

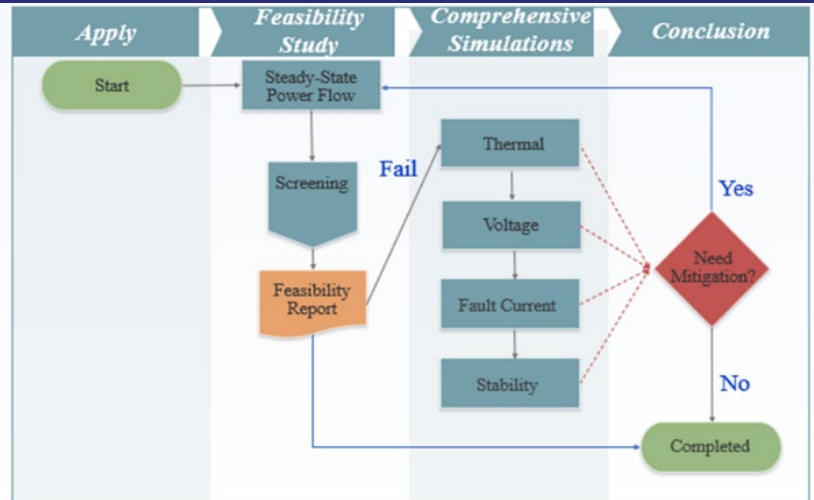
K&A Transmission Planning and Systems Studies Services

Overview:

K&A's Power Systems engineers have experience in every type of modelling and analysis and with almost every simulation tool in the industry. Their range spans from Positive Sequence – power flow and stability – to highly complex EMT-type phenomena to longer-range Production Simulation. Similarly, we can model anywhere on the system - from the generator to the Transmission System at large, to the Distribution System.

Our work allows Power Generation Developers to make more informed decisions to mitigate risk in their Interconnection requests.

System Impact Studies



Planning and Analysis

Transmission System Studies

- ❖ Steady-State Studies
 - Thermal
 - Voltage
- ❖ Breaker Duties - Short-Circuit Current screening
- ❖ Generation Deliverability
- ❖ Available Transfer Capability
- ❖ Power System Stability*
- ❖ Control system Design*
- ❖ Control upgrades and settings
- ❖ Voltage Stability
- ❖ Volt/VAr Coordination
- ❖ Transformer and Cable Energization
- ❖ Capacitor Switching
- ❖ Harmonic Analysis

* Valid for multiple types of studies

Transmission System Conceptual Design - Upgrades and "Non-wire" solutions

- ❖ FERC Order 1000 proposals and solutions
- ❖ FERC Order 715 upgrades
- ❖ Transmission Network Upgrades solutions and Cost Estimates*
- ❖ Cost Allocation Analysis*
- ❖ Cost/Benefit Analysis

Protection Studies and Relay Settings

- ❖ Protection Coordination Studies
- ❖ Relay Settings
- ❖ Real-Time Digital Simulator (RTDS) Relay test set operation

Large Generator or Small Generator Interconnection Request: Conventional or inverter-based Generation

- ❖ Transmission or Distribution System Impact Studies*
 - Thermal
- Steady-State Voltage
 - Voltage Profile
 - Volt/VAr Coordination
 - Voltage Flicker
- Short-Circuit Current screening and Protection Coordination*
- Harmonics screening
- Stability Analysis*
- ❖ IEEE 1547 Std
- ❖ Transmission Network Upgrades solutions and Cost Estimates*
- ❖ Cost Allocation Analysis*
- ❖ Control system Design*
- ❖ Control upgrades and settings recommendations*

Analysis Tools

Positive Sequence – Power Flow and Dynamics

- ❖ PSS/E
- ❖ GE-PSLF
- ❖ DigSilent
- ❖ PowerWorld

Production Cost Modeling (Power Economics)

- ❖ PROMOD
- ❖ GE-MAPS
- ❖ Plexos
- ❖ Gridview

Transients

- ❖ EMTP/ATP
- ❖ PSCAD

Short-Circuit

- ❖ ASPEN
- ❖ EasyPower
- ❖ ETAP
- ❖ SKM
- ❖ CAPE

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