

TRANSIENT POWER SYSTEM MODELS AND STUDIES

OUR SOLUTIONS

EN Engineering offers a suite of electro-magnetic type transient power systems models and studies for transmission system and generation interconnection resources.

Our team of industry experts will work with the Original Equipment Manufacturer (OEM) to ensure the system design and operation comply with the regulatory guidelines and will provide recommendations to ensure compliance and reliability of operation.

These technical studies include, but are not limited to, performing transient over voltage (TOV), transient recovery voltage (TRV), capacitor bank inrush, outrush, back-to-back switching, shunt reactor switching, frequency scans with harmonic analysis, sub synchronous resonance (SSR), and control interaction studies which are required to assess the safety of the equipment and transmission substations during normal operating conditions.



In addition, transmission line switching, ferroresonance, and insulation coordination studies are required to ensure the design of the transmission systems meet bulk power system reliability standards and are not adversely affected by the transient switching devices.

PLANT PSCAD MODEL DEVELOPMENT (CONFIDENTIAL GENERATION DEVELOPERS)

Our highly skilled team members have extensive experience developing plant PSCAD models using the OEM PSCAD model or generic library models due to decades of former utility transmission network modeling and analysis experience.

We are well-positioned to collect required data (inverters/WTGs, GSU, collection system, MPTs, T.line, etc.), develop models, complete testing, and tuning to meet compliance requirements. We can also provide technical support and work with the OEM to address any deficiencies and support the different operating conditions and scenarios identified by the transmission service provider (TSP) or independent system operator (ISO).

This modeling is robust and trusted by our clients for the planning and analysis of their power system network.

SUITE OF ANALYSIS SERVICES (CONFIDENTIAL GENERATION DEVELOPERS)

EN has extensive experience completing many different types of analysis using PSCAD software including:

- Lighting over voltage
- Transient over voltage
- Transient recovery voltage
- Capacitor bank switching



Our knowledgeable team works quickly and efficiently to develop and complete PSCAD study models and provide their recommended solutions for compliance. These studies identify the transmission lines and substation equipment that are adequate for surges and can operate under different operating conditions and scenarios without any damage.

- Frequency scan
- Harmonic analysis

Our team has also completed numerous frequency scans and harmonic analysis using PSCAD software for different resources. We specialize in modeling the harmonics contributions by developing detailed models to represent the harmonics injection. This work includes identifying resonance points, calculating voltage and current distortion limits, providing recommendations for measuring ambient harmonics, and mitigating measures including harmonic filter sizing to meet the compliance requirements.

The individuals you will work with have the experience and expertise you need to get the job done on time and within budget. They have worked on countless projects and are unmatched for efficiency, integrity, professionalism, and their genuine desire to give our clients everything they need to validate plant performance and compliance with industry standards.