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TCE Lecture Series on Power Systems

High-Speed Digital Relaying & Transient Stability Prediction/Controlled Islanding to Prevent Large-Scale Blackouts

August 17, 2022, 4 pm IST



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Abstract: Keeping the lights “on”, an axiom in power systems engineering has taken on a new level of complexity with increasing pressure on the existing network to deliver more power over existing infrastructure. The first part of the presentation will discuss High-Speed Digital Relaying Scheme for EHV/UHV transmission systems (345 kV and above) with half-cycle operating times.

The second part of the presentation will discuss a scheme for real-time transient stability prediction in larger grids, and a Remedial Action Scheme (RAS) scheme applying intentional islanding to prevent large-scale blackouts. The proposed controlled islanding consists of two parts as “when” and “where” to island. The proposed methodology simplifies the communication between central “when” unit and each generator protection relay by using status flags communicated with IEC 61850 R-GOOSE protocol. The proposed “when” methodology is combined with the “where” method based on graph theory to test the overall controlled islanding scheme.

Venue: MMCR,
EE Dept, IISc

Join Teams meeting :
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