

AGENDA: CAWG Meeting
September 7, 1:30 – 5:00
DFW Hyatt, Dallas TX

1. Update on Large Generator Interconnection Task Force recommendations. Presentation by Bob Tumilty

(Discussion should be limited to 60 minutes.)

2. Update on the Application of Base Funding in SPP's Aggregate Request Evaluation Process. Presentation by John Mills

(Discussion should be limited to 45 minutes.)

15-Minute Break

3. Further discussion on Economic Upgrades related to Attachment Z. Presentation by Mike Proctor

SPP LGIA Task Force

09-08-2005

- New Recommendation regarding the allocation of Attachment Facilities cost

Note: The new recommendation is generally supported by transmission owners and transmission dependent utilities. It is generally not supported by generation developers.

RSC Presentation 7-27-05

- 1 - Some Commissioners expressed concerns about putting Attachment Facility costs into the Regional Charge. They wanted to be sure that the customers that pay these costs also receive corresponding benefits from the addition of the generator.
- 2 - They asked for a comparison of the impacts of a straight Order 2003 cost allocation, the regional charge allocation, and allocating the cost to transmission customers that utilize the new generator.
- 3 - They asked if we could describe and quantify general benefits associated with adding a generator to the transmission system.
- 4 - They said that sending the proper economic signal regarding generator siting is important.

General Benefits of New Generation

(Item 3 on RSC list)

- Congestion relief to applicable flowgates when in operation, or when curtailed while performing market function dispatches
- Added ancillary service capability (reactive power, load following service, stand-by generation supply, etc.)
- Elimination of need for applicable future planned transmission upgrade projects
- Improved system reliability
- Increased system configuration options to Transmission Owner and/or Transmission Provider
- Increased transmission service revenues

Previous Recommendation

Allocate 100% of the cost of Attachment Facilities to the Regional Charge

- **Advantages:**
 - Shares the “pain” (e.g. the “inequity”)
 - Ensures a revenue stream to use as credits to the generation developer
- **Disadvantages:**
 - Does not match those who pay with those who utilize the new interconnection
 - Limited cost signal to Generation Developer

New Recommendation

Allocate 100% of Attachment Facility cost to the Generation Developer

- **Advantages**

- The parties that use the interconnection pay for the interconnection
- No revenue stream is needed for crediting
- No information is needed nor assumptions made about future transmission service
- Clear cost signal to developer
- Consistent with other RTO's FERC approved methodologies

New Recommendation, continued

Allocate 100% of Attachment Facility cost to the Generation Developer

- **Disadvantages**
 - Does not account for multitude of variations of generation Attachment Facility configurations and uses (i.e., switchyard configurations, multiple use facilities, generation locational differences)
 - Possible some parties that may benefit from all, or portions, of Attachment Facilities are not part of the cost allocation
 - Challenge by some Market Participants' based on interpretation of Section 1242 (Energy Policy Act of 2005) and associated previous FERC rulings will most definitely occur

Follows Established Model

PJM

- **Subpart A – Generation Interconnection Procedures**

Sec 37.1 Attachment Facilities: A Generation Interconnection Customer shall be obligated to pay for 100 percent of the costs of the Attachment Facilities necessary to accommodate its Generation Interconnection Request.

- **Attachment Facilities:** The facilities necessary to physically connect a Customer Facility to the Transmission System or interconnected distribution facilities.

Follows Established Model

NYISO

Attachment S: Rules to Allocate Responsibility for the Cost of New Interconnection Facilities

- **Section IV.F - Attachment Facilities.** Each Developer is responsible for 100% of the cost of the Attachment Facilities.
- **Section III.B - Attachment Facilities:** The Transmission Owner's Attachment Facilities and the Developer's Attachment Facilities. Collectively, Attachment Facilities include all facilities and equipment between the Large Generating Facility or Merchant Transmission Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the large Facility to the New York State Transmission System. Attachment Facilities are sole use facilities and shall not include Stand Alone System Upgrade Facilities or System Upgrade Facilities.

Follows Established Model

ISO New England

Schedule 11 Generator Interconnection Related Upgrade Costs

- **Section (2) Direct Interconnection Transmission Costs.** Direct Interconnection Transmission Costs shall mean the cost of facilities constructed for the sole use of the Generator Owner that are not PTF [“Pool Transmission Facilities”]. One hundred percent of the Direct Interconnection Costs shall be the responsibility of the Generator Owner whether the project is a Category A Project, a Category B Project or a Category C project.

Follows Established Model

California ISO

Section 5.7 Interconnection of New Facilities to the ISO Controlled Grid

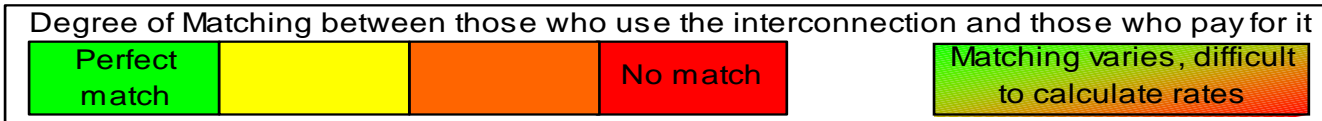
- **5.7.5 Cost Responsibility of New Facility Operators.**

(a) Each New Facility Operator shall pay the costs of required studies in accordance with Section 5.7.4.2 and the costs identified in this Section 5.7.5. The ISO and Interconnecting PTO will provide each New Facility Operator an estimate of its total cost responsibility under this Section. A New Facility Operator shall be responsible for the actual costs of all Direct Assignment Facilities and Reliability Upgrades necessitated by its Completed Interconnection Application. The Interconnecting PTO will provide each New Facility Operator a detailed record of the actual costs assessed to it under this Section. A New Facility Operator may request the Interconnecting PTO to provide any additional information reasonably necessary to audit the actual costs the New Facility Operator is assessed.

Analysis of Cost Allocation Options

	Option 1		Option 2		Option 3		Option 4	
	Allocate 100% of AF Cost to Host TO - Host TO Returns Credits for AF Cost and applies the cost to rate base (2003 A, B, C)		Allocate 100% of AF Cost to Regional Charge, Host TO returns credits using Regional Charge Revenue (1)		Allocate 100% of AF Cost to the Transmission Customer (2), the Incremental AF Revenue is allocated to Host TO		Allocate 100% of AF Cost to the Generator's Customers - Generator fronts the cost, is not reimbursed and includes AF Cost in its power pricing (3)	
T Svc Type	Impact of AF Cost	Party Using the Inter-connection	Impact of AF Cost	Party Using the Inter-connection	Impact of AF Cost	Party Using the Inter-connection	Impact of AF Cost	Party Using the Inter-connection
P to P same zone	All Host TO customer	A few Host TO customers	All SPP customers	A few Host TO customers	P-to-P Customers	P-to-P Customers	Generator and its customers	Generator and its customers
P to P another zone	All Host TO customer	Customers in another zone	All SPP customers	Customers in another zone	P-to-P Customers	P-to-P Customers	Generator and its customers	Generator and its customers
P to P out of SPP	All Host TO customer	Customers Outside SPP	All SPP customers	Customers outside SPP	P-to-P Customers	P-to-P Customers	Generator and its customers	Generator and its customers
Network same zone	All Host TO customer	A few Host TO customers	All SPP customers	A few Host TO customers	Network Customers	Network Customer(s)	Generator and its customers	Generator and its customers
Network another zone	All Host TO customer	other zone customer(s)	All SPP customers	other zone customer(s)	Network Customers	Network Customer(s)	Generator and its customers	Generator and its customers
Market Supplier	All Host TO customer	Generator and its customers	All SPP customers	Generator and its customers	Generator and its customers	Generator and its customers	Generator and its customers	Generator and its customers

See next page for notes



Analysis of Cost Allocation Options

Definitions

AF = Attachment Facilities - Those facilities necessary to attach the generator to the transmission system.

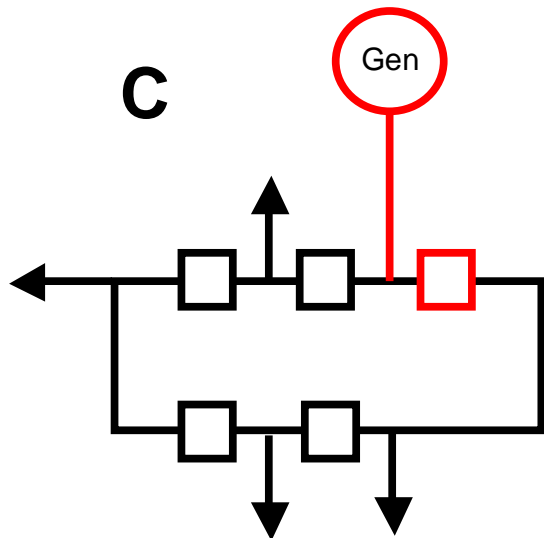
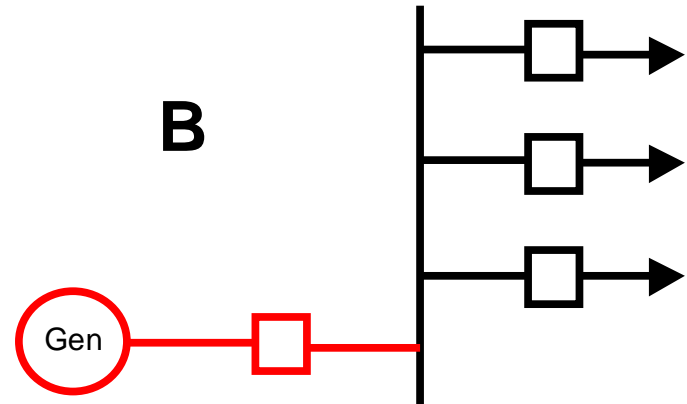
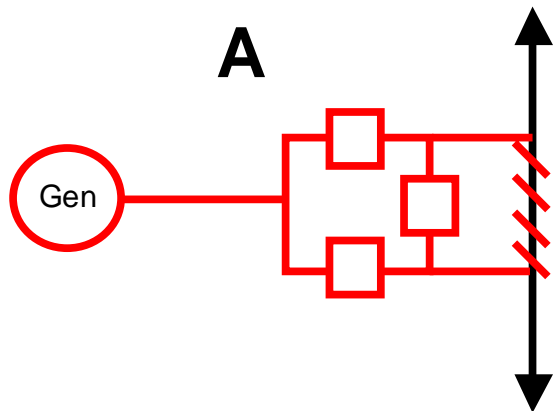
Host TO = The Transmission Owner that is interconnecting with the new generator.

This analysis only considers AF costs. The costs of upgrades required to put the full capacity of the generator onto the transmission system or for transmission service are excluded.

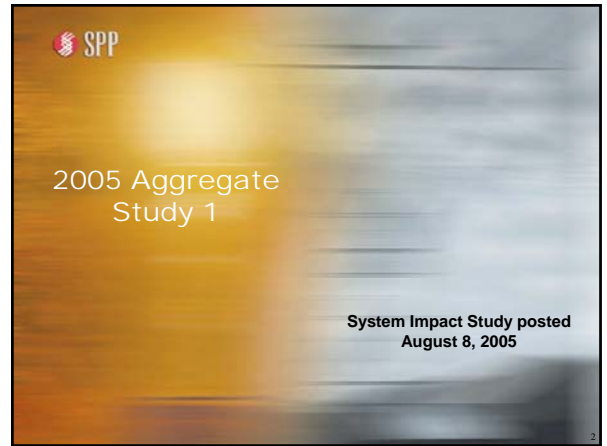
Notes

- (1) - Attachment L Section III -Allocate Base Plan Revenues in proportions to Transmission Owners Base Plan Revenue Requirements
- (2) - The incremental charge for AF costs can only be calculated if the entire generator is subscribed for long term Network or Point-to-point service. If only part of the plant is subscribed, then somehow the AF Costs must be pro-rated between the known transmission service and possible future transmission service. However, the magnitude and duration of future transmission service can not be predicted so there is not a practical method for allocating the AF Cost to Point-to-Point customers.
- (3) - This methodology is similar to that used by PJM, NewYok ISO, ISO New England and California ISO.

Interconnection Attachment Facility Examples



— = Existing Facilities
— = Attachment Facilities



Aggregate Study Overview

- ❖ **Window closed June 1st**
- ❖ **Study Period**
 - ◆ June 1 – October 1
- ❖ **Requests**
 - ◆ 86 Oasis Reservations
 - ◆ 57 Studies
 - ◆ 5,855MW

Modeling Overview

- ❖ **4 Study Groups**
 - ◆ 1 – West to East
 - ◆ 2 – East to West
 - ◆ 3 – South to North
 - ◆ 4 – North to South
- ❖ **3 Scenarios**
- ❖ **13 Seasonal Cases**
- ❖ **Expansion Plan upgrades included**
- ❖ **Total of 312 Study Cases**
- ❖ **Generation dispatch based on dispatch orders received from transmission owners. For dispatch orders not received, dispatch was developed by staff using engineering judgement.**

Results Overview

- ❖ **166 potential facility upgrades needed**
- ❖ **Approximately \$507 Million in identified upgrade costs allocated to transmission customers**
- ❖ **Over \$300 Million in potential base plan funding**

More Results

- ❖ **40 hours of computer time on 15 computers running multitasking software, EnFuzion**
- ❖ **35,000 lines of data requests emailed to TOs**
 - ◆ Represents 1,300 unique overloads due to multiple contingencies
 - ◆ TOs respond in superb fashion!



More Results cont'd

- ❖ Applied 4,035 possible dispatches to each of the 86 transmission requests
- ❖ Outputted 1,137,948 records to Access database
- ❖ Then applied 3% Transfer Distribution Factor cutoff to results to reduce facility upgrades to 166

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What's Next

- ❖ August 23rd deadline for customer to enter into facility study
- ❖ Further upgrade analysis needed to determine optimal solution set
- ❖ Determine allocation of existing ATC to customers
- ❖ Determine possible limitation to rights to renew service
- ❖ Third party facility coordination
 - Approximate 64 potential third party limitations
 - Verify validity of limitations and provide solutions and E&C cost where necessary

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Facility Study Overview

- ❖ Window closed August 23rd
- ❖ Study Period
 - August 24 – October 1
- ❖ Requests
 - 54 Oasis Reservation
 - 47 Studies
 - 3684 MW

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Reasons for Withdrawal

- ❖ Customer not be ready to commit
- ❖ Customer not eligible for Base plan funding
- ❖ Customer's Risk to high vs. reward
- ❖ Customer cost higher than anticipated
- ❖ Customer unable to prove ownership or commitment to purchase

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Preliminary Results Based on SIS

- ❖ Over \$129 Million in potential base plan funding (12 studies)
- ❖ 14 studies exceed 125%
- ❖ 3 studies may receive partial base plan funding

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Facility Study Issues

- ❖ Optimization of solutions
 - SPP Planning staff
- ❖ Customer's may continue to withdraw
- ❖ Providing ATC without upgrades
- ❖ Waiver requests

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Review of Attachment Z
Related to Economic Upgrades:
A Working Document

CAWG Meeting
September 7, 2005

Attachment Z – Aggregate Studies

- Section I (Introduction) appears to limit Aggregate Transmission Service Study process to requests for “long-term point and long-term designated network resource requests.
- Section VI (Cost Recovery), Subsection B (Requested Upgrades and Economic Upgrades – Transmission Revenue Credits) states that
 - “Transmission Customers paying for Requested Upgrades and Project Sponsors bearing the cost of Economic Upgrades shall receive transmission revenue credits in accordance with Section VII.

Question 1

- Are Requested Upgrades and Economic Upgrades included in the Aggregate Transmission Service Studies?
- If not, how does SPP handle these requests?
- Discussion – how should these requests be handled?

Section VII Transmission Service Crediting

- PTP Transmission Service
 - Applies to each new PTP reservation using the Network Upgrade in the direction of the initial overload.
- Network Transmission Service
 - Applies to new Designated Resources or new loads using the Network Upgrade in the direction of the initial overload.
- Power Controlling Devices
 - Applies to all PTP or Network Transmission service using the facility in both directions.

Revenue Credits for New PTP Transmission Service

- In the direction of the initial overload
- Applicable until the TC has been fully compensated for all charges paid in excess of the normally applicable transmission access charges.
- Formula:
 - ✓ RC = revenue credits
 - ✓ RF = positive response factor
 - ✓ RCAP = new reservation capacity
 - ✓ Rate = rate applicable to PTP transmission service

$$RC = (RF) * (RCAP) * (Rate)$$

Question 2

- Without a request for transmission service, how does SPP determine the direction of the initial overload?
 - For a Requested upgrade? Assuming no transmission service as a part of the request, would the requestor be asked to specify the direction as part of the request?
 - For an Economic upgrade? Would this depend on the results of congestion relief shown in SPP's transmission plan or do the project sponsors get to choose a direction?

Question 3

- Without a request for transmission service how does SPP determine “charges paid in excess of the normally applicable transmission access charges.”
- Discussion:
 - Would someone funding a requested or economic upgrade be allowed to continue to receive revenue credits over the life of the upgrade?
 - If not, what would be the limit for receiving such credits?
 - Is the current language of Attachment Z clear on this issue?

Question 4

- Does the formula provide adequate compensation for a Requested or Economic Upgrade?
- Discussion:
 - $(RF) * (RCAP)$ measure the MW use of the Network Upgrade which is greater than the MW-mile share of use of the PTP transmission service.
 - $(MW \text{ use}) * (Rate)$ is then greater than the MW-mile rate share of the revenues from the PTP transmission service.

Other Questions?

Revenue Credits from Network Transmission Service

- Limited to new DNR or new load.
- Formula:
 - ✓ RC = revenue credit
 - ✓ MWuse = MW use of the Network Upgrade by Network Transmission Service from new DNR or new load.
 - ✓ Δ CAP = MW increase in capacity in the direction of the original overload.
 - ✓ OCF = “original cost of the facility”

$$\%MWuse = MWuse / \Delta CAP$$

$$RC = (\%MWuse) * (OCF)$$

Question 5

- How will SPP determine whether or not a new load impacts the Network Upgrade?
- Discussion
 - Will the impacts for New DNRs be evaluated at the time of the request?
 - What about new load?
 - How often will the measure of that impact change?

Question 6

- What is meant by the phrase “original cost of the facility?”
- Discussion
 - Is this the cost of the Network Upgrade?
 - The tariff reads: “This charge shall be paid for by the new Network Customer or applied to rates based on the Base Plan funding formula in Attachment J and credited to the Transmission Customer who provided the Network Upgrade.”
 - Is this a one time payback of the funding or an ongoing annual payment? See also discussion on section VIII.

Other Questions?

Revenue Credits for Power Controlling Devices

- Power controlling devices include direct current ties and regulating phase shifting transformers
- Credits apply to use in both directions.
- Network Service: applies to all Network Service use of the new device.
 - $\%MW_{use} = MW_{use}/\text{sum } \Delta CAP$ in both directions
- PTP Service: applies to all PTP use of the new device, but is limited to revenues received that are not required for other transmission funding obligations = PTP Revenues[#]

$$RC = (\%MW_{use}) * (PTP \text{ Revenues}^{\#})$$

Question 7

- In what ways does the use of a power controlling device apply to Network Service?
- Discussion
 - For DC ties, does this imply that the DNR is on the other side of the tie?
 - Does MWuse then apply on a fixed basis?
 - What about taking Network Service from a non-designated network resource?
 - Does MWuse then apply on a variable (as used) basis?
 - What about network service use of a phase shifter?

Question 8

- What is meant by “total revenue received by the Transmission Provider that is not required for other transmission funding obligations?”
- Discussion
 - If existing PTP transmission service uses the device, how does SPP determine whether the revenue from that service is required to meet a transmission funding obligation?
 - If there is a request for new PTP transmission service that uses the device, and that service cannot be granted absent both the use of the device and additional network upgrades, how is the cost of the device figured into the rate charged the Transmission Customer under the FERC “or” pricing?

Other Questions?

Section VIII Future Roll-In

- “When a facility upgrade being paid for pursuant to the provisions of this Attachment Z is rolled into the revenue requirements used for the development of generally applicable transmission service rates, the Transmission Owner that constructed the facility upgrade shall pay the remaining balance of each customer’s unrecovered payments described in Sections VI.B and VI.D that are applicable to that facility upgrade.”
- “All customers who have upgraded facilities and have remaining balances subject to cost recovery pursuant to Section VI of this Attachment Z, shall be paid in full.”
- “The customer shall continue to pay the charges specified in the customer’s transmission service agreement for the transmission service initially reserved.”

Question 9

- What specifically is meant by “rolled into rates?”
- Discussion:
 - Would new network service that uses an existing network upgrade include some portion of that upgrade being rolled into rates through base funding?
 - Would new PTP service that requires additional network upgrades and uses some portion of the existing network upgrade be rolled into rates through “or” pricing?

Question 10

- Does the “paid in full” apply only to network upgrades that are fully rolled into rates?
- Discussion:
 - Won’t any application only use a portion of the existing network upgrade? If so, when is the existing network upgrade ever fully rolled into rates?
 - Can this “paid in full” concept be read to apply to every network upgrade, whether or not it is fully rolled into rates at some future date?