

Helpful Inspection Tools

COMMON ELECTRICAL DEFICIENCIES

- Items blocking electrical disconnects or circuit breaker boxes
- Open electrical boxes or panels exposing wires
- Power cords passing through walls or ceilings
- Live front electrical plugs
- Out of date or no hot work permit
- Ground Fault Circuit Interrupters not used within 6' of a sink location
- Frayed power or extension cords used in laboratory experiments
- Ganged (multiple) extension cords
- Cords, cables or items affixed to conduit
- Personal appliances not Underwriters Laboratory approved
- Use of unapproved extension cords.
- Lack of current year Ground Fault Circuit Interrupter inspection sticker
- Use of non NRTL equipment without NRTL inspection**

COMMON COMPRESSED GAS CYLINDER DEFICIENCIES

- Unsecured cylinder tanks
- Cylinders in storage with regulators, or no protective covers
- Oxidizers and flammable gases not separated by 20' or a firewall that is 5' high
- Full and empty cylinders stored together
- Lecture bottles not supported or stored correctly

COMMON WALKING/WORKING SURFACE DEFICIENCIES

- Lack of delineation in changes of surface (ie: yellow Caution striping tape)
- Ladders with cracked side rails, steps, or feet that are not stable
- Tripping hazards
- Use of metal ladders and step stools around electrical systems

COMMON HAZARD COMMUNICATION DEFICIENCIES

- Labeling of product not evident on bottles or containers
- Employees not aware of hazards of materials being handled
- No up to date inventory or inspection of items in a Satellite Waste Accumulation Area
- Current contact information on door placards for abnormal conditions or emergencies**

COMMON PERSONAL PROTECTIVE EQUIPMENT DEFICIENCIES

- Lack of personal protective equipment in designated areas
- Damaged or broken safety glasses, hard hats, etc.
- Goggles, face shields, hearing protection etc. not available
- Plastic or rubber gloves not selected correctly to protect against chemicals in use

COMMON FIRE AND LIFE SAFETY DEFICIENCIES

- Storing combustibles by heat producing appliances
- Hanging or attaching items to fire sprinkler pipe
- Out of date or no Open Flame Permit
- Lack of approved (UL/FM) flammable liquid storage cabinets
- Approved flammable liquid cabinet with vent bungs missing
- Emergency lighting inoperative
- Exit lighting inoperative (exit signs, stair, corridor, exterior lighting, etc.)
- Blocked fire extinguisher access or inadequate signage
- Exceeding flammable storage requirements within approved flammable liquid cabinets
- Blocked paths of egress/exits

- Storage of items within 18" of sprinkler heads
- Painted sprinkler heads or missing escutcheons
- Blocked or shielded emergency lighting
- Fire Doors blocked open
- Blocked sprinkler valve access
- Excessive combustibles/poor housekeeping
- Blocked exit discharge (snow, weeds, etc.)
- Obstructed hydrants and post indicator valves

COMMON INDUSTRIAL HYGIENE/CHEMICAL SAFETY DEFICIENCIES

- Storage of incompatible chemicals
- Storage of acids not in secondary containment
- Improper storage of chemicals (Liquid chemicals should not be stored above eye level; chemical storage shelves should have a lip at all exposed edges or closable doors to prevent chemicals from being pushed over the edge)
- Laboratory hoods not current and posted for annual face velocity tests
- Laboratories using chemicals not maintained at negative air balance condition
- Lack of proper signage and barriers at lead storage and use areas

COMMON SAFETY MAINTENANCE INSPECTION DEFICIENCIES

- Lack of weekly testing and documentation of eye wash stations
- Lack of semi-annual safety shower testing and documentation
- Lack of power tool inspection program
- Lack of sling/hoist inspection program
- Lack of monthly LOTO station audits
- Lack of monthly Satellite Waste Accumulation Area inspections
- Look for load rating and manufacturer's name on lifting devices

COMMON OFFICE SAFETY DEFICIENCIES

- Unstable cabinets
- Housekeeping (clutter, storage on top of filing cabinets, etc.)
- Chemicals stored in offices
- Unstable/broken office furniture
- Items stored above 6' which could create a falling injury hazard
- Poor ergonomic layout of computers and similar equipment leading to recordable work-related injuries
- Office chairs with wheels causing a tip over hazard on certain surfaces**

COMMON MACHINE OR APPLIANCE GUARDING DEFICIENCIES

- Lack of guarding of power transmission applications below 7' (Pump motor shafts, etc.)
- Lack of guarding of rotating hazards below 7' (Fans, etc.)
- Lack of machine guarding reviews of newly acquired machines prior to and after purchase.
- Building/Division machine inventory not current
- Tool rest not to exceed 1/8"
- Tongue guard not to exceed 1/4"

COMMON RADIOLOGICAL SAFETY AND ACCELERATOR TUNNEL ACCESS DEFICIENCIES

- Lack of TLD Badge in required areas
- Lack of current radiological training
- Lack of proper Group LOTO for tunnel work
- Flashing magnet power supply, ACIS or other warning lights visible without proper signage or warnings
- Work being performed without proper Work Request documentation
- Work with Lead being performed without proper barriers, signage or PPE

LASER

Class 3 and Class 4 lasers not in division and ANL inventory and reviewed with Laser Safety Officer.

Lack of approved laser safety SOP (annual)

Lasers operated without approved interlocks/ safety interlocks

Interlock documentation that reflects quarterly inspections

Annual inspection of laser eye wear

Operating Permit from laser safety officer posted with current divisional authorization

Use of greater than Class 2 laser pointers in public

COMMON EXTERIOR DEFICIENCIES

Blocked exit discharge (snow, weeds, etc.)

Lighting rods and grounding cable not in place

Obstructed hydrants and post indicator valves

Debris accumulation around building periphery

COMMON PRESSURE SAFETY ITEMS

Corrosion on tubing, vessels or piping

Evidence of gas or fluid leaks

Look for pneumatic pressure devices to be tested

Pressure ratings of components vs. source pressure, Do they match?

Documentation of pressure tests

Materials able to withstand pressure

Proper labels, markings identifying pressure related values

Standard Operating Procedures

Emergency Notification – Shutdown Procedures

Assembly of pressure system components done correct

COMMON COUNTERFEIT AND SUSPECT PARTS

Remove counterfeit parts, report to QAR

Refer to Counterfeit Parts Chart

SLING TAG COLORS (numbers equal months)

YELLOW 1 & 7 January and July

WHITE 2 & 8 February and August

ORANGE 3 & 9 March and September

GREEN 4 & 10 April and October

RED 5 & 11 May and November

BLUE 6 & 12 June and December

ROBOTIC SAFETY

Load limitation devices and interlocks

Collision avoidance features

– **simple touch of apparatus stops motion**

Emergency stops - local and remote

Warning Light to communicate operation and motion

Mounted to prevent unintended motion of the equipment

Signage

Cryogenic materials in use

Any oxygen displacing substances

Pressure pad – stops motion or turns off robot

Light curtain -

Biosafety Level 1-standard chemical lab at the APS

1. Eyewash
2. Sink
3. Easily cleaned work surfaces/benchtops are impervious/ decontaminated once a day during experiment
4. Biohazard Signs are *not* required for BSL1
6. No eating, drinking, etc in labs. No mouth pipetting
8. Sharps containers in place. Biohazard waste receptacles (red bags) when experiment in progress.
9. Proper PPE, lab coats, eye protection, gloves
10. All wastes are decontaminated before disposal by approved methods

Biosafety Level 2- (Sector 14) and temporary setups in other sectors (ex. 18,13, 5)

BSL1 Safety Practices Plus:

1. Biohazard Signs (identify agent, contact info, and special requirements to enter) is required at the entrance and where samples are stored or manipulated.
2. Restricted access to the lab when experiment is in process.
3. An insect and rodent control program is in effect. No visible signs of infestation and documentation of inspection.
4. SOP for procedures are prepared or adopted. Appropriate training is acquired.
5. Sharps container in place "Sharps precautions in place". Biohazard waste containers (red bags) in place.
8. Properly maintained Biological safety cabinets may be needed depending on the agent used.
9. Proper PPE. Lab coats, gloves (sometimes two pairs), goggles, mask or faceshields. PPE is left in the lab and not removed. Protective clothing needs to be laundered by the institution and not taken home.
10. All wastes are decontaminated before disposal by approved methods

Biosafety Level 3- (Sector 14 BioCARS only)

BSL1 and 2 Safety Practices plus:

1. Physical separation from access corridors
2. Double door access
3. Exhaust air not re-circulated
4. Negative airflow in lab
5. Approved and certified Biosafety cabinets must be used for open manipulations of samples.
6. PPE: protective lab clothing; gloves; respiratory protection as needed. None can be removed from facility.
7. Approved emergency response plans, SOPs for procedures/Insect and rodent plan.