

GSM-R Project

Working safely near to GSM-R
installations

9th July 2012

Installations

- The GSM-R project is installing a new driver to signaller communication system
- This will replace the current NRN, SMA and CSR radio systems currently in use
- The GSM-R system uses standard GSM equipment with some additional features added for railway use
- This will comprise (when complete) approx:
 - 2400 base-station sites with heights between 15m and 29m (50 – 100ft)
 - 350 repeater sites covering tunnels, cuttings and other areas not covered from the base-station sites

Safety Assessment

- All of the GSM-R installation types were subjected to a rigorous safety assessment.
- The designs for each of the site types were reviewed & approved by an Infrastructure System Review Panel (ISRP).
- The signage now applied to every site and the briefing you recently attended were recommendations of ISRP.
- The safe limits for staff, passengers and members of the public are based on internationally recognised standards defined by the International Commission on Non Ionising Radiation Protection (ICNIRP). More info at www.icnirp.org
- ICNIRP limits are used by UK Public Mobile Network Operators (O2, Vodafone etc) & in many countries worldwide.

Safety Assessment

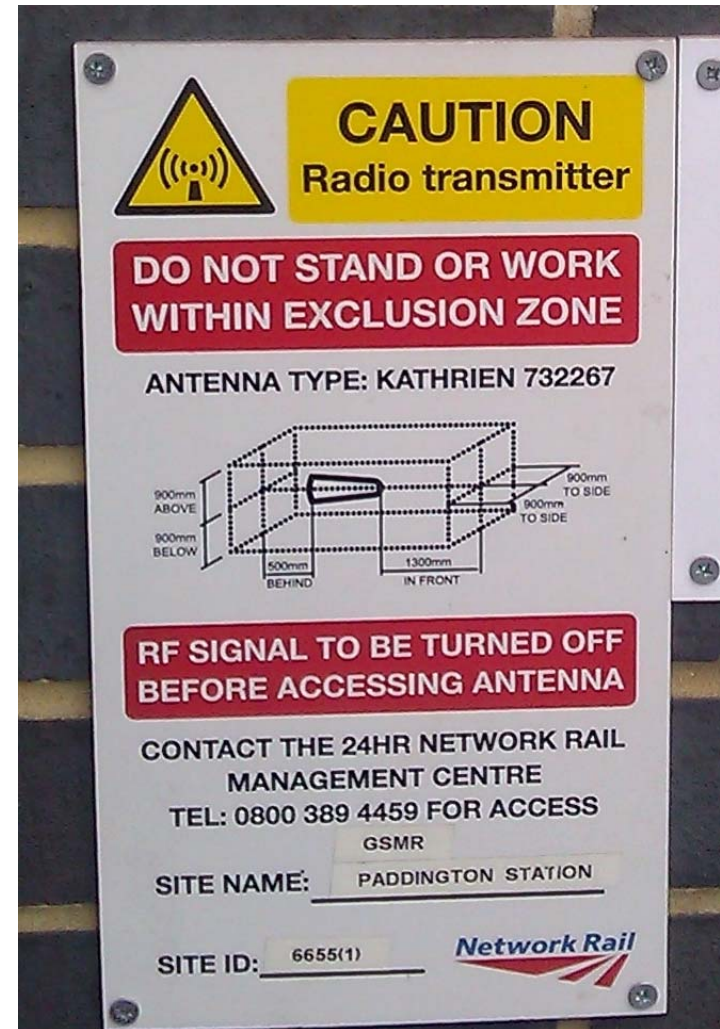
- The Radio Frequency (RF) field strength around each antenna installation is based on:
 - the type of transmitter equipment (Base-station or repeater)
 - the type(s) and number of antenna(s)
- Use of a standard mobile phone presents a higher exposure than standing at the limit of an exclusion zone.
- With a typical exclusion zone, a hazard is only present when working at height.
 - Eg. For a 5m (16ft) pole installation, the exclusion zone only extends 0.9m (3ft) below the antenna so it is safe to walk under.

Safe System of Work

- All GSM-R repeater installations are fitted with a sign in an easily and safely accessible position.

• This describes the **exclusion zone** that **should not** be entered without the equipment having being isolated first.

- These exclusion zones are not large. Generally, these cannot be entered by walking up to a site.
- All of these sites are being added to the hazard directory.



Safe System of Work

- The safe steps to work within an exclusion zone are:
 - Identify if the work will require the exclusion zone to be entered.
 - If it does, contact the Stoke TEC on 0800 389 4459 to arrange for the equipment to be isolated.
 - If the route you are working on has gone live for GSM-R use (the TEC can advise), the appropriate RCE will need be contacted to approve an outage under the Telecoms Disconnection process (NR/L3/TEL/0092).
 - Approval of a **design** that will place new equipment adjacent to a GSM-R antenna **should not** be taken as approval to go ahead with the work. The above process must still be followed.

Safe System of Work

- Complete the work.
- Contact the Stoke TEC to have the GSM-R service restored.
- If in any doubt, please **stop** and invoke the work-safe procedure.