

Generic Risk Assessment:

Risk Assessment Title: Electromagnetic Fields (EMF)		Date Reviewed: June 2023	Review Date: June 2026
<b>Overview/Description of Activity:</b> Assessment of the potential exposure of persons to Electromagnetic Fields during work activities at the University of Bath. This assessment only covers hazards associated with EMF exposure; other incidental hazards associated with the operations covered should be included in the specific assessment for the task.		<b>Duration/Frequency of Activity:</b> Activities can vary in duration and length depending on the type of work being carried out. This assessment applies for short term and long term work of any frequency.	
<b>Location of Activity:</b> University of Bath premises		<b>Generic or Specific Assessment:</b> Generic Assessment	

#	Hazard(s) identified	Who might be affected and how	Existing controls & measures	Severity (a)	Likelihood (b)	Risk Rating (a x b)	Additional control/action required
1	Exposure to EMF in range 0-1 Hz, e.g. Nuclear Magnetic Resonance (NMR) spectrometers, MRI scanners.	Persons subject to scans, those carrying out the work activity and in operational area.  Direct effects may include micro-shocks, nausea, vertigo, metallic taste in the mouth, flickering sensations (magnetophosphenes) in peripheral vision.  Indirect effects such as uncontrolled attraction of ferromagnetic objects with risk of physical injury.	<ul style="list-style-type: none"> <li>• Equipment manufactured in accordance with requirements of PUWER and Machinery Directive 2006/42/EC (CE marked)</li> <li>• Equipment operated by trained, competent persons in accordance with manufacturer's instructions</li> <li>• Equipment maintained in accordance with manufacturer's instructions</li> <li>• Local operating instructions and risk assessments in place</li> <li>• Access control, warning signs and floor markings where required</li> <li>• Appropriate PPE provided and worn, e.g., insulating shoes, gloves and protective clothing</li> </ul>	2	2	4	

#	Hazard(s) identified	Who might be affected and how	Existing controls & measures	Severity (a)	Likelihood (b)	Risk Rating (a x b)	Additional control/action required
2	Exposure to EMF in range 1Hz-10MHz, e.g., Use of electric hand held tools	Persons carrying out the work activity.  Experience nausea, vertigo, metallic taste, flickering sensations, nerve stimulation, tingling, muscle contraction, heart arrhythmia. Possible shocks/burns from contact currents.	<ul style="list-style-type: none"> <li>• Equipment manufactured in accordance with requirements of PUWER and Machinery Directive 2006/42/EC (CE marked)</li> <li>• Equipment operated by trained, competent persons in accordance with manufacturer's instructions</li> <li>• Equipment maintained in accordance with manufacturer's instructions</li> <li>• Local operating instructions and risk assessments in place</li> <li>• Appropriate PPE provided and worn, e.g. insulating shoes, gloves and protective clothing</li> <li>• Electric hand held tools defined as being below Exposure Levels (<a href="#">HSG281</a>)</li> </ul>	2	2	4	

#	Hazard(s) identified	Who might be affected and how	Existing controls & measures	Severity (a)	Likelihood (b)	Risk Rating (a x b)	Additional control/action required
3	Exposure to EMF in range 1Hz-10MHz, e.g. welding (spot and arc)	Persons carrying out the work activity. Main hazard from magnetic fields.  Experience nausea, vertigo, metallic taste, flickering sensations, nerve stimulation, tingling, muscle contraction, heart arrhythmia. Possible skin burns.	<ul style="list-style-type: none"> <li>• Equipment manufactured in accordance with requirements of PUWER and Machinery Directive 2006/42/EC (CE marked)</li> <li>• Equipment operated by trained, competent persons in accordance with manufacturer's instructions</li> <li>• Equipment maintained in accordance with manufacturer's instructions</li> <li>• Local operating instructions and risk assessments in place</li> <li>• Minimise duration of work and proximity to magnetic field (electrodes)</li> <li>• Appropriate PPE provided and worn, e.g., welding visor with filter shade or goggles with correct level of protection, flame retardant clothing and gloves</li> <li>• Warning signs, barriers and restriction of access to work area where necessary</li> </ul>	3	2	6	

#	Hazard(s) identified	Who might be affected and how	Existing controls & measures	Severity (a)	Likelihood (b)	Risk Rating (a x b)	Additional control/action required
4	Exposure to radio frequency (RF) sources, such as mobile phone base stations and other radio transmitters in the environment. University has base stations on buildings leased to companies.	Employees, students, contractors, members of the public	<ul style="list-style-type: none"> <li>Design of base stations comply with the ICNRP exposure guidelines. Documentation has been provided by mast operators to demonstrate this.</li> <li>HSG281 Table 2 identifies base station antennas outside operator's designated exclusion zone as being sources which will not exceed the indirect-effect action levels.</li> <li>Base stations are located on building roofs, a significant distance from persons generally on campus.</li> <li>Occupational and public exposure zones have been identified by the Mast Operator. These do not impact generally accessible areas of the campus.</li> <li>Access is restricted to roofs; risk assessment and permit required</li> <li>Exclusion zones in place on roofs, if work required within exclusion zones permission is required from owner (initiating shutdown of base station) before access is provided to the roof area.</li> </ul>	1	1	1	

#	Hazard(s) identified	Who might be affected and how	Existing controls & measures	Severity (a)	Likelihood (b)	Risk Rating (a x b)	Additional control/action required
5	Persons using general office /household type electrical equipment, e.g., computers, AV equipment, mobile phones, lighting, room heaters, microwave ovens, toasters etc.	Exposure to very low levels of EMF to person/s using equipment	<ul style="list-style-type: none"> <li>This type of equipment is determined to be below action levels and so risk is within acceptable levels and no further control is required.</li> </ul>	1	1	1	
6	Exposure of “persons at particular risk”, e.g. Persons with implanted medical devices, body worn medical devices and pregnant workers	Persons may be more susceptible to effects of exposure to EMF as stated above.	<ul style="list-style-type: none"> <li>A specific risk assessment must be carried out for workers who have declared such a condition.</li> </ul>	3	2	6	