Considerations for Behind-the-Meter Large Electrical Loads

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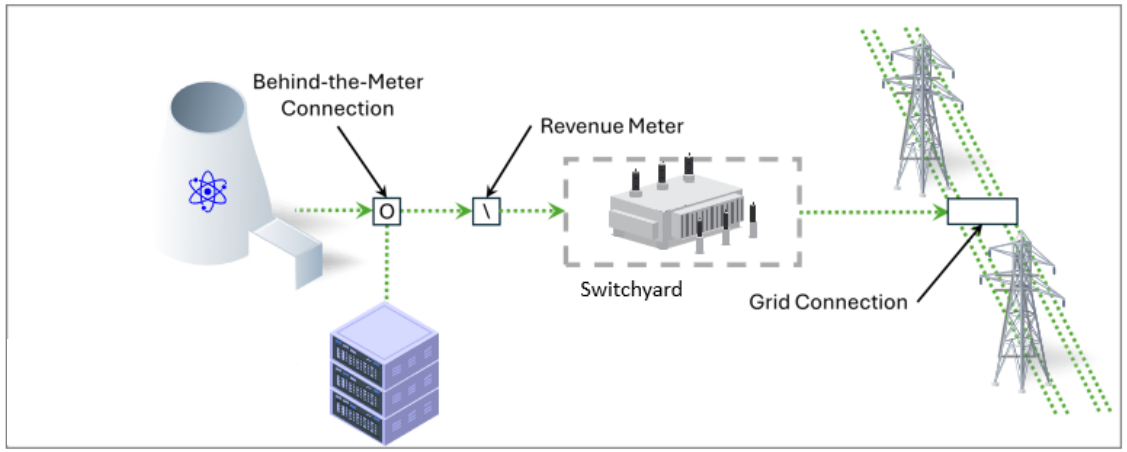
Options for Behind-the-Meter Large Electrical Loads

Objective

- Behind-the-Meter (BTM) connections provide **options for new construction and existing NPPs**.
- **Describes what modifications are required** and the associated Impact on Analyses for existing NPPs.
- **Allows for new constructions and designs to implement an electrical BTM tab option early in the process**.

Concept of BTM connection



Provide fast Deployable and Cost-Effective Electricity to a Data Center

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Project Research Scope

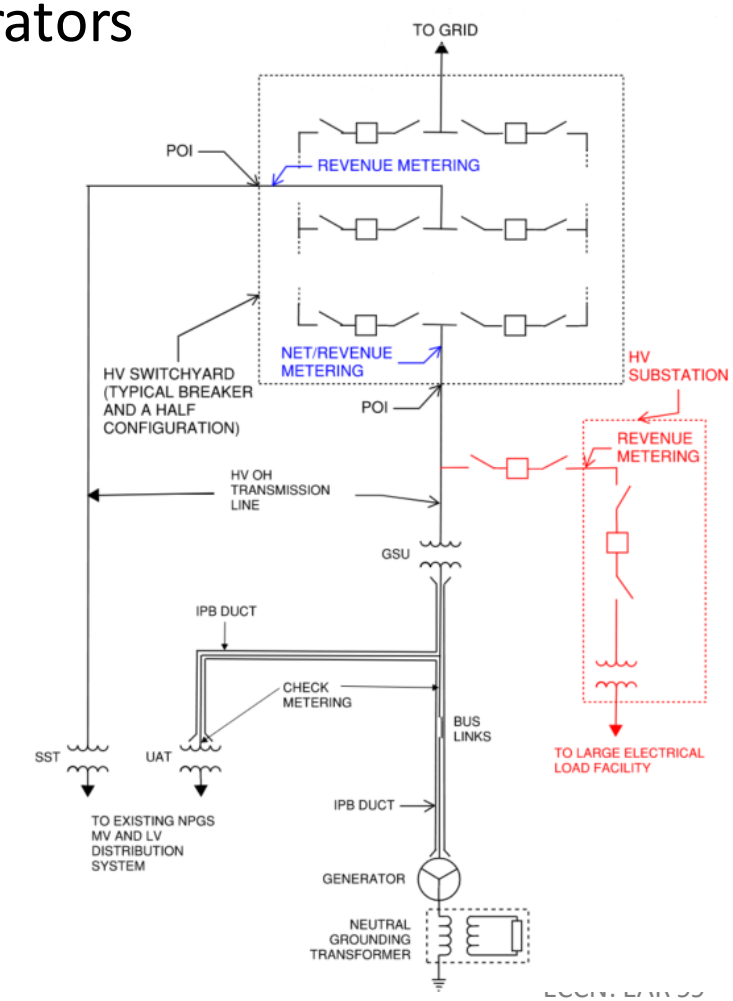
Recommended Electrical Interconnections

- HV Tie-in Connection and HV Revenue Metering, Single Generator
- HV Tie-in Connection and HV Revenue Metering, Two Generators
- HV Tie-in Connection and MV Revenue Metering

Potential Operations and Maintenance Impacts

Expected Steady State and Transients Impacts

- Stability Analysis
- Short Circuit Analysis
- Harmonic Analysis
- Protective Device Coordination Analysis



Example Configuration - Single line of a NPPs to electrical grid system, BTM large electrical load HV side of GSU and revenue metering HV Side of GSU, single generator

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Project Research Scope

Impact Analysis of the Protection System

- Generator Protection Zone, Bus/Transformer Protection Zone
- Transformer/Line/Bus Protection Zone (Modified)
- Protective Relay Devices

Impact from an Electrical Load Rejection (Sudden Load Loss)

- Offsite Power Supply Requirements
- Single Generator Configuration
- Configuration of Two or More Generators

10 CFR Section 50.59 Assessment

New Plant Design Considerations (HV/ MV)

Interconnection Agreements

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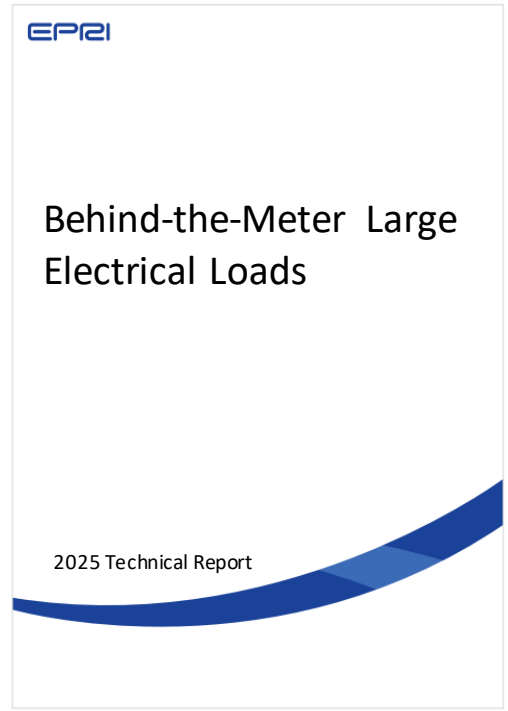

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