Need VARs?

As gas and steam power generation plants approach the end of their estimated effective operational life, generation owners face a challenging decision between upgrading or retiring the plant. In many instances, when power plants are retired, there is a need to maintain grid voltage at or near the same interconnection point in order to maintain grid reliability. Solutions to these concerns can comprise the static VAR (volt-amperes reactive) compensators, shunt capacitor banks, and/or synchronous condensers. Each of these options is beneficial to grid stability and reliability. However, dynamic VARs generated from a synchronous condenser conversion are widely considered to be a preferred approach as they produce a superior response to grid voltage fluctuations while providing a cost-effective solution to the owner.

GE now offers engineered solutions that convert existing synchronous generators, powered by steam or gas turbines, into synchronous condensers with reduced disruption to the existing plant. Since each plant's high voltage electrical system is unique, GE's solution is custom designed using our extensive electrical system experience. GE's solution is focused on clean-waveform static start technology to drive the generator to synchronous speed. This is achieved by the use of a (VFD) variable frequency drive—which reduces the duty imposed on the generator, reduces mechanical alterations, and avoids the cost and maintenance of a starting motor. By converting the generator to a condenser, the existing asset may be able to supply the grid with reactive power to maintain system reliability. Depending on the need, the generator can be converted to a synchronous condenser permanently or on a seasonal basis.

Features

- Static start capability – VFD technology
- Mark* VIe controller – integration with plant controls
- Start button to sync in approximately twenty (20) minutes
- Automated synchronization control
- One VFD and Mark VIe controller – utilized to start multiple units

Benefits

- Increased return on original plant investment
- Reduced cost – reuse of existing generator and auxiliaries
- Operational mode flexibility
- Substantial VAR capacity
- Superior response to power system fluctuations
- Excellent short circuit support

To learn more about this offering, contact your GE sales representative or visit powergen.gepower.com.