ] 14. Internal organs
- [ ] 15. Jaw
- [ ] 16. Knee(s)
- [ ] 17. Leg(s)
- [ ] 18. Mouth
- [ ] 19. Neck
- [ ] 20. Nose
- [ ] 21. Pelvis
- [ ] 22. Rib(s)
- [ ] 23. Scalp
- [ ] 24. Shoulder
- [ ] 25. Tongue
- [ ] 26. Wrist(s)
- [ ] 27. Toe(s)
- [ ] 28. Wrist(s)
- [ ] 29. Other (specify)

**F. Type of Injury (Check primary one)**
- [ ] 01. Abrasion
- [ ] 02. Amputation
- [ ] 03. Bite
- [ ] 04. Bruise
- [ ] 05. Burnd
- [ ] 06. Concussion
- [ ] 07. Cut
- [ ] 08. Dermal
- [ ] 09. Dislocation
- [ ] 10. Foreign object
- [ ] 11. Fracture
- [ ] 12. Frailty
- [ ] 13. Heart attack
- [ ] 14. Heat exhaustion
- [ ] 15. Hematoma
- [ ] 16. Infection
- [ ] 17. Inflammation
- [ ] 18. Internal injuries
- [ ] 19. Inflammation
- [ ] 20. Inflammation
- [ ] 21. Inflammation
- [ ] 22. Inflammation
- [ ] 23. Shock
- [ ] 24. Sprain
- [ ] 25. Spleen
- [ ] 26. Stress
- [ ] 27. Other (specify)

**G. Type of Occurrence (Check one only)**
- [ ] 01. Accident (death, suicide, homicide, etc.)
- [ ] 02. Bodily reaction (drug, medication)
- [ ] 03. Contact with chemicals
- [ ] 04. Contact with electric current
- [ ] 05. Contact with temperatures extremes
- [ ] 06. Other

**G. Continued**

- [ ] 07. Fall on same level
- [ ] 08. Fall on different level
- [ ] 09. Over exertion (exceeding physical ability resulting in injury)
- [ ] 10. Overexposure to environmental hazards (poison, virus, etc.)
- [ ] 11. Slip (not a fall)
- [ ] 12. Suck/ing/ing (smooth, sharp object)
- [ ] 13. Struck by falling, moving object
- [ ] 14. Other (specify)

**H. Physical Thing Most Closely Associated with Occurrence (Check one only)**
- [ ] 01. Aerosol
- [ ] 02. Air pressure
- [ ] 03. Animal (mule, dog, horse, etc.)
- [ ] 04. Battleship equipment (ball, dart, etc.)
- [ ] 05. Attachment (belt, policy, gear, shaft)
- [ ] 06. Building component
- [ ] 07. Cabinet
- [ ] 08. Chemical (solid, liquid, or gas)
- [ ] 09. Clothing
- [ ] 10. Container (bottle, box, barrel, cylinder, etc.)
- [ ] 11. Carp
- [ ] 12. Door (vicious, manual, revolving)
- [ ] 13. Drugs or medicine
- [ ] 14. Dust
- [ ] 15. Electrical apparatus
- [ ] 16. Elevator, escalator
- [ ] 17. Explosives
- [ ] 18. Eyewear
- [ ] 19. Fan
- [ ] 20. Fire, flame, smoke
- [ ] 21. Floor
- [ ] 22. Food products
- [ ] 23. Fences
- [ ] 24. Furniture, fixtures
- [ ] 25. Gun
- [ ] 26. Glass items
- [ ] 27. Gun
- [ ] 28. Ground (cards)
- [ ] 29. Hand tool
- [ ] 30. Heating equipment
- [ ] 31. Heating equipment
- [ ] 32. Hydration
- [ ] 33. Infections or parasitic agent
- [ ] 34. Jammed, client, employee
- [ ] 35. Insect
- [ ] 36. Kitchen equipment
- [ ] 37. Knife
- [ ] 38. Lighting fixture and equipment
- [ ] 39. Ladder, scaffold
- [ ] 40. Locker
- [ ] 41. Machine
- [ ] 42. Material handling equipment
- [ ] 43. Metal
- [ ] 44. Mineral items (ash, clay, gravel, etc.)
- [ ] 45. Motor vehicle
- [ ] 46. Handle
- [ ] 47. Office equipment (chair, desk, cabinet, etc.)
- [ ] 48. Paint
- [ ] 49. Particle
- [ ] 50. Pavement
- [ ] 51. Other (specify)
- [ ] 52. Pipes
- [ ] 53. Platform, dock, ramp

Continued on other side
Ms. Smith states that she was walking down the stairs of the headquarters building. Her heel caught on the edge of the stairs and she fell to the bottom of the stairs injuring her lower back.
EXAMPLE: Employee Information
TWCC - 121

Items 1, 2, and 3: Enter injured employee's complete legal name.

Item 4: Enter injured employee's social security number.

Item 5: Enter injured employee's date of birth in mm/dd/yyyy format.

Item 6: Is injured employee male or female? Check appropriate box.

Item 7: When was employee's first day of employment in this work unit? (Note: May be different from agency hire date.) Enter date in mm/dd/yyyy format.

Item 8: Enter the three-digit code assigned by the Comptroller's Office to the agency of the injured employee. This code may be found on employee's pay check stub.

Item 9: Enter the four-digit code assigned by the Comptroller's Office to the injured employee's budget unit. This code may be found on employee's pay check stub.

Item 10: Enter the four-digit classification code of the injured employee's position. This code is established by the State Employees Classification System, and may be obtained from your agency's personnel office.

Item 11: Is injured employee's position full time, part time, or "Floater"? Check appropriate.

Item 12: Enter the date of the incident, accident, or injury. If occupational disease, enter date disease was first known to be job related. Enter in mm/dd/yyyy format.

Item 13: Enter time the incident, accident or injury occurred. Check a.m. or p.m.

SUPERVISOR'S INVESTIGATION OF EMPLOYEE'S ACCIDENT/INCIDENT

LAST NAME OF INJURED
Smith

FIRST NAME
Jane

SEX
F

DATE OF EMPLOYMENT IN UNIT
10/01/85

AGENCY NUMBER (COMPTROLLER'S CODE)
101

BUDGET NUMBER OF ASSIGNED UNIT
7100

JOB CLASSIFICATION CODE
1161

POSITION STATUS
Full-time

DATE OF INCIDENT
02/01/91

TIME OF INCIDENT
10:30

m
A. Complete the information concerning the extent of the injury:
- Check no injury (item 01) if the incident did not result in any personal injury to the employee.
- An injury not requiring a TWCC-1 (item 02) is an injury which resulted in no medical cost to state workers' compensation and did not result in the employee losing time from work in the following shift.
- Medical (item 03) should be checked when there is a medical claim to state workers' compensation but less than one day of lost work.
- Lost time only (item 04) should be checked when more than one day of work is lost but there is no medical claim to state workers' compensation.
- Medical and lost time (item 05) is appropriate when there is both a medical claim to state workers' compensation and more than one day is lost from work.
- Check fatality (item 06) when the injury results in the employee's death.

B. Check the category which best describes the incident responsible for initiating this report:
- An occupational injury (item 01) is an injury to an employee that occurs while the employee is performing job duties assigned to him/her during the course and scope of employment.
- An aggressive behavior injury (item 02) is an occupational injury that is the result of aggression from a client, inmate or other non-state employee.
- An occupational illness/disease (item 03) is a disease arising out of and in the course of employment that causes damage or harm to the physical structure of the body. The term includes other diseases or infections that naturally result from the work-related disease. The term does not include an ordinary disease of life to which the general public is exposed outside of employment, unless that disease is an incident to a compensable injury or occupational disease. The term includes repetitive trauma injuries.

C. Indicate the location of the incident's occurrence. If the incident occurred indoors, also fill in the building's inventory number. When none of the pre-assigned categories are appropriate, check "other" and fill in the location in the blank provided.
**ACTIVITY ENGAGED IN BY INJURED AT TIME OF INJURY (Check one only)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Walking</td>
</tr>
<tr>
<td>02</td>
<td>Lifting</td>
</tr>
<tr>
<td>03</td>
<td>Carrying</td>
</tr>
<tr>
<td>04</td>
<td>Cleaning</td>
</tr>
<tr>
<td>05</td>
<td>Climb</td>
</tr>
<tr>
<td>06</td>
<td>Cleaning</td>
</tr>
<tr>
<td>07</td>
<td>Descending</td>
</tr>
<tr>
<td>08</td>
<td>Digging</td>
</tr>
<tr>
<td>09</td>
<td>Dressing</td>
</tr>
<tr>
<td>10</td>
<td>Driving</td>
</tr>
<tr>
<td>11</td>
<td>Eating</td>
</tr>
<tr>
<td>12</td>
<td>Exercising</td>
</tr>
<tr>
<td>13</td>
<td>Exercising</td>
</tr>
<tr>
<td>14</td>
<td>Feeding</td>
</tr>
<tr>
<td>15</td>
<td>Grinding</td>
</tr>
<tr>
<td>16</td>
<td>Grooming</td>
</tr>
<tr>
<td>17</td>
<td>Jumping</td>
</tr>
<tr>
<td>18</td>
<td>Lifting</td>
</tr>
<tr>
<td>19</td>
<td>Loading</td>
</tr>
<tr>
<td>20</td>
<td>Mopping</td>
</tr>
<tr>
<td>21</td>
<td>Mechanical (specify)</td>
</tr>
</tbody>
</table>

**BODY PART INJURED (Most Serious)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Ankle</td>
</tr>
<tr>
<td>02</td>
<td>Arm</td>
</tr>
<tr>
<td>03</td>
<td>Back</td>
</tr>
<tr>
<td>04</td>
<td>Buttocks</td>
</tr>
<tr>
<td>05</td>
<td>Check</td>
</tr>
<tr>
<td>06</td>
<td>Chest</td>
</tr>
<tr>
<td>07</td>
<td>Chin</td>
</tr>
<tr>
<td>08</td>
<td>Ear(s)</td>
</tr>
<tr>
<td>09</td>
<td>Eye(s)</td>
</tr>
<tr>
<td>10</td>
<td>Foot(s)</td>
</tr>
<tr>
<td>11</td>
<td>Finger(s)</td>
</tr>
<tr>
<td>12</td>
<td>Forehead</td>
</tr>
<tr>
<td>13</td>
<td>Groin</td>
</tr>
<tr>
<td>14</td>
<td>Hand</td>
</tr>
<tr>
<td>15</td>
<td>Hip</td>
</tr>
<tr>
<td>16</td>
<td>Internal organ(s)</td>
</tr>
<tr>
<td>17</td>
<td>Jaw</td>
</tr>
<tr>
<td>18</td>
<td>Knees</td>
</tr>
<tr>
<td>19</td>
<td>Leg(s)</td>
</tr>
<tr>
<td>20</td>
<td>Mouth</td>
</tr>
<tr>
<td>21</td>
<td>Neck</td>
</tr>
<tr>
<td>22</td>
<td>Nose</td>
</tr>
<tr>
<td>23</td>
<td>Palm(s)</td>
</tr>
<tr>
<td>24</td>
<td>Rib(s)</td>
</tr>
<tr>
<td>25</td>
<td>Scalp</td>
</tr>
<tr>
<td>26</td>
<td>Shoulder</td>
</tr>
<tr>
<td>27</td>
<td>Toe(s)</td>
</tr>
<tr>
<td>28</td>
<td>Wrist(s)</td>
</tr>
<tr>
<td>29</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

**TYPE OF INJURY (Check primary one)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Abrasion</td>
</tr>
<tr>
<td>02</td>
<td>Amputation</td>
</tr>
<tr>
<td>03</td>
<td>Bite</td>
</tr>
<tr>
<td>04</td>
<td>Bruise</td>
</tr>
<tr>
<td>05</td>
<td>Burn</td>
</tr>
<tr>
<td>06</td>
<td>Contusion</td>
</tr>
<tr>
<td>07</td>
<td>Cut</td>
</tr>
<tr>
<td>08</td>
<td>Deamination</td>
</tr>
<tr>
<td>09</td>
<td>Dislocation</td>
</tr>
<tr>
<td>10</td>
<td>Foreign object</td>
</tr>
<tr>
<td>11</td>
<td>Fracture</td>
</tr>
<tr>
<td>12</td>
<td>Puncture</td>
</tr>
<tr>
<td>13</td>
<td>Puncture</td>
</tr>
<tr>
<td>14</td>
<td>Scratch</td>
</tr>
<tr>
<td>15</td>
<td>Shock</td>
</tr>
<tr>
<td>16</td>
<td>Sprain</td>
</tr>
<tr>
<td>17</td>
<td>Stab</td>
</tr>
<tr>
<td>18</td>
<td>Sting</td>
</tr>
<tr>
<td>19</td>
<td>Strain</td>
</tr>
<tr>
<td>20</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

**TYPE OF OCCURRENCE (Check one only)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Aggression (client, student, inmate, patient)</td>
</tr>
<tr>
<td>02</td>
<td>Bodily reaction (drug, medication)</td>
</tr>
<tr>
<td>03</td>
<td>Coughing, sneeze, or sneeze</td>
</tr>
<tr>
<td>04</td>
<td>Contact with chemicals</td>
</tr>
<tr>
<td>05</td>
<td>Contact with electric current</td>
</tr>
<tr>
<td>06</td>
<td>Contact with temperature extremes</td>
</tr>
<tr>
<td>07</td>
<td>Fall on same level</td>
</tr>
<tr>
<td>08</td>
<td>Fall on different level</td>
</tr>
<tr>
<td>09</td>
<td>Over-exertion (exceeding physical ability resulting in strain, rupture)</td>
</tr>
<tr>
<td>10</td>
<td>Overresponse to environmental hazards (noise, toxic)</td>
</tr>
<tr>
<td>11</td>
<td>Slip (not a fall)</td>
</tr>
<tr>
<td>12</td>
<td>Struck against (an object)</td>
</tr>
<tr>
<td>13</td>
<td>Struck by falling, moving object</td>
</tr>
<tr>
<td>14</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

**Note:** Denote the injured employee's activity at the time of the incident. When none of the listed categories are appropriate, mark "other" and write the activity in the space provided.

**Check the body part most affected by the incident. Check "other" and specify the part when none of the categories are appropriate.

**Denote the primary type of injury brought about by the incident. Use the "other" category when none of the listed categories apply.

**Indicate the type of incident which resulted in filing this report. Check "other" when none of the pre-assigned categories are appropriate.**
**PHYSICAL THING MOST CLOSELY ASSOCIATED WITH OCCURRENCE (Check one)**

- Aircraft
- Air pressure
- Animal (cat, dog, horse, etc.)
- Athletic equipment (baseball, bat, dart, etc.)
- Attachments (belt, pulley, gear, shaft)
- Building component
- Cabinet
- Chemical (solid, liquid, or gas)
- Clothing
- Container (bottle, box, barrel, cylinder, etc.)
- Cloth
- Doors (automatic, manual, revolving)
- Drugs or medicine
- Dust
- Electrical apparatus
- Elevator, escalator
- Explosives
- Eyewear
- Fire
- Fuel, flammable, smoke
- Floor
- Food products
- Frame
- Furniture, fixtures
- Glass
- Glue, cement, adhesive
- Insect
- Kitchen equipment
- Knife
- Lighting fixture and equipment
- Ladder, scaffold
- Lock
- Machine
- Material handling equipment
- Metal
- Mineral items (asphalt, clay, gravel, etc.)
- Motor vehicle
- Needle
- Office equipment (chair, desk, cabinet, etc.)
- Paint
- Particle
- Pavement
- Person (other than client, inmate, employee)
- Pipe
- Platform, dock, ramp
- Pole
- Power tool or machinery (lathe, saw, etc.)
- Radiating equipment (microwave, x-ray, etc.)
- Receptacle
- Smoke
- Stair, step
- Sea
- Trench, ditch
- Vegetation
- Weather
- Wood
- Other (specify)

**ACT/PRACTICE ASSOCIATED WITH OCCURRENCE (Check one only)**

- Contact with electrical source (tool, device, wire, etc.)
- Entering an unauthorized area
- Failure to practice safe driving technique
- Failure to use established route or taking short cut
- Failure to use handrail, grab bar
- Failure to use lockout device
- Failure to use wear personal protective equipment (PPE)
- Failure to wear work duties as designated by PPE
- Failure to wear appropriate dress (shoes, shirt, blouses)
- Handling of object, material, item, thing
- Horseplay
- Improper making or storing (non-compatible material, chemicals, etc.)
- Improper placing or storing (materials, tools, equipment)
- Lifting (including position, stance)
- Making safety devices inoperative
- No unsafe condition on the part of employee
- Operating/Working at unsafe speed
- Operating without proper authority/permission
- Over or necessary exposure to hazards (gas, fumes, dust, chemicals, mist, radiation, etc.)
- Repairing or servicing moving objecting (machine, equipment, etc.)
- Riding moving equipment not designed for passengers
- Using defective tool, material, equipment
- Using wrong tool, material equipment
- Working/Waiting under suspended load (crane, hoist, derrick)
- Working in a confined space without proper safeguard
- Working without adequate lighting
- Other (specify)
**J. Condition (Physical Hazard) Associated with Occurrence**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Congested area</td>
</tr>
<tr>
<td>02</td>
<td>Electrical hazard (voltage, current, overloads, etc.)</td>
</tr>
<tr>
<td>03</td>
<td>Excessive noise</td>
</tr>
<tr>
<td>04</td>
<td>Harmful conditions to health</td>
</tr>
<tr>
<td>05</td>
<td>Health hazards (radiation, gas, fumes, dust, vapor, etc.)</td>
</tr>
<tr>
<td>06</td>
<td>Improper housekeeping</td>
</tr>
<tr>
<td>07</td>
<td>Improperly stored chemicals, hazardous substances</td>
</tr>
<tr>
<td>08</td>
<td>Inadequate ventilation</td>
</tr>
<tr>
<td>09</td>
<td>Inadequate or no warning signs</td>
</tr>
<tr>
<td>10</td>
<td>Layout or design (office, shop, equipment)</td>
</tr>
<tr>
<td>11</td>
<td>Lighting</td>
</tr>
<tr>
<td>12</td>
<td>Mislabelled/Unlabelled chemicals, hazardous materials, etc.</td>
</tr>
<tr>
<td>13</td>
<td>No unsafe condition</td>
</tr>
<tr>
<td>14</td>
<td>Open crack, hole, ditch, sharp drop-off</td>
</tr>
<tr>
<td>15</td>
<td>Poisonous vegetation (grass, herbs, plants)</td>
</tr>
<tr>
<td>16</td>
<td>Promoting object (ball, wire, splinter, etc.)</td>
</tr>
<tr>
<td>17</td>
<td>Rough Sharp objects</td>
</tr>
<tr>
<td>18</td>
<td>Slipping or tripping hazard</td>
</tr>
<tr>
<td>19</td>
<td>Step, stairs, ladder, or other working surfaces</td>
</tr>
<tr>
<td>20</td>
<td>Unguarded machine, belt, pulley, roller, etc.</td>
</tr>
<tr>
<td>21</td>
<td>Unsafe/Defective hand or electric tools</td>
</tr>
<tr>
<td>22</td>
<td>Unsafe equipment</td>
</tr>
<tr>
<td>23</td>
<td>Unsafe material</td>
</tr>
<tr>
<td>24</td>
<td>Unsafe vehicle</td>
</tr>
<tr>
<td>25</td>
<td>Unshored trench, excavation, etc.</td>
</tr>
<tr>
<td>26</td>
<td>Walkway, sidewalk, pavement</td>
</tr>
<tr>
<td>27</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

**K. Did the State or the Unit Have a Safety Rule, Regulation, or Standard that Would Have Prevented the Occurrence?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Yes</td>
</tr>
<tr>
<td>02</td>
<td>No</td>
</tr>
</tbody>
</table>

**L. Was the Rule, Regulation, or Standard Violated?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Yes</td>
</tr>
<tr>
<td>02</td>
<td>No</td>
</tr>
</tbody>
</table>

**M. Actions Taken or Planned to Prevent Recurrence**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Action taken with employee for violating rules, regulations or procedures</td>
</tr>
<tr>
<td>02</td>
<td>All employees were made aware of the occurrence cause, consequences, and action taken to prevent recurrence</td>
</tr>
<tr>
<td>03</td>
<td>Employee given basic training</td>
</tr>
<tr>
<td>04</td>
<td>Employee given refresher or remedial training</td>
</tr>
<tr>
<td>05</td>
<td>Existing rule, regulation or standard (SOP) enforced</td>
</tr>
<tr>
<td>06</td>
<td>Existing rule, regulation or standard (SOP) revised</td>
</tr>
<tr>
<td>07</td>
<td>New rule, regulation or standard prepared</td>
</tr>
<tr>
<td>08</td>
<td>Physical hazard(s) corrected</td>
</tr>
<tr>
<td>09</td>
<td>Other positive action taken</td>
</tr>
</tbody>
</table>

**Check the most appropriate, or primary, physical hazards associated with the incident. When appropriate check "other" and specify.**

**Indicate whether the State or the unit had a safety rule which could have prevented this incident.**

**Indicate whether the rule(s) denoted in item K. were violated.**

**Check all actions already taken or planned to prevent a recurrence of this incident. Check "other" and specify when appropriate.**
Ms. Smith states that she was walking down the stairs of the headquarters building. Her heel caught on the edge of the stairs, and she fell to the bottom of the stairs, injuring her lower back.

Robert A. Jones

INJURED'S IMMEDIATE SUPERVISOR (print)

SIGNATURE

DATE

PHONE

P 1 Submit the AGS-10 91/TWCC-121 to the unit's additional duty safety officer for review and comment. A signature is needed whether or not a comment was included.

P 2 Once this form has been completed by the injured employee's supervisor, and reviewed by the additional duty safety officer, it should be submitted to the additional duty safety officer's supervisor for review, comments if appropriate, and signature.

P 3 Submit completed form to the agency's facility safety manager for review of correctness and completeness. When the form is correct and positive action has been initiated to prevent recurrence of similar accidents/incidents, the safety manager should make appropriate comments sign and date the form.

P. 1 SECTION/DEPARTMENT/DIVISION ADDITIONAL DUTY SAFETY OFFICER COMMENT: Employee was wearing 2" spiked heels, and was carrying a box of computer paper in both hands. She has been counseled regarding safety high heels.

Shirley Smith
02/03/91

SIGNATURE

DATE

P.2 SECTION/DEPARTMENT/DIVISION HEAD, COMMENT: No unsafe conditions, only unsafe practices.

Publicize within the agency.

Ben Roberts
02/04/91

SIGNATURE

DATE

P.2 AGENCY OR FACILITY SAFETY MANAGER.

Repeat occurrence: [ ] Yes [ ] No
01. Total incidents: [ ] 03 [ ] 06 [ ] 09 [ ] 12 [ ] 15 [ ] 18 [ ] 21
02. How many of the workers injured in this accident? (If so, complete separate form for each employer) [ ] 01 [ ] 02 [ ] 03
03. Comment: Procedures for descending stairs will be discussed in next safety meeting.

Floyd Arnold
02/05/91

SIGNATURE

DATE

AGS-10-91/TWCC-121
REPORT OF SAFETY OR HEALTH HAZARD

Name: __________________________ Date: ________

Location of the hazard:

Building Name __________________________ Floor: ________

Area ________________________________________________________________________

Room/workstation number ________________________________________________________________________

Nature of the hazard: ________________________________________________________________________

__________________________________________________________________________________________

Do not write below this line

Recommended Action Plan: ________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

Estimated Completion Date: ______________________

Signature: __________________________ Date: __________________

Safety Officer

Date of Follow-up: ________________ Problem Resolved: YES NO
# SAFETY INSPECTION CHECKLIST

**Instructions:** Please review the checklist. If you consider an item in your area unsafe, please complete the Report of Safety or Health Hazard form and return to the Office of Environmental Health and Safety.

**Office/Room#** __________________________ **Bldg** ______

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floors have no slippery surfaces due to excess polish or wax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No holes or depressions in floors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rugs in hallways or offices are free from holes, tears</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aisles free of obstruction, including electrical cords and outlets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stairwells and exits properly lighted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No unsafe ladders or trolleys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General housekeeping is good</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No top-heavy filing cabinets (either by loading or drawer opening)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifting is performed safely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct use of pins, knives, cutters, or staples</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire-escape doors open and free for exit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass doors either frosted or with lettering or decals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch and cover plates in place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No slivers in furniture or accessories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No running or crowding or jamming doors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe storage of flammables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People trained in requirements of the Hazard Communication Standard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct type and placement of the Hazard Communication Standard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-aid facilities available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric fans properly guarded-space heaters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate ventilation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any unsafe practices observed:

**Comments:**  

**Signature:** __________________________ **Date:** ______
CONTACT LIST
UNIVERSITY OF HOUSTON-CLEAR LAKE
2700 Bay Area Blvd.
Houston, TX 77058-1098

Police Department
283-2222
DO NOT CALL 911
Bayou Building, room 1636
Operational hours are 24 hours a day, 7 days a week

Health and Disability Services
283-2626
Bayou Building, room 1406.
Operational hours for the Fall and the Spring are:
Monday-Thursday 9:00 a.m. - 7:00 p.m.
Friday 8:00 a.m. - 12:00 p.m.
Summer hours: Monday - Thursday 8:00 a.m. - 6:00 p.m.
Friday 8:00 a.m. - 12:00 p.m.

Facilities Management and Construction
283-2250
Central Services Building
Operational hours for the Fall and Spring are:
Monday - Friday 8:00 a.m. - 5:00 p.m.
Summer hours: Monday - Thursday 8:00 a.m. - 6:00 p.m.
Friday 8:00 a.m. - 12:00 p.m.

Custodial Services
283-2239
Bayou Building, room 1401
Operational hours for the Fall and Spring are:
Monday - Friday 8:00 a.m. - 5:00 p.m.
Summer hours: Monday - Thursday 8:00 a.m. - 6:00 p.m.
Friday 8:00 a.m. - 12:00 p.m.

The Office of Environmental Health and Safety
283-2106
Bayou Building room 1117.
Operational hours for the Fall and Spring are:
Monday - Friday 8:00 a.m. - 5:00 p.m.
Summer hours: Monday - Thursday 8:00 a.m. - 6:00 p.m.
Friday 8:00 a.m. - 12:00 p.m.
EXECUTIVE ORDER
BY THE
GOVERNOR OF THE STATE OF TEXAS

THE STATE OF TEXAS
EXECUTIVE DEPARTMENT
OFFICE OF THE GOVERNOR
AUSTIN, TEXAS

EXECUTIVE ORDER
GWB 95-8

RELATING TO WORKPLACE SAFETY AND HEALTH OF STATE EMPLOYEES, CITIZENS SERVED, AND PRESERVATION OF STATE PROPERTY

WHEREAS, it is the policy of the State of Texas to provide a safe and healthy workplace for all state employees, citizens served, and to preserve state property, and

WHEREAS, workplace deaths, injuries and illnesses and destruction of property produce human suffering, economic and social losses and impair the operating efficiency of state government; and

WHEREAS, workplace deaths, injuries, illnesses, and loss of state property can be reduced or eliminated by systematic planning, training, safe work practices and the effective use of prevention and control measures, and

WHEREAS, occupational death, accident, illness, and property loss prevention requires management and employee commitment, accountability, cooperation, and leadership at all levels of state government, and

WHEREAS, laws, regulations and sound business practices pertaining to safety and health in the workplace and preservation of property apply to the operation of state government, and

WHEREAS, state government should lead by example by complying with all applicable federal, and state laws, standards, rules, regulations and guidelines;

NOW, THEREFORE, I, GEORGE W. BUSB, Governor of the State of Texas, by the authority vested in me by the Constitution and the laws of this state, do hereby

Proclaim that all state agencies, institutions and universities of higher education must develop and implement comprehensive written risk management/safety programs whose purpose is to attain the following objectives:

1. Minimize the risk of accidental job related deaths, occupational injuries and illnesses, and state property losses by the use of recognized loss prevention and control techniques.

2. Establish written performance/accountability standards and objectives to reduce deaths of both employees and citizens served, injuries and illnesses, and to conserve property resources of the state.

3. Provide adequate safety and health and property preservation training and education for managers, supervisors and employees.
Establish risk management/safety and health committees consisting of representatives from all levels and functional areas of the organization.

Promote work practices that ensure preservation of state property and safety of employees and citizens.

Establish a procedure for conducting periodic risk management/safety and health inspections so that potential hazards are detected and corrected or controlled in a timely manner.

Comply with all state and applicable federal laws, standards, rules, regulations and guidelines regarding employee and citizen safety and health and property preservation.

Designate an individual to serve as the organization's risk manager/safety officer to assist in directing its loss prevention program.

Promote effective investigation and management of workers' compensation claims and the prompt return to work of injured employees.

FURTHER, all state agencies' written risk management/safety and health programs must be reviewed and approved by the State Risk Management Division.

The State Risk Management Division will report biennially to the Legislature for agencies within their jurisdiction on progress in achieving improved workplace safety and health and property preservation in state government.

All state employees must be informed of the Executive Order, of its intent and requirements for fostering a safe and healthy workplace and preservation of state property throughout state government.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Texas to be affixed.

Done at the Capitol in the City of Austin this 29 day of June, 1995.

GEORGE W. BUSH
Governor of Texas

By the Governor

ANTONIO GARZA, JR.
Secretary of State

Filed in the Office of the Secretary of State

JUN 29 1995

A-17
Confined Space Entry Program
DRAFT

1. Purpose

On April 15, 1993, OSHA's Permit-Required Confined Spaces Final Rule (29 CFR 1910.146) went into effect. On December 1, 1998 OSHA published revisions to this rule to provide for:

- Enhanced employee participation in the employer's permit space program;
- Authorized representatives with the opportunity to observe any testing or monitoring of permit spaces;
- Strengthening and clarifying the criteria employers must satisfy when preparing for timely rescue of incapacitated permit space entrants.

2. Definition of a Confined Space

A confined space is any enclosed area with the following characteristics:

- Limited means of entry or exit
- Structure that is not designed for extended human occupation
- Atmosphere that is actually or potentially hazardous
- Potential for other hazards

3. Requirements

Confined spaces offer limited means of entry or exit and may contain hazards; employees must comply with 29 CFR 1910.146 and the UHCL Confined Space Entry Program when working in these areas. The Confined Space Entry Program is available from the Office of Environmental Health and Safety. Contact the Office of Environmental Health and Safety prior to the entry of a confined space.

Most confined spaces are actually or potentially hazardous. These confined spaces require work permits because they have one or more of the following:

- Hazardous atmosphere or the potential to contain hazardous atmosphere
- Materials that could engulf workers
- Internal structure or contents that could trap or asphyxiate employees
- Other recognizable hazards

4. Examples

Examples of confined spaces include, but are not limited to the following:

- Manholes
- Air handlers
- Crawl spaces
- Tunnels
- Tanks
- Trenches
5. Definitions

**Acceptable entry conditions:** The conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

**Attendant:** An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the UHCL Confined Space Program.

**Authorized Entrants:** Properly trained workers authorized by the employer to enter a permit space.

**Confined Space:** Any enclosed space with limited means of entry or egress, which is not designed for continuous occupation. Such as signal manholes, electrical manholes, vaults, sewers, tunnels or other structures similarly surrounded by confining surfaces so as to permit the accumulation of dangerous gases, vapors or the exclusion of oxygen.

**Double Block and Bleed:** The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

**Emergency:** Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.

**Engulfment:** The surrounding and affective capture of a person by liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force in the body to cause death by strangulation, constriction or crushing.

**Entry:** Physical act of entering a confined space. An entry occurs when any part of a worker's body breaks the plane of the confined space opening.

**Entry Permit:** Written or printed document that is provided in appendices A & B to allow and control entry into a permit space and that contains specific required information.

**Hazardous Atmosphere:** an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL)
- Airborne combustible dust at a concentration that meets or exceeds its LFL; NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.
- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit;
Atmosphere that is oxygen enriched, oxygen deficient, combustible, toxic, or otherwise immediately dangerous to life or health.

**Hotwork:** Operations that could provide a source of ignition, such as riveting, welding, cutting, burning, or heating.

**Immediately dangerous to life or health (IDLH):** Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual’s ability to escape unaided from a permit space.

*NOTE:* Some materials -- hydrogen fluoride gas and cadmium vapor, for example -- may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

**Permit-Required Confined Space:** Confined space that contains actually or potentially hazardous atmosphere, or the potential for engulfment by particulate matter or liquid.

**Person Authorizing Entry:** Worker who is properly trained in administrative, technical, and managerial aspects of confined space entry. This person authorizes entry and has the authority to terminate entry when conditions become unfavorable.

*Note:* This person may also serve as an attendant or as an authorized entrant if that person is trained and equipped as required by this program. The duties of this person may be passed from one individual to another.

6. **Employee Responsibilities**

All employees and contractors must follow the guidelines in the UHCL Confined Space Entry Program and other required programs to ensure safe entry into confined spaces. In addition, the Office of Environmental Health and Safety and Supervisors are responsible for the following:

- Selecting a person to authorize entry
- Authorizing entrants and attendants, as appropriate
- Providing atmospheric monitoring equipment, personal protective equipment, and other necessary equipment
- Training the people who authorize entry and the people who enter and attend confined spaces
- Assisting with identifying confined spaces, as necessary
- Monitoring program compliance

7. **Safety Procedures**

The following sections cover proper procedures and guidelines for safely working within confined spaces.

*NOTE:* Electrical manholes and other confined spaces with high voltage electrical hazards are covered by 29 CFR 1910.269. Please refer to the code for more information.
7.1 Inspecting the Space and Completing the Checklist

Before entering a confined space, evaluate the area and complete a Confined Space Checklist Form and Entry Document.

To complete the form, determine the following information:

- Identity and location of the confined space
- Purpose for entering the area
- Known and potential hazards
- Required isolation methods (e.g., lockout/tagout)
- Environmental conditions of the confined space
- Atmospheric readings to verify that acceptable environmental conditions are met and maintained
- Rescue services, procedures, and equipment that may be necessary in case of an emergency
- Communication procedures to be used
- Personal protective equipment to be used
- Any additional information relating to the specific circumstances of the confined space

Obtaining Entry Permission

- Names of the following:
  - Person authorizing entry
  - Supervisor
  - Authorized entrants
  - Authorized attendants

- Employees must notify the person who authorizes entry before working in confined spaces.
- The person who authorizes entry refers to any records on file and identifies the actual or potential hazards of the area in question. If no file exists for the specific space, a new one is developed.
- The person who authorizes entry then reviews and approves the entry form as appropriate. A copy of the form is filed for future reference.

IMPORTANT: If you intend to perform hotwork within the confined space, a Hotwork Permit should be obtained.

7.2 Preparing the Entry Team

Before entering a confined space, all employees involved with the entry must attend a preparation meeting. The agenda for this meeting includes the following:

- Discussion of actual and potential hazards
- Review of emergency procedures including rescue and evacuation
- Completion of the entry form by all team members to acknowledge their understanding of the hazards involved with the confined space
- Issuance of personal protective equipment
- Discussion of site location and other essential information

7.3 Monitoring the Atmosphere

Due to poor ventilation and physical structure, the atmosphere in confined spaces may be actually or potentially hazardous. Atmospheric hazards include the following:

- Oxygen deficient or oxygen enriched atmospheres
- Combustible atmospheres
• Toxic atmospheres
• Any other atmosphere that is immediately dangerous to life or health (IDLH)

Employees trained in atmospheric monitoring will test several points in a confined space for oxygen content, combustible atmosphere and potential toxic contaminants.

**Oxygen Atmospheres.** Oxygen enriched atmospheres are more than 23.5% oxygen; oxygen deficient atmospheres are less than 19.5% oxygen. Certain chemical or biological reactions may reduce oxygen over time, but employee operations such as cutting or welding may reduce oxygen content very quickly. Oxygen levels must be tested regularly whenever hotwork is performed within a confined space.

**Combustible Atmospheres.** Combustible atmospheres have enough oxygen and flammable vapor, gas, or dust to ignite and support a fire or explosion if exposed to flames, sparks, or heat. Oxygen-enriched atmospheres and hazardous atmospheres in excess of their lower explosive limits (LEL) are extremely combustible and dangerous.

**Toxic Atmospheres.** Toxic atmospheres can cause injury, illness, or death. Safety concerns include inhalation and skin exposure. If the identity of the toxic atmosphere is known, check all appropriate Material Safety Data Sheets (MSDSs) for threshold limit values and recommended personal protective equipment. If the identity of the toxic atmosphere is not known, use maximum PPE (i.e., SCBA).

**Ventilation.** Ventilation controls the atmospheric hazards of a confined space by replacing unsafe air with clean, breathable air. There are several methods for ventilating a confined space. The method and equipment used depend on the following factors:

• Size of the confined space
• Atmosphere
• Source of the makeup air

For most confined spaces, fans or other air-moving equipment can provide adequate ventilation. Two common types of mechanical ventilation include local exhaust ventilation and general ventilation.

Local exhaust ventilation captures contaminants at their point of origin and removes them. This type of ventilation method is ideal for flammable and toxic materials produced at a single point (e.g., hotwork and work involving cleaning solvents). When using this type of ventilation system, keep the exhaust intake close to your work. Do not use this type of ventilation system for contaminants that are widely dispersed or for confined spaces that make ventilation difficult. Instead, use general ventilation.

General ventilation flushes the atmosphere by supplying and exhausting large volumes of air. Because this system does not reduce the amount of contaminants released, it is not recommended for highly toxic atmospheres. General ventilation is ideal for providing oxygen and controlling low concentrations of materials that are not highly toxic. When using this type of ventilation system during hotwork, monitor the atmosphere continuously and wear a SCBA, as necessary.

**IMPORTANT:** Ventilation alone cannot reduce some atmospheric hazards to safe levels. Use atmospheric testing to confirm whether the ventilation system has been successful.
7.4 Ventilation Guidelines

Follow these guidelines for ventilating confined spaces:
- Begin ventilation in time to assure that the space is safe before entry.
- Test the atmosphere before entry to confirm that the ventilation system is working properly and that the space is safe.
- Continue ventilation as long as the space is occupied, or at least until the oxygen levels and hazardous concentrations are within safe limits.
- If work inside the space can make the air unsafe (e.g., hotwork, painting, using solvents, sandblasting, etc.) continue ventilation as long as the work is in progress.

7.5 Preparing the Site for Entry

Employees must complete the following steps to prepare confined spaces for entry:
1. Isolate the confined space entry site from the surrounding area using guards and barriers (including signs, rope, or tape).
2. Drain, clean, ventilate, and/or purge the confined space, as necessary, to prevent flammable, toxic, and corrosive hazards.
3. Isolate all electrical, mechanical, and pneumatic energy sources as outlined in the Lockout/Tagout section of this manual.
4. Ensure that all workers are wearing appropriate personal protective equipment, and that all persons wearing respirators have been properly trained in their usage.
5. Provide continuous ventilation, as necessary.
6. Ensure that non-sparking tools and explosion proof equipment are used when working in a potentially combustible atmosphere.
7. Position gas cylinders for cutting or burning outside the confined space.
8. Ensure that a standby SCBA is available.
9. Obtain personal protective equipment, including lifelines, winches, and harnesses, as required. Ensure that the equipment has been inspected as scheduled.
10. Take precautions to ensure against engulfment hazards, such as water, dirt, grain, etc.

7.6 Safeguarding Confined Space Operations

Life support safety is critical during confined space operations. The following items are requirements for safeguarding confined spaces:
- Employees must wear appropriate personal protective equipment at all times.
- Employees must use harnesses, lifelines, and/or winches, as appropriate.
The Authorized Safety Attendant is specifically responsible for the following:
- Keeping a log of all authorized entrants working within the confined space.
- Maintaining constant verbal contact with the authorized entrants within a confined space.
- Taking necessary precautions and measures to prevent unauthorized persons from entering a confined space.
- Initiating evacuation procedures whenever conditions within or outside the confined space pose a new hazard.

All employees must evacuate a confined space when one or more of the following conditions occur:
- Authorized Safety Attendant orders evacuation
- Automatic atmospheric alarm sounds
- Authorized entrants believe they are in danger
7.7 Emergency Procedure

If a worker is unable to evacuate the confined space during an emergency, the Authorized Safety Attendant will contact rescue personnel by radio or other means. The Authorized Safety Attendant and other workers outside the confined space should attempt to hoist the worker out of the confined space using a lifeline.

**IMPORTANT:**
Under no circumstances should unauthorized employees enter a confined space during an emergency.

8. Trenching and Excavation

Some operations such as trenching result in confined spaces. Shoring, sloping or benching are necessary to protect these spaces and reduce the chance for cave-ins. Projects requiring removal of soil at depths greater than 5 feet (1.52 m) require proper protection from cave-in, for employees working in them. This protection shall include shoring, sloping or benching as covered in CFR 1926.650 (sub part P). Excavated material must be 2 feet from the edge of the excavation. Ladders must be placed for employee escape. The excavation must be inspected by a competent person each day. A trench is a narrow excavation below the ground. Trenches are typically deeper than they are wide; however, the width of a trench is less than 15 feet. A shoring system consists of a structure that supports the sides of an excavation and is designed to prevent cave-ins. Employees must follow all the requirements associated with confined spaces when working within trenches.
## Confined Space Entry Permit

Date and Time Issued: ____________________  Date and Time Expires: ____________________

Job/Site I.D.: __________________________  Job Supervisor: __________________________

Equipment to be worked on: __________________________  Work to be performed: __________________________

Stand-by personnel: __________________________

1. Atmospheric checks:
   - Time: __________________________
   - Oxygen: __________________________
   - Explosive: __________________________
   - Toxic: __________________________

2. Testers signature: __________________________

3. Source isolation (No entry):
   - N/A: __________________________
   - Yes: __________________________
   - No: __________________________
   - Pumps or lines blinded: ( ) ( ) ( )
   - Disconnected, or blocked: ( ) ( ) ( )

4. Ventilation Modification:
   - Mechanical: ( ) ( ) ( )
   - Natural Ventilation only: ( ) ( ) ( )

5. Atmospheric check after isolation and ventilation:
   - Oxygen: % __ __ >> 19.5%
   - Explosive: % L.E.L. < 10
   - Toxic: PPM < 10 PPM
   - Time: __________________________
   - Tester signature: __________________________

6. Communication procedure: __________________________

7. Rescue procedures: __________________________

8. Entry, standby, and/or back up person: __________________________

9. Equipment:
   - N/A: __________________________
   - Yes: __________________________
   - No: __________________________
   - Direct reading gas monitor testing: ( ) ( ) ( )
   - Safety harness and lifeline: ( ) ( ) ( )
   - For entry and standby persons: ( ) ( ) ( )
   - Hoisting equipment: ( ) ( ) ( )
   - Powered communication equipment: ( ) ( ) ( )
   - SCBA for standby & entry person: ( ) ( ) ( )
   - Protective clothing: ( ) ( ) ( )

10. Periodic atmosphere tests:
    - Oxygen: %Time __________________________
    - Explosive: %Time __________________________
    - Toxic: %Time __________________________

We have reviewed the work authorized by this permit and the information contained herein.
Written instructions and safety procedures have been received and are understood. Entry can not be approved if any squares are marked in the “No” column. This permit is not valid unless all appropriate items are completed.

Prepared by: __________________________

Approved by: __________________________

This permit is to be kept at the job site. Return job site copy to OEHS following job completion.
Confined Space Entry Document

Permit valid for 8 hours. All copies of permit will remain at the job site until complete.

DATE: ___________________ SITE LOCATION and DESCRIPTION ______________________
PURPOSE OF ENTRY

__________________________________________________________
SUPERVISOR(S) in charge of crews  Type of Crew Phone #

__________________________________________________________
COMMUNICATION PROCEDURES

RESCUE PROCEDURES (PHONE NUMBERS AT BOTTOM)

__________________________________________________________

* BOLD DENOTES MINIMUM REQUIREMENTS TO BE COMPLETED AND REVIEWED PRIOR TO ENTRY*

REQUIREMENTS COMPLETED  DATE  TIME
Lock Out/De-energize/Try-out  ___  ___
Line(s) Broken-Capped-Blanked  ___  ___
Purge-Flush and Vent  ___  ___
Ventilation  ___  ___
Secure Area (Post and Flag)  ___  ___
Breathing Apparatus  ___  ___
Resuscitator - Inhalator  ___  ___
Standby Safety Personnel  ___  ___
Full Body Harness w/"D" ring  ___  ___
Emergency Escape Retrieval Equip  ___  ___
Lifelines  ___  ___
Fire Extinguishers  ___  ___
Lighting (Explosive Proof)  ___  ___
Protective Clothing  ___  ___
Respirator(s) (Air Purifying)  ___  ___
Burning and Welding Permit  ___  ___

Note: Items that do not apply enter N/A in the blank.
**RECORD CONTINUOUS MONITORING RESULTS EVERY 2 HOURS
CONTINUOUS MONITORING**

<table>
<thead>
<tr>
<th>TEST(S) TO BE TAKEN</th>
<th>Permissible</th>
<th>Entry Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCENT OF OXYGEN</td>
<td>19.5% to 23.5%</td>
<td></td>
</tr>
<tr>
<td>LOWER FLAMMABLE LIMIT</td>
<td>Under 10%</td>
<td></td>
</tr>
<tr>
<td>CARBON MONOXIDE</td>
<td>+35 PPM</td>
<td></td>
</tr>
<tr>
<td>Aromatic Hydrocarbon</td>
<td>+1 PPM * 5PPM</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Cyanide</td>
<td>(Skin) * 4PPM</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>+10 PPM * 15PPM</td>
<td></td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>+2 PPM * 5PPM</td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>*35PPM</td>
<td></td>
</tr>
</tbody>
</table>

* Short-term exposure limit: Employee can work in the area up to 15 minutes.
+ 8 hr. Time Weighted Avg.: Employee can work in area 8 hrs. (longer with appropriate respiratory protection).

REMARKS: ____________________________

<table>
<thead>
<tr>
<th>GAS TESTER NAME &amp; CHECK #</th>
<th>INSTRUMENT(S) USED</th>
<th>MODEL &amp;/OR TYPE</th>
<th>SERIAL &amp;/OR UNIT #</th>
</tr>
</thead>
</table>

SAFETY STANDBY PERSON IS REQUIRED FOR ALL CONFINED SPACE WORK

Safety Standby Person(s)  Check#  Space entrants  Check#

SUPERVISOR AUTHORIZING - ALL CONDITIONS SATISFIED ____________________________

DEPARTMENT/PHONE ____________________________

AMBULANCE 911 or 9-911 from campus phones
FIRE 911 or 9-911 from campus phones
Safety 2106
APPENDIX D
Sewer Entry
Appendix D

Sewer entry differs in three vital respects from other permit entries; first, there rarely exists any way to completely isolate the space (a section of a continuous system) to be entered; second, because isolation is not complete, the atmosphere may suddenly and unpredictably become lethally hazardous (toxic, flammable or explosive) from causes beyond the control of the entrant or employer, and third, experienced sewer workers are especially knowledgeable in entry and work in their permit spaces because of their frequent entries. Unlike other employments where permit space entry is a rare and exceptional event, sewer workers’ usual work environment is a permit space.

(1) Adherence to procedure. The employer should designate as entrants only employees who are thoroughly trained in the employer’s sewer entry procedures and who demonstrate that they follow these entry procedures exactly as prescribed when performing sewer entries.

(2) Atmospheric monitoring. Entrants should be trained in the use of, and be equipped with, atmospheric monitoring equipment which sounds an audible alarm, in addition to its visual readout, whenever one of the following conditions are encountered: Oxygen concentration less than 19.5 percent; flammable gas or vapor at 10 percent or more of the lower flammable limit (LFL); or hydrogen sulfide or carbon monoxide at or above 10 ppm or 35 ppm, respectively, measured as an 8-hour time-weighted average. Atmospheric monitoring equipment needs to be calibrated according to the manufacturer’s instructions. The oxygen sensor/broad range sensor is best suited for initial use in situations where the actual or potential contaminants have not been identified, because broad range sensors, unlike substance-specific sensors, enable employers to obtain an overall reading of the hydrocarbons (flammables) present in the space. However, such sensors only indicate that a hazardous threshold of a class of chemicals has been exceeded. They do not measure the levels of contamination of specific substances. Therefore, substance-specific devices, which measure the actual levels of specific substances, are best suited for use where actual and potential contaminants have been identified. The measurements obtained with substance-specific devices are of vital importance to the employer when decisions are made concerning the measures necessary to protect entrants (such as ventilation or personal protective equipment) and the setting and attainment of appropriate entry conditions. However, the sewer environment may suddenly and unpredictably change and the substance-specific devices may not detect the potentially lethal atmospheric hazards that may enter the sewer environment.

Although OSHA considers the information and guidance provided above to be appropriate and useful in most sewer entry situations, the Agency emphasizes that each employer must consider the unique circumstances, including the predictability of the atmosphere, of the sewer permit spaces in the employer’s workplace in preparing for entry. Only the employer can decide, based upon his or her knowledge of, and experience with permit spaces in sewer systems, what the best type of testing instrument may be for any specific entry operation.

The selected testing instrument should be carried and used by the entrant in sewer line work to monitor the atmosphere in the entrant’s environment, and in advance of the entrant’s direction of movement, to warn the entrant of any deterioration in atmospheric conditions. Where several entrants are working together in the same immediate location, one instrument, used by the lead entrant, is acceptable.

(3) Surge flow and flooding. Sewer crews should develop and maintain liaison, to the extent possible, with the local weather bureau and fire and emergency services in their area so that sewer work may be delayed or interrupted and entrants withdrawn whenever sewer lines might be suddenly flooded by rain or fire suppression activities, or whenever flammable or other hazardous materials are released into sewers during emergencies by industrial or transportation accidents.
(4) Special Equipment. Entry into large bore sewers may require the use of special equipment. Such equipment might include such items as atmosphere monitoring devices with automatic audible alarms, escape self-contained breathing apparatus (ESCBA) with at least 10 minute air supply (or other NIOSH approved self-rescuer), and waterproof flashlights, and may also include boats and rafts, radios and rope stand-offs for pulling around bends and corners as needed.
HEARING CONSERVATION PROGRAM
DRAFT

1. Purpose

It is the goal of the University of Houston – Clear Lake to maintain a safe and healthy work environment. The purpose of the University of Houston – Clear Lake (UHCL) Hearing Conservation Program (HCP) is to prevent permanent noise-induced hearing loss resulting from on-the-job noise exposure. Employees, who are exposed for an 8-hour TWA of 85 dBA or greater, which is considered the action level, shall be included in the UHCL Hearing Conservation Program. The HCP includes:

- Noise surveys
- Audiometric testing
- Hearing protection
- Employee education and training
- Record keeping

2. Definitions

2.1 Action Level – An 8-hour time-weighted-average of 85 decibels measured on the A-scale, slow response, or equivalently a dose of fifty percent.

2.2 Audiogram – A chart, graph, or table resulting from an audiometric test showing an individual’s hearing threshold levels as a function of frequency.

2.3 Audiologist – A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

2.4 Decibel (dB) – Unit measurement of sound level. When using the A-scale it is written as dBA.

2.5 Noise Dosimeter – An instrument that integrates a function of sound pressure over a period of time in such a manner that it indicates noise dose.

2.6 Representative Exposure – Measurement of an employee’s noise dose or 8-hour time weighted average sound level that the employers deem to be representative of the exposure of other employees in the workplace.

2.7 Sound Level – Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). Slow time response is required.

2.8 Sound Level Meter – An instrument for the measurement of sound level.

2.9 Standard Threshold Shift (STS) – A change in the hearing threshold relative to the baseline audiogram of an average of 10 dBA or more at 2000, 3000 and 4000 Hz in either ear.

2.10 Time-Weighted Average (TWA) Sound Level – That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.
3. Responsibilities

3.1 Supervisor
3.1.1 Notify the Office of Environmental Health and Safety (OEHS) of noise complaints or potential noise hazards.
3.1.2 Ensure that employees are provided with hearing protection as required.
3.1.3 Ensure that employees properly use and care for hearing protectors.
3.1.4 Ensure that equipment or areas that have potentially high noise exposure are labeled or have signs posted stating that hearing protection is required. This would include all equipment and areas with noise levels equal to or exceeding 85 dBA.
3.1.5 Notify the OEHS of process, material or equipment changes that may alter noise exposures.
3.1.6 Ensure that potentially overexposed employees are provided with a baseline audiometric hearing test prior to the initial work assignment and annually thereafter.
3.1.7 Ensure new employee training and annual refresher training are provided to all potentially overexposed personnel.

3.2 Office of Environmental Health and Safety (OEHS)
3.2.1 Administer the Hearing Conservation Program.
3.2.2 Conduct noise assessment to determine if administrative and engineering controls can be implemented to reduce noise exposure.
3.2.3 Ensure areas and equipment that are identified as having high noise exposure are marked with signs or labels requiring hearing protection.
3.2.4 Conduct an evaluation and periodic re-evaluation of employees’ exposure, by job classification, to determine which job titles need to be included in the Hearing Conservation Program.
3.2.5 Maintain records of employee exposure measurements.

3.3 Employees
3.3.1 Wear hearing protection as required.
3.3.2 Attend required training sessions on noise hazards.
3.3.3 Participate in audiometric testing as required.

4. Program Components

4.1 Noise Surveys
4.1.1 Noise monitoring will be performed according to a designed sampling strategy by the Office of Environmental Health and Safety. This survey will be used to identify employees to be included in the Hearing Conservation Program. Results will also be used to determine hearing protection requirements.
4.1.2 Monitoring will be repeated when any changes occur in production, process, equipment or controls which might require a change in the type of hearing
4.1.3 Employees exposed at or above the action level shall be notified of the results of the monitoring.
4.1.4 Employees' noise exposure will be reassessed following any changes in processes or equipment.

4.2 Audiometric Testing
4.2.1 A licensed audiologist will conduct audiometric testing.
4.2.2 Baseline audiograms shall be performed following at least 14 hours without exposure to workplace noise.
4.2.3 Baseline audiograms shall be provided for the employees in job classifications that are included in the Hearing Conservation Program upon employment, and annually thereafter.
4.2.4 Employees shall be informed in writing within 21 days of the audiometric test when an audiogram indicates a standard threshold shift, which is determined to be work related.
4.2.5 Comparison of the annual audiogram to the baseline audiogram, an evaluation will be made to determine if the employee has experienced any recordable hearing loss during this window of employment. The hearing loss is referred to in the OSHA standard as a standard threshold shift (STS).

4.3 Hearing Protection
4.3.1 Employees exposed to noise levels at or above an 8-hour TWA of 90 dBA shall wear hearing protection. Employees exposed to noise levels at or above an 8-hour TWA of 85 dBA shall wear hearing protection if an employee has experienced a documented standard threshold shift or has not obtained a baseline audiogram.
4.3.2 Hearing protection shall be available to all employees exposed to noise levels at or above the 85 dBA, 8-TWA, at no cost to the employee.
4.3.3 Employees will be given the right to select their hearing protection from a variety of suitable types.
4.3.4 Proper initial fitting and supervision of the correct use of the hearing protector will be provided.
4.3.5 Hearing protection selected must attenuate the noise level to an 8-hour TWA 90 dBA or less.
4.3.6 For employees who have experienced a standard threshold shift, the attenuation must reduce the sound level to an 8-hour TWA of 85 dBA or less.
4.3.7 Work areas in which the noise level exceeds 85dBA shall have signs posted stating “Hearing Protection Required”.

4.4 Employee Education and Training
4.4.1 Annual training is required for all employees exposed at or above the 8-hour TWA of 85 dBA.
4.4.2 The training shall cover the following information:
   - The effects of noise on hearing.
   - The purpose, advantages, disadvantages, and attenuation of various types of hearing protectors.
- Instruction on the proper fitting and care of the protectors.
- The purpose and procedures for audiometric testing.

4.5 **Record Keeping**

4.5.1 Noise exposure records shall be maintained by the Office of Environmental Health and Safety for not less than five (5) years.

4.5.2 A contracted audiologist will conduct audiometric testing. Records of these tests will be sent to the department supervisor and to Health and Disability services. The Office of Environmental Health and Safety will retain the results of audiometric testing for the duration of the employee’s employment and thirty years following the cessation of employment with UHCL.

4.6 **Control**

4.6.1 Administrative Controls- Methods used to control employee exposure through job rotation, work assignment, or time periods away from the hazard.

4.6.2 Engineering Controls – Method of controlling employee noise exposure through modification of the source of the noise.

5. **Reference**

29CFR 1910.95, Occupational Noise Exposure
RESPIRATORY PROTECTION PROGRAM
UNIVERSITY OF HOUSTON-CLEAR LAKE

1. Purpose

The University of Houston-Clear Lake (UHCL) has established a Respiratory Protection Program (RPP) to ensure that all employees are properly protected from respiratory hazards. All personnel must be made aware of potential inhalation hazards within their job duties. UHCL will implement engineering and administrative controls to eliminate or reduce respiratory hazards to the greatest extent feasible. Respirators will be required when other controls are not sufficient in reducing respiratory exposures to acceptable levels. At this point, employees will be issued and required to use appropriate respiratory protection equipment. Affected personnel will complete a respirator use medical evaluation to include a pulmonary function test, be fit tested for the type of respirator to be used and trained to properly don, use, clean and store respiratory equipment.

2. Selection of Respirators

Respirators are selected on the basis of the hazards to which the worker is exposed. Table I lists the types of respiratory hazards and the type of respiratory protection for those hazards. Table II identifies the capabilities and limitations of those respirators. The Office of Environmental Health and Safety (OEHS) reviews the Material Safety Data Sheets (MSDS) for the chemicals or materials involved in each task to determine the proper protection.

3. Medical Evaluations

UHCL provides a medical screening evaluation that consists of an initial questionnaire to determine an employee’s ability to use a respirator. A licensed physician will review the questionnaire and based on the responses, the physician will recommend either a physical and a pulmonary function test (PFT) or a PFT only. A written copy of the results of each medical screening evaluation will be given to the employee. For all positions whereby the use of a respirator is required, such requirement will be stated on the Notice of Vacancy and will be integrated into the job description. UHCL provides the medical screening evaluation post-offer, pre-employment to all new hires for such positions. All personnel in such positions must pass the medical screening evaluation as a condition of employment before they begin their duties.

Subsequent medical evaluations may become necessary if the employee reports any changes in his or her medical condition or if the supervisor or the Environmental Health and Safety Officer makes a recommendation.
4. **Fit Testing**

An employee must be fit tested with the same make, model, style, and size of each respirator that the employee uses prior to the actual use of any respirator with a negative or positive pressure tight-fitting face piece. UHCL shall ensure that employees using a tight-fitting face piece respirator pass the appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT). After the initial testing, employees are required to be fit tested annually. Fit testing must also be done if there is a change in respirator type, a change in the physical condition of the user that could affect the fit upon observations or reports of the supervisor or OEHS.

5. **Use of a Respirator**

To determine if there is a need for a respirator and if so the type to be used, the Office of Environmental Health and Safety will assess any new work activity. OEHS will consider the chemicals to be used or monitor for contaminant exposure to make this determination. Specific situations and working conditions will also be assessed by OEHS prior to the start of a job.

UHCL’s procedures for the proper use of respirators include:
- Prohibiting conditions that may result in the face piece seal leakage including facial hair or any condition that affects the face piece seal or interferes with the valve function;
- Preventing employees from removing respirators in hazardous environments;
- Taking actions to ensure continued effective respirator operations throughout the work shift;
- Establishing procedures for use of respirators in Immediately Dangerous to Life and Health (IDLH) atmospheres.

If an employee wears glasses or goggles or other PPE equipment, OEHS at the time of the fit testing shall ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece.

For any activity that requires the removal of the respirator, the employee must be in an uncontaminated area.

6. **Atmospheres Immediately Dangerous to Life and Health (IDLH)**

Special requirements for IDLH atmospheres include standby procedures and training as well as communication and rescue. OEHS will conduct a specialized training for each instance that employees will be entering an IDLH atmosphere. When physically possible, two people wearing appropriate personal protective equipment (PPE) that includes supplied air respirators will enter the area. There will be a rescue person equipped with appropriate PPE and rescue training (including CPR and First Aid) outside the IDLH area in constant visual or voice contact for each person entering the IDLH atmosphere. The employer or his
designee must be notified prior to the employee outside the IDLH entering the area. Appropriate rescue equipment such as harnesses and ladders will be used depending on the situation and under the authority of OEHS.

At no time will persons be allowed to be in an atmosphere when flammable gas is detected at 10% or more of the Lower Explosive Limit (LEL).

7. Maintenance and Care

UHCL provides for the cleaning, disinfecting, storage, inspection and repair of respirators used by employees. Users shall clean and disinfect their respirator after each use and store it in a plastic bag with the user’s name on it in a climate-controlled area. Each user shall inspect their respirator before and after each use. Employees shall not use defective respirators. Employees shall report any respirator problems to their supervisor.

Emergency respirators are stored in a clearly marked and easily accessible area. Employees that may use these respirators in emergency situations should inspect them monthly and before and after each use.

The inspection of both types of respirators shall include all parts and a check of elasticized parts for pliability and deterioration. Repairs shall be done using manufacturer approved parts.

8. Cartridges, Filters and Canisters

OEHS uses MSDS for chemicals to decide which type of respiratory protection is needed. Anytime an employee is using a chemical for the first time, OEHS must be consulted to determine the proper respiratory equipment. Table III lists the types of canisters, cartridges and filters.

Cartridges and filters must have either an end of service life marked or the employee or OEHS must mark the date they were first used. Cartridges that become wet from chemicals being used should not be reused and should be discarded immediately. Filters should be changed if breathing resistance is increased. The employee should ensure all cartridges, filters and canisters used are labeled and color-coded with National Institute for Occupational Safety and Health (NIOSH) approved labels. These labels must not be removed. The label and the marked date must remain legible. Any cartridge, filter or canister not meeting these requirements shall be discarded.

9. Training and Information

Training is provided by OEHS to all employees required to use a respirator. The training is conducted annually or more frequently if necessary. Following training, each employee must be able to demonstrate why a respirator is
necessary, consequences of an improper fit, how to ensure they have the correct respiratory protection and respirator usage and maintenance. Employees must understand the limitations and capabilities of each type of respirator. They will learn how to inspect, maintain and store their respirator. They will be made aware of medical signs or symptoms that limit or prevent the use of some or all types of respirators. Retraining will be conducted when there are changes in the work environment, the type of respirator being used or as necessary.

10. **Program Evaluation**

The Respiratory Protection Program is evaluated periodically to ensure the program is being implemented successfully and the procedures contained in the program continue to be effective. Individual employees may be consulted by OEHS regarding respirator fit, selection, use and maintenance for evaluation purposes.

If medical surveillance becomes necessary due to accidental overexposures or any other reason and medical results indicate a change in health status, OEHS will review workplace activities, all potential exposures, the type of respiratory protection used and the training the employee received.

11. **Record Keeping**

Records of medical evaluations, fit testing and the respirator program are retained in the OEHS. This information facilitates employee involvement with the program, assists OEHS in auditing the program and ensures records are up-to-date. Each employee’s records of their medical evaluations are available to them. Records for fit testing of each employee are retained until the next fit test is conducted.
# Table I

## Guide for the Selection of Respirators

<table>
<thead>
<tr>
<th>HAZARD</th>
<th>RESPIRATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen deficiency is considered to be 19.5% oxygen or less.</td>
<td>Self-contained breathing apparatus (SCBA)</td>
</tr>
<tr>
<td></td>
<td>Combination airline respirator with auxiliary self-contained air supply</td>
</tr>
<tr>
<td>Gas and vapor contaminants in concentrations considered immediately</td>
<td>Self-contained breathing apparatus (SCBA)</td>
</tr>
<tr>
<td>dangerous to life and health (IDLH)</td>
<td>Combination airline respirator with auxiliary self-contained air supply</td>
</tr>
<tr>
<td>Gas and vapor contaminants not immediately dangerous to life and health</td>
<td>Air-purifying half-mask respirator with the appropriate chemical cartridge</td>
</tr>
<tr>
<td>(IDLH)</td>
<td></td>
</tr>
<tr>
<td>Particulate contaminants immediately dangerous to life and health</td>
<td>SCBA</td>
</tr>
<tr>
<td>(IDLH)</td>
<td>Combination airline respirator with auxiliary self-contained air supply</td>
</tr>
<tr>
<td>Particulate contaminants not immediately dangerous to life and health</td>
<td>Air-purifying half-mask with the appropriate filter pad or chemical cartridge, in low particulate concentrations an particulate filtering mask may be used</td>
</tr>
<tr>
<td>(IDLH)</td>
<td></td>
</tr>
<tr>
<td>Combination gas, vapor and particulate contaminants immediately</td>
<td>SCBA</td>
</tr>
<tr>
<td>dangerous to life and health (IDLH)</td>
<td>Air-purifying full-face piece respirator with chemical canister and appropriate filter (gas mask with filter)</td>
</tr>
<tr>
<td>Combination gas, vapor and particulate contaminants not immediately</td>
<td>Half-mask respirator with appropriate chemical cartridge and filter.</td>
</tr>
<tr>
<td>dangerous to life and health (IDLH)</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Only supplied air respirators may be used in oxygen deficient atmospheres. Cartridges and filters provide **no** protection in oxygen deficient atmospheres.
Table II
Capabilities and Limitations of Respirators

<table>
<thead>
<tr>
<th>RESPIRATOR</th>
<th>CAPABILITIES AND LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Contained Breathing Apparatus (SCBA)</td>
<td><strong>Capabilities:</strong> The wearer carries his/her own breathing atmosphere. This provides protection against oxygen deficient and toxic atmospheres (IDLH). The breathing atmosphere is independent of ambient atmospheric conditions. <strong>Limitations:</strong> The time period the device will provide protection is limited by the amount of air in the apparatus, the type of work being performed and by the person performing the work. Other limitations include the weight and bulk of the apparatus as a detriment to working abilities, limited service life and the training required for the maintenance and safe use of the SCBA. No protection is provided against skin irritation by materials such as ammonia or hydrogen chloride or against absorption of materials such as hydrogen cyanide or organophosphate pesticides through the skin. Face pieces present a special problem to individuals who are required to wear prescription lenses.</td>
</tr>
<tr>
<td>Air Purifying Respirators</td>
<td><strong>Capabilities:</strong> Can be used with a full-face piece respirator that will provide additional protection against eye irritation in addition to the respiratory protection. Half-mask face piece respirators may also be used if the eye protection is not required. <strong>Limitations:</strong> Air purifying respirators do not protect against oxygen-deficient atmospheres or against skin irritations or absorption through the skin of airborne contaminants. The maximum concentration of the contaminant that an air-purifying respirator will protect against is determined by the design efficiency and the capacity of the cartridge, canister or filter. For gases and vapors, the maximum concentration the air-purifying element is designed for is specified by the manufacturer and may be listed on the labels of the cartridges or canisters. The face-piece seal must be carefully fitted on each user to achieve maximum protection. Respirator face pieces present special problems to individuals required to wear prescription lenses. The proper canister, cartridge or filter must be selected for the particular atmosphere and conditions.</td>
</tr>
</tbody>
</table>
# Table III
## Types of Canisters, Filters and Cartridges

<table>
<thead>
<tr>
<th>CONTAMINANT</th>
<th>USES AND LIMITATIONS</th>
<th>COLOR CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Vapor</td>
<td>Organic vapors (concentrations not to exceed established regulatory standards).</td>
<td>Black</td>
</tr>
<tr>
<td>Organic Vapors/ Acid Gases</td>
<td>Organic vapors (concentrations not to exceed established regulatory standards), chlorine, chlorine dioxide, hydrogen chloride, hydrogen fluoride and sulfur dioxide.</td>
<td>Yellow</td>
</tr>
<tr>
<td>Acid Gases</td>
<td>Chlorine, chlorine dioxide, hydrogen chloride, hydrogen fluoride and sulfur dioxide.</td>
<td>White</td>
</tr>
<tr>
<td>Acid Gases/ Ammonia/ Organic Vapors</td>
<td>Organic vapors (concentrations not to exceed established regulatory standards), ammonia, chlorine, chlorine dioxide, hydrogen chloride, hydrogen fluoride and sulfur dioxide.</td>
<td>Brown</td>
</tr>
<tr>
<td>Carbon Monoxide Gas</td>
<td>Carbon Monoxide</td>
<td>Blue</td>
</tr>
<tr>
<td>Ammonia/ Methylamine</td>
<td>Ammonia or methylamine.</td>
<td>Green</td>
</tr>
<tr>
<td>Multi-contaminant</td>
<td>Organic vapors (concentrations not to exceed established regulatory standards), chlorine, chlorine dioxide, hydrogen chloride, hydrogen fluoride and sulfur dioxide, methylamine, formaldehyde.</td>
<td>Olive</td>
</tr>
<tr>
<td>Metallic Mercury Vapor/ Chlorine</td>
<td>Metallic mercury vapor or chlorine</td>
<td>Orange</td>
</tr>
<tr>
<td>Particulate Filter</td>
<td>Solid and liquid aerosol particulates. A P100 filter is at least 99.97% efficient against all types of particulate aerosols.</td>
<td>Purple</td>
</tr>
</tbody>
</table>

**Note:** Many of the cartridges and filter types listed above may be stacked to provide added respiratory protection.