Chapter 10
CONSTRUCTION SAFETY MANUAL ADMINISTRATIVE POLICIES

Appendix B. Environmental Policies

Contents

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NOTE:

. . . . . Denotes a new section.

. . . . . Denotes the beginning of changed text within a section.

. . . . . Denotes the end of changed text within a section.

B.1 Asbestos

B.1.1 Scope and Application

Asbestos can be found in most common insulation and surfacing materials. Examples of construction materials at LBNL facilities that frequently contain asbestos include pipe insulation, ceiling tiles or spray-on insulation, taping compound on gypsum wallboard, floor tiles and mastic, roofing material, and transite wallboard.

Consequently, walls, floors, ceilings or other suspect asbestos-containing material (ACM) should not be cut into or damaged without determining whether ACM is present. If ACM is found, special procedures will be needed to ensure proper control of potential airborne fibers, surface contamination, and waste disposal.

B.1.2 General Requirements

Subcontractor's superintendents must immediately stop work in the affected area and will inform the LBNL Construction Manager if asbestos is suspected to be present at a location.

Subcontractors shall not touch, remove, demolish, or in any other manner disturb materials that are suspected to contain asbestos.

B.2 Blood-borne Pathogens

B.2.1 Scope and Application

Blood-borne Pathogens are disease-causing organisms transmitted through contact with infected blood and other bodily fluids. Diseases such as the Human Immunodeficiency Virus (HIV) and Hepatitis B are among the most common forms of blood-borne pathogens. Any exposure to an infected individual's body fluids may result in transmission of blood-borne pathogens, which could lead to disease or death.

B.2.2 General Requirements

When dealing with blood or other bodily fluids, subcontractor employees are required to follow Universal Precautions. According to the concept of Universal Precautions, all human blood and other human body fluids are treated as if known to be infectious for HIV, Hepatitis B, and other blood-borne pathogens.

All subcontractors certified in first aid are required to wear disposable latex gloves and eye protection while performing first aid on an injured individual. If rescue breathing or CPR is performed, a resuscitation mask shall be provided by the subcontractor for the protection of the injured and the provider.

All blood spills shall be immediately contained and cleaned with an anti-viral solution, or by a solution of bleach and water by the subcontractor.

Any material saturated with blood shall be considered Regulated Waste, including liquid or semi liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; and items that are caked with dried blood or other potentially infectious materials. Discarded Band-Aids and gauze containing small amounts of blood products are not considered regulated waste.

The clean-up and disposal of all regulated waste shall be the sole responsibility of the subcontractor under their blood-borne pathogens control program.

At least one of each subcontractor's on-site personnel shall be trained in first aid and CPR, and they shall also be trained in the decontamination of blood spills. Subcontractors are solely responsible for this training.

B.3. Carbon Monoxide

B.3.1 Scope and Application

Carbon monoxide is formed by the incomplete combustion of carbonaceous materials such as coke, oil, gasoline, and natural or manufactured gas. It is flammable, toxic, non-irritating, tasteless, odorless, and heavier than air. When inhaled it combines with hemoglobin of blood, excluding oxygen from the tissues, ultimately resulting in asphyxia. Some of the common symptoms of carbon monoxide poisoning are shortness of breath, headache, dizziness, muscular weakness, and nausea.

Temporary heaters and/or gasoline motors used where people are working in confined and/or depressed areas produce the greatest carbon monoxide poisoning exposures and are prohibited on this project

B.3.2 Subcontractor Testing Requirements

Use of any device that discharges the products of combustion into an inside work area of employee requires testing defined below:

- Testing the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.
- Test several different points within the area at the breathing heights of an employee.

- Maintain a record of these tests, noting the date, time, and result of each test.

Remove the employees from the area when the concentration of carbon monoxide reaches 25 PPM (.005%). Ventilation shall be provided to reduce the concentration below 25 PPM.

B.4 Confined Spaces

B.4.1 Requirements

A subcontractor must use their own Safety Plan for confined space procedures. It must be reviewed by the LBNL Construction Safety Engineer and approved by the LBNL Confined Space Program Manger, before work may commence. The safety plan must contain procedures that

meet or exceed Federal and/or CAL OSHA requirements for entering permit-required confined spaces and include the completion of a permit form acceptable to LBNL**.**

B.4.2 Record keeping

Copies of all subcontractor atmosphere testing, entry logs, training, and any medical records shall be given to LBNL Project Manager for record retention.

B.5 Contaminated Spills

B.5.1 Scope and Application

A contaminated spill is the introduction of undesirable element or substances into the ground that may or may not impact the environment in a negative way. This can be caused by several sources both past and present. Contamination refers to the impact of these sources in any amount and at any degree below or above permissible levels for health and safety toward the environment or to life. Hazardous means it has elevated above the permissible levels for health and safety toward the environment and life and is regulated under government standards.

LBNL primary concern is to protect the workers and the environment in the event of an incidental spill on this project.

B.5.2 Requirements of Subcontractor

If a spill occurs at the project, the spill shall be isolated and contained to prevent contamination of the surrounding area, waterways, sewer systems or any other environmental impact.

The subcontractor is responsible for all the costs associated with the cleanup and disposal of the contaminated/hazardous materials.

If a spill occurs, the Material Safety Data Sheet (MSDS) for the chemical will provide the emergency information necessary to address the spill. Also, the emergency cleanup team will need a copy of the MSDS in order to begin the cleanup process.

The subcontractor shall immediately notify LBNL Project Manager in the event of any spill.

B.5.3 Training

All subcontractors shall have trained employees assigned to the project who are capable of handling spills. Whenever chemicals are brought on site, the material safety data sheet shall be reviewed by the subcontractor and communicated with all personnel exposed to its usage.

B.5.4 Record Keeping

All subcontractor records regarding spills shall copied and given to the LBNL Project Manager for filing.

B.6 Broken Fluorescent Light

B.6.1 Scope and Application

In addition to the possibility of cuts from glass fragments, serious injury can result from broken fluorescent tubes due to the release of the small amounts of mercury vapor they contain. Mercury vapor, even in very minute quantities, is poisonous.

Persons in close proximity to a fluorescent tube that breaks or who is cut shall be taken to LBNL medical clinic immediately so they may take necessary precautions.

Special regulations also affect the disposal of fluorescent lamp ballasts that contain PCBs. Subcontractors who shall complete work with fluorescent lamps shall get prior approval from the LBNL Construction Manager.

B.7 Hazard Communication

B.7.1 Requirements

The OSHA Hazard Communication Standard requires that all employers with employees potentially exposed to hazardous chemicals at their work site establish a hazard communication program. The regulation is more commonly known as "Haz-Com" or the "Right to Know Law." This program shall transmit information to the employees about the hazardous chemicals they are, or may be, exposed to at the site. This is accomplished by labels on containers, Material Safety Data Sheets (MSDS), hazardous chemical job-site survey and training programs.

Subcontractors and their second-tiered subs are responsible for obtaining and maintaining the on-site file of all MSDS supplied by distributors, manufacturers, and subcontractors. While all MSDS may not be uniform in appearance, they shall convey the same message:

- Identity of the product
- Known acute and chronic health effects
- Exposure Limits
- Threshold Limit Values (TLV)
- If the product is a suspected carcinogen
- Personal protective equipment to be used
- Emergency and first-aid procedure
- Identification of the party responsible for the MSDS
- Target organ affected

B.7.2 Container Labeling

Subcontractors and their second-tiered subs ensure that an MSDS is obtained with each shipment of any material on the hazard substance survey list, should one not be obtained at that time, and the subcontractor shall follow up in writing to the parties involved to obtain one within 72 hours of the notification.

Subcontractors and their second-tiered subs and/or their designee shall verify that all containers received for use have:

- Been clearly labeled as to content,
- Appropriate warnings noted, and
- Names and addresses of the manufacturers listed.

A written description of the labeling system used by each subcontractor is required to be submitted, along with alternatives to the original label used. All secondary containers used with small quantities of a given material shall also be properly labeled.

Labels may be in writing, pictures, a numerical system, or any combination of the above. The message shall be understood as to the nature of the hazard, personal protective equipment needed, parts of the body affected, and emergency procedures to take.

B.7.3 Employee Training and Education

All subcontractors are responsible to train their own employees.

Training of all personnel can include, but not limited to:

- In-house seminar
- Guest speakers
- Use of visual aides
- On-site updates of new products and materials and other related hazards

Instruction shall include, but not limited to:

- How to read and understand the information provided on the MSDS and labels supplied by the subcontractors and suppliers
- An overview of the requirements contained in the Hazard Communication Standard
- Discussion of chemicals included in welding or burning, cement, cleaning solvents, gluing processes, wood dust processes, and other such common items

After attending the training session, each employee will sign a form to verify that they have been properly trained with regards to the Hazard Communication Standard, and that they understood the project's policy regarding this standard. The form is to be filed at the job site.

Training of all new subcontractors will take place as they are assigned to their respective position.

B.7.4 Hazardous Non-routine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information by their subcontractor about hazardous chemicals to which they may be exposed during such activity. The information shall include, but not be limited to:

- Specific chemical or process hazards
- Protective safety measures that the employee will take to prevent exposure
- Measures the project has taken to lesson the hazard including ventilation, respirators, presence of other employees, and emergency procedures

An example of non-routine tasks is confined space entry, i.e., checking the bottom of caissons, entering manholes, etc.

B.7.5 Subcontractor Hazard Communication

All subcontractors are solely responsible to abide by the Hazard Communication Standard in regards to the training of their own employee, their MSDS Record keeping, their notification procedures, and any other aspects of the requirement.

All subcontractors are to supply the LBNL Project Manager with a written copy of their Hazard Communication Program along with the MSDS of any chemical materials brought on to the job site.

The Exchange of MSDS on this project shall take place initially when the subcontractor comes onto the site at regular site safety meetings, and/or at any other designated time by the LBNL Project Manager.

All subcontractors are to abide by this exchange and are to immediately inform the LBNL Project Manager of any new chemical substances brought onto the job site.

B.8 LEAD

B.8.1 Scope and Application

Most painted surfaces at LBNL have lead in some layer of paint at or beneath the surface. Though not currently used for painting at LBNL, lead was commonly used in the past as an ingredient in paints. Most of these painted surfaces do not pose a significant risk to LBNL employees unless dust is produced by sanding, grinding, or welding wall material or painted metal surfaces.

Lead bricks used for shielding are another common source of lead at LBNL. Moisture can react with unprotected lead to produce lead derivatives (white dusty appearance) on the surface. Because it can easily become airborne, this powdery material can become a hazard when these bricks are disturbed. Even when lead oxide and carbonate have not been produced; loose lead particulate can be spread when the brick surface is handled. Ingestion or inhalation of this dust can be hazardous. Consequently, bricks not permanently set in place as shielding or in a designated storage area must be painted or wrapped with tape to control this hazard.

Subcontractors with concerns regarding lead safety must contact the LBNL Project Manager.

B.8.2 General Requirements

Subcontractors shall not touch, remove, demolish, or in any other manner disturb materials that are suspected to contain lead unless procedures have been approved by the LBNL Project Manager.

Subcontractors' superintendents will immediately stop work in the affected area and will inform LBNL if lead is suspected to be present at a location.

B.9 Respiratory Protection

B.9.1 Scope and Application

LBNL is committed to maintaining an injury-free workplace, and makes every effort to protect all employees and contractors from harmful airborne substances. Whenever it is feasible to do so, subcontractors are to accomplish this through

engineering controls such as ventilation or substitution with a less harmful substance, and through administrative controls limiting the duration of exposure. When these methods are not adequate, or if the exposures are brief and intermittent, or simply to minimize employee exposure to airborne substances, subcontractors are to provide respirators to allow their employees to breathe safely in potentially hazardous environments.

LBNL recognizes that respirators have limitations, and their successful use is dependent on an effective respiratory protection program. The LBNL Respiratory Protection Program is designed to be a guide for all subcontractors to identify, evaluate, and control exposures to respiratory hazards; select and coordinate all aspects required for the proper use, care, and maintenance of the equipment. In all instances, the subcontractor is to abide by their own company's Respiratory Protection Program.

B.9.2 Responsibility

Subcontractor management shall provide leadership by example and demonstrate interest by ensuring that adequate resources are available for effective implementation of their company's

Respiratory Protection Program and the project's program.

All employees are to work conscientiously to carry out our Respiratory Protection Program.

B.10 Silica Dust

B.10.1 Scope and Application

Silica is the main component found in sand, quartz, and granite rock. Excessive amounts of silica dust may be generated during activities such as sandblasting, rock drilling, roof bolting, foundry work, stonecutting, drilling, quarrying, brick concrete cutting, gunite operations, lead-based paint encapsulate applications, asphalt paving, cement products manufacturing, demolition operations, hammering, and chipping and sweeping concrete or masonry.

Silica can cause silicosis, a serious and sometimes fatal respiratory disease. Silicosis develops from breathing silica dust on the job. Symptoms of silicosis can either be

chronic, appearing after 5 to 10 years of being exposed to invisible silica dust without using respiratory protection, or symptoms can be acute appearing after only a few weeks of working in thick clouds of silica without respiratory protection.

Silica is also capable of causing lung cancer with prolonged heavy occupational exposures. Workers with impaired lung function due to silica exposure are also more susceptible to other respiratory disease such as tuberculosis.

B.10.2 Requirements

In order to determine whether a product contains silica, the Material Safety Data Sheet shall be obtained and inspected by the Subcontractor. In the event silica is present in the products, the following safe working procedures shall be followed to eliminate or control silica dust exposure:

- Subcontractor-initiated engineering controls shall be utilized to eliminate the hazard whenever feasible.
- Subcontractor-initiated air tests or historical data are required to confirm the controls in place are working and whether personal protective equipment is or is not required.

After working with products that contain silica, each individual will be required to thoroughly wash their hands before eating, drinking, or smoking. Eating, drinking, or smoking near silica is strictly prohibited.

Wet down dry materials and surfaces before cutting, chipping, grinding, sanding, sweeping, or cleaning. All block-cutting operations shall be performed by the wet cut method.

Use power tools with built-in dust extraction units to capture the dust before it is released into the air.

For abrasive blasting, replace silica sand with safer materials. The National Institute for Occupational Safety and Health highly discourages the use of sand or any abrasive with more that 1% crystalline silica in it. Garnet, slags, and steel grit and shot may be good substitutes.

B.10.3 Control of Crystalline Silica Dust

The subcontractor shall provide all necessary control measures at the work site to keep worker exposure to crystalline silica dust within the OSHA Established Permissible Exposure Limits (PEL). Dust control measures may require spraying of water or engineering controls at the dust generating points. It also may include the use of respirators, industrial-grade HEPA vacuums, and HEPA-filtered locally exhausted tools. Construction operations known to cause the release of silica dusts include, but are not limited to:

- Chipping, sawing, grinding, hammering, and drilling of concrete, rock, or brick.
- Work with cementitious materials such as grout, mortar, stucco, gunnite, etc.
- Dry sweeping of dust originating from concrete or rock

B.11 Radiation Areas

B.11.1 Scope and Application

The EH&S Division must be notified before work begins in areas where workers may be exposed to ionizing radiation from LBNL operations.

Workers may be required to use a personal dosimeter and radiation safety training from EH&S before beginning work. Training will be handled on a case-by-case basis. The length of this training will range from 15 minutes to one hour, depending on the facility in which work is to be done.

Dosimeters issued to subcontractor personnel must be returned at the designated times and at the conclusion of the job.

B.12 FIRST AID/CPR

B.12.1 Scope and Application

All subcontractors shall have at least one person certified in first aid and CPR at the job site at all times. Subcontractors are solely responsible to ensure the required and proper training of their employees.

Subcontractors shall provide an ANSI (Z 308.1) approved first-aid kit on this job site. The subcontractor site superintendent is responsible for ensuring that the kit is properly stocked and maintained, and inspected weekly per OSHA requirements. Only trained first-aid personnel shall administer first aid at the job site.

This first-aid kit will also contain equipment and materials to be compliant with Cal/OSHA, General Industry Safety Orders, Section 1593 – Blood-borne Pathogens, including mouth-to-mouth resuscitation devices, powdered bleach, and latex disposable gloves.

Subcontractors shall be responsible to supply their employees with appropriate amounts of potable water.

B.13 Return to Work

B.13.1 Scope and Application

In order to provide prompt quality medical services and to return injured employees back to work on the project as soon as possible, each subcontractor shall establish a "light duty" or "restricted duty" policy for their employees in the event they are injured on this project and cannot perform their normal daily duties. This applies to all subcontractors on this project.

Restricted Duty shall be an assignment provided to an employee who, because of a job-related injury or illness, is physically or mentally unable to perform all or any part of his/her normal assignment during all or any part of the normal workday or shift.

B.13.2 Procedures

All work-related injuries must be reported to LBNL Project Management immediately.

If any employee has any doubt as to where to go for medical treatment for a job-related injury, they must contact LBNL Project Management.

The policy is to return subcontractor employees to work as soon as possible after a job-related injury or illness has occurred. All possible opportunities will be considered to provide Restricted Duty Assignments. Restricted Duty Assignments will also be considered for employees injured off the job whenever possible by the subcontractor.

When an injured employee returns to work, all physical and mental limitations must be evaluated so that additional injury or aggravation does not occur. The safety of other employees working with the injured individual must also be considered.

Injured employees may return to work on Restricted Duty under the following circumstances.

- The employee's attending physician has determined the physical restrictions.
- The contractor has a task that can be assigned that meets the restrictions
- The (Project Name), Project Managers, Supervisors, and Foreman are informed of the restrictions.

The employee must receive full medical release from a physician before resuming normal work activities. No employee on Restricted Duty will be allowed to work more than 40 hours per week.

The injured employee will remain on the project where the injury occurred while on Restricted Duty.