York MRI Facility

Standard Operating Procedure #63-01

Oxygen Sensor Alarm Response

1. Introduction

1.1. Research involving Magnetic Resonance Imaging (MRI) at high magnetic field strengths present unique hazards to both research subjects and individuals working within and around the MRI system. Consequently, the potential for serious personal injury is present due to the sheer size and strength of the static magnetic field along with the flexibility of the research system and associated peripheral hardware.

1.2. The static magnetic field in the York MRI Facility is always present. It is important that all those entering the facility be aware of the presence of the field, as it cannot be detected in any way, i.e. magnetic fields cannot be felt, seen or smelled. Ferromagnetic objects brought into the magnet room could quickly become dangerous projectiles, and the magnetic field can also interfere with the operation of certain medical implants.

1.3. Working within and around the high field MRI requires in depth training on safety and Standard Operating Procedures, and documented proof of other necessary training. See SOP #30-02 “Safety Training Procedures”.

1.4. As a result of the potential for serious injury, access to the York MRI Facility is restricted, and requires permission. See SOP #10-02 “Restricted Access Policy”.

2. Oxygen Sensor Monitoring Panel

2.1. There is an oxygen sensor present in the magnet room just below the filter panel cabinet. This sensor is connected to an alarm box in the equipment room, and to a monitoring panel in the control room. The monitoring panel in the control room is located on the wall to the right of the operator console.

2.2. The monitoring panel contains:

2.2.1. A green light indicating normal levels of oxygen in the magnet room.
2.2.2. A red light indicating low levels of oxygen in the magnet room.
2.2.3. An acknowledge button located on the bottom of the panel, labeled “ACK”.

2.3. Under normal conditions the green light will be illuminated.

2.4. If there are low levels of oxygen in the magnet room the red light will be illuminated and an audible alarm will sound.

3. Oxygen Sensor Error State

3.1. The oxygen sensor is in an error state, if the green light is NOT illuminated and it is not in an alarm state, i.e. there are no lights illuminated on the panel.

3.2. If the oxygen sensor is in an error state, immediately call the York University Work Control Centre (PRB Dispatch) at Ext. 22401. Inform them that an emergency repair is

required on the oxygen sensor in the MRI suite at Sherman Health Science Research Centre, Room 1009.

3.3. Notify the Facility Director or Safety Officer regarding the incident.

4. Oxygen Sensor Alarm Procedure

4.1. Oxygen levels in the magnet room could decrease as the result of an improperly vented quench. Helium levels will saturate the air, and will cause the oxygen sensor to go into an alarm mode. If the red light on the oxygen sensor monitoring panel is red and the alarm is sounding, follow the steps below.

4.2. Immediately turn ON the “Magnet Room Exhaust Fan” located to the left of the oxygen sensor monitoring panel. This engages a roof top ventilation fan that will draw the air out of the magnet room.

4.3. Evacuate the magnet room.

4.4. If any individual is not responding, not breathing and has no pulse, follow the procedure outlined in SOP #40-02 “Medical Emergency Procedure”.

4.5. Once the magnet room has been evacuated, close the magnet room door.

4.6. Notify the Facility Director or Safety Officer and York Security Ext. 33333, immediately following the incident.