TOTAL RADIATION SOLUTIONS

CAPABILITY STATEMENT

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✉ PO BOX 680, Claremont, 6910, Western Australia

NATA
WORLD RECOGNISED
ACCREDITATION

ACRBR
Australian Centre for RF Bioeffects Research
An NHMRC Centre of Research Excellence

COMPANY INFORMATION

Total Radiation Solutions (TRS) is a West Australian company with a national focus, established to cater to the requirements of clients looking for professional, independent consultancy in all areas of radiation safety. *TRS* has representatives located in Perth, Melbourne and Brisbane, that enables the provision of a full service coverage for all metropolitan and regional areas throughout Australia. To this end, *TRS* offers services and training to assist your company in the care and well being of staff and the community in their association with both ionising and non-ionising radiation. Our staff are highly trained and are uncompromising in their standards of excellence and quality.

Phill Knipe

Phill received a BSc degree in physics in 1990, his MPhil in physics in 2002 and a PhD in physics in 2013 from Murdoch University, Australia. Since 1991 he has worked as a consultant physicist specialising in the fields of ionising and non-ionising radiation protection in Australia and internationally. In 2002 he set up Total Radiation Solutions which holds ISO 17025 and ISO 17020 accreditations. He has published in peer reviewed journals in the measurement of electromagnetic fields. He has been a member of Standards Australia Committee TE007 (EMF measurement) since 2011 and has been on the International Electrotechnical Commission (IEC) group responsible for the development and maintenance of the IEC measurement and modelling of radio waves standard (62232) since 2007. He is an initial member of the International Radiation Protection Association (IRPA) Non-Ionizing Radiation Task Group (NIR-TG) since Apr 2022. He is an affiliate researcher at the Australian Centre for Electromagnetic Bioeffects Research (ACEBR). He was a committee member of the Australasian Radiation Protection Society (ARPS) executive (2015-2021) and is a member of the Bioelectromagnetics Society (BioEM).

Jorg Jeske

Jorg commenced his technical career in 1971 and qualified to become a Technical Officer in the field of telecommunications. Since 1985 he has been involved in the operation and maintenance of radio & television broadcasting services for which he holds a BOCP. His involvement in the broadcasting area over the years has seen him progress through a range of positions from technical operations, supervision and management roles to ultimately being recognised as a subject matter expert in the field of RF EME. He is a qualified trainer specialising in the field of RF EME training and is also an approved signatory for measurement and modelling of RF EME, as well as being an honorary NATA technical assessor.

His major academic achievements are detailed below:

* Graduate Certificate in Project Management
* Bachelor of Business Degree (Operations Management & Human Resource Management)
* Post Certificate in Public Administration
* Certificate IV in Training and Assessment
* Broadcasting Operator's Certificate of Proficiency
* Electronics and Communications Certificate

James Ward

James Ward graduated with a Bachelor in Communications Engineering in 1999. He has been with Total Radiation Solutions since 2002 starting initially as a senior RF EME Drafter before completing training to become a RF EME Consultant. James is an approved signatory for measurement and modelling of RF EME and manages the drafting team nationally.

EME MEASUREMENT

TRS holds National Association of Testing Authorities (NATA) accreditation - NATA laboratory - Accreditation No. 15096 complying to ISO/IEC 17025 – Testing.

EME Measurement

Measurement of electromagnetic radiofrequency fields (RF) in accordance with Australian/New Zealand AS/NZS 2772.2 Radiofrequency fields Part 2: Principles and methods of measurement and computation– 3 kHz to 300 GHz.

1. Broadband measurements of E-fields in the range of 300kHz to 50 GHz.
2. Broadband measurements of H-fields in the range of 300 kHz to 1 GHz.
3. Frequency selective measurements (Narrowband) of E-fields in the range 27 MHz to 6 GHz.
4. Frequency selective measurements (Narrowband) of H-fields in the range 100 kHz to 200 MHz.

RF EME surveys can be completed to;

1. Identify any areas where access by RF workers or members of the general public may need to be restricted.
2. Determine RF EME levels in the general environment.
3. Determine the presence of interference signals.

EME MODELLING

TRS holds National Association of Testing Authorities (NATA) accreditation – Type A Inspection Body - Accreditation No. 15096 complying to AS/NZS ISO/IEC 17020 Standard.

Radiocommunications Systems Performance – Evaluation

ARPANSA Radiation Protection Series No. S-1 (RPS S-1) Standard for Limiting Exposure to Radiofrequency Fields – 100 kHz to 300 GHz.

AS/NZS 2772.2 Radiofrequency fields Part 2: Principles and Methods of Measurement and Computation – 3 kHz to 300 GHz.

Modelling of electric and magnetic fields and equivalent power density from antennas and transmitters in the range:

1. 110 MHz to 90 GHz,
2. 50 MHz - 110 MHz for monopole (whip) antennas and single dipole antennas in selected configurations.

The levels from RF EME transmitting equipment can be assessed and analysed theoretically. These calculations are completed using specialised software that has been developed in accordance with the principles of AS/NZS 2772.2. These predictions are specified by the Communications Alliance Ltd Industry – C546:2020 Mobile Phone Base Station Deployment Code and are an integral part of Development Applications (DA) prepared for various councils and production of the required compliance documentation.

SITE EME SAFTY AND COMPLIANCE DOCUMENTATION

TRS can produce site safety and/or site compliance documentation ensuring the safety of personnel accessing the site. The EME Site Safety Guide (EMEG) encompasses compliance to operating procedures; identification of equipment on site; site occupants and their contact details; equipment specifications; drawings of the structure or rooftop, the site specific RF EME drawings, site access controls and details of required signage. EME Guides can be produced with updates to relevant databases.

SITE AUDITS

A full audit of a site can be carried out with full attention to equipment, RF EME Occupational Health and Safety requirements and compliance to standards.

PUBLIC MEETINGS

Lectures, demonstrations and Q&A sessions can be held for the general public and community groups to allay any concerns or for general education.

TRAINING

TRS offers an industry accredited (ACRBR) **RF EME Awareness Training Course.** This course can be delivered online to provide a fast and flexible training solution or face-to-face at your venue or a suitable training facility. All participants are examined and upon successful completion are issued a certificate.

TRS can also offer a four day **RF EME Measurement Officer Training Course** held at either your venue or a suitable training facility. All participants are examined and upon successful completion are issued a certificate.

CONSULTANCY

Professional advice offered to clients on all aspects of ionising and non-ionising radiation.

TRS KEY EMPLOYEES

Employee	Current Business Role
Phill Knipe	Principal Quality Manger Approved Signatory - Modelling Approved Signatory - Measurements Site Field Measurements
Jorg Jeske	RF EME Consultant Training Manager Approved Signatory - Modelling Approved Signatory - Measurements Site Field Measurements
James Ward	RF EME Manager Approved Signatory - Modelling Approved Signatory - Measurements Site Field Measurements
Rob Werner	RF EME Consultant Site Field Measurements RF EME Modelling RF Site Safety Assessments
John Parker	RF EME Consultant Site Field Measurements RF EME Modelling RF Site Safety Assessments RF EME Safety Training
Narelle Taylor	Operations Manager