

1. SCOPE

This SOP describes the procedure to be followed in the event of a fire in the 3T MRI facility.

2. PROCEDURES

a. Smoke Detection

- There are signs a potential fire is present before a fire occurs. Operators need to be aware of these signs to prevent injury to the volunteer/patient and other experimental support personnel in the magnet room and control room during a scan session. The four basic cases are outlined below.
 1. The first sign of a potential fire is often an irregular noise, e.g., a loud popping sound or a sudden stop of the gradients. It is imperative that the operator determines the cause of the noise before continuing with the scan.
 2. The second sign of a potential fire is often a subtle detection of odour.
 3. Another sign of potential fire is small amounts of smoke. There may not be enough smoke to set off the detector, so it is important to always be aware of the possibility of the presence of smoke. If anyone in the control or magnet room detects smoke, even if the smoke detector is not sounding, an emergency fire procedure must be followed.
 4. The final case is one in which the smoke detector has gone off and an alarm is sounding in the control and/or magnet room.
- In each of the above circumstances the operator must:
 - Abort the current acquisition.
 - Remove the volunteer/patient from the scanner
 - Investigate the source of irregular noise, odour or smoke.
 - If a fire is located within the immediate area, proceed below to the *Emergency Fire Procedure*.
 - Immediately notify the 3T MRI facility manager, or facility director.
- It is important to keep in mind that any smoke or odour caused by heat can contain chemicals that are harmful if inhaled. Limit your exposure by closing the magnet room door to prevent noxious fumes from spreading to the rest of the building.

b. Fire Alarm Procedure

- If the fire alarm sounds and a fire is detected within the immediate area of the 3T MRI facility, proceed below to the *Emergency Fire Procedure*.
- If the fire alarm sounds and no fire/smoke is detected within the immediate area of the 3T MRI facility, it is up to the operator to safely determine whether to abort the scan and evacuate.

- MR operators choosing not to evacuate the 3T MRI facility **MUST** notify the Western Emergency Dispatch Team by dialing 911.
- The MR operator will inform the Western Emergency Dispatch Team that a volunteer/patient, or animal in Room 2245B of the Robarts 2nd Floor 3T MRI facility is being scanned. The dispatch team will allow the procedure to continue if the area is safe. If the safety status of the area changes, the MR operator will be notified immediately.
- MR operators choosing to evacuate the 3T MRI facility must follow the guidelines set out in the Western Fire Safety Procedures ([UWO Fire Safety Procedures](#)).

c. Emergency Fire Procedure for Controllable Fires

- Remember to use common sense! There are three basic steps to follow:
 - Ensure your own safety.
 - Ensure the safety of the volunteer/patient in the magnet, and others in the facility.
 - Contain the fire if possible. If it is not possible to contain the fire, follow the procedures in Section C below: “*Emergency Fire Procedure for Uncontrollable Fires*”.



Figure 1.1 Magnet Room

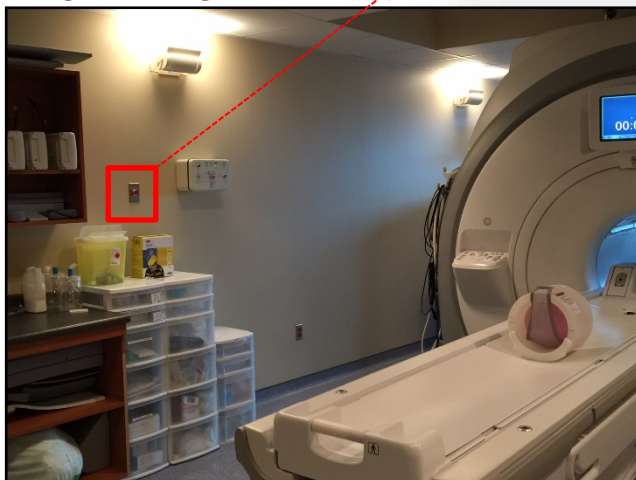


Figure 1.2 Equipment Room



- Shut off the electrical power to the magnet and cabinets in the equipment room by pressing one of the red “Emergency Off” buttons. Please note that this button does **NOT** quench the magnet.
 - There are two Emergency Off buttons located in the MRI suite. One can be found in the magnet room next to the quench button as shown in Figure 1.1. The other can be found just beyond the equipment room door on the wall to the right (Fig. 1.2).
- Remove the volunteer/patient from the magnet.
 - If it is safe to do so, unplug the coil cables.
 - Use the cradle release handle at the foot end of the bed by rotating it inward, and then pulling the cradle all the way out until it clicks into place (as shown in Fig 2.1 of the “*Emergency Code Blue Procedure*” SOP).
 - Put both side rails up on the bed.
 - Undock the bed using the pedals at the foot end.
 - Wheel the bed out of the magnet room.
 - If the volunteer/patient is not responding, not breathing and does not have a pulse, follow the procedures set out in 3T MRI SOP #205 *Emergency Code Blue Procedure*.
- Contain the fire.
 - If the fire is in the magnet room, use the MRI safe fire extinguisher labelled as **non-magnetic** which is located in the console area, just outside the magnet room door (Fig. 2.1). **DO NOT** use any other fire extinguisher inside the magnet room as it is likely to contain ferrous components.

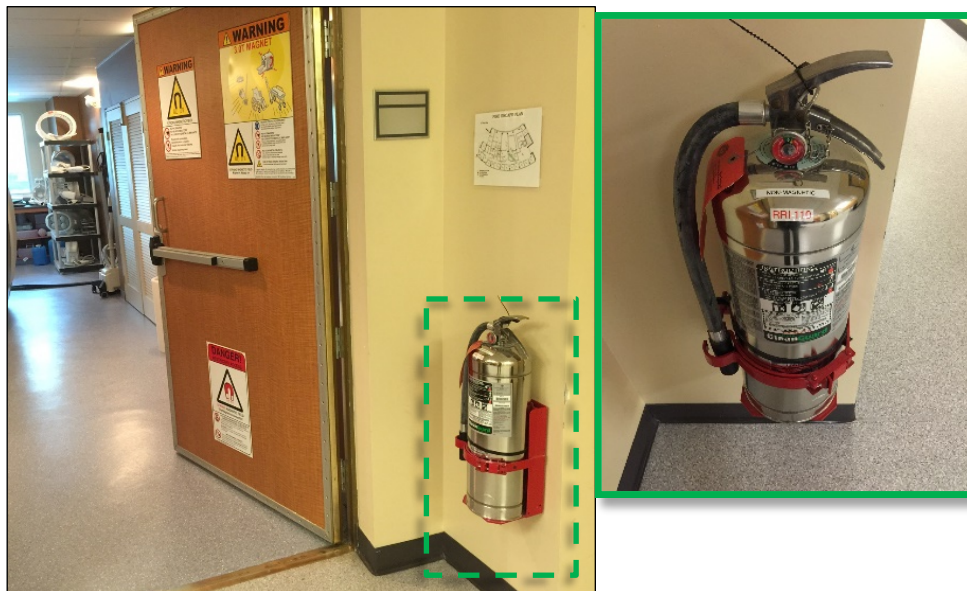


Figure 2.1 non-magnetic fire extinguisher

- If the fire is outside the magnet room, fire extinguishers can be found beside the door inside the equipment room (Fig. 2.2), and on the wall just outside the MRI suite door (Fig. 2.3). Note that these fire extinguishers are **NOT** MRI compatible. Do not use them within the magnet room.



Figure 2.2



Figure 2.3

- If it is not possible to contain the fire, follow the procedures in Section C: Emergency Fire Procedure for Uncontrollable Fires
- Close the magnet room door.
- Notify Western Emergency Dispatch by dialing **911** and explain there was a **small controllable fire that has been extinguished in the 3T MRI facility at Robarts on the 2nd Floor (Room 2245B)**.
- Notify the 3T MRI facility manager or facility director, and Robarts Security (ext. 24041) **immediately** following the incident. The facility staff must then file an appropriate Robarts incident report of the situation (Contact Ron Noseworthy).

d. Emergency Fire Procedure for Uncontrollable Fires

- Always remember to:
 - Ensure your own safety.
 - Ensure the safety of the volunteer/patient in the magnet.
- Shut off the electrical power to the magnet and cabinets in the equipment room by pressing one of the red “Emergency Off” buttons. Please note that this button does **NOT** quench the magnet.
- Remove the volunteer/patient from the scanner.
 - If it is safe to do so, unplug the coil cables.
 - Either use the keypad to advance the patient bed out of the scanner, or use the cradle release handle at the foot end of the bed by rotating it inward, and then pulling the cradle all the way out until it clicks into place.
 - Put both side rails up on the bed.
 - Undock the bed using the pedals at the foot end.
 - Wheel the bed out of the magnet room.
 - If the volunteer/patient is not responding, not breathing and does not have a pulse, follow the procedures set out in 3T MRI SOP #205 *Emergency Code Blue Procedure*.
- Close the magnet room door.
- If the fire is uncontrollable, and **INSIDE** the magnet room, and cannot be contained using the non-magnetic fire extinguisher: Find the closest fire exit and evacuate the building.
 - Pull fire alarm on route to fire exit (pull stations labelled in section F).
- Meet the fire department at the 2nd floor security entrance to Robarts.
 - Explain the details of the incident including the specific location of the fire.
 - If the fire is **INSIDE** the magnet room the firefighters must be informed that the magnet is still at field. The fire department must **NOT** enter the magnet room with their equipment donned; doing so could cause serious injury to themselves or anyone near the magnet at that time.
- Notify the 3T MRI facility manager or facility director, and Robart’s security (ext. 24041) **immediately** following the incident. The facility staff must then file an appropriate Robarts incident report of the situation.

e. Robarts Research Institute Accident/Incident Investigation Report

- This form can be accessed [here](#)
- Paper copies are available at the back of section 8 of the 3T MRI SOP binder

f. Map of Fire Exits, MRI Safety Zones, and Emergency Pull Stations on 2nd Floor

