Western Centre for Functional and Metabolic Mapping

9.4T MRI FACILITY
SOP#315-04 MRI SYSTEM SHUTDOWN

1. INTRODUCTION

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

1.2 There exist dangerous and potentially lethal levels of electricity in the 9.4T MRI system. As such, it is important that all individuals working around the MRI system be aware of the dangers and safety issues concerning electricity. Current carrying cables, connections and junction points in the vicinity of the main magnetic field are particularly susceptible to damage due to the extreme Lorentz forces created through the normal operation of the system. Periodically, the effects of prolonged mechanical fatigue will result in breakage causing electrical arching, sparking and high heat levels before the system can shut down. There is therefore a high potential for personal injury and the possibility of a fire being ignited.

1.3 Equipment in the 9.4T MRI Facility is sensitive to the order used in powering the system up and down. If the proper procedures are not followed, the equipment may be damaged. Only qualified operators are to perform the following procedure.

1.4 Training is required before any procedure involving the MRI equipment is attempted. See SOP#200 "Safety and Training of Personnel".

2. SHUTDOWN PROCEDURE

2.1 If you are unsure of any of the steps in the following procedure, DO NOT CONTINUE. Immediately contact the Head Technician or the Facility Manager.

2.2 To turn OFF the MRI instrument from the system control panel (BRUKER SYSTEM PWR), perform the following steps:

2.2.1 First switch the MR instrument into the STANDBY mode, press the STAND-BY button (middle) and wait until the flashlight has turned into a permanent **orange** light. The instrument is now in the STAND-BY mode.
2.2.2 Turn the rotary switch (bottom) at the system control panel into the OFF position.
2.2.3 Power down the liner power distribution unit (located on the wall).
2.2.4 Put the Heavy Duty Safety switch in the OFF position (located on the wall).
2.2.5 Close the water flow on the chiller and power off the chiller.

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