Managing Exposure to Electromagnetic Fields (EMFs)

Information for Employers and Duty Holders

What Are They?

Electromagnetic fields (EMFs) are invisible electric and magnetic fields created wherever electricity is generated, transmitted or used. They occur naturally, such as the Earth's magnetic field, but are also produced by many types of workplace equipment and industrial processes.

EMFs cover a broad range of frequencies, from static electric and magnetic fields through extremely low frequency fields associated with electrical power systems, to radiofrequency fields used for communications and industrial heating.

Occupational legislation primarily addresses the short-term, direct effects of EMFs, including nerve and muscle stimulation, tissue heating, vertigo, and indirect effects such as interference with active implanted medical devices. It does not address potential long-term health effects.

Common Workplace Sources

Workers may be exposed to EMFs when working with or near equipment that generates strong electric, magnetic or electromagnetic fields. Common workplace sources include:

- Resistance welders
- Induction heaters and furnaces
- High-current electrical systems
- Transformers and switchgear
- MRI scanners
- RF plastic welders and drying equipment
- Radio and mobile transmitters
- Large motors, generators and power supplies

Although many everyday electrical devices produce EMFs, most present very low levels of exposure. Occupational assessments generally focus on equipment capable of producing elevated field strengths or where workers may routinely work close to the source.

Control and Management

The Control of Electromagnetic Fields at Work Regulations 2016 (CEMFAW) require employers to assess risks where employees may be exposed above the relevant Action Levels (ALs) or Exposure Limit Values (ELVs).
Employers should:

- Identify workplace sources of EMFs
- Assess whether significant exposure is likely Consider employees at particular risk (see below)
- Eliminate or reduce exposure so far as is reasonably practicable through engineering controls, safe systems of work and access restrictions where necessary
- Provide suitable information, instruction and training
- Review assessments whenever work activities or equipment change

Many workplaces will not require detailed measurements. A competent assessment can often determine whether exposures are likely to remain below the Action Levels. Where uncertainty exists, specialist measurements or calculations may be required.

Persons at Particular Risk

Some individuals may be more susceptible to the effects of EMFs than the general workforce. This includes workers with active implanted medical devices (e.g. pacemakers or implantable defibrillators), passive implants containing metal, body-worn medical devices, and pregnant workers. These individuals should receive specific consideration as part of the EMF risk assessment.

Pragma and Associates' Occupational Hygiene Team can help to determine if you are compliant and protecting your staff adequately

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