

LABORATORIES AND POWER OUTAGES

One of the biggest fears of any Laboratory Manager or Research Scientist is the thought of a power outage. A power outage creates the potential for loss of valuable specimens and years of research. At some point in time you could lose power in your laboratory due to extreme weather, rolling black outs or equipment malfunctions, but you can lessen the effects of a power outage, and your chances of losing your hard work by being prepared and following some easy procedures.

PRE-POWER OUTAGE:

Make sure your laboratory has a contingency plan in place, and that staff members are trained on the plan. For more details on how to put together a Business Continuity Plan go to <http://emergency.yale.edu/planning/business-continuity-planning> and click on “Guide for Laboratories”. The plan should include but not limited to:

- The location of emergency lighting (i.e. flashlights, glow sticks, etc.).
- A list of essential equipment that may be damaged by a power surge when the power is restored, or that may have an automatic “ON” switch and may come on by itself when power is restored, even if no one is around. Consider unplugging or turning off this equipment during the outage to avoid harmful effects when the power returns. Additionally, some equipment may need to be reset or restarted after the outage is over. (I.e. centrifuges, computers, fume hoods, etc.).
- A list of all of your temperature sensitive specimens and the approximate time period before the specimens will be adversely affected by the temperature rise—this will help you to prioritize the relocation of specimens if necessary.
- A list of all of the equipment containing your specimens (i.e. refrigerators, freezers, etc.).
 - All freezers should be properly maintained and staff must know:
 - How to monitor the temperature in these units,
 - How to ensure the alarms on these units function properly.
 - How to make sure the seals are intact. Most freezers will keep their temperature steady or below freezing for up to 10 hours if kept closed and properly sealed.
- A plan to keep your specimens safe.
 - Considering splitting the storage of specimens—separating the specimens, and storing the two separate collections in different locations not subject to the same power outage will allow you to retain undamaged specimens for future use.
 - Identify other freezers in your lab or neighboring labs that may have their own backup power, run on CO₂ or liquid nitrogen which are unaffected by the power outage, Plan for the transfer of your specimens.
 - Store or know where you can easily obtain dry ice in the event of a prolonged outage.
- The procedure should outline what to do with your specimens and how **to shut down your workstation and laboratory.**

WHEN THE POWER GOES OUT:

- Stay calm. Proper preparation and training regarding your contingency plan will make that much easier.
- Stop or stabilize all experiments immediately.
- Secure all chemicals that are being used.
- Turn off all heat sources (gas or electric burners) to prevent fires.
- If you are using a fume hood and fumes are present shut the fume hood sashes to prevent fumes from escaping.
- Prepare all specimens for storage or securing.
 - It is important that freezer doors are not opened an excessive number of times and remain open a minimal amount of time. Stage the specimens so that they can be quickly placed in the freezer.
 - Place a “**DO NOT OPEN**” sign on the freezer door.
 - Document a list of everything that was transferred to the backup freezer
 - Monitor the temperature.
 - If outage is prolonged you may need to take emergency steps to keep your specimens from being damaged.
- Follow the steps in your contingency plan on protecting the equipment in your laboratory.
- If the evacuation notice has been given then calmly leave the building.

WHEN POWER RETURNS:

- Follow your contingency plan regarding restarting the laboratory.
- Check for unusual odors. Could be the sign of a leak or spill.
- Check the temperatures in your cold storage units. Reset alarms if needed.
- Reset or plug in all the equipment as needed and check to make sure they are functioning properly.
- Check fume hoods for proper flow before using.
- Contact EH&S if you need help with a spill or clean up.

If you have any questions or would like help with your contingency planning please contact EH&S, Risk Management or Emergency Management.

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