

THYRIPOL[®]-S

Omnivise Electrical Solutions Static Excitation Systems

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Static excitation systems (SES)

are excitation systems employing the most advanced technology for synchronous generators and synchronous condensers, compatible with generators from any manufacturer. SES are suitable for low to high performance classes from 1 to over 1200 MVA generator output mainly in hydroelectric, gas, steam and nuclear power plants and are characterized by absolute reliability and maximum efficiency.

The Task

The excitation system in a power plant plays a key role in ensuring long-term reliable operation of synchronous generators, since it significantly influences the operational readiness and dynamics of the generator. It also controls the reactive power response of the synchronous machine.

Sooner or later, existing excitation systems will reach the end of their service life. This may be because some modules have been discontinued, or simply because they can no longer be operated cost-effectively. This is the case, for example, if spare parts are only available at high cost, the growing requirements imposed on the control system dynamics can no longer be met, or the risk of failures rises to unacceptable levels for other reasons. An innovative solution is therefore required which ensures maximum reliability and fits the existing situation in both new-build and existing power plants.

Our Solution

Static Excitation Systems (SES) is a tried-and-tested solution for synchronous machines (generators, motors and synchronous condensers). SES can be used as a stand-alone system or as a compact system in combination with a start-up frequency converter.

The solution adapts perfectly to the conditions in both newly built or upgraded power plants, regardless of the space conditions, generator type, power supply or control system and regardless of whether the control system is also being replaced at the same time, as well as whether there is a hard-wired or bus connection.

Especially important is that Siemens Energy provides a customer-specific solution no matter what redundancy concept is required. This flexibility is achieved solely using standard industrial components, which is why no "custom-made products" and no costly storage of spare parts are necessary.

Of course Siemens Energy ensures smooth installation from project planning right through to commissioning, and then provides ongoing service support for SES.

Use of SES brings with it all the advantages of innovative technology: enhanced plant efficiency, outstanding dynamic behavior, process self-monitoring, on-site visualization and remote diagnostic capabilities.

More than 2000 implemented static excitation systems have proven unconditional reliability and robustness for years.

Your Benefits

- Enhanced efficiency, highest possible availability and reliability thanks to robust and proven technology
- Low maintenance costs through the use of proven industry components and modular structure
- Simple replacement of existing excitation system in the shortest possible time, with no interface problems

Published by

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