Ofcom Consultation – EMF Emissions

Proposed measures to require compliance with International guidelines for limiting exposure to electromagnetic fields (EMF)

Executive Summary

JRC and its Members welcome the opportunity to respond to this further consultation on proposed measures to limit exposure to electromagnetic fields generated by a wide range of wireless telecommunications equipment. We are keen to ensure that members of the public are adequately protected from electromagnetic fields in line with international guidelines whilst simultaneously making sure that the UK as a whole benefits from the significant advantages brought about by the use of wireless technology.

JRC, representing the UK energy utility sector, has provided input to Ofcom to ensure that the approach that requires compliance with the relevant international guidelines is as appropriate and efficient as practicable whilst at the same time avoids an unnecessary regulatory burden for JRC Members and the UK wireless sector in general.

In light of Ofcom's latest proposals JRC makes the below observations which are further elaborated in our submission;

- JRC supports Ofcom's approach and specifically JRC welcomes the proposed technical exemption criteria proposed which will in many instances remove co-ordination obligations on system operators on shared sites;
- Where the technical exemptions do not apply and operators on shared sites are required to co-ordinate to demonstrate compliance, we encourage Ofcom to provide greater guidance as to how the co-ordination process could be administered by operators;
- JRC agrees that Ofcom's 'Guidance on EMF Compliance and Enforcement' is helpful in simplifying calculations and avoiding unnecessary complexity
- JRC has tested the trial version of Ofcom's EMF calculator and confirm that it produces consistent results albeit we seek a clarification as to whether it is intentionally set-up to produce a 'worst case' output, i.e. includes ground reflection as part of the calculation. We also encourage Ofcom to update the calculator to incorporate the latest ICNIRP 2020 guidance.

Background

Joint Radio Company Ltd is a wholly owned joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries used to support operational, safety and emergency communications.

JRC manages blocks of VHF and UHF spectrum for Private Business Radio applications, telemetry, telecontrol services and network operations. JRC created and manages a national cellular plan for co-ordinating frequency assignments for several large radio networks in the UK.

The VHF and UHF frequency allocations managed by JRC support telecommunications networks to keep the electricity and gas industries in touch with their field assets and engineers. These networks provide comprehensive geographical coverage to support installation, maintenance and repair of plant in all weather conditions on 24 hour/365 days per year basis.

JRC's Scanning Telemetry Service is used by radio based Supervisory Control And Data Acquisition (SCADA) networks which control and monitor safety critical gas and electricity industry plant and equipment throughout the country. These networks provide resilient and reliable communications at all times to unmanned sites and plant in remote locations to maintain the integrity of the UK's energy generation, transmission and distribution.

JRC supports the European Utility Telecommunications Council's Radio Spectrum Group and participates in other global utility telecom organisations. JRC participates in European Telecommunications Standards Institute (ETSI) working groups developing new radio standards, and European telecommunications regulatory groups and workshops.

JRC also manages microwave fixed link and satellite licences on behalf of the utility sector.

JRC works with the Energy Networks Association's Future Energy Networks Groups assessing ICT implications of Smart Networks, Smart Grids & Smart Meters and is an acknowledged knowledge source for cyber-security in respect of radio networks.

JRC's Response to Questions

Question 1: Please provide feedback on the additions, amendments and clarifications we have made to the wording of the licence condition to implement our decisions on the scope of the licence condition in our October 2020 Statement, giving reasons for your response.

Confidential? No.

JRC has no specific comments on the wording of the licence condition as currently drafted and in light of the feedback provided here-in anticipate that further enhancements may be warranted before the text is finalised.

JRC welcomes the proposed exemptions as they apply to shared sites. The proposal to limit the requirement for co-ordination on shared sites to those operators with systems generating an EIRP of greater than 100 Watts is an acceptable and sensible compromise. Furthermore, the exemption to systems operating with antennas having a gain of greater than 29 dBi will also have the effect of exempting the majority of fixed point to point microwave links from the co-ordination process at shared locations.

JRC interprets the proposed regulations and exemptions as follows;

(a) An internal exercise should be carried out by operators to identify systems of less than 10 Watts EIRP and discount them from further consideration;
(b) When systems operate at greater than 10 W EIRP operators need to demonstrate compliance to ICNIRP 2020 for safe emissions with regard to the General Public;
(c) When systems operate at greater than 10 W EIRP on shared sites and are subject to the technical exemptions proposed then these systems will not be subject to co-ordination with other systems and operators need only demonstrate compliance of the individual system to ICNIRP 2020 for safe emissions with regard to the General Public.
(d) When systems operate at greater than 10 W EIRP on shared sites and are not subject to the technical exemptions these systems will be required to co-ordinate the EMF emissions calculation to demonstrate compliance to the updated regulatory regime.

Perhaps Ofcom could establish a flow diagram to depict the process steps to make it more accessible and remove the risk of any ambiguity.

Subject to the above interpretation being correct JRC are supportive of the Ofcom approach and believe that the exemptions being proposed are pragmatic and proportionate.

Non-exempt systems on Shared Sites

JRC welcomes additional clarification to describe the mechanism by which operators on shared sites of equipment which is not covered by one of the technical exemptions would be able to identify similar 'non-exempt' operators with whom they would need to co-ordinate. Without a register of all 'non-exempt' operators at a shared site, those operators would have little knowledge of the power levels of other active systems at that location. This could lead to a large (avoidable) number of enquiries to multiple operators at shared sites. Without such a centralised register, the process of identifying 'non-exempt' systems could become unnecessarily complex and may lead to regulatory uncertainty / risk of regulatory failure.

One approach that Ofcom may consider in terms of addressing this potential co-ordination risk is to designate the highest power operator on a shared site (not subject to a technical exemption), as the responsible party for co-ordinating and demonstrating compliance to the ICNIRP 2020 emissions for General Public exposure.

Question 2: Please provide feedback on the additions and clarifications to our 'Guidance on EMF Compliance and Enforcement', giving reasons for your response.

Confidential? No.

Ofcom's clarification that licensees may make a simple calculation in order to confirm ICNIRP Compliance is a positive step. This confirmation provides a degree of confidence to all operators that in the majority of scenarios they may undertake their own straightforward calculations without the need to resort to complex software modelling packages or external consultants.

The latest consultation document contains a graph ('Figure 5.1 'typical separation distances') which provides a straightforward way of assessing ICNIRP 1998 Guidelines safe distances. JRC notes that there is now a more recent set of ICNIRP Guidelines 2020. It would be helpful if Ofcom could provide an updated version based on the ICNIRP 2020 Guidelines.

Question 3: Please provide feedback on the trial version of our EMF calculator, giving reasons for your response.

Confidential? No.

JRC have tested the trial EMF calculator and generally this tool is providing consistent outputs. However, the Trial EMF Calculator does appear to 'over predict' safe distance. JRC anticipate that this may result from the trial EMF calculator assuming a 'worse case' scenario where an antenna is directed towards the ground.

JRC encourages Ofcom to clarify whether the Trial EMF Calculator is designed to more accurately reflect the emissions of systems whose radiated emissions are designed to be directed towards the ground / general public (cellular / MNO) rather than systems that transmit towards the horizon.