



Job/Role Description

Senior Power Systems Engineer

1. Introduction

MPAMOT is a multisector consultancy providing engineering, management, and development services on projects. With over 200 of the best people working on a diverse range of challenges, we're helping our clients deliver sustainable infrastructure and development solutions. We have a collegiate and collaborative culture which values equality and diversity, and we take proactive steps to create an inclusive workplace.

Owing to continued growth and high demand for our services, we are looking for a Senior Power Systems Engineer to join our energy team in our office in Johannesburg, South Africa.

By joining our team, you will have access to the largest, most challenging and innovative projects worldwide. The work is extremely varied as will be your role.

2. Role Description

You will be involved in projects which will include the following roles:

- Power System Analysis – load flow, short circuit, dynamic & transient stability, harmonic analysis, protection, arc flash evaluation, switching studies and insulation coordination studies
- Power System modelling - conversant with PSS/E (version 3x and higher), DigSilent Power Factory, ETAP, IPSA, ETAP and PSCAD/EMTDC
- Proficient in governor and AVR modelling (including user-defined models)
- Proficient in battery, wind and solar PV modelling, including master controllers
- Proficiency in SVC, SCO and STATCOM modelling
- Good understanding of inverter models including grid-following inverters
- Proficient in automating power system simulation studies using scripting tools such as Python
- Good understanding of regional and international grid codes including renewable and battery energy storage grid codes
- International travel and visiting utilities, national control centres (NCCs), substations, project sites and power plants to collect data, sometimes via measurements
- Analysing and interpreting simulation and test data using industry standard tools
- Report preparation and presentation to clients
- Tender preparation based on RFPs and RFIs
- Having an appreciation of the roles of fellow professionals on other projects and interfacing and coordinating with them appropriately
- Interfacing with clients, suppliers and contractors
- Maintaining a comprehensive knowledge and appreciation of technical engineering codes and practices and taking a 'hands on' role in technical matters both at project level
- Mentoring of junior staff

3. Candidate Specification

Electrical engineering degree (minimum BSc/BEng). MSc/MEng or PhD in power systems will be an advantage.



To be successful on our scheme you should demonstrate the following:

- Proficiency in power system simulation software such as: PSS/E, DigSilent Power Factory, ETAP, IPSA and PSCAD/EMTDC
- Proficiency in Python
- Team player and willingness to follow instructions
- Ability to grow a niche in RMS and EMT studies in Africa and worldwide
- Commercial awareness and ability to develop business through existing and new workstreams
- High level of IT literacy and numeracy skills
- Ability to return to first principles and academic literature to resolve complex problems
- Ability to be adaptable and able to work both independently and as part of a team
- Ability to manage small project teams delivering projects within time and budget
- Will confidently build and maintain external and internal relationships
- Ability to produce clear and logical written communication
- Have a systematic logical approach to problem solving
- Pay strong attention to detail and demonstrate accurate work
- Flexible approach to work, and ability to prioritise and manage time effectively to meet deadlines and client needs
- Highly motivated to learn on the job, interface with clients, suppliers and contractors, as well as undertake training
- Willingness to travel internationally from time to time

4. Desirable

- Professional Registration with the Engineering Council of South Africa (ECSA)
- Experience in consultancy environment, and in a client facing role.
- Willingness to travel both locally and globally.

5. Package

To be negotiated: Competitive salary plus benefits

6. Location:

South Africa – Johannesburg