Office of Laboratory Safety and Environmental Health (OLSEH), IISc, Bangalore

Reopening of Labs: Ensure Health and Safety

Date: 11 May 2020

Dear Colleagues and Students:

To protect against COVID-19 pandemic, IISc took the unprecedented step of shutting down all labs and major research facilities on 14 March, 2020. We would like to thank each and every member of the IISc community for taking all the safety measures to shutdown the laboratories during this unprecedented time.

After weeks of being shutdown, institute is looking forward relaxing the restrictions and reopen the laboratories and research facilities. However, we have to take several safety precautions to reopen laboratories and ensure safe return to the workplace.

This document outlines OLSEH guidelines to ensure safety in laboratories and research facilities, during the critical opening phase. We understand that some labs might have unique safety protocol requirements, not covered by these general guidelines. In such cases, the PI's should implement added safety protocols for safe operation of laboratories. For guidance on safe practices, please refer to the safety manual available at: https://olseh.iisc.ac.in/. Please remember that, it is the responsibility of the Lab managers/faculty to ensure safety in their labs.

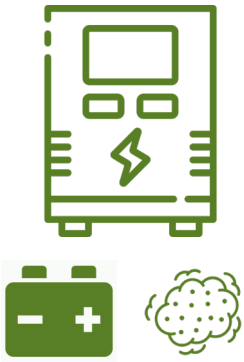
General guidelines:

1. **General Cleaning:** Expect a lot of dust. There are also chances of animal/bug- infestation. Do not enter the lab alone. Step in cautiously with fellow colleague/experienced office staff and please inspect the lab thoroughly. There could be a chance of being overwhelmed by fumes/vapours. Clean the lab thoroughly before beginning any research activities.

2. **COVID-Protocol:** To protect from COVID, labs may need special cleaning, disinfecting, and sanitization. This is unavoidable and an integral part of the reopening exercise. Depending on the equipment, implement a suitable protocol for sanitization. Please ensure all lab members have access to soap and clean water for safe handwashing. High touch surfaces, like elevators, finger-print scanners, handles, etc. should have hand-sanitizers nearby. Please follow protocols on social distancing and hygiene.

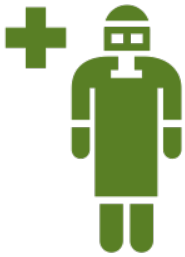
3. **Gas Cylinders:** Ensure all safety sensors (gas leak detection systems, etc) are functional. We house several hazrdous gases in departments/labs, and require special attention.
    a. To a first order assume we are starting up for the first time. Be attentive to every detail.
    b. Ensure all gas safety systems (cabinets, gas leak detection systems, alarms, etc) are functional.
    c. The batteries of some of the gas leak detection sensors may have discharged, especially if they were not connected to UPS (there were many power outages during the lockdown period).
    d. Gas detection sensors cartridges may need replacement.
    e. Pay special attention before re-pressurizing the gas lines. For hazardous gasses, follow a ***documented*** checklist. Don't be ad-hoc.

4. **Power/Electrical/UPS Battery Fire Risk:**
    a. Verify all electrical lines are intact before switching on power sources (many labs may have rat infestation). Turn on major equipment in sequence so that any faults are isolated. The local mains (MCBs) should be switched ON only after careful inspection.
    b. The heavy build-up of dust on UPS can block air vents and the fans will work at over capacity, results into a dramatic increase in internal heat and then catch fire. Please clean the dust accumulated on UPS and keep dust free environment.
    c. Similarly, overcharged lead acid batteries can release flammable hydrogen gas and terminal corrosion can eventually lead to an open electrical connection. It is recommended to check these issues to avoid accidents.



5. **Air Conditioner (AC):** An air conditioner's can accumulate dirt and dust particles in its air vents, filters, coils, and fins. This will obstruct normal airflow, reduce efficiency, and could result in malfunction and eventually cause of a fire. To avoid this problem, replace filters, and clean it as necessary.

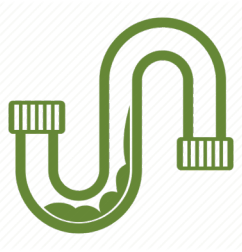
6. **Chemicals:** Inspect the chemical storage area carefully. Chemicals stored in airtight containers, refrigerators or freezers poses high hazard due to pressure build. Wear ***extra*** personal protective equipment including gloves and protective face/eyewear while



opening stored chemicals. Be wary of smell as that indicates vapor build-up. Make sure the exhausts are functional and air velocity is enough. Make sure the PPE are not torn or damaged.

7. **Biological Safety:** Hopefully, all reactions/processes/cultures under process were stopped safely and cleaned up before the shutdown. Ensure that CO_2 and other gas cylinders are properly sealed and functional, while you try to reconnect to incubators or other relevant equipments. Equipments such as autoclaves, centrifuges, laminar flow, biosafety hood, and other high-end instruments may require special attention before turning ON. Please dispose bacterial or viral cultures not in use, safely as per the NIH guidelines.

8. **Water Lines:** Static water in water lines tends to clog-up with algae and sedimentation. Be careful in turning on the water lines. Excessive build-up of pressure can cause pipe-rupture and flooding. It can also damage sensitive equipment. Please turn on water lines very carefully. Run the cooling water loops through filters for a few hours before connecting to equipment.



9. **Utilities:** Junk can accumulate in exhaust and sewers too. Please check before opening them up. Clean all the dust and crud. Check for clogged drains. Note that filters might need changing or cleaning.

Emergency Response Directory

Emergency Response Service: 5555/108 (080-2293-5555 from non IISc Phones)
Security office: 080-22932400/22932225
Health Centre/ Ambulance: 080-22932227/22932234
Dharmendra Singh, Safety Officer: 080-22933199
M.S Ramaiah hospital: 080-23608888
Snake Rescue volunteer: 080-22932506
Electricity-General: 080-22932206/22932018

Best wishes and stay safe

Team OLSEH