

Title: Advanced Failure Detection and Handling in Power Management Systems

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Abstract

Due to both environment considerations and requirements for better fuel economy, it is a wish to run the power plant with closed bus ties. In a closed bus tie configuration fewer generators needs to be connected to keep the required spinning reserve and engines can be run on a more optimum load.

The paper describes Kongsberg Advanced Generator Supervisor (AGS) which is a system to detect and handle failures in the generators speed and voltage control system by comparing measured and estimated values. The faulted generator will be isolated to prevent the fault from escalating into a critical situation or blackout. The system is designed to work in both droop and isochronous modes and with symmetric and asymmetric/base-load control. This will increase the safety level when the power plant is run with closed bus ties.

Results from full scale tests are included.

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