

Design and planning for a resilient electric distribution grid

Identification of R&D Topics

1. Segmentation and recombination/reconfiguration (microgrid) (18 votes)
 - Topology – loop to mesh – new operational scheme
 - Microgrid
2. Data sharing and operation (16 votes)
 - GIS, Real-time
 - Business-model
 - Power flow model – fast, GIS
 - Real time/disparate data/SPARSE data
 - Cloud computing/server – computational problem
3. Stochastic (14-15 votes)
 - Event modeling (not just have to much reliance on models, ask the crew knows more)
Damage to load /priority
 - Event predictive assessment
 - Real-time – data

Other topics

Other topics:

1. Interdependency architecture with fuel supply (2/3)
2. Impact assessment (9/10 votes)
3. Resource management – inventory/crews (8 votes)
 - Operator preparedness
4. Protection, power electronics and Switching Control – hardware (15 votes)

Design of Segmented/ Agile Distributed system

1. Emergency controls, segmentation, comms (14 votes)
 - Tools for adaptive settings
2. Microgrid to feeder integration (11 votes)

Other topics:

1. Why? Policy ...
2. Define microgrid/classes/types/markets (5 votes)
3. Load participation/prioritization (9 votes)
4. Economical protection scheme: Affordable hardware (10 votes)
 1. How to have economical the changing typology?
5. N-1 does not capture ... fundamental problem: Design operation awareness (7 votes)

Big Data & Analytics

1. Multi scale modeling: DIST+TRANS (16 votes)
2. Real-time database – speed (15 votes)

Other topics:

1. Open database (13 votes)
2. Power flow solving (10 votes)
 - Real-time stochastic/stackable power flow
3. Data reduction (8 votes)
4. Data validation & dealing with uncertainty (14 votes)

Stochastic/ Uncertainty

1. Robust control to uncertain data (18 votes)
2. Predictive models (13 votes)
 - Threats
 - Loads
 - Assets
 - Real-time data

Other topic:

3. DER/Renewable/ uncertain generation (10 votes)