



U.S. Chemical Safety and Hazard Investigation Board

SUBJECT: Occupational Safety and Health Program

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1. **PURPOSE.** Federal law contains special provisions intended to assure the safety and health of federal employees in the workplace. In order to comply with all federal requirements, and to maximize the safety and health of all of its personnel, the U.S. Chemical Safety and Hazard Investigation Board (CSB) hereby establishes its occupational safety and health program (OSH Program).
2. **EFFECTIVE DATE.** The CSB OSH Program is effective upon passage by the Board.
3. **SCOPE.** The CSB OSH Program applies to all CSB personnel, including Board Members, staff, and contractors.
4. **REFERENCES.** The program implements the provisions of the Occupational Safety and Health Act of 1970, (the Act), Public Law No. 91-596, 29 U.S.C. §§ 651-700, 29 CFR Parts 1910, 1929, and 1960, and Executive Order 12196.
5. **POLICY.** The Board is committed to assuring that each employee is provided with a workplace that is free of hazards that are likely to cause serious physical harm or death, and that all hazards are eliminated or mitigated as completely as possible, whether by use of personal protective equipment or other appropriate means, in compliance with controlling occupational safety and health laws. Through implementation by the Designated Agency Safety and Health Officer (DASHO), and with additional oversight by the Chief Operating Officer (COO), the Chairman and Board Members intend to meet all agency safety and health responsibilities through this evolving program.
6. **RESPONSIBILITIES.**

A. Agency Head.

The CSB Board Members, through the CSB Chairperson, shall ensure that the CSB (1) provides safe and healthful places and conditions of employment, consistent with the standards set under 29 U.S.C. § 655; (2) acquires, maintains, and requires the use of safety equipment, personal protective equipment, and devices reasonably necessary to protect employees; (3) keeps adequate records of all occupational accidents and illnesses for proper evaluation and necessary corrective action; (4) consults with the Secretary of Labor with regard to the adequacy as to form and content of records kept pursuant to 29 U.S.C. § 668(a)(3); and (5) makes an annual report to the Secretary of Labor with respect to occupational accidents and injuries and the agency's program under this section. Such report shall include any report submitted under section 7902(e)(2) of Title 5 of the United States Code.

Additionally, the Chairperson, shall:

- (1) Furnish to employees places and conditions of employment that are free from recognized hazards that are causing or are likely to cause death or serious physical harm.
- (2) Operate its OSH Program in accordance with the requirements of this Order and basic program elements promulgated by the Secretary of Labor.
- (3) Designate an agency official with sufficient authority to represent the interests of the agency head and to be responsible for the management and administration of the agency OSH Program, including having sufficient authority to enlist the support of the agency head in any safety matters.
- (4) Comply with all standards issued under section 6 of the Act, except where the Secretary approves compliance with alternative standards. When the Chairperson determines it is necessary to apply a different standard, the Chairperson shall, after consultation with appropriate personnel with occupational safety and health expertise (and occupational safety and health committees, if established), notify the Secretary of Labor and provide justification that equivalent or greater protection will be assured by the alternate standard.
- (5) Assure prompt abatement of unsafe or unhealthy working conditions. Whenever the CSB cannot promptly abate such conditions, it shall develop an abatement plan setting forth a timetable for abatement and a summary of interim steps to protect employees. Employees exposed to certain conditions shall be informed of the provisions of this plan. When a hazard cannot be abated without assistance of the General Services Administration (if applicable) or other federal or private lessor, the CSB shall act with the lessor to secure abatement.
- (6) Establish procedures to assure that no employee is subject to restraint, interference, coercion, discrimination or reprisal for filing a report of an unsafe or unhealthy working condition, or other participation in agency OSH Program activities.
- (7) Assure that periodic inspections of all agency workplaces are performed by personnel with equipment and competence to recognize hazards.
- (8) Assure responses to employee reports of hazardous conditions and require inspections within 24 hours for imminent dangers, and three days for other conditions. Assure the right to anonymity of those making the reports.
- (9) Assure that employee representatives accompany inspections of agency workplaces.

(10) Operate an occupational safety and health management information system, which shall include the maintenance of such records as the Secretary may require.

(11) Provide safety and health training for supervisory employees, employees responsible for conducting occupational safety and health inspections, all members of occupational safety and health committees where established, and other relevant employees, including Investigators in Charge (IICs), Field Safety and Health Officers (FSHOs), Safety and Health Officers (SHOs), and all Investigators.

(12) Submit to the Secretary an annual report on the CSB's OSH Program that includes any information the Secretary may require.

B. Appointment of and Delegation of Power to the Designated Agency Safety and Health Officer (DASHO) and Staff.

The CSB COO shall designate a senior member of the Investigations and Safety Programs (ISP) staff as the DASHO, via written appointment, after direct coordination with the CSB's Chairperson. The DASHO will have the full authority and responsibility to represent the Chairperson, the CSB Board Members, and the COO in the management and administration of the CSB's OSH Program.

The DASHO shall have a safety staff to assist him in the course of his/her duties. The DASHO shall appoint the members of his/her staff, via written appointments, after direct coordination with the CSB's COO, as well as the supervisor of any designated employee.

The DASHO's safety staff shall consist of a number of appropriately trained, qualified, and designated Field Safety and Health Officers (FSHOs), whose responsibilities, outlined below, pertain to safety issues arising during field investigation activities. The DASHO will also be assisted by an appropriate number of Safety and Health Officers (SHOs), all of whom will assist the DASHO in carrying out the requirements of the CSB's OSH Program. CSB employees from the Office of General Counsel, Financial Operations, and/or Management Operations may be appointed to the CSB's safety and health organization and provide assistance to the DASHO as well (e.g., evacuation coordinators). All written appointments and/or delegations to safety and health positions shall be maintained in the "OSH Program Administrative File" in accordance with the "General Recordkeeping" requirements set forth below in this Order.

Notwithstanding this delegation, and any other delegations, appointments, or assignments of safety responsibilities throughout the CSB, the Chairperson of the Board retains responsibility for and oversight of all occupational safety and health programming. Additionally, the Board as a whole shall ensure that the DASHO has sufficient autonomy, authority, and responsibility to plan for and secure the funds necessary for the safety and health staff, equipment, materials, and training required to ensure implementation of an effective OSH Program.

C. Program Resources.

In accordance with federal law, all CSB Board Members will also ensure that the CSB budget submission includes appropriate financial and other resources to implement and administer the agency's OSH Program. Appropriate resources for the agency OSH Program shall include, but not be limited to:

- a. Sufficient personnel to implement and administer the program at all levels, including necessary funds to cover administrative costs, training, travel, and the acquisition of needed personal protective equipment.
- b. Means to abate unsafe or unhealthful working conditions related to CSB operations or facilities.
- c. Access to safety and health sampling, testing, diagnostic and analytical tools and equipment, including laboratory analyses, as required.
- d. Any necessary contracts to identify, analyze, or evaluate unsafe or unhealthful working conditions and operations.
- e. Funding for needed program promotional costs such as publications, posters, or films.
- f. Access to needed technical information, documents, books, standards, codes, periodicals, and publications.
- g. Commitment to compliance with the Occupational Safety and Health Administration standards applicable to the agency.

D. Training of Top Management.

Pursuant 29 CFR Part 1960.54, the CSB will provide its top OSH management officials, defined here as the Chairperson, the COO, and the DASHO, and any others so designated by the DASHO, with orientation, training, and other learning experiences which will enable them to accomplish their safety and health related responsibilities as outlined in the CSB's OSH Program. Such orientation will include coverage of Section 19 of the Act, Executive Order 12196, the requirements of Part 1960, and the CSB OSH Program.

E. Designated Agency Safety and Health Official (DASHO).

The DASHO's primary function is to assist the Chairperson in meeting the goal of providing employment and workplaces that are as safe and healthful as possible. This will be accomplished through the use of appointed FSHOs and SHOs, the establishment of binding safety rules and procedures, and the cooperation of all personnel.

Responsibilities:

- (a) Assist the Chairperson in establishing an agency OSH Program to carry out the provisions of Section 19 of the Act, Executive Order 12196, and 29 CFR Part 1960;
- (b) Develop an organization, including provision for the designation of safety and health officers at appropriate levels, including the appointment of the safety staff, with adequate budgets to implement the OSH Program at all operational levels;
- (c) Assure effective implementation of the agency policy, programs, and procedures, as required by Section 19 of the Act, Executive Order 12196, and the program elements of Part 1960, considering the mission, size, and organization of the CSB;
- (d) Provide goals and objectives for reducing and eliminating occupational accidents, injuries, and illnesses;
- (e) Develop and implement plans and procedures for evaluating the CSB's OSH Program effectiveness at all operational levels;
- (f) Determine priorities for dealing with the factors that cause occupational accidents, injuries, and illnesses in the CSB's workplaces so that appropriate corrective actions can be taken;
- (g) Investigate accidents that result in serious personal injury or major property damage;
- (h) Review and analyze reports of occupational injuries, illnesses, and accidents to evaluate the adequacy of actions taken to prevent the recurrence of such accidents and make recommendations for improvement where necessary;
- (i) Promote safety and health activities within the agency by initiating specific promotional campaigns;
- (j) Create and support an ongoing safety and health training program for supervisors, IICs, and employees, as needed, and ensure that necessary training is provided;
- (k) Ensure that the practice of prompt completion and processing of employee injury compensation forms is followed within the agency;
- (l) Review the CSB's OSH Program periodically to ensure continued compliance with regulatory requirements;
- (m) Develop safety and health requirements in those areas that are deficient.
- (n) Conduct routine inspections of CSB office workplaces;
- (o) Provide information and training on the specific hazards present or likely in the workplace;
- (p) Ensure that appropriate management officials are advised of any changes in safety regulations requirements;
- (q) Identify to the extent possible and cause the correction of safety and health hazards in the workplace; and
- (r) Maintain documentation on all safety related training conducted for CSB employees.
- (s) Consult with appropriate agency management officials and agency counsel in relation to the performance of duties arising under the OSH Program, where appropriate.

Qualifications:

- (a) Have and maintain knowledge of current applicable laws, codes and standards regulating occupational safety and health;
- (b) Have extensive experience working in a safety position at a chemical or oil processing facility, or other equivalent experience in the chemical or petrochemical industries, including experience gained serving in the private, public, or non-profit sectors;
- (c) Have experience in all facets of CSB field investigations, including directing CSB field investigation activities, as well as familiarity with all applicable Board Orders, protocols, policies, and procedures.

Training:

The CSB will provide occupational safety and health training for the DASHO, as needed, through courses and other tasks related to safety program development and implementation, as well as hazard recognition, standards, analysis of accident, injury, and illness data, preparation of reports and other documentation to support the inspection findings and other related tasks. To the extent necessary, DASHO training will also include all office employee related training outlined in **Appendix F**.

F. Field Safety and Health Officers (FSHOs).

The Field Safety and Health Officers (FSHOs) will assist Investigators in Charge (IIC) of each CSB investigation and will help identify and analyze pertinent safety issues, ensure that Investigators are provided appropriate safety equipment, and monitor adherence to CSB safety guidelines during all field activities. A standing pool of FSHOs will be appointed by the DASHO in writing. An FSHO will normally be a member of the ISP staff with appropriate additional training in order to ensure competence in carrying out the safety duties assigned. An FSHO will either be deployed with each field investigation team, or will be made available to provide assistance from CSB headquarters to every IIC leading a field investigation team. FSHOs will primarily work with the IIC of each investigation, and, if necessary, will also coordinate with the DASHO.

Responsibilities:

- (a) To the extent possible, research the likely hazards or other safety concerns that can be anticipated upon a field investigation team's arrival during a field deployment. Ensure that the IICs, field investigation team members, and appropriate management officials are advised of any changes in safety requirements that are relevant in each investigation;
- (b) Perform an initial review of the conditions and hazards found during field investigation activities;
- (c) Review temporary work site monitoring records when necessary to determine likelihood of airborne hazardous concentrations;

- (d) Provide guidance on chemical, physical and biological hazards in order to determine proper PPE requirements;
- (e) Provide information on the specific hazards present or likely in temporary workplaces;
- (f) Work closely with the DASHO to monitor conditions during field investigation activities and remain available to consult with the DASHO and upper management if conditions change significantly; and
- (g) Continue to identify and correct safety and health hazards affecting the field deployment team.

Qualifications:

- (a) Have and maintain knowledge of current applicable laws, codes and standards regulating occupational safety and health;
- (b) Have experience working in a safety position at a chemical or oil processing facility, or other equivalent experience in the chemical or petrochemical industries, including experience gained serving in the private, public, or non-profit sectors;
- (c) Have experience in CSB field investigations, including familiarity with applicable Board Orders, protocols, and procedures.

Training:

The CSB will provide occupational safety and health training for FSHOs, as needed, through courses and other tasks related to safety program development and implementation, as well as hazard recognition, standards, analysis of accident, injury, and illness data, preparation of reports and other documentation to support the inspection findings and other related tasks. Additionally, FSHO training will include all Investigator related training including in **Appendix F**.

G. Investigators in Charge (IICs).

IICs lead and direct all facets of field investigation activities on behalf of the CSB. During field investigation activities, IICs are responsible for the health and safety of all deployed CSB personnel. As such, IICs shall function like deployed supervisors over all deployed personnel for all safety matters, among other things, and they must meet all of the responsibilities established below in Section H for Supervisors. In addition, IICs must:

- (a) Appoint and consult with a properly designated FSHO before and during deployments;
- (b) Prior to allowing CSB personnel to enter a potentially hazardous area at the incident site, and in consultation with the FSHO, determine the nature of any hazards that may be present, and assess whether any prohibited entry categories may be encountered;

- (c) Obtain all relevant material safety data sheets (MSDSs) from the owner or operator of the site being investigated;
- (d) Ensure that team members are informed of all hazards and are properly equipped and trained to be safe in light of hazards that may be present;
- (e) Take responsibility for and assert control over all deployed CSB personnel on any and all matters relating to health and safety, and use all means necessary to protect the health and safety of all deployed CSB personnel, including temporarily suspending investigation-related activity, obtaining additional PPE, contracting out any functions that exceed CSB personnel's training or PPE limitations, etc.;
- (f) Consult with FSHO, DASHO, and other agency management officials when significant safety developments arise that might affect the investigation or the health and safety of deployed CSB personnel;
- (g) Ensure any work-related accidents or injuries are promptly reported and investigated, as required.

H. Supervisors.

CSB employees who exercise supervisory functions shall, to the extent of their authority, furnish employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm. They shall also comply with the occupational safety and health standards applicable to their work areas and with all rules, regulations and orders issued under the authority of the CSB with respect to the CSB's OSH Program.

Responsibilities:

- (a) Enforce safety and health rules, regulations and standards;
- (b) Instruct employees in safe practices and methods of operation;
- (c) Give full support to the CSB's OSH Program;
- (d) Conduct regular safety and health inspections of his/her operation and take prompt corrective action whenever unsafe and unhealthful conditions and practices are noted;
- (e) Obtain medical attention for injured or ill employees;
- (h) Encourage and promote employee suggestions on how to improve safety and health in the work environment;
- (i) Work with the DASHO when investigating accidents and completing appropriate compensation and accident forms and submitting them through proper channels on a timely basis;
- (j) Remain available as a resource to the DASHO, IICs, and FSHOs during deployments, especially on issues affecting employees assigned to you.

Training:

The CSB will provide occupational safety and health training, as needed, for supervisory employees that includes: supervisory responsibility for providing and maintaining safe and healthful working conditions for employees, the CSB's OSH Program, Section 19 of

the Act, Executive Order 12196, Part 29 CFR 1960, and any other pertinent rules and regulations.

I. Safety and Health Officers (SHOs)

SHOs will work in areas with specific tasks to be assigned by the DASHO in their appointment letter. Responsibilities of the SHOs shall include the following types of duties or combinations of duties:

- respiratory protection
- asbestos protection
- hearing protection;
- Personal Protective Equipment (PPE)
- medical surveillance and pre-employment medical screening;
- Hazard Communication (HAZCOM)
- fall protection
- confined space entry;
- occupant emergency action plan;
- evacuation coordinators;
- administration and operational requirements;
- other items, as needed.

In addition to SHOs who will assist the DASHO with safety issues, the DASHO will also require financial, legal, logistical, and technological support. Should the DASHO need such specialized assistance, he or she should seek help from the head of the administrative unit best able to assist (i.e., Office of General Counsel, Financial Operations, Management Operations, Information Technology, etc.)

Responsibilities.

To be determined by the DASHO.

Qualifications.

The DASHO will determine whether each person's unique background of skills, education and experience qualifies them for the duties assigned.

Training.

At the discretion of the DASHO, appropriate training will be provided on an as-needed basis, depending on the nature and extent of the duties and the individual's background.

J. All Employees.

Constant awareness and conformity with the CSB OSH Program and controlling safety rules are the best available protection from injury. Each employee must recognize and accept safety as a way of life when on the job for the CSB. Each employee will accept the duty of working safely, observing safety procedures, wearing appropriate PPE, protecting themselves and others, and practicing safety rules.

Responsibilities:

- (a) Being responsible for the safe performance of his/her duties and for learning and using safe and correct procedures;
- (b) Remaining continually aware of the safety and health precautions necessary on the job;
- (c) Becoming aware of unsafe and unhealthful conditions and immediately eliminating those they can;
- (d) Notifying the IIC, supervisor, or appropriate safety representative immediately regarding unsafe and unhealthful conditions that they cannot personally correct;
- (e) Reporting all on-the-job accidents and illnesses to their immediate supervisors or, if deployed, to the IIC;
- (f) Complying with the CSB OSH Program, and continuing to assist the DASHO with improving the program;
- (g) Using safety equipment, personal protective equipment, and other devices and procedures provided or directed by the agency and necessary for their protection;
- (h) Reporting unsafe and unhealthful working conditions to appropriate officials without fear of reprisal.

Training:

The CSB will provide appropriate safety and health training, as needed, for employees including specialized job safety and health training for work performed by office and field employees. The training will also inform employees of the CSB OSH Program, with emphasis on their rights and responsibilities. **(See Appendix F for program details.)**

7. BASIC PROGRAM INFORMATION.

A. Required Posting and Program Promotion.

Posters will be conspicuously displayed in accordance with 29 CFR Part 1960.12(c), in CSB headquarters. The poster will inform employees of the following:

1. Provisions of the OSH Act and Executive Order 12196.
2. The CSB OSH Program required by 29 CFR Part 1960.

3. Details of the CSB's procedures for responding to reports by employees of unsafe or unhealthful working conditions, and to allegations of discrimination or reprisal due to participation in safety and/or health activities.
4. The location where employees may obtain information about the CSB OSH Program, including the full text of CSB occupational safety and health standards.
5. The CSB will also promote employee awareness of safety and health matters through electronic mail, bulletins and safety meetings, where appropriate.

B. Standards.

The CSB will comply with the safety program element requirements set forth in 29 CFR Part 1960. Where an OSHA standard is applicable to the CSB work environment, the agency will attempt to adhere to that standard. If a problem is identified and there is no applicable OSHA standard, then standards or codes published by other nationally recognized safety organizations will be studied for guidance when creating an appropriate standard for the CSB. If utilized, applicable standards will be available for review by employees in the CSB library. The CSB reserves the right to apply alternate standards, where deemed necessary, in accordance with the requirements of 29 CFR 1960.17, or to create supplementary standards in accordance with 29 CFR 1960.18.

C. Inspections (office areas).

Each CSB office area will be inspected initially by the DASHO upon implementation of this OSH Program, and periodically thereafter. Supervisors are required to abate any discovered hazards in a timely manner. The annual inspection will begin with an opening conference wherein the inspection procedure and the safety program requirements will be explained to both management and employees. Management and a representative chosen by employees may accompany the DASHO through the entire inspection. CSB employees have the right to accompany management officials during the inspection on official duty time. The DASHO will explain each hazard observed and noted during the inspection.

When the inspection is over, a closing conference will be held with the manager and employee representative. At this time each hazard that was noted during the inspection will be discussed and an abatement date for each hazard will be agreed upon. When abatement cannot be completed within a reasonable amount of time due to extenuating circumstances, interim safeguards will be put into effect, when practical, to reduce the risk of accident or injury. Inspections may also be conducted when an employee reports an unsafe condition, at which time an inspection will be conducted in accordance with the procedures found at Appendix K.

D. Product Safety.

When questions arise about the safety of new pieces of equipment or chemicals to be

purchased and used in the workplace, the DASHO should be consulted about safety standards and precautions applicable to the item(s) being purchased. This is to ensure that products and equipment used by CSB employees are safe, that any special storage requirements can be met and that necessary protective apparel is available. When a request is made for procurement of an item that could pose serious safety or health problems, the DASHO will do the research necessary to determine whether there is a safer product and discuss the matter with the appropriate agency officials.

E. Hazard Communication (HAZCOM).

The purpose of this section, as detailed in Appendix A, is to ensure that all hazardous chemicals that could be encountered by CSB personnel in the course of any assigned duties are properly evaluated and that information concerning their hazards is transmitted to employees. OSHA Standard 29 CFR 1910.1200 is the Hazard Communication Standard. It requires a written policy for informing employees of the hazardous materials that are being used in their workplace. This transmittal of information is to be accomplished by means of a comprehensive hazard communication program, which must include container labeling and other forms of warning. Training is also required for all employees using hazardous materials. All chemicals of a hazardous nature used in the workplace must have a material safety data sheet (MSDS) located in the workplace. The MSDS must be available and accessible for review by the employees using the chemical. The DASHO will be responsible for assuring the implementation and continuous updating of the CSB's written Hazard Communication Program. **(See Appendix A for program details and recordkeeping requirements.)**

F. Occupant Emergency Plan.

OSHA Regulation 29 CFR 1910.38, as further outlined in Appendix B, requires a written occupant emergency plan that states in advance how emergencies will be handled. Such plans provide detailed information regarding what to do in event of fire, bomb threat or other emergencies. Ensuring that the written plan is updated as needed and that it contains adequate information will be the responsibility of the DASHO. A yearly review of this plan will be part of the annual safety and health inspection conducted by the DASHO. **(See Appendix B for program details.)**

G. Workplace Ergonomics.

The CSB recognizes that certain ergonomic and environmental factors can contribute to the safety, health and comfort of CSB employees in the everyday performance of their duties. The CSB is committed to compliance with OSHA/NIOSH ergonomic guidelines. Thus, to the extent practicable and possible, workstations, tools, and equipment will be designed to maximize worker safety, health, comfort, and productivity. Each agency is required to have a designated ergonomics liaison officer to provide proper training on the use of video terminals and furniture. The DASHO is hereby designated as that official at the CSB. Employees are required to notify their supervisors of any work-related medical condition that develops, which may be associated with ergonomic hazards.

H. Vehicle Travel Safety.

Only CSB employees who hold a valid State driver's license may rent or drive any motor vehicle during the performance of official CSB duties. All vehicles used on official business must be minimally equipped with safety belts and shoulder harnesses for front seat occupants and safety belts for rear seat passengers. CSB employees operating or riding in a government owned, rented, or privately owned vehicle on official business are to use safety restraints (both seat belts and shoulder harnesses if available). In addition, the driver will instruct passengers to fasten their safety restraints before operation of the vehicle.

Daily, before driving any assigned vehicle, in addition to walking around the vehicle, the operator must check: (1) brakes, (2) steering, (3) windshield wipers, (4) tires, (5) all operational lights, and (6) horn. If a vehicle is found to be unsafe to operate notify the proper authority immediately and arrange for alternate transportation. CSB personnel are not authorized to drive any vehicle that is unsafe to operate.

I. Reporting and Investigating Work-Related Accidents and Injuries.

Accidents are reported and investigated in order to determine cause, so that similar occurrences may be prevented in the future. If an employee has an accident or sustains an injury or illness while performing his/her assigned duties, he or she shall report it to their supervisor as soon as possible and complete a first report of injury form (OSHA 301). The forms must be completed as soon as possible. The injured employee's supervisor (or, if deployed, the IIC) will complete the form. These forms will be forwarded to the DASHO who will ensure that a workplace injury log is created (OSHA 300). The DASHO will further ensure that the basic information is maintained, along with information regarding any other accidents or injuries, in order to create the statistical data necessary to develop prevention programs and to prepare the agency's required annual report. A copy of all accident or injury forms will also be provided to the CSB Human Resources Director (HRD), and an additional copy will be provided to the CSB's Office of General Counsel (OGC).

The DASHO or his/her designee shall investigate all serious work-related accidents (requiring any treatment more extensive than first aid, or in any case requiring an absence from work, or any accident involving the death of CSB employees, the hospitalization of three or more employees, or in the discretion of the DASHO, any other significant injury requiring medical treatment). Accidents involving only substantial property damage and near misses that could have resulted in a serious accident may also be investigated to an extent reflective of the seriousness of the accident or incident.

The DASHO must determine the causal factors involved in each accident. Except to the extent necessary to protect employees or the public, evidence at the scene of an accident shall be left untouched until the employee investigating the accident has an opportunity to examine it. At CSB headquarters, the injured employee's supervisor (or if necessary, a

designated SHO) shall conduct the investigation. In the case of accident investigations during field deployments, the IIC (or if necessary, the FSHO) shall conduct the investigation.

The report of the accident shall include appropriate documentation on date, time, location, description of operations, description of accident, photographs, interviews of employees and witnesses, measurements, and other pertinent information. A copy of the investigative report will be forwarded to the employee involved in the accident when it is completed, and the office of the DASHO, the HRD, and the OGC.

As a separate matter, within eight hours after the death of any CSB employee from a work-related incident or the in-patient hospitalization of three or more employees resulting from a work-related incident, the Chairperson or his/her designee shall orally report the fatality/multiple hospitalization by telephone or in person to the area office of the Occupational Safety and Health Administration, in accordance with 29 CFR 1960.70.

J. Work-Related Accidents and Injuries – Recordkeeping.

As discussed above, the process for reporting and investigating work-related accidents, injuries, and illnesses will generate several types of records. These records include: (1) reports of occupational accidents, injuries, and illnesses; (2) the workplace injury log; (3) the workplace injury database; (4) reports of investigations of workplace accidents; and (5) related records (e.g., correspondence and memos pertaining to reports and investigations). These records shall be maintained in accordance with applicable OSHA regulations, including 29 CFR 1960.73. Disposition instructions for these records are provided by National Archives and Records Administration General Record Schedule 1, item 34, “Occupational Injury and Illness Files.” Pursuant to those instructions, the five types of records listed in this paragraph shall be retained for five years following the end of the fiscal year to which they relate. The DASHO or his/her designee is responsible for maintaining the official record copy of reports of occupational accidents, injuries, and illnesses; the workplace injury log; the workplace injury database, and related records, as well as the official record copy of reports of investigations of workplace accidents and related records.

The five types of records generated by the reporting and investigation process for work-related accidents, injuries, and illnesses are covered by the Privacy Act, under the government-wide system of records, “Employee Medical File System Records” (OPM/GOVT-10). The records shall be maintained and handled in strict accordance with the requirements of the Privacy Act and OPM/GOVT-10.

K. Reporting Hazards.

Employees should be aware of their surroundings and report all hazards and other dangerous workplace conditions immediately. Appendix K establishes the procedures that CSB personnel should use in reporting hazards, and further establishes the manner in which hazards will be investigated and abated. Safety and health hazards should always

be reported to the supervisor first, or, during the field phase of an investigation, to the IIC. In many cases, the supervisor can have the problem corrected. Employees also have the option of reporting a hazard directly to the DASHO or the Occupational Safety and Health Administration (OSHA) after attempts to correct the hazard through the supervisor and other agency mechanisms have failed. **(See Appendix K for program details and recordkeeping requirements.)**

In general, any employee who believes that an unsafe or unhealthful working condition exists in any workplace has the right and is encouraged to report unsafe or unhealthful working conditions and request an inspection of the workplace. The report shall be reduced to writing either by the individual submitting the report or, in the case of an oral notification, by the supervisor, the DASHO, or other person designated to receive the reports in the workplace. Any such report shall set forth grounds for the reported condition and shall contain the name of the employee or employees making the request unless anonymity is requested.

Pursuant to 1960.28(c), no person receiving a report (i.e., supervisor, DASHO or other management official) shall disclose the name of the individual making the hazard report or the names of individual employees referred to in the report, to anyone other than authorized representatives of the Secretary of Labor when anonymity is requested by the individual making an unsafe or unhealthful workplace report.

In the case of situations involving imminent danger, employees shall make reports by the most expeditious means available. Each report of an existing or potential unsafe or unhealthful working condition will be recorded on a log and maintained by the DASHO. At a minimum, each log entry will contain the following information: date, time, location of condition, brief description of the condition, classification (imminent danger, serious or other), and date and nature of action taken.

Pursuant to Executive Order 12196, the CSB will conduct worksite inspections within 24 hours for employee reports of imminent danger conditions, within three working days for potentially serious conditions, and within 20 working days for other than serious safety and health conditions. However, an inspection may not be necessary if, through normal management action and with prompt notification to employees, the hazardous condition(s) identified can be abated immediately. The employee making a report of unsafe or unhealthful working conditions will be notified in writing within 15 working days if the official receiving the report determines there are not reasonable grounds to believe that the reported hazard exist and does not plan to make an inspection.

The DASHO, under the authority of the Board, and in consultation with the COO, will establish procedures to ensure that no employee is subject to restraint, interference, coercion, discrimination or reprisal for filing a report of an unsafe or unhealthful working condition, or other participation in agency OSH Program activities, or because of the exercise by such employee on behalf of himself or herself or others of any right afforded by Section 19 of the OSH Act, Executive Order 12196, or Part 29 CFR 1960. These rights include, among others, the right of an employee to decline to perform his or her

assigned task because of a reasonable belief that, under the circumstances the task poses an imminent risk of death or serious bodily harm coupled with a reasonable belief that there is insufficient time to seek effective redress through normal hazard reporting and abatement procedures established in this program. **(See Appendix K for program details.)**

L. Unique Safety and Health Practices.

Supervisors will inform employees of any unusual or unique safety or health practices in effect in their workplace. Remember that safety or health standards, codes and procedural practices are usually developed after a history of accidents or injuries, so adhering to the rules should keep the employee from having a similar accident.

M. Employee Assistance Program (EAP).

In accordance with Public Laws 79-658, 91-616, 92-255 as amended, and Executive Order 12564, the CSB hereby implements its Employee Assistance Program (EAP). EAP covers, alcohol/drug abuse, family relationship concerns, behavioral concerns, personal/emotional concerns, occupational adjustment problems, and work/family life issues. These services are provided on a free and confidential basis to CSB employees through Federal Occupational Health (FOH). Assistance can be obtained 24 hours a day, seven days a week, by calling 1-800-222-0364 or 1-888-262-7848 (TTY). Information can also be obtained from the FOH website, found at www.foh.dhhs.gov.

N. Access to Medical Information.

OSHA Standard 29 CFR 1910.1020 gives employees the right to access their medical and exposure records. It requires that employees be notified annually and upon first entering into employment of their rights to these records. The DASHO will provide this information during new employee orientation and as part of the agenda of at least one employee safety meeting annually.

O. Personal Safety.

Since protective services are limited, employees must assist in making their office areas safe and secure. Be alert to all potential hazards or threats, and report any perceived dangers to the appropriate agency authority, including your supervisor or the DASHO.

P. Field Safety and Health Program.

Protection of Investigators and other CSB personnel deployed with a field investigation team, or any time during the field phase of an accident investigation, is critical. No accident investigation activity is so important that it should be allowed to threaten the life, safety or health of anyone. During the initial phases of the CSB response to a chemical incident, Investigators may encounter hazardous conditions that present a significant risk to their safety and health. Among the potential hazards that may be

encountered are: highly toxic atmospheric and surface contamination, (including carcinogens), the identity and concentration of which may not be known; explosive or corrosive atmospheres; confined spaces; and the potential for encountering atmospheres immediately dangerous to life and health.

As noted above, IICs, assisted by an assigned FSHO, and if necessary, in consultation with the DASHO, are responsible for the health and safety of any deployed CSB personnel during field investigation activities. In addition to duties already outlined in specific subject areas throughout the CSB OSH Program, IICs must also enforce the following restrictions on investigative activity:

- (1) CSB personnel shall not be allowed to enter into prohibited entry areas (PEAs), which are to be determined by the IIC and the FSHO, such as environments with extreme risks (active fire scenes, explosive or flammable substances are present in dangerous concentrations, potentially hazardous but unidentified substances are present, radiation is present and exceeds permissible exposure levels, mechanical devices with energized electricity that cannot be shut off or locked out, pipelines that cannot be isolated and/or shut off, etc.), exceed the team's training limitations or available PPE, or other such factors identified as a significant risk by the IIC.
- (2) CSB personnel shall not be allowed to enter any area where Level A or B protection is required.
- (3) Investigation activity by any CSB personnel must be carefully planned to minimize the on-site time required, thus reducing potential exposure time.

Q. Investigator Training.

All CSB Investigators, and any other employees to be deployed with field investigation teams, and who will enter accident investigation sites, will be trained in all components of the CSB OSH Program with special emphasis on field safety and health requirements. Refresher training on the procedures contained herein will be provided on an as-needed basis. The DASHO or his or her designee will maintain documentation on all safety related training provided for Investigators. **(See Appendix F for program details.)**

R. Training Records.

Training is a key element of the CSB OSH Program. Training requirements are set forth throughout the program, along with requirements to document training received by agency employees. To ensure that training documentation is properly maintained and readily accessible, the DASHO shall establish an agency-wide "Safety Training File System." This system will have two components – the "Individual Safety Training File" and the "Training Administration File."

The Individual Safety Training File will consist of a folder for every CSB employee. All documentation of training received by individual employees shall be maintained in their respective folders. Individual folders shall be retained until one year after the date of separation of the employee to whom the folder pertains.

The Individual Safety Training File is covered by the Privacy Act under a CSB system of records. This file shall be maintained and handled in strict accordance with the requirements of the Privacy Act and the applicable system of records.

The Training Administration File will consist of all training records that do not pertain to individual employees. Examples of records to be located in this file include planning and administrative documents, memoranda and correspondence, and copies of all training materials (i.e., hand-outs, presentation slides, etc.). Records in the Training Administration File shall be retained for five years from the date of their creation. This file is not covered by the Privacy Act.

S. On-Site Equipment.

The CSB will select and maintain the full complement of equipment necessary to investigate the hazards commonly found in the workplace. Because equipment and supplies necessary for accident investigations are typically stored at the agency's Washington office, management shall ensure that supervisors and Investigators have ready access to the office areas during off-duty hours.

T. Medical Surveillance Program.

CSB staff members investigate chemical accidents and perform other work around hazardous substances. During these investigations, employees may be exposed to potentially hazardous situations and substances. The implementation and application of a pre-employment medical examination (**Appendix C**), and medical surveillance examination (**Appendix D**), for applicants and Investigators, respectively, ensures that the health of CSB employees will be monitored and protected at a level that permits them to perform job-related assignments without medically related hazards to themselves or others. (See **Appendix C & D for program details.**)

U. Exposure Control Plan for Personnel with Occupational Exposure to Bloodborne Pathogens.

OSHA's bloodborne pathogens standard is designed to protect the nation's workers, particularly health care workers, from exposure to the hepatitis B virus (HBV), the human immunodeficiency virus (HIV), and other bloodborne pathogens. The CSB will not require its employees to render medical assistance or enter areas where potentially infectious material may exist. Therefore, no exposure control plan will be developed. However, Investigator employees may be provided awareness level training to aid in recognizing and avoiding potentially infectious situations.

V. CSB Respiratory Protection Program (RPP).

In order to control or eliminate occupational health hazards caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors,

the primary objective shall be to prevent CSB employee exposure to atmospheric contamination. This will be accomplished as far as feasible by encouraging site employers to use accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible during field activities, or while they are being instituted, appropriate respirators will be used by CSB Investigators pursuant to requirement of OSHA standard 29 CFR 1910.134.

The CSB's RPP is set out in detail at Appendix E. Respirators will be provided by the CSB when such equipment is necessary to protect the health of the employee. The CSB will provide respirators that are applicable and suitable for the purpose intended. The CSB will be responsible for the establishment and maintenance of a RPP that will include, as a minimum, the requirements outlined in paragraph (c) of the OSHA standard referenced above. **(See Appendix E for program details.)**

W. CSB Fall Protection Plan.

The purpose of a fall protection plan is to protect employees working at elevated heights from injuries or death due to a fall while doing non-routine work at an elevated worksite. The CSB's Fall Protection Plan is found at Appendix G. Fall protection standards are outlined in OSHA General Industry Standards under 29 CFR 1910.23 – 1910.29 and in OSHA Construction Standards under 29 CFR 1926, Subpart M, Fall Protection, 29 CFR 1926.104, Safety Belts, Lifelines, and Lanyards, 29 CFR 1926.105, Safety Nets, and 29 CFR 1926.106, Working Over or Near Water. National consensus standards also provide guidelines for technical issues related to fall protection and elevated work surface exposures and associated controls. **(See Appendix G for program details.)**

X. CSB Permit-Required Confined Space Entry Program.

The purpose of a confined space program is to prevent injuries to personnel who must enter confined spaces to work. Practices and procedures to protect employees from the hazards of entry into confined spaces are covered under the U.S. Department of Labor, Occupational Safety and Health Administration's (OSHA), Permit-Required Confined Spaces, 29 CFR 1910.146. The CSB Permit-Required Confined Space Entry Program (PRCSEP) is found at Appendix H. The CSB PRCSEP is designed to enable employees to operate safely in a confined space work environment that is maintained by another employer. All confined spaces are considered potentially hazardous especially those where actual knowledge of the space is limited. Therefore CSB employees will not enter confined spaces until the site employer's confined space evaluation data has been examined by the IIC and/or the FSHO and is found to be in compliance with this program and the OSHA standard and allows CSB employees to meet its own safety requirements. This program applies to all CSB investigative personnel and contractors. **(See Appendix H for program details.)**

Y. CSB Personal Protective Equipment (PPE) Requirements Program, the CSB Asbestos Protection Program, and the CSB Prescription Safety Glass Program.

The FSHO shall ensure that adequate personal protective equipment for each investigator is available. The CSB PPE policy is found at Appendix I. Each investigator shall be trained in the proper care, use and limitations of the personal protective equipment (PPE) assigned to them. If additional PPE is necessary, it must be obtained prior to exposure. Under no circumstances shall an investigator be unprotected from any recognizable hazard encountered during the course of the investigation. **(See Appendix J for PPE program details.)** Questions about precautions to be taken in relation to asbestos are fully addressed in Appendix L, the CSB Asbestos Protection Program, and are also addressed collaterally in Appendices E, F, and J. **(See Appendix L, E, F, and J for program details.)** Questions about protective eyewear, and the CSB's prescription safety glass program, are separately addressed in a single Appendix. **(See Appendix M for program details.)**

Z. General Recordkeeping

Administration of the CSB OSH Program will generate a variety of official records. Recordkeeping requirements for particular types of records are explained in the appropriate places in this program and its appendices.

In addition to the specific records categories identified throughout the OSH Program, a number of general administrative records will be created in the course of operating the program. Examples of such records include program documents, planning documents, and related memoranda and correspondence. When these documents are not covered by a more specific record category described elsewhere in this program (and appendices), they shall be maintained in an "OSH Program Administration File." The DASHO is responsible for creating and maintaining the OSH Program Administration File. Records in this file shall be retained for five years from the date of their creation.

U.S. Chemical Safety and Hazard Investigation Board

Adopted January 25, 2001; Amended August 10, 2003.

Appendix A

CSB Hazard Communication (HAZCOM) Program

1. General CSB Policy.

The CSB is complying with the OSHA Hazard Communication Standard, Title 29 Code of Federal Regulations 1910.1200, by compiling a hazardous chemicals list, by using MSDSs, by ensuring that containers are labeled, and by providing its employees with required training. This program applies to all office work operations in the CSB where employees may be exposed to hazardous chemicals under normal working conditions or during an emergency situation, as well as during field investigation work.

The DASHO is the program coordinator and maintains overall responsibility for the program, unless otherwise delegated. The DASHO, or his/her designee, will review and update the program as necessary. Under this program, CSB employees will be informed of the contents of the Hazard Communication Standard, the hazardous properties of chemicals which may be in the workplace, safe handling procedures, and measures employees must take to protect themselves from these chemicals. Employees will also be informed of the hazards associated with non-routine tasks, such as changing printer cartridges or responding to small chemical spills or chemical fires within the work area.

2. HAZCOM and Deployed CSB Personnel

HAZCOM is critically important to CSB personnel deployed to field investigation activities. The IIC and FSHO assigned to each field investigation team must obtain information about hazardous substances at the scene in order to make preliminary and ongoing decisions about the safety of the deployed team members. Where possible, information about such hazards should be gathered prior to deployment. When this is not possible, the IIC and FSHO must obtain this information from the owner or operator of the facility being investigated, and/or the on-scene commander or other lawful authority in charge of an accident site. Methods of obtaining such information include, but are not limited to: obtaining copies of all relevant MSDSs and labeling information, direct personal observation, and the taking of relevant and appropriate samples.

Once all needed information is obtained, the IIC and the FSHO must analyze the nature and extent of the incident in light of any potential safety and health hazards. This analysis must include the type, amount, and quality of PPE available to CSB personnel, as well as each individual team member's training and experience.

The result of this decision making process will undoubtedly vary. At one end of the spectrum, investigative activity should be able to commence immediately, with or without some form of PPE. At the other end of the spectrum, an IIC may be required to abort or temporarily suspend on-scene investigative activity due to safety concerns. If this should occur, the IIC should coordinate this decision with appropriate agency

management officials. Additionally, the IIC and FSHO should continue to monitor the hazards present and wait for a downgrade that would allow resumption of investigative activity at the site. In either case, the IIC and FSHO should continuously monitor all potential hazards, and continue to downgrade the required PPE as risk subsides, or increase the level of protective equipment if new hazards are detected.

3. HAZCOM and CSB Headquarters

HAZCOM requirements also apply to the office environment at CSB headquarters.

4. List of Hazardous Chemicals.

The DASHO will make a list of all hazardous chemicals and related work practices used at CSB headquarters, and will update the list as necessary. This list of chemicals identifies only those chemicals used in the office areas.

5. Material Safety Data Sheets (MSDSs).

MSDSs provide employees with specific information about the hazardous chemicals they use. The DASHO will maintain a binder in his or her office with an MSDS on every hazardous chemical used at the CSB headquarters. These MSDSs will be made readily available to each employee upon request. The DASHO is responsible for acquiring and updating MSDSs. He or she will contact the chemical manufacturer or vendor if additional research is necessary or if an MSDS has not been supplied with an initial purchase from the vendor. All new chemical procurements for the CSB must be cleared by the DASHO prior to delivery.

6. Labels and Other Forms of Warning.

The DASHO will ensure that all hazardous chemicals in the work area are properly labeled. Labels will list the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer or other responsible party. The DASHO will refer to the corresponding MSDS to assist personnel in verifying label information. Labeling provisions will also be followed when CSB ships hazardous chemicals from investigation sites or receives chemical samples for the purpose of conducting analytical testing.

7. Non-Routine Tasks.

If employees are required to perform hazardous non-routine tasks, a special training session will be conducted to inform the employee(s) of the hazardous chemicals to which they might be exposed and the precautions they must take to reduce or avoid exposure.

8. Training.

Every employee who works with or is potentially exposed to hazardous chemicals will receive initial training on the HAZCOM Standard and the safe use of those hazardous chemicals. The DASHO will conduct these training sessions, or ensure they are conducted. Whenever a new hazard is introduced, additional training will be provided. Regular safety meetings will also be used to review the information presented in the initial training. Supervisors will be trained, as needed, regarding hazards and appropriate protective measures so they will be available to answer questions from employees and provide daily monitoring of safe work practices.

9. CSB HAZCOM Training Program.

The CSB HAZCOM training program shall include:

- a. A summary of the OSHA standard and the CSB's written program.
- b. The chemical and physical properties of hazardous materials (e.g., flash point, vapor pressure, reactivity) and methods that can be used to detect the presence or release of chemicals;
- c. The physical hazards of the chemicals in work areas (e.g., potential for fire, explosion, etc.);
- d. The health hazards, including signs and symptoms of exposure, of the chemicals in work areas and any medical condition known to be aggravated by exposure to these chemicals;
- e. Procedures to protect against chemicals hazards (e.g., required personal protective equipment, and its proper use and maintenance; work practices or methods to ensure appropriate use and handling of chemicals; and procedures for emergency response);
- f. Work procedures to follow to assure protection when cleaning hazardous-chemical spills and leaks;
- g. The location of the MSDSs, how to read and interpret the information on labels and MSDSs, and how employees may obtain additional hazard information.

The DASHO or his/her designee will periodically review the employee hazard training program and re-evaluate training or retraining needs. Retraining is usually required when the chemical hazards change or when a new hazard is introduced into the workplace. It will be CSB policy to provide training regularly in safety meetings to ensure the effectiveness of the program. As part of the assessment of the training program, the DASHO will obtain input from employees regarding the training they have received, and their suggestions for improvement.

10. HAZCOM and CSB Contractor Employees.

The DASHO, (or during a field investigations, the IIC), upon notification by the responsible supervisor, will advise any outside contractors, where appropriate, of any chemical hazards they may be encountered in the normal course of their work on the

premises. This notification will include the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. In addition, the DASHO will notify the contract supervisor of the location and availability of MSDSs. Each contractor bringing chemicals on-site must provide the DASHO with the appropriate hazard information for any hazardous substances in their possession that could affect CSB employees in the normal course of their work. This information must include MSDSs, labels, and precautionary measures to be taken when working around these chemicals.

At a minimum, contractors working on field investigations with CSB Investigators will follow all HAZCOM and PPE requirements identified for CSB personnel during any work performed on behalf of the CSB.

11. Hazard Determination. The CSB does not manufacture, produce or import hazardous chemicals and the agency is relying solely on the hazard determination of its suppliers as reflected on the MSDS for chemicals used in its headquarters. A hazard determination will be performed in the field prior to shipping samples and/or other evidence, and labels will be utilized in accordance with paragraph 6.

12. HAZCOM Recordkeeping Requirements.

The MSDSs and the hazardous chemical list called for by this program are considered agency records. These records shall be maintained in accordance with applicable OSHA regulations, particularly 29 CFR 1910.1200. As noted above, the DASHO is responsible for acquiring/developing, updating, and maintaining MSDSs and the hazardous chemical list. The DASHO is further responsible for ensuring that these records are available in the locations specified in regulation and this program. Current versions of MSDSs and the hazardous chemical list shall be retained as prescribed in regulation and this program until obsolete. Obsolete versions of MSDSs and the hazardous chemical list shall be clearly marked "obsolete" and retained by the DASHO in a separate file for one year from the date of obsolescence.

Records pertaining to the general administration of the Hazard Communication Program shall be maintained in a "Hazard Communication Program Administration File." The DASHO is responsible for creating and maintaining the Hazard Communication Program Administration File. Records in this file shall be retained for five years from the date of their creation.

Appendix B

CSB Occupant Emergency Plan

1. Evacuation and Emergency Procedures in Case of Fire.

- a. In the event that an employee:
 1. Discovers a fire;
 2. Smells smoke or the odor of burning material; or
 3. Hears the building's fire/evacuation alarm (a steady ringing alarm accompanied by flashing lights)

- b. All CSB employees shall:
 1. Evacuate via one of the two stairwells in the center of the building while conducting a minimal sweep for visitors on the way out.
 2. Verbally warn others in the area on the way to the rally point.
 3. Activate the Fire Alarm system (pull stations near the exits).
 4. Shut windows and close the door tightly when exiting the work area (if possible).
 5. Call 911 from a safe place.
 6. Assemble at the predetermined rally point, provide assistance to the injured, and help account for all personnel.
 7. Remain outside of the building until the authorities give the "all clear" and it is safe to return to your work area.

- c. Use of Emergency Fire Suppression Equipment: Although it is CSB policy to evacuate in case of a fire, circumstances may dictate that a fire extinguisher is needed. **DO NOT** use a fire extinguisher unless:
 1. You have been trained in the hands-on use of an extinguisher within the last year.
 2. You are able to put out the fire without endangering yourself or others.
 3. You have an open path of escape at all times.

2. Bomb Threats.

- a. If a bomb threat is received by phone:
 1. Stay calm. Do not panic.
 2. If the threat of explosion is immediate, notify the supervisor if possible and activate the alarm to evacuate all people from the premises at once.
- b. If the caller indicates there is some time before the bomb will go off:
 1. Try to get as much information as possible about the location and description of the bomb and the caller, including:
 - On display-type telephones note the number from where the call is coming;
 - Note the exact time;
 - Write down as accurately as possible the statements made;
 - Listen to the voice to determine the sex, age, accents, lisps, etc., (attempt to note any distinguishing features);
 - Listen for background noises (airport, bowling alley, train station);
 - Exact location of the bomb;
 - Time set for detonation;
 - What the device looks like;
 - What type of bomb (or explosive);
 - Why it was planted.
 2. Stay on the line only as long as the caller continues to provide useful information.
 3. When the caller hangs up, notify your supervisor if possible, sound the evacuation alarm, and evacuate the premises, heading for the predetermined rally point (Take the information provided by the caller with you.)
 4. Call 911 and provide any information obtained from caller.

3. Discovery of Suspicious Items.

If you find an item you suspect is a bomb, or other terrorist device, including a nuclear, biological or chemical (NBC) threat, **DO NOT** touch, shake, move or otherwise disturb the item. Such a suspicious item includes, but is not limited to:

- A letter or package containing a powdery or oily substance
- Any unknown substance found in or around the building
- A suspicious package, briefcase, piece of luggage, box, or other container found in or around the building

If you find such a suspicious item:

- Isolate the area (i.e., close the door of the office where it is located)
- Contact the COO's office or your supervisor, building management, and law enforcement immediately. (The COO's office or your supervisor will

immediately work with building management to shut down the building's HVAC system.)

- Evacuate the building, using the same procedures established in case of fire, and go to the predetermined rally point.
- If you came into contact with the suspicious material, you should:
 - wash affected areas with soap and water immediately;
 - remove any contaminated clothing and place in plastic bags;
 - remain available to meet with law enforcement or medical personnel to receive further decontamination instructions and to provide information about the source of contamination;
 - ensure that anyone in the vicinity of the suspicious materials also remains available to meet with law enforcement and medical personnel.

Signs of a Suspicious Package or Letter.

- Any unattended box, briefcase, bag, suitcase, or other container;
- Any item received through the mails which has:
 - excessive postage
 - incorrect titles, misspelled names, or misspelled departments
 - position titles only, with no named addressee
 - oily stains, discolorations, or odor
 - excessive weight
 - lopsided or uneven appearance
 - protruding metal, wires, or foil, or has the feel of solid components inside
 - excessive security materials, such as masking tape, string, etc.
 - ticking sounds
 - shows a city or state in the postmark that does not match the return address

4. Emergency Exits.

Become acquainted with all emergency exits before an emergency occurs. Additionally, see building the floor plan/map, on file with the building engineer.

5. Sheltering in Place, Evacuation, and Rally Points.

a. Sheltering in Place

Sheltering in place may likely be the best defense in the event of a terrorist attack or other similar disaster where airborne contaminants can cause you harm. Sheltering in place requires that employees remain indoors with all doors and windows closed, and heating, ventilation and cooling (HVAC) systems turned off. Sheltering in place is designed to be a short-term barrier of protection against an acute threat. It should provide significant protection from certain threats while also allowing for those protected within the building to gather sufficient, reliable information which would permit CSB employees to evacuate the building safely.

If such an incident requiring sheltering in place occurs somewhere within the Washington, D.C. metropolitan area, but not within the immediate vicinity of CSB headquarters, CSB personnel will be called to assemble in the 4th Floor Conference Room, via the intercom, assuming the structural integrity of the 4th Floor Conference Room remains intact. If damage to the building, windows, or other dangerous conditions prevent the agency from assembling in the 4th Floor Conference Room, the alternate assembly point will be the 6th Floor Conference Room and the adjacent area. Take your personal belongings with you so you can evacuate immediately without returning to your offices. Floor monitors will then sweep the floors to ensure that all personnel are moving to the shelter location, while other employees will hold open the doors to the stairwell. Meanwhile, building engineers in the building will be working with CSB management officials to ensure the shut off the HVAC system immediately in order to protect employees from the outside air being circulated within the building. Once safely secured in one of the two conference room areas, and after a full accounting of the location of all employees, agency management will best be able to determine what is happening, and what CSB personnel should do to protect themselves. Once sufficient and reliable information is obtained, a decision will be made on what actions to take.

The CSB has acquired hand-held radios for use within the building in the event power is out and the intercom system will not function. The CSB has also acquired several cases of water, as well as a number of flashlights, and battery powered radios/televisions. The CSB has also provided each employee with a copy of "A Federal Employee's Emergency Guide," issued by the United States Office of Personnel Management. This publication should be read thoroughly.

CSB employees are encouraged to assemble and maintain a personal safety kit within their individual office spaces. Employees are encouraged to include the following items:

- Sufficient food for two days
- Any other drinks you might desire
- Needed prescription medication
- A day pack with comfortable clothes and walking shoes

b. Evacuation

In the event immediate evacuation is required, regardless of reason (fire, bomb threat, terrorist attack in the immediate area, etc.), CSB personnel should evacuate by way of the stairs and meet at the primary rally point, which is located under the awning of the "Carriage House," a large apartment building located at the northwest corner of 22nd and L Streets. The alternate rally point is to meet outside of the West End Public Library, 1101 24th Street at L Street (straight down L Street in the direction of Georgetown, opposite Columbia Women's Hospital.) At the Rally Points the DASHO or an evacuation coordinator will account for all employees. If people cannot be accounted for, inform emergency responders.

In preparing for any possible evacuation from the District of Columbia itself, CSB employees are encouraged to find someone to travel with, and to map out various routes and modes of evacuation.

6. Employees Authorized to Remain Behind to Operate or Shut Down Critical Operations.

None.

7. Personal Injury Emergency Procedures.

In the event that:

- a. An employee is injured, or
- b. The employee comes upon an injured person, or
- c. The employee encounters what he or she suspects to be blood or other bodily fluids, then

The employee shall:

- a. Contact a supervisor or call 911 (in the case of injury) and inform them what has happened.
- b. Administer first aid only if you have been trained and are using proper personal protective equipment.
- c. If the situation involves suspected blood or other bodily fluids and no victim, the employee shall contact his or her supervisor or the DASHO and inform them of the situation. Keep people away from the suspected bodily fluid.

8. Plan for aiding disabled persons with evacuation.

Persons with disabilities may require extra assistance during an evacuation. The disabled will be either evacuated from the building or taken to a place of refuge within the building, as appropriate.

- a. Identification of Individuals with Disabilities:
 - Supervisors must ascertain whether any of their employees need assistance to evacuate or to detect the fire/evacuation alarm. The supervisors must then coordinate escape plans for these individuals with the DASHO.
 - Employees who have visitors in their work area will be asked to escort them during an evacuation regardless of identified disability.

b. Evaluate assistance needed:

The DASHO will assess individual circumstances or concerns regarding access requirements for disabled employees. The DASHO will also supervise arrangements for accommodating the affected employees.

- The DASHO will develop plans to assist specific individuals.
- The situation may require that one or more volunteers be assigned to escort the disabled during the evacuation. Plans should be made for backups when the primary escorts are not available.
- Escorts will be provided additional training, as needed, to perform this duty safely.

c. Training for Escorts:

Typical training for escorts will consist of familiarity with fire protection systems within the building, and should include:

- Evacuation routes and alternate routes.
- Areas of refuge.
- Fire doors.
- Basic strategies for surviving fires.
- Fire extinguisher training.
- Methods of communication with emergency response personnel.

9. Evacuation Coordinators.

Where possible, evacuation coordinators will be asked to verify that people have been evacuated from each CSB occupied floor and help anyone that needs assistance.

a. Guidelines for the Evacuation Coordinators:

1. Sweep through the office areas on their assigned floor making people aware that an evacuation is in progress and where the nearest exit is located.
2. Note anyone that is left behind, and report this to the emergency responders.
3. If disabled individuals cannot be safely evacuated, assist them to a place of refuge and report their location to the emergency responders.
4. If signs of fire or other emergency are present (i.e. smoke or burning odor), only proceed with the sweep as long as you are certain that you are not in danger.

5. **DO NOT** attempt to fight a fire.
6. **DO NOT** attempt to force a person to evacuate, merely report this fact to the emergency responders.

b. Training for Evacuation Coordinators:

Evacuation coordinators shall receive appropriate training in fire safety. Minimum training requirements will consist of familiarity with fire protection systems within the building, and will also include:

- Evacuation routes and alternate routes specific to their building.
- Fire doors.
- Areas of refuge.
- Basic strategies for surviving fires.
- Hands-on fire extinguisher training.
- Methods of communication with emergency response personnel.

10. Communication with Emergency Response Personnel.

Timely communication between the emergency responders at the scene and the building occupants can be crucial. The emergency responders need to know information on precisely what has occurred, detailed information about areas of the building, and status of the evacuation. Obviously, the occupants of the building are the most likely source for supplying this information. Additionally, the occupants of the building need to know when it is safe to reenter the building and what has triggered the evacuation so that they can prevent future occurrences. To assist in accomplishing the above stated goals, employees will adhere to the following guidance when briefing emergency personnel:

If the DASHO is available, he/she will meet with emergency response personnel first, and will serve as the established point of contact with such personnel on behalf of the agency. The DASHO must provide emergency responders with information on any trapped employees, disabled employees or other employees in places of refuge, people unaccounted for, and any details about the emergency itself that may be helpful to the emergency responders.

If the DASHO is not available, one or more of the evacuation coordinators will meet with emergency responders and will provide required information.

11. Prevention/Follow-up.

After an emergency situation has occurred and appropriate response taken, an incident investigation will be completed by the DASHO or his/her designee, and any corrective measures necessary will be implemented to prevent future recurrence of preventable problems. If the emergency involves an injury, the injured employee or his/her supervisor will complete the appropriate report of injury forms.

12. Implementation and Maintenance.

This plan will be reviewed, employees trained, and a practice drill exercised when the plan is first implemented. Additional employee training will occur whenever a new employee is hired, when changes to the plan are necessary, or at least once a year during the building's established fire drills. The initial training and new employee training will consist of providing a copy of the Occupant Emergency Plan and evacuation map to the employee(s), explaining procedures, walking through an evacuation, and answering any questions the employee has. Annual evacuation drills will also be conducted. The DASHO is responsible for updating this plan as needed.

13. Training Record for Emergency Action Plan.

Employees that are trained in accordance with requirements contained within the program will have that training documented. This document is to record that required training has taken place. The following information shall be included on the training document:

Date of Training:

Employee Trained:

Employee Signature:

Position:

Department/Administrative Unit:

Trainer:

Signature:

14. First Aid Kits. The CSB will continue to make available first aid kits for its employees use within CSB headquarters.

Appendix C

CSB Pre-Appointment Medical Examination Program (PMEP)

1. **Purpose.** Among the essential functions of the Chemical Incident Investigator position are the field investigation of industrial chemical accidents and the gathering of evidence at chemical accident scenes. By their very nature, these functions can be physically demanding and their performance may expose Investigators to hazardous environments and substances. To perform their duties safely and effectively in hazardous or potentially hazardous situations, Investigators must be able to wear and operate PPE, including respirators. The CSB has established physical requirements for the investigator position to ensure that individuals appointed to such positions can successfully, safely, and efficiently perform the essential functions of the position. The Pre-Appointment Medical Examination Program serves to evaluate individuals who have been selected to fill investigator positions for medical conditions which could interfere with their ability to use PPE (especially respirators), meet the physical requirements of the position, and/or safely and efficiently perform the essential functions of the position.

2. **Physical Requirements.** The physical requirements of the Chemical Incident Investigator position are as follows:

Performance of the duties of this position requires the ability to wear and operate a range of personal protective equipment, including respirators. Performance of the duties of this position also requires the ability to engage in moderate to strenuous levels of physical exertion involving walking and standing, climbing ladders, working in and moving through confined spaces, and working at high elevations for the purpose of documenting and gathering evidence. The ability to maintain these levels and types of physical exertion for extended periods of time, in a range of weather conditions, and while wearing personal protective equipment is required. Manual dexterity with range of motion of finger, wrist, elbow, shoulder, hip, and knee joints sufficient to allow successful performance of the essential functions of the position described above is also required. Arms, hands, legs, and feet must be sufficiently functional to allow satisfactory performance of the essential functions of the position. Vision and hearing must be sufficiently acute to allow satisfactory performance of the essential functions of the position. Any physical condition that would cause the individual to pose a significant risk of substantial harm to himself/herself or others is disqualifying.

3. **Personal Protective Equipment (PPE).** Many of the hazards Investigators may face while conducting field investigations are regulated by established OSHA standards, which require the use of PPE. Although some hazardous situations can be anticipated and avoided or controlled, dangerous conditions can arise suddenly and unexpectedly; therefore, all Investigators must be physically able to properly wear and operate appropriate PPE, including respirators, to protect against such hazards. The proper use of PPE requires an evaluation of the wearer's ability to use the equipment safely,

without interference from a medical condition(s) or adverse effects on the wearer's health.

4. **Action Based on Medical Examination.** If the results of the pre-appointment medical examination indicate that an individual conditionally selected for an investigator position is unable to use personal protective equipment, meet one or more of the position's physical requirements, and/or safely and efficiently perform the essential functions of the position, that individual will be disqualified from appointment to the position, unless a waiver or reasonable accommodation is granted, in accordance with applicable law and regulation, by the Director of Human Resources in consultation with the DASHO. The Director of Human Resources and the DASHO shall consult with FOH providers and staff, appropriate agency management officials, and agency counsel, on an as-needed basis, to meet these and any other responsibilities arising with respect to specific medical qualifications questions.

5. **Medical Examination Parameters.**

- a. Vision.

- (1) Examination Parameter: Distant visual acuity must be at least 20/40 in each eye with or without corrective lenses; distant binocular acuity of at least 20/40 with or without corrective lenses. Near visual acuity must be corrected to at least 20/40 in each eye; near binocular acuity of at least 20/40 with or without corrective lenses. Field of vision at 90 degrees in the horizontal meridian in each eye. Ability to distinguish the colors red, amber, and green.
- (2) Work Activity: Routinely assigned to areas where: the reading of comprehensive literature is necessary; both near and far visual acuity are necessary for hazard recognition; potentially life-threatening environments exist (therefore, accurate reading of the type of personal protective equipment is necessary); color-coded warning signs represent hazardous conditions. Routine use of finely calibrated equipment.
- (3) Rationale: Investigators work in environments where potential safety and health hazards exist or can spontaneously occur. Once these hazards occur, an investigator must be capable of determining what actions are appropriate in order to safeguard the safety and health of him/herself and others. These actions will nearly always require both near and far visual acuity; for example, quickly ascertaining the condition of a respirator to use in the case of an emergency egress situation (this may require reading finely calibrated air gauges). While performing routine work, an investigator may encounter situations where full field of vision will be necessary in order to avoid a serious accident. For example, while working on high scaffolding it may be necessary to rapidly descend. Normal field of vision is necessary to perform this activity safely while wearing a full-face respirator.

b. Hearing.

- (1) Examination Parameter: Average hearing loss in the better ear cannot be greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz, with or without a hearing aid.
- (2) Work Activity: Investigators are routinely assigned to areas where a broad spectrum of physical hazards exist, including environmental noise levels above 90 decibels.
- (3) Rationale: It is important that an investigator have an established hearing level in order to communicate and give instructions in a noisy environment. During the course of daily activities it is important for an investigator to hear instructions and communications in order to ensure safety. A greater than 40 decibel loss of speech frequency in the better ear may interfere with an investigator's ability to communicate under noisy conditions.

c. Musculo-Skeletal / Cardiovascular / Respiratory.

- (1) Examination Parameter: Both hands, arms, legs, and feet. No impairment of the use of a leg, a foot, an arm, a hand, the fingers, back, or neck which would interfere with the satisfactory performance of the essential functions of the position. No established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which would interfere with the satisfactory performance of the essential functions of the position or the ability to safely use personal protective equipment.
- (2) Work Activity: Investigators are required to perform moderate to strenuous lifting, carrying, walking, and standing. Investigators will routinely be required to ascend or descend heights in order to safely egress from a potentially hazardous area. During routine activities, Investigators may be required to carry portable equipment.
- (3) Rationale: It is imperative that no established medical history of cardiac or pulmonary disease exists. It is known that carrying heavy equipment while ascending or descending great heights places an excess burden on the cardiopulmonary system. Therefore, it is imperative that the cardiopulmonary system be without pathology. Because Investigators may be required to wear a negative pressure respirator, it is imperative and in compliance with OSHA standard 1910.134 that a physician medically qualify the individual to wear such a respirator. It is known that pre-existing cardiac or pulmonary disease can prevent an individual from wearing such a respirator.

6. Medical Examination Requirements and Procedures.

a. General Requirements and Procedures.

- (1) The pre-appointment medical examination will be conducted by a physician experienced in occupational medicine, preferably one who is a member of the American College of Occupational Medicine. The CSB will contract with a qualified government agency or private firm to provide all pre-appointment medical examinations. Individuals conditionally selected for investigator positions must be examined by the CSB-designated provider. The CSB will pay for all pre-appointment medical examinations ordered by the agency.
- (2) In addition to the examination by the CSB-designated provider, the conditionally selected individual may submit medical documentation from his/her personal physician or practitioner. The CSB-designated provider will review and consider such documentation in making any decision based upon the results of the medical examination.
- (3) The CSB-designated provider will be responsible for providing any necessary pre-exam instructions (e.g.: fasting periods, special eating restrictions, etc.) and/or medical forms directly to the individual who is to be examined.

b. Health History. Review of the candidate's health history must be conducted in regard to personal and family medical history and a work history including occupational exposures to chemical and physical hazards.

- (1) Any necessary medical forms must be completed by the candidate prior to the examination and submitted to the provider in accordance with its instructions.
- (2) There shall be an examining room discussion between the candidate and the physician regarding medical history.
- (3) The development of the medical history is to be inclusive of what is commonly termed multi-phasic screening.

c. Specific Examination Requirements. The physical examination should include, but not be limited to, an examination of the following: head and neck, including visual tests; ears, nose, and throat; respiratory, cardiovascular, and central and peripheral nervous systems; abdomen, rectum, and genitourinary system; spine and other musculoskeletal systems; and skin. Specific tests/measurements to be obtained include:

- (1) Height and weight.
- (2) Temperature, pulse, respiration rate, and blood pressure.

(3) Eye examination, including:

- (a) Visual acuity, near and far.
- (b) Depth perception.
- (c) Accommodation.
- (d) Field of vision.
- (e) Fundiscopic.

(4) Cardiopulmonary evaluation, including:

- (a) Resting twelve-lead electrocardiogram with interpretation.
- (b) A sub-maximal exercise test with a twelve-lead EKG will be required of those individuals found to be in a category of risk greater than 18 per 100 according to the Coronary Risk Handbook published by the American Heart Association
- (c) Pulmonary function evaluation:
 - FVC, FEV1, FEV1/FVC ratio.
 - Permanent record of flow curves must be included in the candidate's report.

(d) Chest X-ray (PA) 14 x 17 inches as a baseline.

(5) Comprehensive laboratory profile, including:

- (a) Urinalysis (including microscopic).
- (b) Hemocult.
- (c) CBC
- (d) Test chemical groups (done after 12-hour fast):
 - Chloride, bicarbonate.
 - Glucose.
 - Blood urea nitrogen.
 - Creatinine.
 - Uric acid.
 - LDH, SGOT, SGPT, GGTP.

- Alkaline phosphatase.
- Bilirubin.
- Total protein.
- Albumin and globulin.
- Cholesterol.
- Triglycerides.
- HDL Cholesterol.
- Potassium.
- Calcium.
- Blood lead, if indicated. A blood lead and zinc protoporphyrin should be done when there is a history of lead exposure or when the test is indicated in the physician's judgment.

d. Audiometric Testing.

- (1) An otoscopic examination, otological history, and audiometric test shall be administered by an otolaryngologist, audiologist, or certified audiometric technician.
- (2) Audiometric facilities, equipment, calibration procedures, and technician certification shall meet the requirements outlined in 29 CFR 1910.95.
- (3) The results of the otoscopic examination, otological history, and audiometric tests shall be reviewed by an otolaryngologist, audiologist, or other qualified physician.

7. **PPE Evaluation.** The examining physician will evaluate the following results to determine the candidate's ability to use PPE, including a full-face negative pressure air-purifying respirator and protective clothing.

- a. Personal Medical History: Conditions such as myocardial infarction, angina, severe emphysema, or any significant cardiac or pulmonary condition should be disqualifying.
- b. Physical Examination: Findings such as severe facial asymmetry, beard, obvious cardiac or pulmonary pathology should be disqualifying.
- c. Pulmonary Function Test: Evidence of moderate to severe restrictive or obstructive airway pattern should be disqualifying.
- d. Chest X-ray: Evidence of cardiopulmonary pathology should be disqualifying.
- e. Electrocardiogram: Obvious cardiac disease should be disqualifying.

8. Reporting Requirements.

- a. Examining Physician to the Candidate. The examining physician will generate personal medical reports for all candidates examined and mail them to their private residences within 15 working days of the date of the examination. The results will list each test, individually indicating whether a result is normal or abnormal and, if appropriate, a recommendation for referral to the candidate's personal physician will be made. In addition, the personal medical report will contain:
 - (1) The physician's opinion as to whether the candidate has any detected medical condition(s) which would cause the individual to pose a significant risk of substantial harm to himself/herself or would interfere with his/her ability to meet the physical requirements of the position and/or safely and efficiently perform the essential functions of the position.
 - (2) A determination of the candidate's ability to wear a respirator or any other personal protective equipment.
- b. Examining Physician to DASHO. The examining physician will forward to the DASHO, within 15 working days of the date that the candidate is examined, the following:
 - (1) A written opinion as to whether the candidate has any detected medical condition(s) which would cause the individual to pose a significant risk of substantial harm to himself/herself or would interfere with his/her ability to meet the physical requirements of the position and/or safely and efficiently perform the essential functions of the position.
 - (2) A written opinion as to whether the candidate is able to wear a respirator or any other personal protective equipment.
 - (3) A written statement that the candidate has been informed in writing by the physician of the results of the medical examination.

The FOH "Qualification Statements," which are one-page summary documents containing the pass/fail information regarding the results of the examination, will be maintained by the DASHO in a secured location in his/her office, in an appropriate system of records, as explained below.
- c. Medical Documentation. A specific diagnosis or clinical impression must be justified according to established diagnostic criteria and the conclusions and recommendations must not be inconsistent with generally accepted professional standards. An acceptable diagnosis must include the following information:

- (1) The history of the medical condition, including references to findings from previous examinations, treatment, and responses to treatment;
- (2) Clinical findings from the medical examination, including findings of physical examination, results of laboratory tests, X-rays, EKG's, and other special evaluations or diagnostic procedures;
- (3) Diagnosis, including the current clinical status;
- (4) Prognosis, including treatment options and an opinion as to whether recovery can be expected and, if so, whether the recovery will be full or partial and an estimate of the time until recovery;
- (5) An explanation of the impact of the medical condition on the examinee's ability to use personal protective equipment, meet the physical requirements of the position, and/or safely and efficiently perform the essential functions of the position. This should include a statement of the basis for any conclusion that restrictions or accommodations are or are not warranted and, where they are warranted, an explanation of their therapeutic or risk avoiding value;
- (6) An explanation of the medical basis for any conclusion which indicates the likelihood that the examinee is or is not expected to suffer sudden or subtle incapacitation by carrying out, with or without reasonable accommodation, the essential functions of the position;
- (7) Narrative explanation of the medical basis for any conclusion that the medical condition has or has not become static or well stabilized and the likelihood that the individual may experience sudden or subtle incapacitation as a result of the medical condition. In this context, "static or well-stabilized medical condition" means a medical condition that is not likely to change as a consequence of the natural progression of the condition, specifically as a result of the normal aging process, or in response to the work environment or the work itself. "Subtle incapacitation" means gradual, initially imperceptible impairment of physical or mental function whether reversible or not which is likely to result in performance or conduct deficiencies. "Sudden incapacitation" means abrupt onset of loss of control of physical or mental function.

9. Medical Records.

- a. Upon completion of the medical examination and the required reports to the candidate and the DASHO, the examining physician shall forward each candidate's complete medical record to the FOH records storage area, where the records will be kept in accordance with controlling federal recordkeeping requirements, as further explained below. The package shall include:

- (1) Completed medical/occupational history forms.
 - (2) Completed physical examination forms.
 - (3) All laboratory test results.
 - (4) Chest X-ray (radiograph and interpretation).
 - (5) Pulmonary function test results.
 - (6) Audiometric test results.
- b. The records generated by the pre-appointment medical examination program shall be maintained in accordance with Office of Personnel Management regulations at 5 C.F.R. § 339.305 and 5 C.F.R. Part 293, Subpart E, “Employee Medical File System Records.” The records shall be maintained in a secure location by FOH, with appropriate oversight by the DASHO. Disposition instructions for these records are provided by 5 C.F.R. Part 293, Subpart E and National Archives and Records Administration General Record Schedule 1, item 21.
- c. The records generated by the pre-appointment medical examination program are covered by the Privacy Act, under the government-wide system of records, “Employee Medical File System Records” (OPM/GOVT-10). The records shall be maintained and handled in strict accordance with the requirements of the Privacy Act and OPM/GOVT-10.

Appendix D

CSB Medical Surveillance Program (MSP)

1. Purpose. Among the essential functions of the Chemical Incident Investigator position are the field investigation of industrial chemical accidents and the gathering of evidence at chemical accident scenes. These functions can be physically demanding. Additionally, performance of such duties may expose Investigators to hazardous environments and substances. To perform their duties safely and effectively in hazardous or potentially hazardous situations, Investigators must be able to wear and operate PPE, including respirators. The CSB PMEP, the analog to the MSP, was necessitated by the physical requirements of the investigator position, in order to ensure that individuals appointed to such positions can successfully, safely, and efficiently perform the essential functions of the position. However, continued medical surveillance of Investigators is also required in order to ensure that the Investigators continue to meet the standards established by the PMEP program. Therefore, the CSB herein adopts a MSP, by which the CSB will regularly monitor its Investigators, on an annual basis, in order to evaluate these employees and to ensure that they have not developed medical or other conditions which could interfere with their ability to use PPE (especially respirators), that they continue to meet the physical requirements of their positions, and that they remain able to safely and efficiently perform the essential functions of the positions, without hazard to themselves or others.

2. Physical Requirements. The physical requirements of the Chemical Incident Investigator position are as follows:

Performance of the duties of this position requires the ability to wear and operate a range of personal protective equipment, including respirators. Performance of the duties of this position also requires the ability to engage in moderate to strenuous levels of physical exertion involving walking and standing, climbing ladders, working in and moving through confined spaces, and working at high elevations for the purpose of documenting and gathering evidence. The ability to maintain these levels and types of physical exertion for extended periods of time, in a range of weather conditions, and while wearing personal protective equipment is required. Manual dexterity with range of motion of finger, wrist, elbow, shoulder, hip, and knee joints sufficient to allow successful performance of the essential functions of the position described above is also required. Arms, hands, legs, and feet must be sufficiently functional to allow satisfactory performance of the essential functions of the position. Vision and hearing must be sufficiently acute to allow satisfactory performance of the essential functions of the position. Any physical condition that would cause the individual to pose a significant risk of substantial harm to himself/herself or others is disqualifying.

3. PPE. Many of the hazards Investigators may face while conducting field investigations are regulated by established OSHA standards, which require the use of personal protective equipment. Although some hazardous situations can be anticipated

and avoided or controlled, dangerous conditions can arise suddenly and unexpectedly; therefore, all Investigators must continue to be physically able to properly wear and operate appropriate PPE, including respirators, to protect against such hazards. The proper use of PPE requires an evaluation of the wearer's continued ability to use the equipment safely, without interference from a medical condition(s) or adverse effects on the wearer's health.

4. Action Based on Medical Examination. If the results of a medical examination conducted pursuant to the CSB's MSP indicate that an investigator is unable to use personal protective equipment, meet one or more of the position's physical requirements, and/or safely and efficiently perform the essential functions of the position without hazard to themselves or others, that individual is disqualified from further service as a CSB investigator unless a waiver or reasonable accommodation is granted, in accordance with applicable law and regulation, and consistent with the CSB's reasonable accommodation policy, by action of the Director of Human Resources in consultation with the DASHO. The Director of Human Resources and the DASHO shall consult with FOH providers and staff, appropriate agency management officials, and agency counsel, on an as-needed basis, to meet these and any other responsibilities arising with respect to specific medical qualifications questions.

5. Medical Examination Parameters.

a. Vision.

- (1) Examination Parameter: Distant visual acuity must be at least 20/40 in each eye with or without corrective lenses; distant binocular acuity of at least 20/40 with or without corrective lenses. Near visual acuity must be corrected to at least 20/40 in each eye; near binocular acuity of at least 20/40 with or without corrective lenses. Field of vision at 90 degrees in the horizontal meridian in each eye. Ability to distinguish the colors red, amber, and green.
- (2) Work Activity: Routinely assigned to areas where: the reading of comprehensive literature is necessary; both near and far visual acuity are necessary for hazard recognition; potentially life-threatening environments exist (therefore, accurate reading of the type of personal protective equipment is necessary); color-coded warning signs represent hazardous conditions. Routine use of finely calibrated equipment.
- (3) Rationale: Investigators work in environments where potential safety and health hazards exist or can spontaneously occur. Once these hazards occur, an investigator must be capable of determining what actions are appropriate in order to safeguard the safety and health of him/herself and others. These actions will nearly always require both near and far visual acuity; for example, quickly ascertaining the condition of a respirator to use in the case of an emergency egress situation (this may require reading finely calibrated air gauges). While performing routine work, an investigator may encounter

situations where full field of vision will be necessary in order to avoid a serious accident. For example, while working on high scaffolding it may be necessary to rapidly descend. Normal field of vision is necessary to perform this activity safely while wearing a full-face respirator.

b. Hearing.

(1) Examination Parameter: Average hearing loss in the better ear cannot be greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz, with or without a hearing aid.

(2) Work Activity: Investigators are routinely assigned to areas where a broad spectrum of physical hazards exist, including environmental noise levels above 90 decibels.

(3) Rationale: It is important that an investigator have an established hearing level in order to communicate and give instructions in a noisy environment. During the course of daily activities it is important for an investigator to hear instructions and communications in order to ensure safety. A greater than 40 decibel loss of speech frequency in the better ear may interfere with an investigator's ability to communicate under noisy conditions.

c. Musculo-Skeletal / Cardiovascular / Respiratory.

(1) Examination Parameter: Both hands, arms, legs, and feet. No impairment of the use of a leg, a foot, an arm, a hand, the fingers, back, or neck which would interfere with the satisfactory performance of the essential functions of the position. No established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which would interfere with the satisfactory performance of the essential functions of the position or the ability to safely use personal protective equipment.

(2) Work Activity: Investigators are required to perform moderate to strenuous lifting, carrying, walking, and standing. Investigators will routinely be required to ascend or descend heights in order to safely egress from a potentially hazardous area. During routine activities, Investigators may be required to carry portable equipment.

(3) Rationale: It is imperative that no established medical history of cardiac or pulmonary disease exists. It is known that carrying heavy equipment while ascending or descending great heights places an excess burden on the cardiopulmonary system. Therefore, it is imperative that the cardiopulmonary system be without pathology. Because Investigators may be required to wear a negative pressure respirator, it is imperative and in compliance with OSHA standard 1910.134 that a physician medically qualify the individual to wear such a respirator. It is known that pre-existing cardiac or pulmonary disease can prevent an individual from wearing such a respirator.

10. Medical Examination Requirements and Procedures.

a. General Requirements and Procedures.

- (1) The MSP examinations will be conducted by a physician experienced in occupational medicine, preferably one who is a member of the American College of Occupational Medicine. The CSB will contract with a qualified government agency or private firm to provide all MSP examinations. The CSB will pay for all MSP examinations, whether they are regularly scheduled, requested, offered, or ordered by the agency, pursuant to the requirements of federal law.
- (2) In addition to any examination(s) by CSB-designated provider(s), the employee may submit medical documentation from his/her personal physician or practitioner. The CSB-designated provider will review and consider such documentation in making any decision based upon the results of the medical examination.
- (3) The CSB-designated provider will be responsible for providing any necessary pre-exam instructions (e.g.: fasting periods, special eating restrictions, etc.) and/or medical forms directly to the employee who is to be examined.
- (4) The DASHO may designate a CSB employee, by name or by position, to oversee the efficient coordination and accomplishment of MSP examinations established by this program. Regardless of any express designation in this regard, however, the DASHO retains full responsibility for the fulfilling the mandates of program.

b. Health History. The employee's health history must be updated and reviewed in regard to personal and family medical history, as well as a work history including occupational exposures to chemical and physical hazards since the employee's PMP examination or last MSP examination.

- (1) Any necessary medical forms must be completed by the employee prior to the examination and submitted to the provider in accordance with its instructions.
- (2) There shall be an examining room discussion between the employee and the physician regarding any changes in medical condition or medical history since the employee's last CSB-sponsored examination.
- (3) The development of the medical history is to be inclusive of what is commonly termed multi-phasic screening.

c. Specific Examination Requirements. The physical examination should include, but not be limited to, an examination of the following: head and neck, including

visual tests; ears, nose, and throat; respiratory, cardiovascular, and central and peripheral nervous systems; abdomen, rectum, and genitourinary system; spine and other musculoskeletal systems; and skin. Specific tests/measurements to be obtained include:

- (1) Height and weight.
- (2) Temperature, pulse, respiration rate, and blood pressure.
- (3) Eye examination, including:
 - (a) Visual acuity, near and far.
 - (b) Depth perception.
 - (c) Accommodation.
 - (d) Field of vision.
 - (e) Fundiscopic.
- (4) Cardiopulmonary evaluation, including:
 - (a) Resting twelve-lead electrocardiogram with interpretation.
 - (b) A sub-maximal exercise test with a twelve-lead EKG will be required of those individuals found to be in a category of risk greater than 18 per 100 according to the Coronary Risk Handbook published by the American Heart Association
 - (c) Pulmonary function evaluation:
 - FVC, FEV1, FEV1/FVC ratio.
 - Permanent record of flow curves must be included in the candidate's report.
 - (d) Chest X-ray (PA) 14 x 17 inches as a baseline.
- (5) Comprehensive laboratory profile, including:
 - (a) Urinalysis (including microscopic).
 - (b) Hemocult.
 - (c) CBC

(d) Test chemical groups (done after 12-hour fast):

- Chloride, bicarbonate.
- Glucose.
- Blood urea nitrogen.
- Creatinine.
- Uric acid.
- LDH, SGOT, SGPT, GGTP.
- Alkaline phosphates.
- Bilirubin.
- Total protein.
- Albumin and globulin.
- Cholesterol.
- Triglycerides.
- HDL Cholesterol.
- Potassium.
- Calcium.
- Blood lead, if indicated. A blood lead and zinc protoporphyrin should be done when there is a history of lead exposure, or when the test is otherwise indicated in the physician's judgment.

d. Audiometric Testing.

(1) An otoscopic examination, otological history, and audiometric test shall be administered by an otolaryngologist, audiologist, or certified audiometric technician.

(2) Audiometric facilities, equipment, calibration procedures, and technician certification shall meet the requirements outlined in 29 CFR 1910.95.

(3) The results of the otoscopic examination, otological history, and audiometric tests shall be reviewed by an otolaryngologist, audiologist, or other qualified physician.

11. **PPE Evaluation.** The examining physician will evaluate the following results to determine the employee's continued ability to use PPE, including a full-face negative pressure air-purifying respirator and all protective clothing and equipment.

- a. Personal Medical History: Conditions such as myocardial infarction, angina, severe emphysema, or any significant cardiac or pulmonary condition should be disqualifying.
- b. Physical Examination: Findings such as severe facial asymmetry, beard, obvious cardiac or pulmonary pathology should be disqualifying.

- c. Pulmonary Function Test: Evidence of moderate to severe restrictive or obstructive airway pattern should be disqualifying.
- d. Chest X-ray: Evidence of cardiopulmonary pathology should be disqualifying.
- e. Electrocardiogram: Obvious cardiac disease should be disqualifying.

12. Reporting Requirements.

- a. Examining Physician to the Employee. The examining physician will generate personal medical reports for all employees examined and mail them to their private residences within 15 working days of the date of the examination. The results will list each test, individually indicating whether a result is normal or abnormal and, if appropriate, a recommendation for referral to the employee's personal physician will be made. In addition, the personal medical report will contain:
 - (1) The physician's opinion as to whether the employee has any detected medical condition(s) which would cause the individual to pose a significant risk of substantial harm to himself/herself or would interfere with his/her ability to meet the physical requirements of the position and/or safely and efficiently perform the essential functions of the position.
 - (2) A determination of the candidate's ability to wear a respirator or any other personal protective equipment.
- b. Examining Physician to DASHO. The examining physician will forward to the DASHO, within 15 working days of the date that the employee is examined, the following:
 - (1) A written opinion as to whether the employee has any detected medical condition(s) which would cause the individual to pose a significant risk of substantial harm to himself/herself or would interfere with his/her ability to meet the physical requirements of the position and/or safely and efficiently perform the essential functions of the position.
 - (2) A written opinion as to whether the employee is able to wear a respirator or any other personal protective equipment.
 - (3) A written statement that the employee has been informed in writing by the physician of the results of the medical examination.

The FOH "Qualification Statements," which are one-page summary documents containing the pass/fail information regarding the results of the examination, will be maintained by the DASHO in a secured location in his/her office, in an appropriate system of records, as explained below.

- c. Medical Documentation. A specific diagnosis or clinical impression must be justified according to established diagnostic criteria and the conclusions and recommendations must not be inconsistent with generally accepted professional standards. An acceptable diagnosis must include the following information:
- (1) The history of the medical condition, including references to findings from previous examinations, treatment, and responses to treatment;
 - (2) Clinical findings from the medical examination, including findings of physical examination, results of laboratory tests, X-rays, EKG's, and other special evaluations or diagnostic procedures;
 - (3) Diagnosis, including the current clinical status;
 - (4) Prognosis, including treatment options and an opinion as to whether recovery can be expected and, if so, whether the recovery will be full or partial and an estimate of the time until recovery;
 - (5) An explanation of the impact of the medical condition on the employee's continued ability to use personal protective equipment, meet the physical requirements of the position, and/or safely and efficiently perform the essential functions of the position without hazard to themselves or others. This should include a statement of the basis for any conclusion that restrictions or accommodations are or are not warranted and, where they are warranted, an explanation of their therapeutic or risk avoiding value;
 - (6) An explanation of the medical basis for any conclusion which indicates the likelihood that the employee is or is not expected to suffer sudden or subtle incapacitation by carrying out, with or without reasonable accommodation, the essential functions of the position;
 - (7) Narrative explanation of the medical basis for any conclusion that the medical condition has or has not become static or well stabilized and the likelihood that the individual may experience sudden or subtle incapacitation as a result of the medical condition. In this context, "static or well-stabilized medical condition" means a medical condition that is not likely to change as a consequence of the natural progression of the condition, specifically as a result of the normal aging process, or in response to the work environment or the work itself. "Subtle incapacitation" means gradual, initially imperceptible impairment of physical or mental function whether reversible or not which is likely to result in performance or conduct deficiencies. "Sudden incapacitation" means abrupt onset of loss of control of physical or mental function.

13. Medical Records.

- a. Upon completion of the medical examination and the required summary reports to the employees and the DASHO, the examining physician shall forward each employees' complete medical record to the FOH records storage area, where the records will be kept in accordance with controlling federal recordkeeping requirements, as further explained below. The package shall include:
 - (1) Completed medical/occupational history forms.
 - (2) Completed physical examination forms.
 - (3) All laboratory test results.
 - (4) Chest X-ray (radiograph and interpretation).
 - (5) Pulmonary function test results.
 - (6) Audiometric test results.
- b. The records generated by the MSP examination program shall be maintained in accordance with Office of Personnel Management regulations at 5 C.F.R. § 339.305 and 5 C.F.R. Part 293, Subpart E, "Employee Medical File System Records." The records shall be maintained in a secure location by and under the supervision of FOH, with appropriate oversight by the DASHO. Disposition instructions for these records are provided by 5 C.F.R. Part 293, Subpart E and National Archives and Records Administration General Record Schedule 1, item 21.
- c. The records generated by the MSP examination program are covered by the Privacy Act, under the government-wide system of records, "Employee Medical File System Records" (OPM/GOVT-10). The records shall be maintained and handled in strict accordance with the requirements of the Privacy Act and OPM/GOVT-10.

Appendix E

CSB Respiratory Protection Program (RPP).

1. Program Elements.

The CSB RPP will cover the following basic elements, as applicable:

- a. The designation of the DASHO or other CSB employee to serve as a program administrator for the RPP;
- b. Procedures for selecting respirators for use in the workplace;
- c. Pre-employment and recurring medical evaluations of Investigators required to be fit tested and to use respirators (addressed separately in Appendices C and D, respectively);
- d. Fit testing procedures for negative pressure respirators;
- e. Use of respirators in routine and reasonably foreseeable emergency escape situations;
- f. Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, and otherwise maintaining respirators;
- g. Procedures to ensure adequate air quality, quantity and flow of breathing air for self-contained breathing apparatus (SCBA) and Air-Line Breathing Apparatus. (Reserved; Currently Prohibited);
- h. Training Investigators with regard to the respiratory hazards to which they might be exposed;
- i. Training Investigators in the proper use of respirators, including putting on and removing them, any limitations on their use, and maintenance procedures; and
- j. Procedures for regularly evaluating the effectiveness of the program and for updating the program on a recurring basis, based on changes in workplace conditions, types of respirators in use, number of users, and other relevant factors.

2. Program Administrator.

The DASHO or his/her designee, appointed in writing, shall be the program administrator of the CSB's RPP. The program administrator will be qualified for this position by appropriate training and/or experience, commensurate with the complexity of the program he/she must administer. The program administrator will administer the entire RPP, including drafting and implementing all relevant policies and procedures, as well as instituting training, recordkeeping, and other required matters, under the direction and control of the DASHO. The DASHO maintains final authority over the RPP, pursuant to the Board's delegation to the DASHO over occupational safety and health matters.

3. Respirator Selection Procedures.

Respirator selection requires correctly matching the respirator with the hazard, the degree of hazard, and the user. The respirator selected must be adequate to effectively reduce exposure of the respirator user under all conditions of use, including reasonably foreseeable emergency escape situations. Proper respirator selection involves choosing a device that will protect the Investigator from the respiratory hazards to which he or she

may be exposed, yet permits the Investigator to perform the job with the least amount of physical burden.

4. General Requirements.

Many factors will be carefully considered in selecting a respirator. In choosing the appropriate respirator, Investigators must consider the nature and extent of the hazard, work requirements and conditions, and the characteristics and limitations of the available respirators. The following information will be taken into account:

- a. Nature of the hazard, and the physical and chemical properties of the air contaminant;
- b. Concentrations of contaminants;
- c. Relevant permissible exposure limit or other occupational exposure limit;
- d. Nature of the work operation or process;
- e. Length of time the respirator is worn;
- f. Work activities and physical/psychological stress;
- g. Fit testing;
- h. Physical characteristics, functional capabilities, and limitations of respirators; and
- i. Guarantee of NIOSH or other appropriate certification for all chosen respirators.

The CSB will assign its Investigators a full-face respirator, with a variety of filters (canisters or cartridges) for a variety of atmospheres and/or contaminants that would likely be confronted during investigations. Provision will be made to acquire other appropriate filters when needed during any given investigation. Half-face respirators may also be acquired and issued to Investigators in appropriate circumstances, at the discretion of the DASHO. CSB Investigators will be able to choose from a selection of respirators in order to find the best possible fit for each person, including respirators manufactured by reputable companies. However, prior to use, all respirators selected for use by CSB personnel must be certified by NIOSH, and they must be adequate to protect the health of the employee and ensure compliance with all OSHA and other statutory requirements. Thereafter, all respirators must be used in accordance with the terms of that certification, which appears on the NIOSH certification label.

Filters, cartridges and canisters will also be chosen to meet anticipated hazards. They will be appropriately labeled and color-coded. It is prohibited to alter, deface or remove any labeling or color-coding. Replacement respirators, cartridges, canisters, and filters will be made available as required. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while the respirator is in use.

5. Non-IDLH Atmospheres.

For protection against gases and vapors in atmospheres that are non-IDLH, an air-purifying respirator may be used. When an air-purifying respirator is selected, a system must be in effect that will reliably protect respirator wearers from contaminant breakthrough. These systems are:

- a. A respirator equipped with a NIOSH-approved end-of-service life indicator (ESLI) for the particular contaminant; or
- b. If there is no ESLI appropriate for the conditions encountered at a worksite, Investigators will follow a sorbent change schedule for canisters and cartridges based on reliable information or data ensuring that canisters and cartridges are changed before the end of their service life.

In many cases, Investigators may need to don respirators before recognizing all of the conditions of the work area or having access to the information needed to develop a good change-out schedule. Investigators will carry to each jobsite extra cartridges or canisters and shall err on the side of caution. Investigators should obtain as much information on the chemical hazards in the workplace as possible, and they should consider the employer's change-out schedule, if one is available, since it will have been created with that site in mind. If the gases and/or vapors have sensory warning properties such as odor, taste, and/or irritation effects, and the Investigator detects "breakthrough," the Investigator must leave the respirator use area immediately and the cartridge or canister must be replaced before the Investigator returns to the work area.

Some gaseous contaminants will migrate across the adsorbent or absorbent bed while the respirator is not in use, such as overnight. This migration can subject the user to an initial dose of the contaminant when the respirator is again placed in service. Therefore, as a minimum, gas vapor cartridges and canisters should be disposed of after each day's activities no matter how short those activities were.

Experience and professional judgment should be used along with existing information and data to establish cartridge or canister change schedules. If further information is needed in establishing a change-out schedule, the program administrator can consult the OSHA website or the manufacturer's website if one exists.

For protection against particulate contaminants in atmospheres that are non-IDLH, an Investigator will use an air-purifying respirator equipped with filters certified for particulates by NIOSH under 42 CFR Part 84. Filter cartridges should be replaced when the breathing resistance becomes great enough to cause discomfort to the wearer (overloaded) or when the cartridge suffers physical damage compromising its integrity.

6. No Use of SCBAs or Air-Line Breathing Apparatus.

The use of SCBAs (Self-Contained Breathing Apparatus) or Air-Line Breathing Apparatus by CSB Investigators is currently prohibited.

7. No Entry into IDLH Atmospheres and Other Prohibitions.

- Investigators are not allowed to enter known IDLH atmospheres for any purpose.
- Investigators are also not allowed into oxygen deficient atmospheres, or into atmospheres/situations where a canister or cartridge can become saturated or otherwise fail suddenly.

- Investigators are not allowed into atmospheres in which the assigned respirator does not meet the requirements for the substance specific standards or other OSHA standards present in a given situation.
- IICs must not allow Investigators to enter into confined spaces while wearing respirators unless the IICs have determined that no special procedures are needed for safe entry and investigative activity, including the provision for escape. (See also Appendix H.)

8. Emergency Escape from IDLH Atmospheres.

Escape-only respirators, as opposed to traditional SCBAs, are authorized for use by CSB Investigators and must be carried by all Investigators when there is a potential for exposure to IDLH atmospheres. This type of situation may exist in portions of refineries, chemical plants, sewage treatment plants, and hazardous waste sites, etc.

The CSB will provide several escape-only respirators/escape packs and will make them available to field investigation teams on an as needed basis. All escape-only respirators have limitations and these limitations must be taken into account when selecting them. Additionally, all limitations on use will be explained during any required training.

Respirators that are to be used exclusively for escape from IDLH atmospheres will be selected from those certified by NIOSH for escape from the atmosphere in which they will be used. If the toxic materials in question can cause eye irritation, then a full facepiece or hood, chemical goggles, or other combinations of appropriate PPE must be used. For example, under current 29 CFR 1910.1050, the standard governing exposure to methylenedianiline (MDA), escape respirators may be any full facepiece air-purifying respirator equipped with high-efficiency particulate air (HEPA) cartridges or any positive pressure or continuous flow self-contained breathing apparatus with full facepiece or hood. For formaldehyde exposure, escape respirators may be a full facepiece with chin style, front, or a back-mounted industrial canister approved against formaldehyde (29 CFR 1910.1048). If such an escape pack is selected for a potential IDLH atmosphere, the Investigator must assess the egress route to ensure that the emergency egress time does not exceed the capacity of the escape pack.

9. Medical Evaluation.

Investigators assigned to tasks that require the use of a respirator must be physically able to perform the work while using a respirator. Accordingly, Investigators must be able to tolerate the physical and psychological stress imposed by respirator use, as well as the physical stress originating from job and workplace conditions, including: the burden imposed by the respirator itself; limitations on hearing, sight, or smell; and isolation from the workplace environment. Since certain jobs and workplace conditions in which a respirator is used can also impose a physiological burden on the user, the medical evaluation will also consider the following factors: type and weight of the respirator to be worn; duration and frequency of respirator use; expected physical work effort; use of protective clothing and equipment to be worn; and temperature and humidity extremes that may be encountered.

The CSB's Pre-employment Medical Examination Program (PMEP) and the CSB's Medical Surveillance Program (MSP), found at Appendix C and D, respectively, set forth the particulars of all initial and ongoing medical evaluations and eligibility determinations needed for Investigator personnel. Accordingly, Investigators will be medically evaluated and found eligible to wear the respirator selected for their use prior to fit testing, (covered below), and first-time use of the respirator in the workplace. Thereafter, they will continue to be monitored throughout their tenure at the CSB. Prior to deployments, IICs will be briefed by the DASHO regarding any Investigators who have a medical history that could interfere with their ability to use a respirator safely and effectively. If necessary, as determined by the DASHO, IICs will be permitted to have access to a copy of the written medical opinion for each Investigator who will wear a respirator.

10. Reevaluation of Investigator's Ability to Use a Respirator.

In addition to the annual MSP examination, there are a number of circumstances that may require reevaluating an Investigator's ability to use a respirator. Medical reevaluations will be provided under the following conditions: when the Investigator reports medical signs or symptoms that are relevant to the Investigator's ability to use a respirator; when CSB management informs the examining physician that a Investigator needs to be reevaluated; or when information from the respirator program, including observations made during fit testing or program evaluation, indicates a need for Investigator reevaluation.

11. Fit Testing.

Fit testing is separate and distinct from PMEP or MSP examinations. Fit testing is administered by Federal Occupational Health (FOH), on behalf of the CSB, via contract, in accordance with the requirements of 29 CFR 1960.134, the intended use of the respirators purchased, and the CSB's RPP. Fit testing is intended to identify the specific make, model, style, and size of negative-pressure respirator best suited for each Investigator. In addition, fit testing also reinforces respirator training by having wearers review the proper methods of donning and wearing the respirator. As noted above, Investigators must be medically evaluated and found eligible to wear the respirator selected for their use prior to fit testing, and prior to deployment on an investigation where respirators are required.

a. Requirements:

Fit testing is required for all negative or positive pressure tight-fitting facepiece respirators. The OSHA respiratory protection standard requires that fit testing be performed before an employee first starts wearing a respirator in the work environment, whenever a different respirator facepiece is used, and at least annually thereafter. Thereafter, the respirator with which the Investigator is fit tested will be the only respirator the Investigator will be permitted to use. Under no circumstances will Investigators be allowed to wear respirators for which they have not been appropriately fit tested.

b. Demonstrating and Selecting a Respirator Model:

Prior to the actual fit test, the Investigator must be shown how to put on the respirator, position it on the face, set strap tension, and determine an acceptable fit. Next, the Investigator will be allowed to choose a respirator from a sufficient number of models and sizes so that the Investigator can find an acceptable and correctly fitting respirator. Once an acceptable respirator has been found -- which takes into account the position of the mask on the face, nose, and cheeks; room for eye protection; and room to talk -- a user seal check will be conducted.

c. Protocols:

Fit testing will be either **qualitative** (QLFT) or **quantitative** (QNFT), as required.

d. Protocol Descriptions:

QLFT and QNFT protocols are described in mandatory Appendix A to OSHA standard 1910.134, and will be followed in the CSB Programs whenever negative-pressure respirators are provided for use by Investigators. QLFT may only be used to fit test negative-pressure air-purifying respirators that must achieve a fit factor of 100 or less.

e. Preliminary Steps:

Prior to the commencement of the fit test, the Investigator will be given a description of the fit test and a description of the exercises that he or she will be performing during fit testing. The respirator to be tested will be worn for at least five minutes before the start of the fit test. The Investigator must be fit tested with the same make, model, style, and size of respirator that will be used. Investigators assigned more than one respirator will be fit tested for each respirator assigned.

f. Changing Respirator Model Selection, Retesting:

If the Investigator finds the fit of the respirator to be unacceptable, he or she will be given a reasonable opportunity to select a different respirator and to be retested. In addition, retesting is required whenever there are changes in an Investigator's physical condition that could affect respirators fit. Such conditions include, but are not limited to, facial scarring, dental changes (e.g., wearing new dentures), cosmetic surgery, or an obvious change in body weight.

g. Record of Fit Test:

(1) A record of each fit test will be maintained to document that annual fit testing has been done, and to document that tested employees passed either the QLFT or the QNFT with a fit factor that was appropriate for the type of respirator being used.

- (2) The fit test record shall consist of:
- (a) Name of the person tested;
 - (b) Type of fit test performed (QLFT, QNFT - irritant smoke, saccharin, etc.);
 - (c) Make, model, and size of the respirator fitted;
 - (d) Date of the fit test;
 - (e) Pass/fail results if a QLFT is used; and
 - (f) Fit factor and strip chart recording or other record of the test results if quantitative fit testing was performed.

12. Respirator Use.

Respirators must be used properly during investigations. Investigators must use their respirators under conditions specified by the RPP and in accordance with the training they receive. In addition, the respirator must only be used in a manner for which it is certified by NIOSH or by its manufacturer. The following conditions compromise the effective use of the respirator and jeopardize worker protection: facepiece seal leakage; removing the respirator while in hazardous atmospheres; not properly performing user seal checks; or not properly repairing defective parts.

13. Facepiece Seal Protection.

All Investigators will conduct a user seal check (formerly known as a fit check) every time a negative-pressure respirator is put on or adjusted to ensure that the respirator is seated properly on the face with no noticeable leaks. The user seal check procedure conducted must be either the positive and/or negative pressure checks described in Appendix B-1 of the OSHA standard 1910.134, or the manufacturer's recommended procedures (when equally protective). If leaks are present, the Investigator will adjust the respirator and try again.

Respirators with negative-pressure facepieces may not be worn by Investigators who have conditions that would compromise the facepiece-to-face seal. Examples of these conditions include facial hair (e.g., beard stubble, sideburns, or beard) that interferes with the facepiece seal or valve function, absence of normally worn dentures, facial deformities (e.g., scars, deep skin creases, prominent cheekbones), or the use of jewelry or headgear that projects under the facepiece seal.

Corrective glasses, safety goggles, protective safety glasses (as described in Appendix K), or any other personal protective equipment, must be worn in such a way that does not interfere with the seal of the facepiece to the face. It should be noted that in some cases a full-facepiece respirator or powered air-purifying respirator (PAPR) may be more comfortable and less cumbersome than the combination of a half-mask and chemical goggles. Contact lens wearers may wear contact lenses with full face respirators.

14. Skin or Eye Irritation.

Skin or eye irritation can result from wearing a respirator in hot, humid conditions as well as in contaminated environments. Such irritation can cause considerable distress to Investigators, causing them to remove or adjust the respirator or to refrain from wearing the respirator at all, thereby rendering it ineffective. To prevent skin or eye irritation

associated with respirator use, Investigators will leave the respirator use area to wash their faces and respirator facepieces as needed.

15. Vapor or Gas Breakthrough.

Whenever the Investigator can detect vapor or gas breakthrough (by odor, taste, and/or irritation effects) or a change in breathing resistance or leakage of the facepiece, the Investigator must leave the respirator use area immediately to replace the respirator or the filter, cartridge, or canister elements. Similarly, Investigators must leave the respirator use area if they are replacing cartridge or canister elements according to a change schedule, or when the end-of-service-life indicator shows that the canister or cartridge(s) must be changed.

16. Impairments.

Because respirators must be in good working condition to function, they will not be used if they have been impaired in any way. Impairments include a broken strap, loss of respirator shape, and a face seal that can no longer be maintained. Respirators that are not properly functioning must be repaired or replaced.

17. Investigator Responsibilities for Maintenance and Care.

Investigators must clean and inspect their own respirators in accordance with the provisions of this program. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components are to be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators are to be conducted by the manufacturer or other authorized service provider.

18. Maintenance and Care Program.

To ensure that the respirator remains serviceable and delivers effective protection, a maintenance program will be developed by the DASHO and followed by all respirator users. A proper maintenance program ensures that the Investigator's respirator remains as effective as when it was new. The maintenance program will be tailored to the type of facilities, working conditions, and hazards involved. In addition to the OSHA requirements, the manufacturer's instructions for inspecting, cleaning, and maintaining will be consulted to ensure that the respirator continues to function properly. The CSB maintenance program minimum requirements will include at least the following:

A. Cleaning and Disinfecting.

Cleaning and sanitizing respirators is necessary to prevent skin irritation and dermatitis. Where the contaminant is a dust, mist, or fume, its build-up on the respirator face-to-facepiece seal or within the respirator can reduce the protection provided by the respirator because the contaminant is in the breathing zone or has compromised the seal. In addition, the build-up of contamination on the respirator can contribute to the deterioration of the respirator's materials, which can lead to reduced protection. Respirators that are issued for the exclusive use of an Investigator will be cleaned and disinfected as often as necessary to remain sanitary. Respirators maintained for escape-

only use, as well as respirators used in fit testing and training, must be cleaned and disinfected after each use.

The Investigator will use either the cleaning and disinfecting procedures recommended in Appendix B-2 of the OSHA respiratory protection standard (1910.134) or the procedures recommended by the respirator manufacturer, as long as they are equivalent in effectiveness to the OSHA method. Equivalent effectiveness simply means that the procedures used ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user. The program administrator will ensure an adequate supply of the appropriate cleaning and disinfecting agents are maintained at the facility for Investigator use.

B. Storage.

All respirators must be stored so that they are protected against damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. Filter cartridges must be stored separately from respirator facepieces. This is to prevent contamination of the interior of the respirator facepiece from hazardous particulate matter (e.g., lead, asbestos, cadmium, silica) that may have accumulated on the filter cartridge. When respirators are packed or stored, the facepiece and exhalation valve must be stored in a manner that will prevent deformation. Each respirator should be positioned so that it retains its natural configuration. Synthetic materials and even rubber will warp if stored in an unnatural shape, thus affecting the fitting characteristics of the facepiece. Respirators should also be securely stored in lockers or boxes, in their carrying case/carton, away from harmful matter (dust, sunlight, heat, excessive temperatures or moisture, and damaging chemicals).

C. Inspection.

To ensure the continued reliability of respiratory equipment, they will be inspected on a regular basis. Investigators and the program administrator and/or DASHO shall use a standardized inspection checklist, such as OSHA's "Sample Respirator Inspection Record." Any inspection criteria from the manufacturer, NIOSH, or other acceptable source can also be used. The program administrator will maintain a record of all inspections. The record will include the date of the inspection, the name of the inspector, the findings of the inspection, any required remedial action, and a serial number or other means of identifying the inspected respirator or other equipment.

(1) All Respirators.

For all respirators, inspections will include a check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters, or filters. In addition, the elastomeric parts must be evaluated for pliability and signs of deterioration.

(2) Emergency Escape SCBAs.

If acquired by the CSB, emergency use SCBAs will require monthly inspections. The air cylinders must be maintained in a fully charged state and recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. In addition, the regulator must be inspected to ensure that no leaks have occurred. The program administrator will maintain a record of the monthly inspections. The record must include the date of the inspection, the name of the inspector, the findings of the inspection, any required remedial action, and a serial number or other means of identifying the inspected respirator.

(3) **Additional Visual Inspection.**

The frequency of inspection and the procedures to be followed depend on whether the respirator is intended for **routine use** or **emergency escape**.

- **Routine Use.** All respirators used in **routine** situations will be inspected before each use and during cleaning.
- **Escape-Only Use.** Respirators used for **escape-only** will be inspected before being carried onto the jobsite.

D. Repair.

Respirators that fail to pass inspection or are otherwise found to be defective must be removed from service, and discarded, repaired, or adjusted. Repairs or adjustments to respirators must be done only by appropriately trained personnel, using only the respirator manufacturer's NIOSH-approved parts designed for that respirator. The repairs also must be made in accordance with the manufacturer's recommendations and specifications regarding the type and extent of repairs to be performed. Because components such as reducing and admission valves, regulators, and alarms are complex and essential to the safe functioning of the respirator, they are required to be adjusted and repaired only by the manufacturer or a technician trained by the manufacturer. When a respirator is taken out of service, the respirator must be tagged "out of service," and the Investigator will be given a replacement of the same make, model and size, or the respirator must be properly returned to service, before that Investigator can use a respirator.

19. Training.

Training is an important part of the RPP and is essential for correct respirator use. All new CSB field personnel will receive training prior to using a respirator. Current Investigators will receive training as soon as possible. For the training to be effective, the training must be comprehensive and presented in an understandable way. The DASHO, FSHOs and/or program administrator(s) must attend training by the OSHA Training Institute (OTI) course on respiratory protection, or other equivalent training. The DASHO/FSHO, a qualified contractor, or other qualified CSB employee will provide the necessary training to all Investigators who may be assigned to wear respirators. Additional investigator training may also be provided through completion of an OSHA

OTI course in respiratory protection or other training source. As a result of this training, all personnel will be able to understand the operation of the respirator and be able to use it properly.

The respirator training must cover, at a minimum, the following topics:

- a. The general requirements of the OSHA respiratory protection standard;
- b. A discussion of why the use of the respirator is necessary. Such training should address the identification of the potential hazards involved during investigations, the extent of employee exposures to those hazards, and the potential health effects of such exposures;
- c. Proper selection of respirators;
- d. The procedures for inspecting the respirator, donning and removing it, checking the fit and seal, and actually wearing it;
- e. Information regarding the consequences of improper fit, usage, or maintenance;
- f. Limitations and capabilities of the respirator selected, including ESLI and change schedules;
- g. How to use the respirator effectively in emergency situations, including situations when malfunctions occur;
- h. Proper procedures for maintenance and storage; and
- i. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators (e.g., shortness of breath, dizziness).

20. Annual Retraining and Refresher Training.

Retraining will be done annually, and under some conditions additional retraining might be required. Circumstances which would require retraining include situations where changes in the type of respirator assigned to the employee render previous training obsolete; when the employee has not retained the requisite understanding or skill to use the respirator properly; or any other situation in which retraining appears necessary to ensure safe respirator use. The DASHO or his/her designee is responsible for documenting all respirator training, including initial training, annual training, and refresher training. Such documentation will include the type, model, and size of the respirator assigned to each employee, along with the specific training provided.

21. Program Evaluation.

The program administrator will conduct evaluations of the RPP as necessary to ensure that the provisions of the current written respirator program are being properly implemented for all Investigators required to use respirators. Evaluations must be conducted to ensure the continued effectiveness of the program. Evaluations of the program will determine whether the correct respirators are being used and worn properly and whether the training program is effective.

The program administrator will regularly consult with Investigators wearing respirators to ascertain the employees' views on program effectiveness and to identify any problems. This assessment will determine if the respirators are properly fitted. It will also evaluate whether the Investigators are able to wear the respirators without interfering with

effective workplace performance; respirators are correctly selected for the hazards encountered; respirators are being worn when necessary; and whether respirators are being maintained properly. The program administrator will correct any problems associated with wearing a respirator that are identified by Investigators in an ongoing fashion, or that are revealed during any other part of the evaluation.

To facilitate the formal RPP evaluation, as a starting point, the program administrator should consult OSHA's sample respirator program evaluation checklist. The program administrator should then also consider any number of factors, including experience gained during the history of the CSB's RPP, and make any needed changes or modifications to the program.

22. Recordkeeping.

Administration of the CSB RPP will generate several types of records. Requirements for managing those records are described in this section.

Administrative records are one category of records that will be generated by the RPP. These records consist of files related to the general administration of the program. Examples of such files include planning documents, memoranda, and correspondence. Records of equipment inspections (but not fit testing) should also be maintained as administrative records. RPP administrative records shall be maintained by the program administrator for five years from the date of their creation.

Fit test records are a second category of records that will be generated by the RPP. The Fit Testing section of this program prescribes the information these records must include. Records of individual employee fit testing shall be maintained in the same manner as records of the MSP examination (*see* Appendix D, section 9). The most recent fit test record for each employee covered by the RPP shall be maintained by the program administrator until it is superceded by the next year's test record. Fit test records for employees who are no longer covered by the RPP or no longer employed by the CSB shall be retained for one year from the date program coverage or employment ended.

The RPP may also generate medical records in addition to those created under the Pre-Employment Medical Examination Program and the Medical Surveillance Program. All medical records created in furtherance of the RPP, such as records of medical reevaluations, shall be maintained in the same manner as records of the MSP examination (*see* Appendix D, section 9). The program administrator shall coordinate with the DASHO to ensure that medical records are created and used in accordance with 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records" and 5 CFR 293, Subpart E, "Employee Medical File System Records." This includes establishing and maintaining a confidential storage and retrieval system for individual medical records.

Appendix F

CSB Training Program

Part I - Required Training for Office Personnel (Including Contractors)

1. Employee Emergency Plans and Fire Prevention Plans (1910.38)

As separately described in the CSB OSH Program:

- Designate and train a sufficient number of people to assist in the emergency evacuation of employees.
- Review the plan with covered employees: (A) when the plan is developed; (B) whenever the employee's responsibilities change; and (C) whenever the plan is changed.
- Review with employees, upon initial assignment, parts of the plan they must know in the event of an emergency. The written plan must be kept at the workplace and made available to employees.
- Apprise employees of the fire hazards to which they are exposed.

2. Portable Fire Extinguisher (1910.157)

- When portable fire extinguishers are provided for employees, also provide an education program on how to use them.
- This education must be given upon initial employment and annually thereafter.
- Train designated employees in the use of appropriate fire fighting equipment.
- This training must take place upon initial assignment and annually thereafter.

3. Hazard Communication (1910.1200)

As described separately in Appendix A:

- Train employees about hazardous chemicals in their work area.
- Inform employees of: (i) the requirements of this section; (ii) operations where hazardous chemicals are present; and (iii) the location of the written hazard communication program and the material safety data sheets.
- Employee training must include: (i) methods used in detecting the presence of hazardous chemicals; (ii) hazards of chemicals in the workplace; (iii) protective measures; and (iv) details of the hazard communication program.

4. Office Safety and Ergonomics

- The DASHO will develop and implement office safety and ergonomics guidance for the CSB.

Part II Training for Investigators

Subpart A: Required Training for Investigators

1. Employee Emergency Plans and Fire Prevention Plans (1910.38)

As separately described in the CSB OSH Program:

- Designate and train a sufficient number of people to assist in the emergency evacuation of employees.

- Review the plan with covered employees: (A) when the plan is developed; (B) whenever the employee's responsibilities change; and (C) whenever the plan is changed.
- Review with employees, upon initial assignment, parts of the plan they must know in the event of an emergency. The written plan must be kept at the workplace and made available to employees.
- Apprise employees of the fire hazards to which they are exposed.

2. Medical Services and First Aid (1910.151)

- When medical aid is not nearby, a person or persons must be trained to give first aid.

3. Portable Fire Extinguisher (1910.157)

- When portable fire extinguishers are provided for employees, also provide an education program on how to use them.
- This education must be given upon initial employment and annually thereafter.
- Train designated employees in the use of appropriate fire fighting equipment.
- This training must take place upon initial assignment and annually thereafter.

4. Hazard Communication (1910.1200)

As described separately in Appendix A:

- Train employees about hazardous chemicals in their work area.
- Inform employees of: (i) the requirements of this section; (ii) operations where hazardous chemicals are present; and (iii) the location of the written hazard communication program and the material safety data sheets.
- Employee training must include: (i) methods used in detecting the presence of hazardous chemicals; (ii) hazards of chemicals in the workplace; (iii) protective measures; and (iv) details of the hazard communication program.

5. Occupational Noise Exposure (1910.95)

- Provide training in the use and care of hearing protectors.
- Institute a training program for all employees exposed to noise at or above an eight-hour time-weighted average (TWA) of 85 decibels (dB), and ensure that every employee participates.
- Repeat the training program annually for employees included in the hearing conservation program. Update information in the program to keep it current and consistent with standards.
- Ensure employees are informed of: (i) the effects of noise on hearing; (ii) the purpose of hearing protectors, the advantages, disadvantages and attenuation of various types, and instruction on selection, fitting, use and care; and (iii) the purpose of audiometric testing and an explanation of the test procedures.

6. General Requirements of Personal Protective Equipment (1910.132)

As described separately in Appendix I:

- Train employees using PPE in the following: when and what PPE is necessary for the workplace; how to put on, remove, adjust and wear the PPE; and the limitations, proper care, maintenance, life expectancy and disposal of the PPE.
- Employees must demonstrate that they understood their training prior to performing

work.

- Retrain employees when: changes occur in the workplace or types of PPE; and inadequacies exist in the employee's knowledge of PPE.

7. Respiratory Protection (1910.134)

As described separately in Appendix E:

- The program administrator, qualified by appropriate training or experience, must be designated to administer the written RPP.
- The CSB must provide training to Investigators, and other employees that may require such training in the future.
- Respirator users must receive fit testing according to the exact type of respirator they will be using.
- Training and information. The Program Administrator must ensure that each employee can demonstrate knowledge of at least the following: (i) the reasons why a respirator is necessary and how improper fit, usage or maintenance can compromise its protective effect; (ii) respirator limitations and capabilities; (iii) how to use a respirator effectively in emergency situations, including situations in which the respirator malfunctions; (iv) how to inspect, put on, remove, use and check respirator seals; (v) procedures for respirator maintenance and storage; (vi) how to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and (vii) the general requirements of this section.
- The training must be conducted in a manner that is understandable to the employee.
- Training must be provided prior to requiring the employee to use a respirator in the workplace.
- Retraining must be administered annually, and when: (i) changes in the workplace or the type of respirator used render previous training obsolete; (ii) inadequacies in the employee's knowledge or use of the respirator indicate that the requisite understanding or skill has not been retained; or (iii) any other situation arises in which retraining appears necessary to ensure safe respirator usage.
- The basic advisory information on respirators, can be found in the Appendix to OSHA Standard 1910.134.

8. Permit-Required Confined Spaces (1910.146)

As described separately in Appendix H

- Train Investigators for safe performance in this area.
- Training must be given to affected employees: (i) before their first assigned duties; (ii) before there is a change in assigned duties; (iii) whenever a change in permit space operations causes a hazard that an employee has not previously been trained on; and (iv) whenever the DASHO determines there are deviations from the procedures in (d.3) or inadequacies in employee knowledge.
- Training must establish employee proficiency and introduce new or revised procedures when necessary.

9. Fall Protection Training Requirements (1926.503)

As described separately in Appendix G:

- Train employees exposed to fall hazards.

- Employees must be trained by a competent person qualified in the following: (i) the nature of fall hazards; (ii) procedures for erecting, maintaining, disassembling and inspecting fall protection systems; (iii) the use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones and other protection; (iv) the role of employees in the safety monitoring system; (v) the limitations of mechanical equipment during low-sloped roofing work; (vi) procedures for handling equipment and the erection of overhead protection; (vii) the role of employees in fall protection plans; and (viii) standards contained in this section.

- Maintain the latest training certification. Retrain employees when: (i) changes occur in the workplace; (ii) changes occur in fall protection systems; and (iii) their knowledge is inadequate.

10. Ladders (1926.1060)

- Train employees on using ladders and stairways.
- Training must include: (i) the nature of fall hazards; (ii) procedures for erecting, maintaining and disassembling fall protection systems; (iii) proper construction in the handling of stairways and ladders; (iv) maximum intended load-carrying capacity; and (v) standards contained in this part.
- Retrain if necessary.

11. Asbestos (1910.1001).

- The DASHO will design and implement training requirements in this area.

12. The Control of Hazardous Energy (Lockout/Tagout) (1910.147)

- The DASHO will design and implement training requirements in this area.

Subpart B: Possible Awareness Training for Investigators

1. Bloodborne Pathogens 1910.1030(g)(2)

The DASHO will determine what level, if any, training is appropriate in this area.

2. Air Contaminants

The DASHO will determine what level, if any, training is appropriate in regard to the following contaminants.

Carcinogens (1910.1003-1910.1016)

Vinyl Chloride (1910.1017)

Inorganic Arsenic (1910.1018)

Cadmium (1910.1027)

Benzene (1910.1028)

Coke Oven Emissions (1910.1029)

Cotton Dust (1910.1043)

1,2-Dibromo-3-Chloropropane (DBCP) (1910.1044)

Acrylonitrile (1910.1045)

Ethylene Oxide (1910.1047)
Formaldehyde (1910.1048)
Methylenedianiline (1910.1050)
1,3-Butadiene (1910.1051)
Methylene Chloride (1910.1052)
Lead (1910.1025)

3. Electrical Safety-Related Work Practices (1910.332)

The DASHO will determine what level, if any, training is appropriate in this area.

4. Explosives and Blasting Agents (1910.109)

The DASHO will determine what level, if any, training is appropriate in this area.

5. Storage and Handling of Liquefied Petroleum Gases (1910.110)

The DASHO will determine what level, if any, training is appropriate in this area.

6. Storage and Handling of Anhydrous Ammonia (1910.111)

The DASHO will determine what level, if any, training is appropriate in this area.

7. Accident Prevention Signs and Tags (1910.145)

The DASHO will determine what level, if any, training is appropriate in this area.

8. Ionizing Radiation (1910.1096)

The DASHO will determine what level, if any, training is appropriate in this area.

Part III – Training Resources

1. Other Agencies. The CSB may seek training assistance from the Secretary of Labor, the National Institute for Occupational Safety and Health and other appropriate sources.

2. The Secretary of Labor. After the effective date of Executive Order 12196, the Secretary shall, upon request and with reimbursement, conduct orientation for Designated Agency Safety and Health Officials and/or their designees that will enable them to manage the occupational safety and health programs of their agencies. Such orientation shall include coverage of Section 19 of the OSH Act, Executive Order 12196, and the requirements of Part 1960.

3. The Department of Labor. Upon request and with reimbursement, the Department of Labor shall provide each agency with training materials to assist in fulfilling the training needs of this subpart, including resident and field training courses designed to meet selected training needs of agency safety and health specialists, safety and health inspectors, and collateral duty safety and health personnel. These materials and courses in no way reduce each agency's responsibility to provide whatever specialized training is required by the unique characteristics of its work.

4. The Office of Personnel Management. OPM will develop guidelines and/or provide materials for the safety and health training programs for high-level managers, supervisors, members of committees, and employee representatives.

5. References.

Access to Medical and Exposure Records

*Access to Employee Exposure and Medical Records 29 CFR 1910.120, Title 29 Code of Federal Regulations Parts 1901.1 to 1910.999.*⁴

*Access to Medical and Exposure Records (OSHA 3110).*¹

Asbestos

*Asbestos Standards for Construction (OSHA 3096).*¹

*Asbestos Standards for General Industry (OSHA 3095).*¹

*Asbestos 29 CFR 1910.1001, Title 29 Code of Federal Regulations, Parts 1910.1000 to End.*⁴

Electrical Hazards

*Control of Hazardous Energy (Lockout/Tagout) (OSHA 3120).*¹

*Controlling Electrical Hazards (OSHA 3075).*⁴

*Electrical Protective Devices 29 CFR 1910.137, Title 29 Code of Federal Regulations, Parts 1910.1 to 1910.999.*⁴

*Subpart S - Electrical 29 CFR 1910.301 to 1910.399 Title 29 Code of Federal Regulations, Parts 1910.1 to 1910.999.*⁴

*The Control of Hazardous Energy (Lockout/Tagout) 29 CFR 1910.147, Title 29 Code of Federal Regulations, Parts 1910.1 to 1910.999.*⁴

Emergency Response Program

*How to Prepare for Workplace Emergencies (OSHA 3088).*¹

*Subpart E - Means of Egress 29 CFR 1910; Subpart L - Fire Protection 29 CFR 1910; Employee Emergency Plans and Fire Prevention Plans 29 CFR 1910.38; and Hazardous Waste Operations and Emergency Response Standard 29 CFR 1910.120, Title 29 Code of Federal Regulations, Parts 1910.1 to 1910.999.*⁴

*Principal Emergency Response and Preparedness Requirements in OSHA Standards and Guidance for Safety and Health Programs (OSHA 3122).*⁴

Ergonomics

*Ergonomics Program Management Guidelines For Meatpacking Plants (OSHA 3123).*¹

*Ergonomics: The Study of Work (OSHA 3125).*⁴

Glazner, Linda. "Shiftwork: Its effects on Workers." *AAOHN Journal*, 39(9).

Hales, Thomas R., and Bertsche, Patricia K. "Management of Upper Extremity Cumulative Trauma Disorders." *AAOHN Journal*, 40(3):118-127, March 1992.

U.S. Department of Labor, Occupational Safety and Health Administration, "Ergonomic Safety and Health Management; Proposed Rule." *Federal Register 57 (149): 34192-34200, August 3, 1992.*¹

Formaldehyde

*Formaldehyde Standard 29 CFR 1910.1048, Title 29 Code of Federal Regulations, Parts 1910.1000 to End.*⁴

Hazard Communication

*Hazard Communication Standard 29 CFR 1910.1200, Title 29 Code of Federal Regulations, Parts 1910.1000 to End.*⁴

Hazard Communication - A Compliance Kit. GPO Order No 029-016-00147-6.⁴

Hazard Communication Guidelines for Compliance. GPO Order No. 029-016-00127-1.⁴

*Chemical Hazard Communication (OSHA 3084).*¹

Emergency Response and Hazardous Waste Program

*Hazardous Waste and Emergency Response (OSHA 3114).*¹

*Hazardous Waste Operations and Emergency Response Standard 29 CFR 1910.120, Title 29 Code of Federal Regulations Parts 1910.1 to 1910.999.*⁴

Infectious Diseases

*Occupational Exposure to Bloodborne Pathogens Standard 29 CFR 1910.1030, Title 29 Code of Federal Regulations, Parts 1910.1000 to End.*⁴

Bloodborne Facts; factsheets provided by OSHA entitled, "Reporting Exposure Incidents," "Protect Yourself When Handling Sharps," "Hepatitis B Vaccination Protection for You," and "Personal Protective Equipment Cuts Risk," and "Holding the line on Contamination."¹

*Occupational Exposure to Bloodborne Pathogens and Long-Term Healthcare Workers (OSHA 3131).*¹

*Occupational Exposure to Bloodborne Pathogens (OSHA 3127).*¹

U.S. Department of Health and Human Services, Centers for Disease Control, "Immunization Recommendations for Health."

Centers for Disease Control, "Protections Against Viral Hepatitis Recommendations of the Immunization Practices Advisory Committee (ACIP)," MMWR 39(RR-2), February 9, 1990.

U.S. Department of Labor, Occupational Safety and Health Administration, "Enforcement Procedures and Scheduling for Occupational Exposure to Tuberculosis, CPL 2.106," Office of Health Compliance Assistance. Washington, D.C.⁴

U.S. Department of Labor, Occupational Safety and Health Administration, "OSHA Instruction CPL 2-2.44C: Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens Standard," Office of Compliance Assistance, Washington, DC: March 6, 1991.⁴

Ionizing Radiation

Gauvin, J.P., "Radiation Protection in Hospitals" reprinted in W. Chaney and J. Schimer, *Essentials of Modern Hospital Safety*, Lewis Publishers, 1990.

*Ionizing Radiation 29 CFR 1910.96, Title 29 Code of Federal Regulations, Parts 1910.1 to 1910.999.*⁴

Respiratory Protection

*Personal Protective Equipment (OSHA 3077).*¹

*Respiratory Protection 29 CFR 1910.134, Title 29 Code of Federal Regulations, Parts 1910.1 to 1910.999.*¹

*Respiratory Protection (OSHA 3079).*¹

Recordkeeping

*Recording and Reporting Occupational Injuries and Illnesses 29 CFR 1904, Title 29 Code of Federal Regulations, Parts 1901.1 to 1910.1 to 1910.999.*⁴

Recordkeeping Guidelines for Occupational Injuries and Illnesses. GPO Order No. 029-016-00165-4.⁴

Training

Training Requirements in OSHA Standards and Training Guidelines (OSHA 2254). GPO Order No. 029-016-00137-9.⁴

Worksite Analysis

Job Hazard Analysis (OSHA 3071). GPO Order No. 029-016-00142-5.⁴

Workplace Violence

Dealing with Workplace Violence: A Guide for Agency Planners, U.S. Office of Personnel Management (February 1998).

Guidelines for Preventing Workplace Violence for Healthcare and Social Service Workers (OSHA 3148). GPO Order No. 029-016-00172-7.⁴

OSHA Information

OSHA Act.¹

OSHA Publications and Audiovisual Programs (OSHA 2019).¹

All About OSHA (OSHA 2056).¹

OSHA Act (Spanish) (OSHA 2069).¹

OSHA Inspections (OSHA 2098).¹

OSHA Poster (Spanish) (OSHA 2200).¹

OSHA Poster (OSHA 2203).¹

Employer Rights and Responsibilities Following an OSHA Inspection (OSHA 3000).¹

Employee Workplace Rights (OSHA 3021).¹

Consultation Services for the Employer (OSHA 3047).¹

Handbook for Small Businesses (OSHA 2209). GPO Order No. 029-016-00144-1.⁴

OSHA Regulations, Documents and Technical Information on CD-ROM. GPO Order No. 729-13-00000-5.⁴

Other Resources

Finkle, B.S., Blank, R.V, and Walsh, J.M., *Technical, Scientific, and Procedural Issues of Employee Drug Testing*.

Part IV – Publication Ordering Information

¹U.S. Department of Labor - OSHA

Publications Office, Room N3101

200 Constitution Ave., NW

Washington, DC 20210

Telephone: (202) 219-4667

FAX: (202) 219-9266

²National Technical Information Service (NTIS)

U.S. Department of Commerce

5285 Port Royal Road

Springfield, Virginia 22161
Telephone: (703) 487-4650
FAX: (703) 321-8547

³National Institute for Occupational Safety and Health

Publication Dissemination, DSDTT
4676 Columbia Parkway
Cincinnati, Ohio 45226
Telephone: (513) 533-8287

⁴Superintendent of Documents

U.S. Government Printing Office
Washington, D.C. 20402
Telephone: (202) 783-3238

⁵Technical Information Services

Center for Prevention Services
Centers for Disease Control and Prevention
Atlanta, Georgia 30333

⁶Centers for Disease Control and Prevention

Center for Infectious Disease
Division of Viral Diseases
Atlanta, Georgia 30333

Appendix G

CSB Fall Protection Program

This plan applies to all CSB field Investigators and other deployed personnel. This includes but is not limited to, all personnel visiting or performing work at elevated work sites.

Existing and potential hazards of elevated work surfaces at all work sites shall be identified and procedures established by the Investigator-In-Charge (IIC) to ensure safe working conditions. If the IIC does not believe he or she is qualified to perform this function, appropriate support must be obtained from contractors, company officials, or other federal or state investigative agencies in order to provide the IIC with expert advice. The FSHO must also be consulted. However, final decisions regarding when and how CSB Investigators perform work at elevated worksites remain in the hands of the IIC.

The fall protection procedures shall address non-routine climbing operations or when the use of conventional fall protection systems is not feasible or creates greater hazards in use (e.g., during construction or modification of elevated work areas). The plan shall also address applicable procedures such as one-person and multi-person climbing operations; requirements for radio and/or telephone communications; special logistics for remote locations; and emergency rescue procedures.

The IIC shall take steps to determine that all elevated work surfaces are designed, constructed, and maintained to ensure that they support their maximum intended load. When examinations identify potential deficiencies with a structure or system, a determination shall be made by a qualified person to insure that the surface has the strength and structural integrity to support employees working on them. When exposure to a fall hazard cannot be prevented through engineering controls (e.g., platforms, guardrails) or through the use of elevated work platforms, fall arrest equipment shall be used. The IIC shall evaluate modifications or installations of fall arrest systems to elevated work structures to ensure that the fall arrest systems will perform as intended.

All fall protection and arresting equipment used by Investigators shall be approved by the IIC prior to its use. All equipment shall meet applicable OSHA and ANSI standards and must be suitable for the work conditions and environment. Full body harnesses shall be worn, where required. Body belts are not acceptable as part of personal fall arresting system (PFAS). The following factors shall be considered when selecting equipment and systems:

- (a) Maintenance requirements;
- (b) Performance specifications;
- (c) Ease of use and worker productivity;
- (d) Environmental conditions;
- (e) Installation (e.g., anchorage points, structural integrity);
- (f) Maintenance and inspection;

(g) Training of intended users.

All equipment and systems shall be inspected and maintained in accordance with manufacturer's specifications and OSHA and ANSI standards. Any PFAS with signs of damage, impact loading, or significant component defect shall be withdrawn from service immediately and evaluated for serviceability by a competent person or replaced. All maintenance and inspection activities shall be documented. All equipment and systems should be thoroughly inspected before each use.

The following information constitutes additional guidelines for use in complying with requirements for a personal fall arrest system.

(a) **"Selection and use considerations."**

- (1) The kind of personal fall arrest system selected should match the particular work situation, and any possible free fall distance should be kept to a minimum. Consideration should be given to the particular work environment. For example, the presence of acids, dirt, moisture, oil, grease, etc., and their effect on the system, should be evaluated. Hot or cold environments may also have an adverse effect on the system. Wire rope should not be used where an electrical hazard is anticipated. As required by the standard, the employer must plan to have means available to promptly rescue an employee should a fall occur, since the suspended employee may not be able to reach a work level independently.
- (2) Where lanyards, connectors, and lifelines are subject to damage by work operations such as welding, chemical cleaning, and sandblasting, the component should be protected, or other securing systems should be used. The work conditions and environment (including seasonal weather changes) should be fully evaluated before selecting the appropriate personal fall protection system. Once in use, the system's effectiveness should be monitored. In some cases, a program for cleaning and maintenance of the system may be necessary.

(b) **"Testing considerations."** Before purchasing or putting into use a personal fall arrest system, the CSB should obtain from the supplier information about the system based on its performance during testing so that the DASHO, IICs, FSHOs, and Investigators can know if the system meets this standard. Testing should be done using recognized test methods. The Appendix to OSHA standard 29 CFR Part 1926, Subpart M contains test methods recognized for evaluating the performance of fall arrest systems. Not all systems may need to be individually tested; the performance of some systems may be based on data and calculations derived from testing of similar systems, provided that enough information is available to demonstrate similarity of function and design.

(c) **"Component compatibility considerations."** Ideally, a personal fall arrest system is designed, tested, and supplied as a complete system. However, it is common practice for lanyards, connectors, lifelines, deceleration devices, body belts and body harnesses to be interchanged since some components wear out before others. The IICs, FSHOs, and Investigators should realize that not all components are interchangeable. For instance, a

lanyard should not be connected between a harness and a deceleration device of the self-retracting type since this can result in additional free fall for which the system was not designed. Any substitution or change to a personal fall arrest system should be fully evaluated or tested by a competent person to determine that it meets the standard, before the modified system is put in use.

(d) "**Employee training considerations.**" Thorough training in the selection and use of personal fall arrest systems is imperative. All Investigators must be trained in the safe use of the system. This should include the following: application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and total fall distance to prevent striking a lower level; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death. All Investigators shall become familiar with the material in this Appendix, and Subpart M, as well as the manufacturer's recommendations, before a system is used. Of uppermost importance is the reduction in strength caused by certain tie-offs (such as using knots, tying around sharp edges, etc.) and maximum permitted free fall distance. Also, to be stressed are the importance of inspections prior to use, the limitations of the equipment, and unique conditions at the worksite which may be important in determining the type of system to use. All Investigators shall receive training to recognize the hazards associated with elevated work surfaces. Investigator training shall be conducted by a competent person in accordance with OSHA regulations, ANSI requirements, and the manufacturer's instructions. Refresher training shall be conducted whenever an employee who has already been trained demonstrates a lack of understanding or skill with the PFAS (e.g., due to changes in the workplace or changes in the types of fall protection systems or equipment to be used). All training shall be properly documented and maintained. Documentation shall include a written certification record that contains the name or other identifier of the employee trained, the date(s) of the training, and the signature of the competent person who performed the training. Employees shall be physically capable of performing assigned job duties.

(e) "**Instruction considerations.**" The DASHO must ensure that the CSB's IICs, FSHOs and Investigators obtain comprehensive instructions from the supplier as to any given system's proper use and application, including, where applicable:

- (1) The force measured during the sample force test;
- (2) The maximum elongation measured for lanyards during the force test;
- (3) The deceleration distance measured for deceleration devices during the force test;
- (4) Caution statements on critical use limitations;
- (5) Application limits;
- (6) Proper hook-up, anchoring and tie-off techniques, including the proper dee-ring or other attachment point to use on the body belt and harness for fall arrest;
- (7) Proper climbing techniques;
- (8) Methods of inspection, use, cleaning, and storage; and
- (9) Specific lifelines that may be used.

This information should be provided to IICs, FSHOs, and Investigators during training.

(f) "**Rescue considerations.**" When personal fall arrest systems are used, the IIC must assure that Investigators can be promptly rescued or can rescue themselves should a fall occur. The availability of rescue personnel, ladders or other rescue equipment shall be evaluated. In some situations, equipment that allows Investigators to rescue themselves after the fall has been arrested may be desirable, such as devices that have descent capability. Emergency and rescue procedures, consistent with the nature of the operations and the conditions of the elevated space, shall be established to rescue an Investigator should an emergency occur. Procedures shall include methods for summoning rescue and emergency services, for rescuing Investigators from heights, and for providing necessary medical services in a timely fashion.

(g) "**Inspection considerations.**" Personal fall arrest systems must be regularly inspected. Any component with any significant defect, such as cuts, tears, abrasions, mold, or undue stretching; alterations or additions which might affect its efficiency; damage due to deterioration; contact with fire, acids, or other corrosives; distorted hooks or faulty hook springs; tongues unfitted to the shoulder of buckles; loose or damaged mountings; non-functioning parts; or wearing or internal deterioration in the ropes must be withdrawn from service immediately, and should be tagged or marked as unusable, or destroyed.

(h) "**Tie-off considerations.**"

(1) One of the most important aspects of personal fall protection systems is fully planning the system before it is put into use. Probably the most overlooked component is planning for suitable anchorage points. Such planning should ideally be done before any climbing or other support structure, such as scaffolding, is constructed.

(i) Existing anchorages should be used if they are available. In some cases, anchorages must be installed immediately prior to use. In such cases, a registered professional engineer with experience in designing fall protection systems, or another qualified person with appropriate education and experience should design an anchor point to be installed.

(ii) In other cases, the agency recognizes that there will be a need to devise an anchor point from existing structures. Examples of what might be appropriate anchor points are steel members or I-beams if an acceptable strap is available for the connection (do not use a lanyard with a snap hook clipped onto itself); large eye-bolts made of an appropriate grade steel; guardrails or railings if they have been designed for use as an anchor point; or masonry or wood members only if the attachment point is substantial and precautions have been taken to assure that bolts or other connectors will not pull through. A qualified person should be used to evaluate the suitability of these "make shift" anchorages with a focus on proper strength.

(2) IICs, FSHOs, and Investigators should at all times be aware that the strength of a personal fall arrest system is based on its being attached to an anchoring system which does not reduce the strength of the system (such as a properly dimensioned eye-bolt/snap-hook anchorage). Therefore, if a means of attachment is used that will reduce the strength of the system, that component should be replaced by a stronger one, but one that will also maintain the appropriate maximum arrest force characteristics.

(3) Tie-off using a knot in a rope lanyard or lifeline (at any location) can reduce the lifeline or lanyard strength by 50 percent or more. Therefore, a stronger lanyard or lifeline should be used to compensate for the weakening effect of the knot, or the lanyard length should be reduced (or the tie-off location raised) to minimize free fall distance, or the lanyard or lifeline should be replaced by one which has an appropriately incorporated connector to eliminate the need for a knot.

(4) Tie-off of a rope lanyard or lifeline around an "H" or "I" beam or similar support can reduce its strength as much as 70 percent due to the cutting action of the beam edges. Therefore, use should be made of a webbing lanyard or wire core lifeline around the beam; or the lanyard or lifeline should be protected from the edge; or free fall distance should be greatly minimized.

(5) Tie-off where the line passes over or around rough or sharp surfaces reduces strength drastically. Such a tie-off should be avoided or an alternative tie-off rigging should be used. Such alternatives may include use of a snap-hook/dee ring connection, wire rope tie-off, an effective padding of the surfaces, or an abrasion-resistance strap around or over the problem surface.

(6) Horizontal lifelines may, depending on their geometry and angle of sag, be subjected to greater loads than the impact load imposed by an attached component. When the angle of horizontal lifeline sag is less than 30 degrees, the impact force imparted to the lifeline by an attached lanyard is greatly amplified. For example, with a sag angle of 15 degrees, the force amplification is about 2:1 and at 5 degrees sag, it is about 6:1. Depending on the angle of sag, and the line's elasticity, the strength of the horizontal lifeline and the anchorages to which it is attached should be increased a number of times over that of the lanyard. Extreme care should be taken in considering a horizontal lifeline for multiple tie-offs. The reason for this is that in multiple tie-offs to a horizontal lifeline, if one Investigator falls, the movement of the falling Investigator and the horizontal lifeline during arrest of the fall may cause other Investigators to fall also. Horizontal lifeline and anchorage strength should be increased for each additional employee to be tied off. For these and other reasons, only qualified personnel will be permitted to design systems using horizontal lifelines. Testing of installed lifelines and anchors prior to use is recommended.

(7) The strength of an eye-bolt is rated along the axis of the bolt and its strength is greatly reduced if the force is applied at an angle to this axis (in the direction of shear). Also, care should be exercised in selecting the proper diameter of the eye to

avoid accidental disengagement of snap-hooks not designed to be compatible for the connection.

(8) Due to the significant reduction in the strength of the lifeline/lanyard (in some cases, as much as a 70 percent reduction), the sliding hitch knot (prusik) should not be used for lifeline/lanyard connections except in emergency situations where no other available system is practical. The "one-and-one" sliding hitch knot should never be used because it is unreliable in stopping a fall. The "two-and-two," or "three-and-three" knot (preferable) may be used in emergency situations; however, care should be taken to limit free fall distance to a minimum because of reduced lifeline/lanyard strength.

(i) "**Vertical lifeline considerations.**" Each Investigator must have a separate lifeline when the lifeline is vertical. The reason for this is that in multiple tie-offs to a single lifeline, if one Investigator falls, the movement of the lifeline during the arrest of the fall may pull other Investigators' lanyards, causing them to fall as well.

(j) "**Snap-hook considerations.**" Locking snap hooks designed for connection to suitable objects (of sufficient strength) are required in lieu of the non-locking type. Locking snap hooks incorporate a positive locking mechanism in addition to the spring-loaded keeper, which will not allow the keeper to open under moderate pressure without someone first releasing the mechanism. Such a feature, properly designed, effectively prevents roll out from occurring.

(k) "**Free fall considerations.**" The IIC, FSHOs and Investigators should at all times be aware that a system's maximum arresting force is evaluated under normal use conditions established by the manufacturer, and in no case using a free fall distance in excess of 6 feet (1.8 m). A few extra feet of free fall can significantly increase the arresting force on the user, possibly to the point of causing injury. Because of this, the free fall distance should be kept at a minimum, and, as required by the standard, in no case greater than 6 feet (1.8 m). To help assure this, the tie-off attachment point to the lifeline or anchor should be located at or above the connection point of the fall arrest equipment to belt or harness. (Since otherwise additional free fall distance is added to the length of the connecting means (i.e. lanyard)). Attaching to the working surface will often result in a free fall greater than 6 feet (1.8 m). For instance, if a 6-foot (1.8 m) lanyard is used, the total free fall distance will be the distance from the working level to the body belt (or harness) attachment point plus the 6 feet (1.8 m) of lanyard length. Another important consideration is that the arresting force that the fall system must withstand also goes up with greater distances of free fall, possibly exceeding the strength of the system.

(l) "**Elongation and deceleration distance considerations.**" Other factors involved in a proper tie-off are elongation and deceleration distance. During the arresting of a fall, a lanyard will experience a length of stretching or elongation, whereas activation of a deceleration device will result in a certain stopping distance. These distances should be available with the lanyard or device's instructions and must be added to the free fall

distance to arrive at the total fall distance before an employee is fully stopped. The additional stopping distance may be very significant if the lanyard or deceleration device is attached near or at the end of a long lifeline, which may itself add considerable distance due to its own elongation. Sufficient distance must be maintained between the Investigator and obstructions below, in order to prevent an injury due to impact before the system fully arrests the fall. In addition, a minimum of 12 feet (3.7 m) of lifeline should be allowed below the securing point of a rope grab type deceleration device, and the end terminated to prevent the device from sliding off the lifeline. Alternatively, the lifeline should extend to the ground or the next working level below. These measures are suggested to prevent a user from inadvertently moving past the end of the lifeline and having the rope grab become disengaged from the lifeline.

(m) "**Obstruction considerations.**" The location of the tie-off should also consider the hazard of obstructions in the potential fall path of the Investigator. Tie-offs that minimize the possibilities of exaggerated swinging should be considered. Any obstructions that might interfere with this fall or exaggerated swinging motion should also be considered or a severe injury could occur.

(n) "**Other considerations.**" Because of the design of some personal fall arrest systems, additional considerations may be required for proper tie-off. For example, heavy deceleration devices of the self-retracting type should be secured overhead in order to avoid the weight of the device having to be supported by the user. Also, if self-retracting equipment is connected to a horizontal lifeline, the sag in the lifeline should be minimized to prevent the device from sliding down the lifeline to a position that creates a swing hazard during fall arrest.

(o) "**Vehicle-Mounted Elevating Systems, Rotating Work Platforms, and Personal Platforms Hoisted by Cranes and other Machinery.**"

When investigative work requires field investigators to use vehicle-mounted elevating and rotating work platforms, appropriate personal fall protection equipment shall be used. This normally consists of a body belt/harness system with a short (e.g., no more than 2 feet) positioning-type lanyard appropriately attached to a suitable identified anchor point in the work platform. The lanyard in this case acts as a restraint that prevents the user from being exposed to any type of fall (e.g., prevents climbing the guardrail system, or bouncing out of the protective enclosure of the guardrail system).

When investigative work requires field investigators to use a personal platform hoisted by a crane appropriate personal fall protection equipment shall be used. This normally consists of a body belt/harness system with lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member within the personnel platform capable of supporting a fall impact for users using the anchorage. The IIC shall ensure that the other requirements of 29 CFR 1926.550(g)(2) are met (e.g., appropriate type crane, properly designed platform, trial lift, prelift training) before allowing field investigators to use the personal platform.

Appendix H

CSB Permit-Required Confined Space Entry Program (PRCSEP)

1. Entry Policy for Investigators. CSB Investigators will only enter confined spaces when it is determined essential to the investigation by the IIC. Only Investigators who are experienced and trained in confined space entry may enter permit-required confined spaces. The training requirements specified in this appendix are a minimum for this purpose.

2. Definitions.

a. Alternate entry procedures. Procedures utilized for entry when the only hazard or potential hazard presented by the confined space is atmospheric and may be eliminated by the use of continuous forced air ventilation.

b. Confined space.

- (1) A space that is large enough and so configured that an employee can bodily enter and perform assigned work;
- (2) Has limited or restricted means for entry or exit; and
- (3) Is not designed for continuous employee occupancy.
- (4) Examples of such spaces include: storage tanks, pits, boilers, fuel cells, sewers, underground utility vaults, tunnels, cooling towers, temporary enclosures, and manholes. Once a known or potential hazard is identified within a confined space, it becomes a permit-required confined space (PRCSP).

c. 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:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL).
- (2) Airborne combustible dust at a concentration that meets or exceeds its LFL.
- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit (PEL) is published in 29 CFR 1910, Subpart G, "Occupational Health and Environmental Control," or in 29 CFR 1910, Subpart Z, "Toxic and Hazardous Substances," and which could result in employee exposure in excess of its dose or PEL.
- (5) Any other atmospheric condition that is immediately dangerous to life or health.
- (6) CSB personnel will use OSHA PEL'S. Where there are no OSHA PEL'S, airborne limits shall not exceed American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values-Time Weighted Averages (TLV-TWA), NIOSH Recommended Exposure Limits (REL), or other published sources, such as material safety data sheets (MSDS), whichever is the more

stringent, when making decisions related to personnel exposure to air contaminants.

d. Permit-Required Confined Space (PRCSP). A confined space that has one or more of the following characteristics:

- (1) Contains or has a potential to contain a hazardous atmosphere; or
- (2) Contains a material that has the potential for engulfing an entrant; or has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; or
- (3) Contains any other recognized serious safety or health hazard.

e. Personal Protective Equipment (PPE). Equipment necessary is to protect employees from the risk of injury by creating a barrier against workplace hazards. Personal protective equipment is not a substitute for good engineering or administrative controls or good work practices, but should be used in conjunction with these controls to ensure the safety and health of employees. Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injury and/or illness. PPE includes eye, face, head, foot, respiratory, hearing and hand protection.

3. Program Elements.

a. Investigator Safety and Health. The Investigator in Charge (IIC), in coordination with the FSHO, will determine that entry into any confined space is vital to the investigation. Once it is determined that entry into the confined space is unavoidable, the IIC, in coordination with the FSHO and/or the DASHO, aided by information obtained from the site employer's Confined Space Program Manager (CSPM) and the CSB's field investigation team, will evaluate the hazards identified by the site employer's PRCSP which are present in the permit-required confined space. In addition, the space may be independently evaluated by the IIC for any other hazards that may be present. Appropriate precautionary measures will be based on both of the evaluations.

- (1) Besides personal protective equipment normally issued to the Investigator, an Investigator who is conducting an investigation requiring entry into a permit-required confined space shall be given ready access to all equipment necessary for safe entry, in accordance with other applicable provisions of this program (i.e., no Self-Contained Breathing Apparatus (SCBA), appropriate training required before use of needed PPE, etc.) The IIC shall determine what equipment is needed, ensure that needed equipment is provided (and ready to use, including calibrating, testing, monitoring, etc.), that any additional personal protective equipment is provided, and that any CSB employees utilizing PPE are properly trained in the proper use of such equipment. The IIC shall also obtain documents showing that

the equipment has been properly maintained prior to use by CSB field investigation team members, as required.

(2) A second trained Investigator will act as an attendant when the first Investigator enters the permit space. Both Investigators will be cross-trained in each other's duties as an entrant and an attendant.

(3) The Investigator who will enter the confined space may use the permit entry procedures established by the employer only after the IIC and/or the FSHO have conducted a thorough review of the procedures and compared those procedures with 1910.146. If there is a potential or actual discrepancy between the standard and the employer's procedures, or the IIC is or becomes uncomfortable with the potential hazards presented, the IIC and/or FSHO must resolve the issue(s) to their satisfaction. Entry will not commence until all discrepancies have been resolved.

(4) No entry will be attempted until the equipment necessary for safe entry has been provided and **all** provisions of the 1910.146 standard have been met.

b. Site PRCSP Evaluation. The following elements of a site employer's Confined Space Program must be developed and implemented before CSB employees will enter any permit required confined space at the site.

(1) A CPSM shall be designated to manage the site specific Confined Space Program.

(2) A written confined space entry program (CSEP) must be developed and implemented in accordance with the requirements of 29 CFR 1910.146. The entry program must be made available to CSB employees for inspection. The written CSEP must contain evidence or assure that the following elements or steps have been taken:

(a) A survey of facilities shall be conducted and documented to identify and classify all confined spaces (permit and non-permit required) that could be entered by employees. A current inventory of spaces shall be maintained for each facility.

(b) Existing and potential hazards of each space shall be identified and evaluated, and procedures and practices established by which the confined spaces can be entered safely.

(c) Responsible supervisors shall prevent unauthorized entry through such measures as training and by posting signs and barriers, as necessary. The employer shall inform exposed employees by posting danger signs or by any other equally effective means of the existence of and location of the danger posed by the permit spaces.

(d) If CSB employees enter permit-required confined spaces, a written permit system shall be developed in accordance with 29 CFR 1910.146. Prior to entry into any PRCSP containing a potentially hazardous atmosphere, the space shall be tested for oxygen content and the presence of toxic or flammable/explosive

constituents. During the PRCSP entry operation, the permit shall be clearly posted at the site.

(e) If the hazard cannot be eliminated, but is reduced so that only continuous forced air ventilation is required to permit safe entry, and no other potential hazard is present, the space may be designated as an alternate entry procedure space, thus eliminating the requirement for attendants and rescue provisions. PRCSP procedures must be followed until the entry supervisor certifies that all alternate entry procedures have been met. The entry shall be documented in accordance with requirements as listed in 29 CFR 1910.146 (c)(5).

c. Employee Information and Training. All CSB employees who work in or near confined spaces must be properly trained on the hazards likely to be encountered and appropriate safety measures necessary to protect themselves before being assigned to work in accordance with 29 CFR 1910.146(g). Training shall include procedures specific to the employees' job duties and responsibilities (e.g. authorized entrant, attendant, etc.). All training shall be properly documented. Refresher training will be required whenever there is a change in operations that presents a hazard about which the employee has not been previously trained; whenever the IIC believes there have been deviations from entry procedures or there is inadequate knowledge of procedures; and whenever evaluation determines inadequacies in the investigator's knowledge. Minimum training for an Investigator who will be entering a permit space is:

- (1) The Confined Space entry course offered by OSHA's Training Institute or equivalent, including training administered by the CSB through appropriate contractors or formalized, in-house training programs.
- (2) Respiratory Protection course offered by OSHA's Training Institute or equivalent, including training administered by the CSB through appropriate contractors or formalized, in-house training programs.
- (3) Introduction to Industrial Hygiene for Safety Personnel course offered by OSHA's Training Institute or equivalent, including training administered by the CSB through appropriate contractors or formalized, in-house training programs.

d. Emergency Rescue Procedures. Site employer emergency and rescue procedures must be consistent with the nature of the operations and the conditions within the confined space. A written emergency plan, approved by the CSPM, shall be developed and implemented for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary medical services to rescued employees, and for preventing unauthorized personnel from attempting rescue. This plan shall be reviewed by the IIC prior to confined space entry by CSB Investigators. If formed by future action of the DASHO, emergency rescue teams shall be trained and shall conduct annual permit space rescue drills in the specific spaces to be entered in accordance with 29 CFR 1910.146(k). Additionally, rescue equipment such as hand-held radios (or other adequate communication device), tripod, harness, cable, and lift crank shall be provided, as appropriate.

e. Evaluation. An evaluation of the CSB's PRCSEP shall be conducted annually, or whenever the DASHO, or any FSHO or IIC have reason to believe that the measures taken under the permit program may not sufficiently protect employees, or in order to validate compliance with controlling OSHA standards. The program shall be revised to correct deficiencies found to exist before additional entries are authorized.

Appendix I

CSB Control of Hazardous Energy (Lockout/Tagout)

1. Lockout/Tagout Policy. No CSB Investigator or other deployed CSB personnel shall knowingly contact or work in potentially dangerous proximity to any uncontrolled “energy source.” Lockout/Tagout procedures will be implemented in coordination with the facility Lockout/Tagout Program Manager (LTPM) at any site that is the subject of any CSB field investigation activity.

2. Definitions.

a. Authorized employee. Facility employees who perform service and maintenance on machines and equipment and are specifically trained to use a lockout/tagout.

b. Affected employee. Employees (including CSB employees and contractors) performing normal job duties in an area where lockout/tagout controls may be used (e.g., servicing equipment, inspecting, sampling, testing, photographing, etc.).

c. Contractor employees. Employees of contractors performing maintenance, repair, inspection, testing, or contacting equipment requiring lockout and/or tagout.

d. Capable of being locked out. An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

e. Energized. Connected to an energy source or containing residual or stored energy.

f. Energy isolating device. A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

g. Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, stored (potential) or other energy.

h. Exempted Equipment.

- (1) Cord and plug equipment where the plug is under exclusive control of servicing employee when removed from the receptacle.

- (2) Operations where a shutdown is not possible, but where alternative adequate protection is provided by trained and Authorized employees or contractors being overseen by the LTPM in coordination with the IIC.

i. Initial survey evaluation. An initial survey and evaluation to identify energized equipment requiring lockout and/or tagout, or any equipment or machinery currently locked or tagged out. Particularly relevant to this survey evaluation are equipment and machines with multiple sources of power and stored energy, and any hazardous conditions caused by fire, explosion, or overpressure.

j. Lockout. The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

k. Lockout device. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

l. Lockout/Tagout. Specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities.

m. Lockout/Tagout Program Manager (LTPM). The facility safety and health coordinator or equivalently authorized manager (or his/her designate) responsible for overseeing the facility's lockout/tagout program.

n. Other employee. Employees whose work operations are or may be in an area where lockout/tagout control procedures may be utilized must be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

o. Stored (potential) energy. Energy stored by spring tension, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam or water pressure, etc.

p. Tagout. The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

q. Tagout device. A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

3. Program Elements.

a. Investigator Safety and Health. The Investigator in Charge (IIC), along with the FSHO and the LTPM, and aided by information obtained by other CSB Investigators and appropriately trained persons familiar with the equipment at the site, will conduct an Initial Survey Evaluation to identify hazardous energy sources present and ensure that the release of energy from such hazards are controlled prior to allowing investigation activities to be conducted.

(1) The investigation site facility lockout/tagout program will be followed by CSB investigators unless such program, after being reviewed for compliance with 29 CFR 1910.147 by the IIC or his/her designee, is determined to be inadequate.

b. Lockout/Tagout Work Practices. The IIC, LTPM and authorized facility employees must implement the following work practices as necessary.

(1) The LTPM (or his designee) shall:

(a) Notify all affected and other employees (including CSB personnel and contractors) that a lockout or tagout system is going to be utilized, and the reason for the procedure.

i. Notification must convey the type and magnitude of energy that the machine, equipment, or hazardous condition presents.

ii. Notification must include the exact location and identity of lockout and/or tagout devices, which must be demonstrated in the workplace and recognizable by all affected and other employees.

iii. Emphasis must focus on preventing accidental start up of equipment.

(b) Shut down, by normal stopping procedures (i.e., stop button, toggle switch, etc.), all energized or operating equipment or hazardous energy sources.

(c) After shut down, relieve any stored energy by operating the switch, valve or other energy-isolating device(s) so that the equipment is isolated from its energy sources(s) and energy free.

(d) Lockout and/or tagout the energy-isolating devices with the assigned lock(s) or tag(s) selected (e.g., locks, tags, additional safety measures, etc.).

i. Lockout is always the first choice for isolating equipment.

ii. Tagout devices will only be used when an energy-isolating device cannot be locked out or is incapable of being locked out.

iii. Tagout devices (and related tagout procedures) must provide all affected and other employees, as well as all CSB personnel and contractors, with a level of protection equal to that achieved through a compliant lockout system.

(e) After ensuring that no personnel are potentially exposed, operate (test) the

equipment controls to make certain the equipment has been de-energized (i.e., return operating control(s) to the “neutral” or “off” position after the testing has been conducted).

(2) The following steps must be followed by the LTPM (or his designate) when lockout or tagout work is completed:

(a) Check the area around the machines or equipment to ensure that no one is exposed.

(b) After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices.

(c) Locks or tags are to be removed only by those employees who attach them. In the very rare case when the original placing person cannot remove his or her device, the device must be removed under the direction of the LTPM or other management official. Then the person who placed the lock or tag must be personally notified prior to returning to work that the equipment has been uncontrolled and re-energized.

b. Employee Information and Training. All CSB employees who work in or near energized equipment or hazards requiring lockout and/or tagout must be properly trained on the hazards likely to be encountered and appropriate safety measures necessary to protect themselves before being assigned to work in accordance with 29 CFR 1910.147(c)(7)(i).

(1) Minimum Training for Investigators.

(a) Lockout/tagout awareness training, highlighting the contents of this policy.

(b) Refresher training will be conducted whenever a change in operations presents a previously unrecognized hazard, or whenever a policy change is implemented about which an investigator has not been previously trained. Also, during an investigation, whenever the IIC believes there have been deviations from the facility lockout/tagout procedures, or where an Investigator exhibits inadequate knowledge of procedures or CSB policy.

(c) The retraining shall reestablish employee awareness, proficiency, and introduce new or revised control methods and procedures, as necessary.

(d) The CSB shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

c. Evaluation. An evaluation of the CSB's lockout/tagout program shall be conducted annually, or whenever the DASHO, or any FSHO or IIC have reason to believe that the measures taken under the lockout/tagout program may not sufficiently protect employees, or in order to validate compliance with controlling OSHA standards. The program shall be revised to correct deficiencies.

(1) Evaluations shall be documented in writing and must describe all revisions, the name of the evaluator, the date of the evaluation, and must outline any training that must be conducted as a result of revisions.

(2) In an attempt to provide the highest level of protection that can reasonably be achieved, CSB Investigators will be encouraged during their training to participate in identifying program shortcomings and deficiencies, and to report such deficiencies (from past experiences and during investigations) to the DASHO, FSHO or his or her immediate supervisor.

Appendix J

CSB Personal Protective Equipment (PPE) Requirement Program

This program is intended to provide assistance to CSB IICs, supervisors, and employees in performing hazard assessment and selecting appropriate PPE.

1. **Controlling hazards.** PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and other sound safety practices. Therefore, CSB Investigators will encourage site employers to use the above referenced alternatives in addition to wearing all equipment necessary for their safety.

2. **Assessment and selection.** It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an industrial operation or process, and to match the protective devices to the particular hazard. It will be the responsibility of the IIC and the FSHO to rely on common sense, safety training, and professional expertise to accomplish these tasks.

3. **Assessment guidelines.** In order to assess the need for PPE the following steps should be taken:

a. Assigned PPE. Upon commencing employment with the CSB, Investigators will be assigned a variety of PPE. Additionally, Investigators and other deployed personnel will bring their full complement of PPE when deployed to an investigation, know how to don all needed PPE upon receiving direction from the IIC, FSHO, or other management official, and continue to wear all PPE until told by the IIC or FSHO that it is safe to remove it.

- (1) Under ordinary circumstances, PPE will include: hard hats, steel-toed boots or safety shoes, Nomex coveralls, gloves, tape, ear plugs or ear muffs, and safety glasses (of which, prescription safety glasses are covered separately in **Appendix M**) or goggles.
- (2) If asbestos is an issue in a given investigation, Investigators will also be issued disposal Tyvex coveralls, disposable gloves, disposable head coverings, and HEPA filters that fit each Investigator's respirator.

b. Survey. In areas where air contaminants are not suspected or appropriate respiratory protection is used, the IIC will conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

- Impact
- Penetration
- Compression (roll-over)

- Chemical
- Heat
- Harmful dust
- Light (optical) radiation

- c. Sources. During the walk-through survey the IIC or FSHO should observe:
- (a) sources of motion, (i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects);
 - (b) sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.;
 - (c) types of chemical exposures;
 - (d) sources of harmful dust;
 - (e) sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.;
 - (f) sources of falling objects or potential for dropping objects;
 - (g) sources of sharp objects which might pierce the feet or cut the hands;
 - (h) sources of rolling or pinching objects which could crush the feet;
 - (i) layout of workplace and location of co-workers; and
 - (j) any electrical hazards.

In addition, all relevant injury/accident data made available from a site employer should be reviewed and discussed with the site employer in order to help identify potential problem areas. The IIC/FSHO should speak with the site employer in order to gather this and any other relevant safety information, on an as-needed basis.

d. Organize data. Following the walk-through survey, it may be necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare an analysis of the hazards in the environment to enable proper selection of protective equipment.

e. Analyze data. Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards (paragraph 3.a.) should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

4. **Selection guidelines**. After completion of the analysis procedures, the general procedure for selection of protective equipment is to:

- (a) Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do, (i.e., splash protection, impact protection, etc.);

- (b) Compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment;
- (c) Select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards; and
- (d) Fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE.

5. **Fitting the device.** Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Care should be taken to ensure that the right size is selected.

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

7. **Reassessment of hazards.** It is the responsibility of the IIC and/or FSHO to reassess the workplace hazard situation as necessary to insure proper PPE selection.

8. **Selection guidelines for eye and face protection.** Some activities for which eye protection should be routinely considered are: carpentry, electrical work, machinists activities, mechanical and general repair activity, plumbing and pipe fitting, sheet metal work, machine assemble, sanding, grinding operations, lathe and milling machine areas, saw operations, welding, and chemical processes. Investigators working anywhere near areas where work of this type, or any other similar activity that poses the same types of dangers, should obtain and wear appropriate eye and face protection.

9. **Prescription Eye Protection (Safety Glasses).** As previously noted, CSB employees requiring prescription safety glasses will follow provisions outlined in **Appendix L**.

10. **Selection guidelines for head protection.** All head protection (hard hats or helmets) is designed to provide protection from impact and penetration hazards caused by falling objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts). Class B helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors (they are proof tested to 20,000 volts). Class C

helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

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

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

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

12. Selection guidelines for hand protection. Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systemic effects following dermal exposure. There are no gloves that provide protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many chemicals. Therefore, it is important to select the most appropriate glove for a particular application and to determine how long it can be worn, and whether it can be reused.

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

- (A) As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse more expensive types;
- (B) The work activities should be studied to determine the degree of dexterity required, the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied. With respect to selection of gloves for protection against chemical hazards;
- (C) The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects;
- (D) Generally, any "chemical resistant" glove can be used for dry powders;
- (E) For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials; and,
- (F) Employees must be able to remove the gloves in such a manner as to prevent skin contamination.

13. **Cleaning and maintenance.** It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. For the purposes of compliance with 1910.132 (a) and (b), PPE will be inspected, cleaned, and maintained at regular intervals so that the PPE provides the required protection. It is also important to ensure that contaminated PPE that cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

Appendix K

CSB Hazard Reporting Process

1. **Introduction.** This appendix is a condensed version of the requirements of 29 CFR 1960.28. Refer to that regulation, or Executive Order 12196, 1-201, should any clarification be needed.
2. **General.** Hazard reporting by CSB employees is intended to help identify actual or potential unsafe, unhealthy, or hazardous conditions. Once identified, corrective action can be taken. These reports are not used as, nor are they considered to be, grievances of any sort. No employee should fear retribution or retaliation for filing what they perceive to be a legitimate report. Employees who believe an unsafe or unhealthful condition exists in their workplace are encouraged to report these conditions to their supervisor or to the appropriate safety and health official, or to request a workplace inspection. Employees who make a report may request that their name be withheld.
3. **Employee Report of Hazardous Condition.** Employees may report unsafe or unhealthful conditions either orally or in writing, at any time, in the following manner:
 - a. Initial Report
 1. The employee will make an initial report to their immediate supervisor.
 2. This report must contain the following information:
 - (a) Complete description of the hazard;
 - (b) Location of the reported unsafe or unhealthy condition;
 - (c) Employee's name (or submitted anonymously, if desired);
 - (d) Date and time the condition was discovered;
 - (e) Other information as deemed appropriate (e.g., proposed corrective action, etc.).
 - b. Supervisor's Report
 1. The supervisor must orally notify the DASHO upon receipt of a hazard report if the hazard reported poses an imminent danger or a serious hazard (threat of death or serious bodily injury or significant property damage). Otherwise, within 24 hours, the supervisor will notify the DASHO of the reported hazard in writing. This report will include:
 - (a) A complete copy of the employee's initial report, filed as an attachment;
 - (b) Approximate number of employees affected;
 - (c) Date reported to the supervisor;
 - (d) Supervisor's opinion as to whether there is imminent danger posed by the hazard, and seriousness of the hazard;
 - (e) Actions already taken by the supervisor;
 - (f) Additional suggested corrective action.

3. The supervisor should make a copy of the cover sheet and initial report and retain it for their own records. The entire package of original documents must then be transmitted to the DASHO for further action.

c. DASHO's Report

1. The DASHO must then analyze the data provided and produce his/her own report, correct the hazard, and attend to all required recordkeeping, in the following manner:

(a) Concur or non-concur with the supervisor's assessment of imminent or serious danger, and process accordingly.

(i) Stabilize an imminent or serious danger as quickly as possible in order to prevent death, injury, or property damage, and in all cases less than 24 hours. Once stabilized, move to creating a long-term solution, if necessary.

(ii) If the condition is potentially serious, the condition must be stabilized in 3 working days or less.

(iii) If the danger presented is not imminent or serious, and is not potentially serious, the condition must be stabilized in 20 days or less.

(iv) If the hazard cannot be corrected due to lack of funds, manpower, or other factors out of the DASHO's control, the situation must be elevated to the Chief Operating Officer for action. Or, if timely and appropriate abatement of a hazard cannot be made as required, and in the judgment of the DASHO abatement will not be possible within 30 calendar days, an abatement plan must be prepared, in accordance with 29 CFR 1960.30.

(b) Assign a log number to the incident;

(c) Create a log report, including:

(i) Date and time of receiving the report (oral and written dates and times should both be included, if appropriate);

(ii) Brief description of the condition;

(iii) Hazard classification, (e.g., imminent danger, serious, less than serious, etc.);

(iv) Date and nature of action taken, and plans for follow-up (if required).

4. **Timelines for Action.**

1. Any hazards posing imminent dangers or serious conditions capable of causing death, serious bodily injury/illness, or significant property damage will be investigated and rectified as noted above.

2. Follow-up investigation and/or inspections may or may not be necessary. The DASHO must, however, be assured that an appropriate abatement or correction has been

made. Therefore, the DASHO must inspect the affected workplace if the hazard reported posed an imminent or serious danger, unless he or she is satisfied that management has taken corrective action in response to the identified hazard, and the hazard has been permanently and completely abated. Otherwise, the DASHO may inspect the affected worksite as a matter within his or her discretion.

3. An employee reporting an unsafe or unhealthful condition shall be notified in writing within 15 calendar days by the DASHO if it is determined that no hazards exist and no other inspections are planned. A copy of the report will be provided to the employee's supervisor. If an investigation or inspection is initiated, the results shall be made available to the employee making the report (and that employee's supervisor) within 15 calendar days after the completion of the investigation or inspection.

4. Any final actions to resolve a reported hazard must be added to the DASHO's log, and the entry should be closed out. At year's end, the incident should be reported to OSHA, as required by federal regulation.

5. **Reprisal Prohibited.** All employees are protected from coercion, discrimination, or reprisal for filing a report of an unsafe or unhealthful working condition, whether said condition affected themselves or others, for participation in the CSB's OSH Program or any activities therein, or for declining to perform his or her assigned tasks because of a reasonable belief that the task poses an imminent risk of bodily harm or death (coupled with the employee's reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures outlined in this Appendix).

Employees should report allegations of reprisal to their supervisor, or the DASHO, or in the event of conflict, to the CSB's Chief Operating Officer, either orally or in writing. Such allegations will be thoroughly investigated, and a report will be created. A copy of the report will be provided to the employee. Any supervisor, safety official, or other CSB personnel found to have engaged in any form of reprisal against a CSB employee who exercised their rights in regards to the above-noted topics will be appropriately disciplined.

6. **Recordkeeping.**

As discussed above, the process for making and acting on reports of hazardous conditions will generate several types of records. These records include: (1) reports of hazardous conditions (including initial report, supervisor's report, and DASHO's report); (2) the hazardous condition report log; and (3) related records (e.g., correspondence and memos pertaining to the reports). These records shall be maintained in accordance with applicable OSHA regulations, including 29 CFR 1960.28. As provided by section 1960.28, hazard report records should be maintained in case file format, such that all records related to a particular report of a specific hazardous condition(s) are maintained together. The records described in this paragraph shall be retained for five years following the end of the fiscal year to which they relate. The DASHO is responsible for maintaining the official record copies of all records generated by the reporting process.

Appendix L

CSB Asbestos Protection Program

1. **Purpose.** This Appendix highlights the special dangers posed by asbestos and ensures the maximum protection of CSB personnel against those dangers. Investigating chemical accident scenes threatens CSB personnel with exposure to asbestos, including exposure to airborne asbestos fibers, asbestos-containing materials (ACMs), and materials presumed to contain asbestos (PACMs). Thus, this Appendix will primarily focus on eliminating, mitigating, or proper protective measures to be taken in relation to asbestos which may be encountered during field investigation activities.
2. **Objective and Scope.** The protection of all CSB personnel threatened, or potentially threatened, by the hazards associated with exposure to asbestos while performing any work-related duties on behalf of the CSB.
3. **Authorities.** Federal regulations governing asbestos include 29 C.F.R. § 1910.1001 (general industry asbestos standard), 29 C.F.R. § 1910.134 (respiratory protection standard), 29 C.F.R. § 1926.1101 (construction asbestos standard), 40 C.F.R. Part 61, Subpart M; 40 C.F.R. Part 763, Subpart E, and that Part's Appendix C. These authorities must be monitored by the DASHO or his/her designee, including watching for relevant amendments posted in the *Federal Register*. Upon relevant amendments, the CSB OSH Program must be modified in turn, on an as-needed basis, to incorporate relevant amendments and/or modify training requirements and other procedures.
4. **Procedures.**
 - (a) The IIC and, if applicable, the FSHO, should make an early determination about the presence of, and hazards associated with, any asbestos found at an accident investigation. Information should be gathered from employees at the site, signs, labels, and the IIC's and FSHO's own personal observations of the accident site, including things like: appropriate air sampling and/or other testing; observation that the site in question was built before 1981; visual signs of ACM or PACM (thermal system insulation and surfacing material, especially insulation applied to pipes, fittings, boilers, breeching, tanks, ducts and other similar structures, as well as certain flooring, roofing, siding, and like materials; fireproofing or acoustical surface materials, etc.), and anything else identified on the basis of these officials' experience and training regarding asbestos.
 - (b) If asbestos is not determined to be a concern, the IIC should commence investigative activities with other appropriate PPE. If asbestos is determined to be a concern, the IIC must make a determination as to whether or not investigative activity can commence safely, and if so, what additional PPE might be required (HEPA filter cartridges inserted in particular respirators, use of disposable Tyvex

suits, etc), by which properly-trained Investigators, and the maximum duration of investigative activity conducted in such an environment (see ¶ 5, below).

(c) The IIC should work very closely with the on-scene commander or other official in charge of the site to ensure timely and complete communications regarding all hazards, including asbestos. All significant safety developments at any CSB investigation should be reported to the DASHO, including all developments concerning the presence of asbestos that could even potentially affect any deployed CSB personnel.

5. Permissible Exposure Limit (PEL) and Excursion Limit (EL).

- (a) PEL. An eight-hour time-weighted average (TWA) airborne concentration of asbestos not in excess of 0.1 fiber per cubic centimeter of air, as determined by the method described in Appendix A of the OSHA's general industry asbestos standard, or by an equivalent method approved by the DASHO for CSB purposes, or
- (b) EL. An airborne concentration of asbestos not in excess of 1.0 fiber per cubic centimeters of air as averaged over a sampling period of 30 minutes, as determined by the method described in Appendix of the OSHA's general industry asbestos standard, or by an equivalent method approved by the DASHO for CSB purposes.
- (c) Determining Airborne Concentrations. Airborne concentrations shall be determined on the basis of one or more samples representing full-shift exposures for each shift of CSB employees expected to be in each work area. Representative 30-minute (short term) exposures shall be determined on the basis of one or more samples representing a 30-minute exposure with operations that are most likely to produce exposures above the excursion limit.
- (d) Monitoring. Initial monitoring must be done whenever the IIC and/or FSHO believe CSB personnel are, or may reasonably be expected to be exposed to airborne concentrations at or above the TWA PEL or EL. Monitoring shall be done by a qualified CSB employee or contractor, in full accordance with 29 C.F.R. 1910.1001 (i.e., samples shall be taken from the breathing zone air samples of representative employees). After initial monitoring, samples shall be taken of such frequency and pattern as to continue to represent with reasonable accuracy the levels of exposure that might affect any CSB personnel. Such additional monitoring can be ordered by the IIC in appropriate circumstances (i.e., partial cave-in releases additional dust and debris into the air at an accident site).

6. Limitations.

No CSB personnel are permitted to do Class I, II, III, or IV asbestos work as defined in the OSHA Asbestos Construction Standard. At most, CSB personnel are authorized only to do general industry activities as specified in the OSHA General Industry Asbestos Standard.

To the maximum extent possible, however, and consistent with asbestos training and other relevant safety and health training, CSB personnel deployed to engage in field investigation activities are required to focus solely on the quick completion of all tasks related to completion of the field phase of an investigation, and shall not spend unnecessary time talking with witnesses or visiting a site when asbestos is a pertinent safety issue. Additionally, consistent with all applicable training, CSB personnel should avoid engaging in any activities that increase risks associated with asbestos (i.e., avoid actions that threaten the stability/integrity of ACM or PACM, or that will otherwise disturb such materials and may cause dust or other fine particles to become airborne).

CSB personnel should be especially cautious when dealing with friable asbestos, and should strive to find methods of accessing parts of a site and/or relevant physical evidence that will not disturb asbestos. In no case should CSB personnel attempt to move, cut, saw, drill, remove, or otherwise sample ACM or PACM. Consult with the IIC and the FSHO if there are any questions.

With the above-noted limitations in mind, it should be emphasized that CSB personnel are not expressly governed by OSHA's General Industry Asbestos Standard. Nevertheless, to the extent possible, CSB management, employees, and contractors will seek to conform to the guidance contained in that standard, and they shall attempt to defer to that standard. Of course, IICs, FSHOs, supervisors, and the DASHO are always encouraged to apply more rigorous safety standards when confronting a workplace hazard, but particularly where asbestos is a concern.

7. Additional Rules and Procedures Regarding Asbestos.

- IICs should ensure all deployed CSB personnel understand the risks associated with asbestos and are fully briefed on hazards in accordance with the CSB HAZCOM policy, found at Appendix A.
- IICs shall limit access to regulated asbestos areas during CSB investigations to CSB personnel with appropriate PPE and all needed training. All required PPE must be properly worn at all times, until told that it is safe to remove the PPE. Once it is safe to remove PPE, the PPE should be removed and properly disposed of, in accordance with applicable regulations. Any non-disposable PPE should be segregated until it can be properly cleaned, decontaminated, and if needed, replaced.
- IICs shall further consider limiting access to regulated asbestos areas by limiting entrance to such areas to a portion of a field investigation team in order to prevent unnecessary exposure to all deployed personnel. This restriction can be accomplished by establishing a regulated area, with appropriate demarcation plainly visible within the site, and compliance with the CSB HAZCOM policy, in order that CSB personnel might not unwittingly cross into a regulated asbestos area. CSB warning signs or tape might also be used.

- IICs should ensure that CSB personnel follow appropriate hygiene and clean-up practices following exposure or possible exposure to hazardous substances, but especially to asbestos. If needed, IICs must obtain the use of suitable decontamination facilities and equipment, clean change rooms, and showers.
- CSB personnel shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated asbestos areas within accident investigation sites.
- IICs and FSHOs will work with site owners/operators, on-scene commanders, or other officials in charge of an accident site to use engineering controls and other work practices to help control asbestos hazards.

Appendix M

CSB Prescription Safety Glasses Program

1. **Purpose.** Certain CSB personnel are required, in the course of their assigned duties, to enter designated "eye hazardous" areas. For their protection, and to set a proper example for others when entering these areas, CSB personnel should wear the appropriate personal protective equipment. The purpose of this policy is to establish safety standards and procedures for all CSB employees who could be engaged in field activities that may require prescription safety glasses. The glasses shall be purchased following the policies, standards and procedures described below.
 - a. **Policy.** CSB will provide prescription safety glasses for any of its employees who wear vision corrective glasses or contact lenses and may receive field assignments (or participate in other CSB business where safety glasses would be required), through a master agreement contract with a designated local vendor:
 - (1) The vendor will provide a CSB approved list of frame and lens designs from which an employee must make a selection.
 - (2) CSB will only pay for the approved frame and lens designs, as well as inserts or other approved lens-holding devices used in conjunction with full-face respirators. CSB employees will be responsible for payment of any additional costs for any items, services, or options that are not specifically covered.
 - (3) Tinted and/or photogrey lenses will not be allowed unless specifically required as a part of the prescription eye correction (i.e., the individual has a specified eye defect or weakness). CSB will pay for tinted and/or photogrey lenses if shown required by an eye examination.
 - (4) UV coating on lenses is allowed; however, the employee is responsible for the expense incurred.
 - (5) Progressive lenses are allowed; however, the employee is responsible for the additional expense incurred.
 - b. **Specifications.** The prescription safety glasses issued by CSB must comply with American National Standards Institute (ANSI) Standard Z87.1-1989, Practice for Occupational and Educational Eye and Face Protection. (See ANSI Z87.1-1989 for detailed requirements.)
 - c. **Procedures.** Procedures for requesting prescription safety glasses:

- (1) Obtain eyeglass prescription from your eye-care professional. The individual must have his or her eye examination performed by an optometrist or ophthalmologist. CSB does not pay for eye exams (full or partial coverage of expenses may be covered under the individual's health care insurance).
 - (2) Contact CSB prescription safety glass coordinator to obtain order form.
 - (3) Your supervisor must approve the order by signing the form.
 - (4) Provide order form and prescription at the vendor location.
 - (5) Check order form to ensure selected frame and lens meet CSB requirements.
 - (6) Pay vendor for any upgrades. (Employee should only have to pay vendor in cases where they have upgraded their order above parameters set by the CSB).
- d. **Replacement.** Replacement of prescription safety eyewear may be approved as needed with advanced authorization by the employee's supervisor. The procedures for obtaining replacement prescription safety glasses are the same as those for the initial purchase, with the exception that the cause for the replacement must not be the fault of the employee (see 1.e, below), and the reason for the replacement is explained.
- e. **Consequences.** Prescription safety eyewear damaged or destroyed by the fault of the employee, whether through inattention, negligent behavior, or willful or intentional abuse, is considered misconduct. Employees are advised that adverse personnel actions may arise from such unacceptable behavior and/or destruction of government property.
2. **Additional Information.** Should a prescription safety glasses coordinator be appointed, that person will be the point of contact for all inquiries pertaining to this policy. Until then, all inquiries pertaining to this policy should proceed through your supervisor, and the DASHO, if needed.