A quick overview of EME (Electromagnetic Emission) on BAI Communications sites

Radiofrequency (RF) Electromagnetic Emission (EME) is the transfer of energy by radio waves. RF EME lies in the frequency range between 100 kilohertz (kHz) to 300 gigahertz (GHz) and is non-ionising radiation, meaning that it has insufficient energy to break chemical bonds or remove electrons (ionisation). Exposure to sufficiently high levels of RF EME can heat biological tissue and potentially cause tissue damage but the amount of environmental RF EME routinely encountered by the general public is too low to produce significant heating or increased body temperature.

The ARPANSA standard: Standard for Limiting Exposure to Radiofrequency Fields – 100 kHz to 300 GHz (RPS-S1) sets limits for human exposure to RF EME. The Standard also includes requirements for protection of the general public and the management of risk in occupational exposure. The way we manage these risks on BAI Communications sites is via the **Radio Frequency Hazard Control Document (RFHCD**) and in conjunction with applicable Telecommunications Carrier EME Guides.

As a FIM or contractor that works on our broadcast site(s) it is important that you understand the areas that are safe to work in and where a power reduction or total outage would be required to safely enter certain areas. This guide will provide you with the basic information as to where to find the RFHCD and how to read the drawings contained at the end of these documents.

If you need assistance or have any questions relating to EME on our sites, please contact your local BAI Communications office or initiate enquiries to eme@baicommunications.comIf the site is owned by BAI Communications, then the management of EME is our responsibility and there will be a RFHCD available in our site access platform Appian. To find this document select the specific site page and then select the **Site Safety Info** tab followed by the **Documents** tab. There is a section called **EME Management** and this will contain the RFHCD. If the site is not owned by BAI, then the RF Control Document must be provided by the site owner / manager. Access to any Telco EME Guides is located under the **INFO** tab then select **RFNSA Details** which will provide an associated redirection notice to the applicable site on the **Radiofrequency National Site Archive (RFNSA).**

If the site is broadcasting Television and/or FM radio, the EME exclusion areas will most likely only be around the antennas on the structure(s). If the site is broadcasting AM radio, then the whole structure/s will be radiating and there will be fenced exclusion zones at ground level.

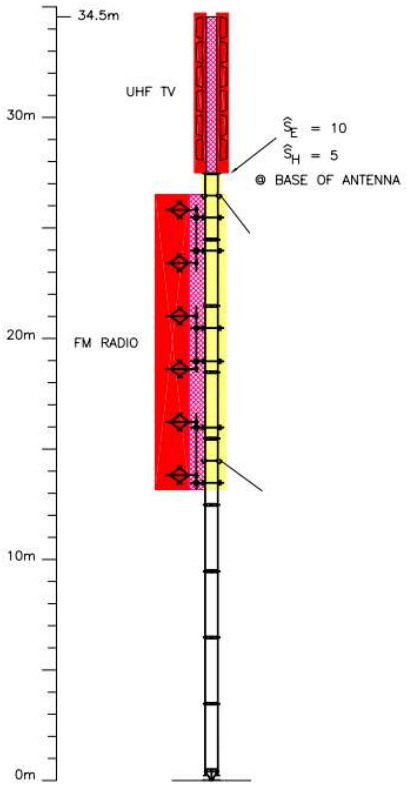
The different colours on the EME drawings show the levels of EME at each location which in turn allows us to determine what we have to do to make an area safe to enter.

A Yellow zone means that this area is only to be entered by people that have had RF EME Awareness training and this could have been via a formal course or could have been during a site-specific induction at the site by BAI staff.

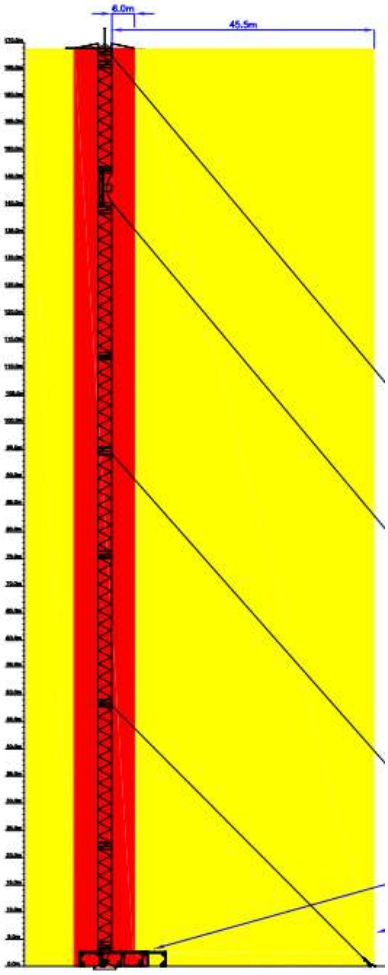
A Red Cross Hatch zone means that an RF suit must be worn to enter that area and can only be performed by someone that has completed formal RF Awareness and RF Protection Suit training.

A Red zone is not to be entered by anyone as they contain EME that is above the limits of the ARPANSA standard and / or there is a RF shock or burn hazard. To enter these areas the transmitter(s) output power must either be reduced or turned off. Work in these areas must only be conducted by someone that has completed formal RF Awareness training.

The following are examples of what you would typically see in a BAI Communications report.



Here is an example of a TV / FM broadcast structure showing red, crosshatch and yellow zones. All of the EME is on the structure and the rest of the site has no eme exclusion areas.



To the left is an example of an AM broadcast structure elevation view showing red and yellow zones. As you can see the whole structure is a red zone when operational.

The plan view below shows that the red zone is within the fenced area, but the yellow zone extends beyond the ACU compound fence.