

Procedures for Performing Work in Computer Rooms

This document discusses the proper procedures and expectations for working in Computer Rooms. It discusses ES&H issues, as well as logistics and security. The document contains a link to the Computer Room Hazard Analysis. Review of this procedure and its links are required every two years. Taking and passing a short, online test is required to receive credit for the review of this procedure.

This training requirement is initiated when a Fermilab employee completes an Individual Training Needs Assessment (ITNA) for another employee or subcontractor. The question that triggers the training is - Will the individual perform any work within any of CD's Computer Rooms, i.e. FCC2, FCC3, WH8W, GCC Computer Room?

In the context of this document, "Computer Room" will include Fermi Network rooms, Tape Robot room and Wilson Hall 8 - Fiber Central room.

Depending on the work being performed in the computer rooms, this procedure may fall under Fermilab Environment, Safety and Health Manual (FESHM) - FESHM 7010 ES&H Program for Construction, or FESHM 7020 ES&H Program for Subcontractor Safety Other Than Construction.

List Changes:

1. Updated Contact Names
2. Minor Adjustments to Document Language

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Updated By: Michael Frederick                      Date: 07/8/2026

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## Procedure for Performing Work in Computer Rooms

### Personal Accountability

Persons who work in Fermilab Computing rooms are responsible for their actions and those of subcontractors who do work for them. These procedures and work rules are intended to reduce the chance of mistakes and unintended events which can cause harm to individuals or negatively impact computing services. It is also important that any persons who works in Fermilab Computing room must follow all procedures for escorted and badged subcontractors and vendors.

### Safety

This document is in conformance to Fermilab's Integrated Safety Management and Hazard Analysis procedures which integrate safety into all aspects of Fermilab work. Following this procedure is of paramount importance for protecting your safety, the safety of others and the mission of the Fermilab.

The most frequent safety problems in computer rooms have been the presence of combustibles, open/unseated floor tiles and incorrect use of electrical outlets. Combustibles must not be stored in the computer rooms. Bringing combustibles into a computer room on a temporary basis must first be coordinated with Data Center Operations as identified in work rule #8. Computer room open floor tiles can result in serious personal injury and are covered in work rule #6. Plugging into electrical outlets for computing equipment must be pre-arranged with Data Center Operations as stated in work rule #3.

### Computer Room Safety Systems

There are nine computer rooms currently in operation; two computer rooms are in the Feynman Computing Center building (FCC2 and FCC3), and four computer rooms are in the Grid Computing Center (GCC) (A, B, C, and tape robot room). These rooms are equipped with fire detection and suppression systems as required by the National Fire Protection Association's current "Standard for the Protection of Electronic Computer/Data Processing Equipment", NFPA 75, 2013 ed. In addition, there are two networking rooms at GCC, Network Room A (NRA) & Network Room B (NRB) and a room in Wilson Hall, WH8W (fiber central). For a list of fire safety systems in each room, see Appendix A.

|                    |                       |                               |
|--------------------|-----------------------|-------------------------------|
| FCC2 Computer Room | GCC – Computer Room A | Wilson Hall 8 – Fiber Central |
| FCC3 Computer Room | GCC – Computer Room B |                               |
|                    | GCC – Computer Room C |                               |
|                    | GCC – Tape Robot Room |                               |
|                    | GCC – Network Room A  |                               |
|                    | GCC – Network Room B  |                               |

### Emergencies

*All computer rooms are equipped with smoke detectors, fire alarms with strobe lights and sprinklers. A manual, under the floor, halon system is installed in FCC2 and will only be discharged at the discretion of the fire department. FM200 gas suppression systems are used in tape robots.*

All of the computer rooms have an automated/manual emergency power off (EPO) buttons located at main exit doors. These buttons are recessed and surrounded by a collar to help prevent accidental activation. Most have

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covers that must be opened to expose the button. Depressing one of these buttons will remove all electrical power to computers and air conditioners in the room. Uninterruptible power supplies (UPS's) will also remove power to their attached equipment. Lights will remain on and wall outlets will remain live. These buttons are labeled and should be activated only in a life-threatening emergency, such as, electrocution. For fire emergency, you must exit the building.

### **Computer Room Security**

All FCC and GCC computer rooms are DOE designated Property Protection Areas (PPA). Access is provided by the Security & Emergency Management Division. Email requests for access to computer rooms may be sent to the Lab Security Office @ [cardaccess@fnal.gov](mailto:cardaccess@fnal.gov).

### **Computer Room Modifications**

Any work which requires a modification to a computer room must be reviewed and approved in advance by Data Center Operations. Modifications include, adding or removing computers or racks, plugging or unplugging equipment. Email any proposed room modifications to [cd-operations@fnal.gov](mailto:cd-operations@fnal.gov) in advance for guidance and approval.

### **Work Rules**

1. Persons in computer rooms must not touch or manipulate breakers and controls on any electric distribution panel, power distribution unit, UPS, or air conditioning unit. These are both safety and operational hazards. You should never reset a tripped electrical breaker. You should always contact [cd-operations@fnal.gov](mailto:cd-operations@fnal.gov) (see contact list below).
2. Plugging or unplugging of computers into power outlets must be arranged in advance with Data Center Operations.
3. All equipment racks must have stabilizer feet flush to the floor, wheel stops or wheel lockdowns which are tightened so that the racks cannot roll.
4. If maintenance of any kind is performed that requires the adjustment or removal of cold aisle containment panels, please notify Data Center Operations so that the panels can be inspected and re-secured as necessary. Please ensure containment doors are closed when leaving the area.
5. Never set items on top of equipment or block access of any aisles, doors, air conditioning units, electrical or fire panels. Do not run wires or cables on top of the floor across an aisle.
6. Use safety cones and plastic chain as outlined in Computer Room Open Floor Tile Work Rules <http://cd-docdb.fnal.gov/cgi-bin/ShowDocument?docid=2826> to direct people away from hazardous areas. Floor tiles must be replaced at the end of each day's work.
7. Floor tile pullers for both solid and vented tiles are located at the computer room main exit doors. Use of stand-up of floor tile pullers for solid tiles is preferred to save on back/arm strain. Pullers must be returned when finished.
8. All computer equipment must be unpacked outside of computer rooms. Boxes and packing materials are not allowed in computer rooms. If this is not possible, arrangements must be made in advance with Data Center Operations.
9. Each computer room is provided with an equipment lift which may be used for inserting equipment into racks. Before operating the lift, read the instructions posted on the lift if you haven't already done so. Using the lift is at least a two-person operation, three people if the equipment is very heavy. Do not attempt to use the lift by yourself.
10. Nothing shall be stored under the computer room raised floor.
11. When working under the raised floor, cables, fire detectors, water leak detection wires and other subfloor devices and equipment must not be disturbed. If this is not possible, contact Data Center Operations.

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12. No flammable liquids of quantity greater than 1 pint should be brought into the computer room without the approval of the CS DSO. Flammables must be removed at the end of each workday and stored in a chemical cabinet.
13. Ear protection is required in specific computer rooms if working more than two hours. Signage is posted at the entrance to the rooms where ear protection is required. Ear protection dispensers are located near the entrances to the computer rooms.
14. Depending on the type of work done, not limited to installing, de-installing, and or moving of data center racks, may require personal protective equipment, such as safety shoes and/or safety glasses. Supervisors must make the judgment and it should be part of the job hazard analysis (HA), whether verbal or written. Under no circumstances will bare feet be allowed. Funds for safety shoes are allocated every year. The form to request safety shoes may be obtained from ESH. Your supervisor must sign the form.
15. Several computer rooms may have localized warm spots in designated warm aisles where the servers exhaust warm air. If working in the warm aisles, portable fans are available in several computer rooms to temporarily circulate the air. You may also wear layered clothing, take breaks, and hydrate more often.
16. Food and beverages are not allowed in the computer rooms. There is a break room on the 2nd floor of the Feynman Computing Center. Smoking is not allowed in any buildings, computer rooms or other facilities.

Now you need to read the hazard analysis (HA) for working in CS computer rooms. It is published at:

<http://cd-docdb.fnal.gov/cgi-bin/ShowDocument?docid=627>

Task managers or service coordinators for subcontractors must keep subcontractor signed HA forms posted at the job site. Expired HAs must be kept on file with the task manager or service coordinator.

Now that you've read the above material, please take the [Online Test](#). (Note: you will have to retake this training whenever your Fermilab ID card is renewed with a new expiration date.)

### **Contact List**

If you have general questions about this procedure, please submit a service desk ticket at <https://servicedesk.fnal.gov>.

| Function                | Phone    | Name              | Email/Web Form                                           |
|-------------------------|----------|-------------------|----------------------------------------------------------|
| Division Safety Officer | 2822     | Michael Frederick | <a href="mailto:mfrederi@fnal.gov">mfrederi@fnal.gov</a> |
| Data Center Operations  | 85838454 | Steve Slowiak     | <a href="mailto:sslowiak@fnal.gov">sslowiak@fnal.gov</a> |

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Appendix A

**Computer Room Fire Safety Systems**

| <b>Emergency Systems</b>   | <b>FCC2</b>           | <b>FCC3</b> | <b>WH8W “Fiber Central”</b> | <b>GCC A, B, C &amp; Tape Robot Room (TRR)</b> | <b>GCC NRA NRB</b> |
|----------------------------|-----------------------|-------------|-----------------------------|------------------------------------------------|--------------------|
| Smoke detection            | Ceiling & below floor | Ceiling     | Ceiling & below floor       | Ceiling & below floor                          | Ceiling            |
| Fire Alarms and/or Strobes | Yes                   | Yes         | Yes                         | Yes                                            | Yes                |
| Suppression                | Yes* – manual halon   | No          | No                          | No*                                            | No                 |
| Sprinklers                 | Yes                   | Yes         | Yes                         | Yes                                            | Yes                |
| Emergency Power Off        | Yes                   | Yes         | Yes                         | Automatic & Manual                             | No                 |
| High Temp Shutdown         | No                    | No          | No                          | Yes, except TRR                                | No                 |
| Fire Rated Doors           | Yes                   | Yes         | Yes                         | Yes                                            | Yes                |
| Emergency Lights           | Yes                   | Yes         | Yes                         | Yes                                            | Yes                |

\* The tape robots in the FCC2 computer room and the GCC tape robot room each have an internal gaseous fire suppression system installed. Robot power is not removed in the event of an internal alarm.

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