Special Issue

Protection Challenges under High Penetration of Distributed Energy Resources

Message from the Guest Editors

Power system protection is a vital operating component of power systems to detect and isolate faults. A protection system is expected to ascertain sensitivity and selectivity requirements. Modern power grids are facing the integration of distributed energy resources (DERs) at different levels and experiencing topology changes and clustering into multiple microgrids. DERs in general, and inverter-based resources (IBRs) in particular, pose different challenges on the protection system. As opposed to rotating types of generation sources, IBRs lack the required inertia to stabilize the power grid frequency and have different fault current signatures. This Special Issue will cover paper submissions related to the protection of power grids under high penetration of DERs. The list of topics includes but is not limited to the following: Distribution system protection challenges in presence of DERs; IBRs' fault signatures; Microgrid protection challenges; Adaptive protection schemes; Microgrid controller considerations for adaptive protection; Integration of adaptive protection into distribution management systems; Fast-tripping protection schemes in low-inertia power grids.

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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