Protection Security Assessment of a Municipal Distribution System

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Due to the integration of renewable energy generation into their distribution system and the resulting changing requirements in the power system, münsterNETZ GmbH, a subsidiary of the municipal utility of the City of Muenster, Germany, recently commissioned Siemens PTI with a system-wide evaluation of the protection system. The aim of this study was to ensure reliable protection operation of main and backup protection in the entire distribution system for all main operating states.

Using combined power and protection system simulation, the team analyzed the existing protection schemes and settings with regard to selectivity and reliably starting of the protection devices for varying fault conditions – a very complex task. To facilitate the systematic evaluation of varying operating states, fault location and type combinations, this assessment was done using the Protection Security Assessment methodology and SIGUARD PSA software. This automated system-wide analysis provided valuable information for the refinement and optimization of the applied protection schemes and setting calculation strategies ensuring reliable protection operation in the entire system.

Learn more about the SIGUARD PSA methodology and its benefits.