

Electrical Safety

- Are relocatable Power Taps (power strips) used in a compliant manner?
- Are space heaters provided with tip-over switch, as well as grounded with three-wire cord and plug, or labeled double-insulated, or constructed totally of plastic or bear the U.L. double-insulated symbol (a square within a square)?
- Are coffee pots, clocks, and fans grounded with three-wire cord and plug, or labeled double-insulated, or constructed totally of plastic or bear the U.L. double-insulated symbol (a square within a square)?
- Are all panels, disconnects, and other emergency disconnecting means clear with a 30-inch width and a 36-inch depth (42-inch for high voltage) plus a free access path (28-inch width)?
- Are all panels and disconnects labeled and numbered?

- Are all conductors and conducting parts shielded from employee contact?
- Are all pieces of equipment and apparatus in good condition (not damaged, frayed, missing components, or otherwise compromised)?
- Has any piece of equipment or apparatus been modified or adapted in any way that may be unsafe or noncompliant?
- Does all equipment with more than one point of hazardous energy control have a posted lockout/tagout procedure?
- Do all cords and equipment have necessary grounding and bonding?
- Are all pieces of electrical apparatus on metal surfaces bonded and grounded to the grounded surface so as to have an equal potential?
- Are all electrical receptacles within 6 feet of water sources (sinks, hose barbs, showers, etc.) protected by Ground Fault Circuit Interrupter (GFCI) technology?

- Are all pieces of equipment or fixed apparatus wired with a fixed wiring method (not an extension cord)?
- Are all switches, control cabinets, and other electrical installation access points accessible?
- Do all experiments and components with interlocks have an interlock testing log or other document?
- Are all cords and cables bundled and protected from damage?
- Ensure extension cords are not run through walls, ceilings, floors, under mats, or across doorways and other openings?

Contact List

Biological & Chemical Safety, including compressed gases and cryogenics	x7597
Electrical Safety	x4314
Emergency Preparedness, including emergency lighting and exit routes	x7032
Environmental Quality	x7614
Ergonomics	x7170
Fire Protection and Prevention	x6370
Hazardous Waste	x4644
Health Services	x6266
Industrial & Shop Safety, including Machine Guarding	x7170
Radiation Safety, including lasers	x7652
Seismic Safety involving equipment	x7170

For more information: www.lbl.gov/ehs

ES&H Safety Walk Around Check List for Managers

Lab Work Environment (Labs & Storage Areas)



Lab Work Environment (Labs & Storage Areas)

- Is the chemical inventory complete, current, and maintained in the LBNL Chemical Management System? Do employees know how to obtain Material Safety Data Sheets (MSDS) for the chemicals they use and apply the safety information?
- Are procedures and materials (spill kits) accessible and equipment (emergency eyewash and shower, portable extinguisher, etc.) in place to handle chemical spills, personnel contamination, and emergencies? Is staff familiar with these procedures and trained and knowledgeable regarding the use of spill clean-up materials and emergency equipment?
- Are hazards known, proper personal protective equipment used, and controls adequate to minimize exposure/contamination/environmental releases during routine handling of chemical, biological and/or radioactive materials?

- Has the research activity been reviewed for safety implications and applicable authorization(s) been obtained to cover work prior to start-up?
- Have employees completed their JHQs and required ESH training?
- If radiation signage or radioactive materials are present, is there a current RWA, SSA, or RWP that is readily available in the area?
- Are high power lasers and laser users listed on a current AHD that is readily available in the area?
- Are pressure vessels appropriately designed (reviewed by EH&S and/or Engineering)?
- Is personal protective equipment (thermally-resistant gloves, lab coat, and eyewear with side shields or face shield) available for dispensing super cold liquids (cryogenics like liquid nitrogen)?
- Are hot surfaces identified, labeled, and protected?

- Are chemicals stored properly (i.e., proper storage cabinets, incompatible chemicals segregated, etc.)? Does shelving have lips/restrains to prevent chemicals from falling?
- Are chemical containers capped and sealed, except when actively adding or removing materials from them?
- Are caps present on compressed gas cylinders when cylinders are not being used?
- Are flammable liquid storage cabinets used and adequate for the needs of the research lab? Are storage cabinets of approved construction (e.g., metal with self-closing doors)?
- Are food and drink stored and consumed where they will not be contaminated by toxic, infectious, and radioactive materials?
- Are laboratory fume hoods free of clutter, spills cleaned up, exhaust slots unobstructed, and certified for proper air flow (by the EH&S Division)?

- Are centrifuges equipped with interlocking lids or are administrative controls in place to prevent exposure to rotating parts?
- Has all oil-containing equipment that is out of service been reported to EH&S?
- Are emergency response guides posted and filled out with location-specific emergency information?
- Is chemical, biological and radioactive waste handled, contained, labeled and stored according to LBNL Waste Management requirements?
- If an SAA is in place, is a principal point-of-contact established for the proper management of the SAA? Are there efforts to minimize the amount of chemical products used and stored?
- Is waste generator knowledge robust and reliable regarding the nature of all waste streams? Has EH&S issued an NCAR in the past six (6) months?

- Has any decay-in-place and subsequent discharge to the sanitary sewer of radioactive material been authorized by EH&S?
- Are all sinks labeled to prevent discharge of hazardous materials?

General Work Environment (Office & Common Areas)

- Are employees familiar with Integrated Safety Management (ISM), their Division Safety Plan, and performing work under the five core functions of ISM?

- Do employees know who their Division Safety Coordinator, EH&S Division Liaison, Building Manager and Building Emergency Team members are and how to get in touch with them?

- Are all work areas clean and orderly? Floors dry?

- Is there at least 18 inches of clearance maintained below fire sprinkler heads?

- Are aisles and passageways clear (exit passageways must be at least 28" leading to main hallways)?

- Are bookcases (>3' high), filing cabinets (>3' high), shelves, racks storage cabinets seismically braced?

- Are stairway doors kept closed (unless equipped with self-closing devices)?

- Are computer workstations evaluated and ergonomically configured for by employees to prevent repetitive stress injuries?

- Are computer workstation operators knowledgeable regarding ergonomically sound workstation design?

- Do employees know how to access EH&S experts for ergonomic advice and assistance?

- Have employees completed their JHQs and required ESH training?

- Are there safety and warning signs (electrical, chemical, and radiation) in the area? Are they understood? Is it clear who is responsible for controlling the hazards?

- Are dumpsters kept closed, and do employees know to whom to report spills?

- Is paper, aluminum and glass being collected for recycling?

- Is overhead storage minimized and restrained to reduce fall hazards from seismic activity?

- Are fire alarm pull stations and portable fire extinguishers visible, properly labeled, and inspected? Is access kept clear for emergency use?

- Are emergency exit signs identifiable, readily visible, or illuminated?

- Are emergency instructions and evacuation routes posted? Do employees know what emergency number to call and procedures to follow?

- Is emergency lighting available to guide the path to exit in the event of a power failure?

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 - Are all panels and disconnects labeled and numbered?
- Are all conductors and conducting parts shielded from employee contact?

 - Are all pieces of equipment and apparatus in good condition (not damaged, frayed, missing components, or otherwise compromised)?

 - Has any piece of equipment or apparatus been modified or adapted in any way that may be unsafe or noncompliant?

 - Does all equipment with more than one point of hazardous energy control have a posted lockout/tagout procedure?

 - Do all cords and equipment have necessary grounding and bonding?

 - Are all pieces of electrical apparatus on metal surfaces bonded and grounded to the grounded surface so as to have an equal potential?

 - Are all electrical receptacles within 6 feet of water sources (sinks, hose barbs, showers, etc.) protected by Ground Fault Circuit Interrupter (GFCI) technology?
- Are all pieces of equipment or fixed apparatus wired with a fixed wiring method (not an extension cord)?

 - Are all switches, control cabinets, and other electrical installation access points accessible?

 - Do all experiments and components with interlocks have an interlock testing log or other document?

 - Are all cords and cables bundled and protected from damage?

 - Ensure extension cords are not run through walls, ceilings, floors, under mats, or across doorways and other openings?

ES&H Safety Walk Around Check List for Managers

General Work Environment (Office & Common Areas)



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ES&H Safety Walk Around Check List for Managers

Industrial Environment (Shops Area)



Industrial Environment (Shops Area)

- Are tools, equipment, portable ladders, and work areas maintained in an orderly, clean and safe manner? Is scrap stock cleaned from floor and work benches following each job or at the end of each day?
- Are workers adequately trained to use fixed or portable powered shop machines, industrial lift trucks (forklifts), crane and hoists or welding equipment, etc., prior to use? Are cranes, hoists, and forklifts periodically inspected to ensure proper operation?
- Have exposed moving parts on equipment/machinery been guarded to prevent contact by employees?
- Are shop floor areas appropriately marked to identify restricted work areas or “approved operator only” floor lines?

- Are shop areas and equipment (such as, hand tools and portable and fixed power tools) inspected periodically and deficiencies corrected?
- Are painting and welding operations conducted in well ventilated areas?
- Is appropriate personal protective equipment (PPE) for face, eye, respiratory, hearing, hand, foot, knee and body, etc., provided to and used by employees?
- Are areas of high noise or where potentially elevated levels of airborne chemical contaminants may exist being monitored by EH&S Division personnel and exposures controlled?
- Are fire alarm pull stations and portable fire extinguishers visible, properly labeled, and inspected? Is access kept clear for emergency use?
- Are emergency response guides posted and filled out with location-specific emergency information?
- Are flammable materials (paints, solvents, chemicals, etc.) stored in appropriate cabinets and away from

- ignition sources? Are storage cabinets of approved construction (e.g., metal with self-closing doors)?
- Are lockout/tagout procedures in place and followed by employees who perform service or maintenance on machines or equipment where unexpected energizing, start up, or release of stored energy could occur and cause injury?
- Are compressed gas cylinders, compressed air, and other pressure systems appropriately installed, secured, used, and inspected? Are caps present on compressed gas cylinders when cylinders are not being used?
- Is the chemical inventory complete, current, and maintained in the LBNL Chemical Management System? Do employees know how to obtain Material Safety Data Sheets for the chemical products they use and apply safety information?
- Are chemical containers and products labeled as to their contents and hazard? Are employees aware of the measures necessary to use these safely?

- Are exhaust systems functioning adequately to capture debris at/near the point of generation? Are sawdust collection bins cleaned out periodically?
- Do shop safety procedures contain provisions for working alone and for emergencies?
- Are ultra high vacuum cleaning operation and photo fabrication operations and treatment units properly designed and operated to prevent worker exposure, and environmental release? Are required emergency procedures posted, and is the Accidental Spill Prevention and Containment Plan accessible? Are the units in compliance with all permit conditions?
- Have employees completed their JHQs and required ESH training?
- Are guard rails or other barriers in place to eliminate fall hazards from elevated surfaces (i.e., 4 feet or higher) or stairs?
- Are compressed air nozzles set to less than 30 pounds per square inch (psi) pressure?

- Are lead bricks in good condition (not flaking or chalky in appearance) or wrapped in tape or encapsulated (painted) to prevent deterioration?
- Is personal protective equipment (thermally-resistant gloves, lab coat, and eyewear with side shields or face shield) available for dispensing super cold liquids (cryogenics like liquid nitrogen)?
- Has all oil-containing equipment that is out of service been reported to EH&S?
- Are dumpsters kept closed, and do employees know to whom to report spills?
- Is paper, aluminum, glass, and scrap metal being collected for recycling?
- If an SAA is in place, is a principal point-of-contact established for the proper management of the SAA? Are there efforts to minimize the amount of chemical products used and stored in the shop?
- Have all sinks been labeled to prevent discharge of hazardous materials?