

# Small Hydro Workshop

September 2011



What is considered “small” generation?

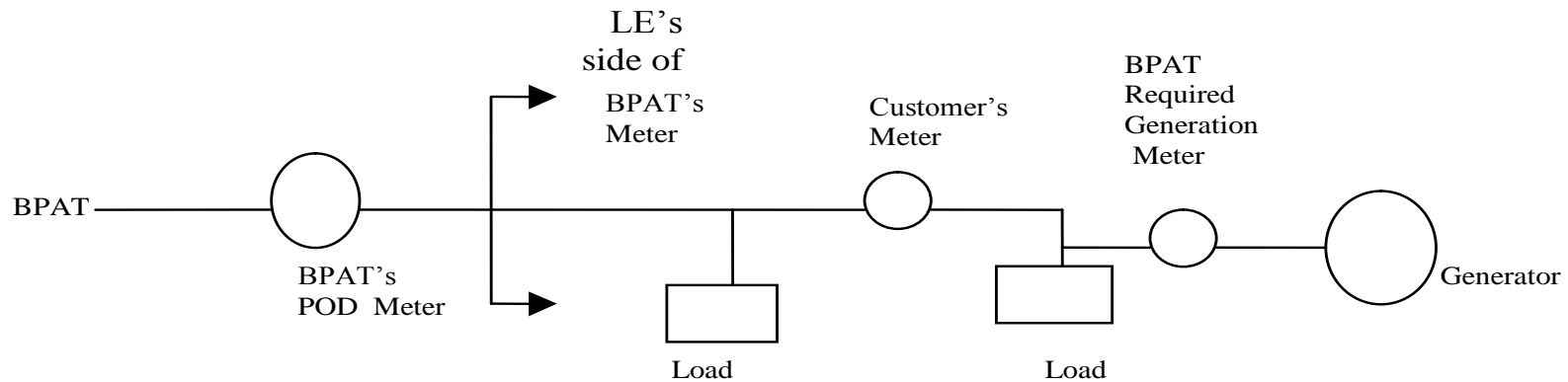
**Small Generation Project (FERC Definition)**

**Not exceeding 20 MW of aggregate nameplate capacity**



# Generation Interconnection v. Integration

- BPA defines generation interconnection as a direct electrical connection to BPA's transmission system.
- Generation integration, by contrast, is generation not directly connected to BPA's transmission system but within BPA's Balancing Authority Area.



# Submitting a Generation Interconnection/Integration Request

- Interconnection requests are processed under the provision of BPA's Open Access Transmission Tariff, Attachment N – Small Generation Interconnection Procedures
- For both Interconnections and Integrations, developers must submit a small generation interconnection request and are assigned a position in BPA's Interconnection Queue.
- BPA does not maintain a separate generation integration queue. Generation integration projects must be submitted via the generation interconnection procedures.



# BPA's Generation Interconnection Queue Management

- Interconnection/Integrations requests are dealt with in queue order. The queue is managed on a first-come, first-served basis.
- The queue determines the order in which interconnection studies are performed.
- Higher-queued requests encumber rights ahead of those lower in the interconnection queue.



## How small is too small?

- BPA does not require an generation interconnection request from resources <200kW.
- The Host Utility and BPA may need to coordinate revenue metering requirements. BPA may require remote access to the meter to download data.



# Typical Small Generation Interconnection Technical Study Progression

- The following are the typical sequence of steps once a developer submits a small generation interconnection request:
  - Conduct Scoping Meeting
  - Feasibility Study and review meeting
  - System Impact Study and review meeting
  - NEPA Study (in parallel, usually started at SIS)
  - Facility Study and review meeting
- It typically takes BPA 14 – 18 months to complete the technical studies and NEPA.



## Sometimes However...

- If a small generation request is scoped and determined to have no system impact to the BPA Grid, it may be able to skip the Feasibility and System Impact Studies.
- In these situations, the Facility and NEPA Studies are performed, followed by execution of the required interconnection/operating/construction agreements.



# Study Deliverables

- Feasibility Study: 60 Hz sketch and rough cost estimates
- System Impact Study: 60 Hz and control & communication sketches, more refined cost estimates
- NEPA Study: Record of Decision or other NEPA-compliant decision document
- Facility Study: Project Requirements Diagram and +/- 20% cost estimates.



# NEPA Study

- BPA is required to comply with the National Environmental Policy Act (NEPA)
- NEPA studies require a separate study agreement and are funded by the customer
- Complexity of NEPA study depends on location of the project and scope of the interconnection plan-of-service
- At the conclusion of the NEPA work, BPA issues a Record of Decision (ROD)
- The ROD is required before BPA can execute any type of construction or interconnection agreement



# Small Generation Study Costs

- \$2,500 initial deposit with application –
  - *Site control must be established with the request.*
- \$5,000 Feasibility Study deposit (FES may be skipped by mutual agreement)
- Minimum \$5,000 System Impact Study deposit (SIS may be skipped by mutual agreement)
- Minimum \$5,000 Facility Study deposit. The Facility Study determines the plan of service and division of responsibilities
- NEPA Study: varies from \$5,000 on up, depending on the proposed action



## After the Technical and NEPA Studies...

- Direct Assignment Cost Determination
  - Direct Assignment: customer funds, no credits
  - Network Upgrade: customer finances and is eligible for credits
- Will the project connect directly to BPA or through a “Host Utility” located within BPA’s BAA?
  - The final plan of service will drive the required agreements



## Prior to Construction

- A signed Record of Decision is required before BPA can “turn dirt” on a project
- Upon customer request, BPA may offer an Engineering & Procurement (E&P) Agreement to start design and procure long lead time items, such as a transformer.
  - An E&P Agreements helps move the project along prior to the ROD being signed
  - The E&P is at the customer’s risk!



# Required Agreements

- For Small Generation Interconnections
  - Small Generation Interconnection Agreement (SGIA) for any generating resource 20MW of less that is directly connected to BPA's system.
- For Generation Integrations
  - Balancing Authority Area Services Agreement (BAASA)
  - Construction Agreement
  - *Oftentimes 3-Way Operations and Maintenance Agreement*



# Ongoing Requirements

- Generating Resources operating in BPA's Balancing Authority Area are required to comply with all applicable operating requirements.
  - Can vary based on size and type of resource
- Required Control Area Services
  - Operating Reserves
  - Generation Imbalance
  - Others as applicable



# Questions?

