



STATIC MAGNETIC FIELD (0 Hz) SAFETY

The safety controls below apply to areas on the UC Irvine campus where high intensity direct current (dc; steady-state; 0 Hertz) magnetic fields exist. These controls are based on exposure guidelines developed by the International Commission for Non-ionizing Radiation Protection (ICNIRP), which are summarized on page 2. *Note: 1 Tesla (T) = 10,000 Gauss (G).*

- ❖ Only authorized personnel may be allowed into areas where high-intensity magnetic fields (HIMFs) exceed 100 mT (1,000 G). Further, such authorized personnel shall be carefully screened before beginning work that exposes them to very high magnetic fields.
- ❖ Magnetic fields can interfere with the body's sense of time when day and night cues are absent. Therefore, personnel should not work more than 12 hours per shift in areas where fields exceed 100 mT.
- ❖ **Caution signs must be posted in areas where magnetic field strengths could exceed 0.5 mT (5 G), warning people with *heart pacemakers* or other medical electronic implants to keep out of the area, and warning individuals with magnetizable implants to check with EH&S or the facility supervisor before entering the area.**
- ❖ People with metallic medical implants shall be kept out of areas where field strengths exceed 3 mT (30 G).
- ❖ Areas where magnetic fields exceed 3 mT shall be surveyed to determine where potential mechanical hazards exist. A string of metal paper clips fastened to each other can be used to locate areas where strong attractive forces exist.
- ❖ Areas where potential mechanical hazards exist must be identified and prominently labeled; **metal tools, compressed-gas cylinders, and other articles made of magnetically permeable material must be kept out of such areas.**
- ❖ Danger signs warning people about tool hazards normally must be posted in areas where fields exceed 3 mT. Danger signs that warn about potential tool hazards and the access rules for authorized personnel must be posted in areas where fields exceed 2 T (20 kG). These signs shall also be posted where static magnetic fields exceed 4 T (40 kG), warning people to stay out of the area and of possible headaches caused by prolonged exposure to that high of a field.

EXPOSURE GUIDELINES FOR STATIC MAGNETIC FIELDS

<u>Frequency</u>	<u>Exposure Group</u>	<u>Exposure Duration</u>	<u>Exposed Part of Body</u>	<u>Magnetic (mT)</u>	<u>Reference</u>
Static	Occupational	Shift	All	200	ICNIRP 1994
Static	Occupational	Ceiling	All	2000	"
Static	Occupational	Ceiling	Limbs	5000	"
Static	Public	24 hr/day	All	40	ICNIRP 1990

Shift = 8 hour exposure per day.

Ceiling = Maximum exposure allowed at any time.

Static magnetic field means 0 Hz.

Note: Exposures to higher fields in special facilities are allowed if access controlled and occupational exposure limits are not exceeded.

If you have any questions regarding high static magnetic fields, please contact Rick Mannix of EH&S at 949-824-6098 or rcmannix@uci.edu.