Utility Microgrids

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• A ‘utility microgrid’ uses utility-owned wires to serve load during islanding.
• Generator is PJM wholesale.
• Not a PJM-defined term (not in Tariff or Manuals)
• Generator and customers metered as ‘normal’ when islanding.
What it is NOT:
Private Emergency Backup Generator

• Example: House, hospital, university or other private ‘campus’
Considerations and Questions: Operations

• During grid connected mode, front-of-meter generation dispatch will occur.
  – Can microgrid be dispatched by PJM off-cost to address distribution system reliability needs?

• When islanded, Generator is as a ‘normal’ PJM Generator, but is no longer available for dispatch or reserves.
  – Is this a forced outage?
  – How does the generator indicate off-grid status to PJM? New gen status? eGADS? eDART? Call PJM Operator?
  – In island mode, generation will operate to match load. Deviates from previously sent PJM set point.

• Should there be PJM restrictions on when the microgrid is allowed to operate in island mode?
  – Distribution system outage situation requiring islanded operations only?
  – PJM emergency situation as part of a load shed plan?
  – Other types of emergency declarations – state/federal?
    • How to define these ahead of time?
  – Economic islanding?

• How should microgrid load and generation be modeled in the EMS, especially when in island mode?
• Additional telemetry needs? For example, relay status to determine microgrid status?
Considerations and Questions: Markets & Settlements

- Can wholesale microgrid generator be a Capacity Performance resource?
  - How are Performance Assessment Interval events handled if in island mode?

- How is “off-cost” operation during islanding handled?

- Is islanded utility microgrid load that PJM settles considered served by PJM as part of RTO load?

- Congestion impacts of islanding

- Should additional market parameters be considered for island vs. grid connected mode?
Considerations and Questions: Planning

• Any adjustment to contingency planning?

• Additional information requirements needed to perform Interconnection Analysis, such as relaying and protection?

• What happens if another generator wants to connect to a distribution facility that is part of the utility microgrid?
  – Special requirements for that generator to interconnect?
  – Potential for that interconnection to be FERC jurisdictional due to prior wholesale sales?
Proposed Path Forward

• Your feedback today and between now and the next meeting
  – What additional questions do you have? What’s missing?
• Document interests
• Provide a distilled view of where we think real gaps exist
• Agree on gaps that need to be addressed, and develop a proposal to address (CBIR or proposed manual changes)