

## The Ohio State University

### Freezer Maintenance Guidelines

In order to prevent research or resource losses from freezer failure, each OSU laboratory or business unit should continuously evaluate its preventative measures and ensure responsible staff (principal investigators and building emergency coordinators) is trained on all applicable procedures as reflected in the unit's Business Continuity Plan. Research or resources of a financially or reputationally sensitive nature must be protected. The strategies below should be utilized to avoid losses, which can have a devastating impact on faculty and staff, as well as university partners and benefactors.

#### **To Prevent Loss of Research or other resources:**

Freezers should follow Good Lab Practices, Code of Federal Regulations, or any other maintenance guidelines applicable to the lab or business unit. It is important to follow any other compliance conditions as directed by research sponsors, your department or college, or government funding sources. Temperature logs and Preventative Maintenance records should be maintained for a minimum of six months. Precautions as listed below must be followed.

1. The unit/department must have a maintenance contract for freezers containing items of value. If the unit/department has freezers that are covered by the university's insurance programs, the unit/department must have this maintenance agreement. If the unit/department does not acquire a maintenance contract, a loss of samples, regents, or other resources may not be covered for reimbursement in event of a systems failure.
2. If a failure incident should occur, and the freezer is unable to hold set temperature, the lab will be responsible for subsequent actions, including thaw and leakage clean-up and decontamination. The university may not be held responsible for sample loss, theft, damage, etc., and items will not be replaced or have their value refunded by the university if a maintenance plan is not in place. Costs of installation, service, monitoring, and maintenance are the responsibility of the unit/department.
3. The unit/department must ensure that proper setup and operational procedures will be followed. Partner with the Facilities Office to confirm the building has appropriate electrical capabilities and to certify suitable installation to prevent overloads. Designate personnel responsible for the preventative maintenance/inspection plan, which should include:
  - Testing for proper mechanical operation and filter cleanings
  - Periodic testing of alarms (battery checks and replacements)
  - Training procedures for new lab and department employees

An Inventory of samples and resources, updated on a regular basis and including the current estimated value of contents, must be maintained. This information will be crucial in determining the replacement value and any applicable compensation should a system failure or loss occur. Extent of reimbursement will be evaluated on a case by case basis. The list should be included with the Property Loss claim report.

4. Temperature change notification and response is the first line of defense. Integrated freezer alarm systems should be functional and active. Install a web-based alarm system to trigger notification in the event of failure. Set appropriate alarm range triggers to allow enough time to react before a loss. Local alarms or standard thermometers alone may not be sufficient, and alarms linked to pager, text, or e-mail alerts are mandatory for some research. Temperature change alarms should ensure that a designated 'on-call' employee is notified. Inspect the system and battery status regularly.
5. Verification of a reliable power source and surge protection should be a primary concern. Loss of power can be caused by any unanticipated circumstance if the outlet is not on emergency backup. Emergency power (an Uninterruptible Power Supply) is the best solution. If lab limitations to UPS application are present, a Nitrogen backup freezer or dry

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ice storage should be arranged in case of extended outage. If practical, it may also be prudent to:

- Separate research and samples into more than one freezer, in case of a single freezer failure.
  - Duplicate research samples wherever practical and store duplicate samples in a separate freezer location. Ideally, the second location is on a separate power line.
6. Prepare an Emergency Plan for power loss. This may take the form of a stand-alone plan or may be integrated with the Business Continuity Plan details. Ensure that any necessary resources will be available. Planning should account for all potential interruptions such as public utilities, adverse weather, etc. Also, post notices strictly prohibiting outlet or power disconnection without written permission.
  7. Knowledge and oversight of contractors in the vicinity (performing cleaning or other work) are vital. If a contractor is to work in the freezer area or within close proximity, a knowledgeable researcher or lab employee should be present to ensure no interruption of operations during the service activity.
  8. If an anticipated change affecting the freezer is to occur, including a scheduled power interruption or contractor work, a designated emergency lab contact should be informed in advance and any necessary precautions are taken.

### **Inventory of freezers**

1. Maintain a location list of all freezers in the responsible unit, the purchase source, activation date, and expected retirement date.
2. Maintain and date an inventory list of the contents on a regular basis, not to exceed 45 days, or whenever changes in inventory occur. Include the current estimated value of the contents.
3. Store a dated copy of the inventory list in an alternate and accessible location.
4. Determine what components of research projects are irreplaceable and the best means by which to protect them (i.e., local alarms and remote monitoring services).
5. If patient information is included, it should be de-identified or encoded in a manner where no personal information is noted and any other compliance measures are met (i.e., HIPPA).

### **If a Freezer Loss Should Occur**

Immediately report, within 24-48 hours or as soon as possible, any loss of research or resources to the OSU Office of Risk Management for a determination of compensation eligibility. Immediate measures should also be taken to mitigate any further damage or loss. A fully documented account of the incident should be submitted to the ORM within 30 days. Follow instructions to “Report Property Loss/Damage” [here](#).

Examples of documentation to supply with the loss report include:

1. Copies of purchase records, invoices, receipts, etc. (to evidence proof of University ownership).
2. Police reports, photos of lost or damaged resources, damaged lab equipment, etc.
3. Itemized quotes for the replacement value of lost materials or contents.
4. Any other documentation relevant to the loss incident.