



GENERATOR SET EXCITATION SCENARIOS WHILE IN PARALLEL WITH AN INFINITE UTILITY POWER GRID

The following scenarios are designed to illustrate what happens when a diesel generator is running in parallel with an infinite utility power grid.

- 1) Generator operating under excited:

Generator will experience NEGATIVE VARS IN with a LEADING POWER FACTOR

- 2) Assuming generator and bus voltage do not change if the generator **voltage regulator** set point is **increased** slightly:

Generator kW load will REMAIN THE SAME and AMPS will INCREASE

- 3) Assuming bus voltage does not change, if the generator **voltage regulator** set point is **decreased** slightly:

Generator KW load will REMAIN THE SAME and generator AMPS will DECREASE

- 4) Assuming generator terminal voltage and bus frequency do not change, if the **generator governor** set point is **increased**:

Generator kVAR load will REMAIN THE SAME and generator AMPS will INCREASE

- 5) If the voltage supplied to the **generator field** is slowly and continuously **increased**:

Generator will experience high AMPS due to EXCESSIVE GENERATOR KVARs OUT

- 6) If the voltage supplied to the **generator field** is slowly and continuously **decreased**:

Generator will experience high AMPS due to EXCESSIVE GENERATOR KVARs IN