

SUMMARY STATEMENT OF CRAIG MORLEY ON BEHALF OF STEWART FAMILY ASSETS LIMITED

Qualifications and Experience

1. I hold two New Zealand certificates in Engineering (NZCE) from Central Institute of Technology (CIT) - NZCE – Telecommunications, and NZCE– Electronics & Computer Technology. I also attended Massey University for a Bachelor of Engineering, BE (Electronics and Computer Engineering) and a Bachelor of Science (Mathematics), however did not finish as I took a job working in France (Schneider), Siemens (Germany) and Schaffner (Switzerland) RF & EMC Labs. During my 10 years in the RNZAF my main role was in ground and Tactical communications which included operating, managing and servicing HF, VHF, UHF, satellite systems and antenna. This provided an extensive RF Engineering background. I have since been employed as a Design Engineer and EMC specialist for various companies. I have advised on and provided EMC solutions across a large number of sectors and product types.

Summary of Evidence

2. Radio frequency spectrum management is already comprehensively governed nationally by RSM under the Radiocommunications Act 1989 and Radiocommunications Regulations 2001. Regulating radio frequency (RF) interference sits entirely outside the resource management framework and is not the responsibility of Space Ops or the Invercargill City Council (ICC).
3. The 2km EMI boundary is flawed. Potential emitters outside the proposed 2km zone (such as the Invercargill CBD, airport, Tiwai Point smelter, and South Port) present a far higher risk because operators there may be unaware of frequency restrictions. SFAL are aware of the EMI requirements and pose minimal risk. Even if intentional radiators are used on SFAL property, they will not operate in the 2200MHz to 2290MHz S-band and cause potential harmful interference (i.e. SCADA communications links).
4. There are flaws in the proposed horizon mask and obstruction controls. A blanket 3km or uniform horizon mask is overly conservative. Signal degradation depends heavily on physical variables, including weather, path attenuation and Fresnel zone effects. Wind turbine blades constructed of non-metallic composite materials (like fiberglass) are largely transparent to radio waves, meaning the effective physical obstruction height is dictated mainly by the steel tower rather than the total tip height.

Conclusion

5. I consider that the proposed 2km EMI limitation area and associated emission limits are arbitrary, unnecessary and duplicative.
6. Horizon mask penetrations must be independently evaluated on a rigorous, case-by-case basis. These decisions should not be made totally in Space Ops' hands and I consider the onus should not be on SFAL to demonstrate whether or not the obstruction interferes with Space Ops' operations.
7. Consequently, regulatory reliance should default to RSM frameworks, and structural intrusions should be assessed individually on their technical merits.

Craig Ian Morley

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