Area Generation Connection Task Force

• AGCTF Charter from the MOPC:
  • The Area Generation Connection Task Force (AGCTF) is responsible for developing and recommending policy to guide SPP Staff and/or recommendations for Tariff modifications or business practices to determine the optimum methods and locations for interconnecting generation to the transmission system given the complex situations generally prevalent.

• AGCTF has developed a Whitepaper describing many of these issues and proposed solutions.
Area Generation Connection Task Force

- MOPC accepted AGCTF recommendations at April meeting but recognized additional action is required
  - Recommendations related to payment of certain facilities were contingent upon CAWG and RSC approval
- AGCTF was directed to hold further discussions on open issues affecting other working groups, Legal etc.
- AGCTF was directed to hold discussions on cost allocation and to obtain approval from CAWG and RSC
- AGCTF was directed to work with RTWG to develop needed Tariff language
- MOPC did not address collector system issues except for an acknowledgment that there is a need for such
The Generation Interconnection Issue

• Current practice is that each GI customer independently interconnects, and directly pays for all costs, associated with its request for interconnection

• SPP has received multiple requests for interconnection in the same geographical area on the same line
  • May have multiple substations in very close proximity to each other
  • Can cause operational issues on the power line
  • Increase impedance on a line if static inductors are required

• GI customers appear to be reluctant to jointly share the same interconnection facilities
  • Ownership issues and lease agreements can make this difficult
AGCTF Recommendation on Generation Hubs

• In areas where multiple generators wish to interconnect on the same line
  – Generators will be required to interconnect at a centrally located substation (a Generation Hub)
  – This will minimize the number of interconnections on the same line
• Existing Substations may qualify as a Hub
  – Minimize costs
  – Consistent with current Tariff (Attachment V. Section 4.2.3).
Generation Hubs

• Hubs can be identified by:
  – ITP process by identifying significant areas of generation potential
  – GI Cluster Study process when multiple generators request interconnection in the same geographical area

• No existing substation or new substation will become a Hub unless identified as necessary through one of the above processes and approved by the BOD

• No NTC’s issued until SPP has an executed and approved GIA

• Hubs preferably located and spaced for optimum connections to other substation/hubs
Requirements to Interconnect to a Hub

• A GI customer is NOT required to connect to a Hub unless a Hub is determined to be needed

• When a Hub is identified, a GI customer must connect to the Hub if directed to do so through the GI process

• GI customer may ask for an exception
  – Reasons for Granting: Access to Hub, costs, etc.
  – Must independently fund all related studies
  – May have its GI request delayed to complete the studies
  – If granted, the GI customer is responsible for all interconnection costs pursuant to Attachment V
Cost Recovery for Generation Hubs

• 345 kV and above substations
  – Regionally fund the initial cost to build a Hub – land, fencing, breakers to tie in and out of the transmission line
    • Offset to GI customers who may have to build longer generator leads to get to a Hub
  – Additional costs are direct assigned to the GI customer(s)
    • E.g. bus work, relaying, switches, breakers, etc.

• Substations interconnected at voltages below 345 kV
  – Direct assigned to GI customer(s)
    • Eligible for credits in accordance with Attachment Z
Potential Generation Hubs

• ITP Hub Locations
  – Midpoint of Hitchland-Woodward 345kV
  – Midpoint of Tuco – Woodward 345kV

• Additional locations may be identified due to GI requests on any 345kV or higher voltage line known to be in a generation resource rich area

• Hubs should be planned to be potential terminal points for future lines to other hubs (i.e. the collector system)
Possible Tariff Changes

• This proposal should not require major changes to the Tariff language
  • ITP and GI processes have enough flexibility to allow Hubs to be identified and created
  • Waiver process for GI customers may need to be in Tariff
  • Some minor changes (not yet identified) in the Base Plan Funding rules to allow cost recovery as approved by the RSC
Discussion Questions:

• Recovery of some costs of Hubs through Base Plan Funding?

• Are rules around identifying Hubs clear enough?
Next Step for the AGCTF

• Address “Collector System” Issues
• Requiring GI customers to interconnect at the Hub can cause issues
  – Longer Generator Leads (higher cost to GI customer)
  – Unable to get right-of-way access to Hub
• Building a collector system can solve some of these issues
• Creates issues of:
  – “who pays for what”
  – How collector systems are designed and identified
Collector System

• Hubs are the beginning of a Collector System. The first step of a collector system is to have the ability to share generator leads from the proposed Hubs
• Who builds those leads (T.O. or Generator) and their cost allocation has been much debated
Collector System

- Collector System can be further refined by combining shared leads
Collector System

- For a robust collector grid system – additional ties to other hubs may be required