

MOBILE PHONE AERIAL TRANSMITTERS



Cellular mobile phones transmit electromagnetic signals in the form of microwaves. In use, cellular phones and base stations produce electromagnetic fields (EMFs), as do most everyday electrical items such as microwave ovens and computer monitors.

Health and Safety Reps may be approached by members concerned about the installation of microwave aerials on the roof of buildings. These aerials are usually base transmitters for mobile telephone networks.

Cellular mobile phones transmit electromagnetic signals in the form of microwaves. In use, cellular phones and base stations produce electromagnetic fields (EMFs), as do most everyday electrical items such as microwave ovens and computer monitors. Mobile phones have a very limited range. In order to give national coverage, mobile phone companies have established a network of "Cells" each of which are served by a base station which relays mobile phone signals from one "Cell" to another. This is done in the form of electromagnetic radiation (EMR).

The aerials are normally sited on tall buildings to cover the widest area possible. This has meant that many public sector employers have been approached with financial inducements for the siting of aerials on, or near, their premises. This has been a particular problem within schools and colleges. At present local authorities are often powerless to prevent the erection of these masts since planning permission is not required.

HEALTH RISKS

As anyone with a microwave oven knows, micro-

waves have a heating effect on substances containing water. Microwaves transmitted from base station aerials will only have this effect on a person who is extremely close to the aerial while it is transmitting or receiving. There are strict guidelines giving restrictions on the levels of absorption so that any direct biological effects on the body due to heating are avoided.

Mobile phone operators must assess the strength and variation of radio waves in the space around the antennae and exclude people from any area where the exposure levels might exceed the exposure guidelines established by the National Radiological Protection Board (NRPB). In 1998 the International Commission on Non-Ionizing Radiation Protection (ICNIRP) recommended reducing the EMF exposure limits for the public. The NRPB claimed that there was a lack of scientific evidence to support this, and that the current limits were sufficient.

In June 2000 the NRPB published a study into the effects of EMR from base station aerials. They carried out 118 tests at 17 sites. These tests confirmed that the radiation levels were well below national and international guidelines. They also found in one case more radiation was being absorbed in a classroom from a mast over 300 metres away than from one on the roof of the classroom.

The NRPB insists that there is no persuasive evidence to indicate that there is any risk from the very weak levels of EMR produced from base station aerials. However, there is still concern over whether even small exposures can cause cancer. In December 2000 the Radio Communications Agency announced it was to carry out an audit of base stations, focusing particularly on those sited close to schools.

However the masts from third generation "3G" masts may pose a greater hazard. These operate at a higher frequency than those for traditional mobiles. A Dutch study published in October 2003 concluded that exposure to radiation from 3G masts could lead to nausea, headaches and tingling. No such symptoms were experienced by those exposed to emissions from traditional base stations. The mobile phone manufacturers and the NRPB have both said that more research is needed and that those living beside 3G masts "should not be worried" UNISON believes that the installation of any further 3G masts should be delayed until such research has taken place.

Whilst there remains a lack of consensus among the experts about whether and at what levels electric magnetic fields and electromagnetic radiation can affect humans, there are many who believe that a precautionary approach should be adopted. And this is the key issue for UNISON members. Should their health be put at potential risk by waiting for proof of harm beyond all reasonable doubt, before preventative action is taken; or should action be taken as a precaution before any conclusive evidence is found to prevent any potential harm?

The Local Government Association (LGA) represents all local authorities in England and Wales. It believes that the NRPB's approach is unacceptable. It notes that the NRPB states simply that it believes that "there is no convincing evidence" and not that there is no evidence. The LGA also points out that there are

conflicting views about the scientific evidence available and about how convincing it is.

A government report into mobile phones, published in May 2000, also looked at the issue of masts. It reported that there was no conclusive evidence either way although it did accept that anxiety about possible dangers from the transmitters could affect well-being. The report also called for such masts to be subject to planning restrictions and for an ombudsman to resolve disputes about siting. The government is currently considering the report.

It is possible that EMFs and EMR at the current levels are harmless, but they may not be. The question is whether we wait for overwhelmingly convincing proof, by which time many people may have been harmed or whether we take precautionary preventative steps now.

OTHER ISSUES FOR SAFETY REPS

It is not only the question of the possible effect from radiation that will concern safety reps. There are three other safety concerns.

The first is whether the building has had a proper structural survey to see if it is capable of taking the weight of the aerial. This is essential and must include the effect of wind resistance on the aerial to make sure that it will be able to stand up to severe gales.

In addition, there are the security implications of an outside contractor requiring 24 hour access for maintenance. What effect will this have on the issue of security and caretaking staff?

Finally, and this is particularly an issue in schools, will security arrangements be sufficient to ensure that children will be unable to gain access to the mast.

Safety reps. will wish to make sure that all these matters have been fully addressed before the installation of a base station aerial in, or near, their workplace is



agreed.

Most research has been into the effect of mobile phones and UNISON has produced a separate information sheet on these.

