

# **APPENDIX A**

## **EXAMPLES OF CALCULATION OF MW IMPACT FROM NEW TRANSMISSION REQUESTS**

### **Assumptions common to all examples:**

1. Directly Assigned Network Upgrade increased the capacity of the existing flowgate by 500 MW in the A to B direction.
2. New transmission service request from Customer B has a 50 MW impact on the same flowgate and in the same A to B direction.
3. The original cost of the Directly Assigned Network Upgrade was \$16,000,000.
4. The Directly Assigned Network Upgrade has been in service for 10 Years with a depreciation life of 40 years.

Calculation common to all examples: The net plant value of the Directly Assigned Network Upgrade:

$$\begin{aligned} &\text{Original Cost} - \text{Accumulated Depreciation} \\ &\$16,000,000 - (10/40)*(\$16,000,000) = \\ &\$16,000,000 - \$4,000,000 = \mathbf{\$12,000,000} \end{aligned}$$

### **Example A: MW Impact as a percent of Incremental MW Capacity**

Additional Assumption: The project sponsor that requested the Directly Assigned Network Upgrade did so without requesting any transmission service..

1. Percent of MW capacity from the new transmission service:

$$50 \text{ MW} \% 500 \text{ MW} = 10\%$$

2. Cost of Directly Assigned Network Upgrade allocated to Customer B:

$$\$12,000,000 * 10\% = \mathbf{\$1,200,000}$$

### **Example B: MW Impact as a percent of Incremental Transmission Service**

Additional Assumption: The customer that requested the Directly Assigned Network Upgrade (Customer A) did so through a request for transmission service, and that transmission service uses 100 MWs of the 500 MWs of increased capacity on the flowgate

1. Percent of incremental transmission service taken on the Directly Assigned Network Upgrade by Customer B:

$$\begin{aligned} &50 \text{ MW} \% (100 \text{ MW} + 50 \text{ MW}) = \\ &50 \text{ MW} \% 150 \text{ MW} = 33.3\% \end{aligned}$$

2. Cost of Directly Assigned Network Upgrade allocated to Customer B:

$$\$12,000,000 * 33.3\% = \mathbf{\$4,000,000}$$

### **Example C: MW Impact from adding subsequent new transmission service**

Additional Assumption: In example B, assume that after the first new customer (Customer B) was granted transmission service, a second new customer (Customer C) is granted new transmission service with a 25 MW impact on the Directly Assigned Network Upgrade in the same direction, A to B.

1. Percent of incremental transmission service taken on the Directly Assigned Network Upgrade by Customer C.

$$25 \text{ MW} \% (100 \text{ MW} + 50 \text{ MW} + 25 \text{ MW}) =$$

$$25 \text{ MW} \% 175 \text{ MW} = 14.3 \%$$

2. Cost of Directly Assigned Network Upgrade allocated to Customer B.:

$$\$12,000,000 * 14.3 \% = \mathbf{\$1,714,286}$$

### **Example D: MW Impact from adding multiple new transmission service**

Additional Assumption: In example B, assume that at the same time both transmission customers request transmission service – Customer B for 50 MW and Customer C for 25 MW.

1. Percent of incremental transmission service taken on the Directly Assigned Network Upgrade by the new customers:

$$\text{Customer B: } 50 \text{ MW} \% 175 \text{ MW} = 28.6\%$$

$$\text{Customer C: } 25 \text{ MW} \% 175 \text{ MW} = 14.3\%$$

2. Cost of Directly Assigned Network Upgrade allocated to new transmission service customer:

$$\text{Customer B: } \$12,000,000 * 28.6\% = \mathbf{\$3,428,571}$$

$$\text{Customer C: } \$12,000,000 * 14.3\% = \mathbf{\$1,714,286}$$

### **Example E: Compare Examples B combined with C to Example D**

Notice that Customer B is paying less in example D than he would be paying in example C, simply because of the sequencing of the service request. To correct this problem, Customer B along with Customer A should be eligible for revenue credits from Customer C. Thus in example C, the distribution of revenue credits from Customer C between Customers A and B is:

1. Percent allocation of revenue credits between Customers A and B:

$$\text{Customer A: } 100 \text{ MW} \% 150 \text{ MW} = 66.7\%$$

$$\text{Customer B: } 50 \text{ MW} \% 150 \text{ MW} = 33.3\%$$

2. Allocation of Revenue Credits from Customer C to Customers A and B:

$$\text{Customer A: } \$1,714,286 * 66.7\% = \$1,141,857$$

$$\text{Customer B: } \$1,714,286 * 33.3\% = \$571,429$$

Notice that with this revenue credit from Customer C, Customer B is now paying in net the same amount as shown in Example D; i.e.,

$$\$4,000,000 \text{ (to Customer A)} - \$571,429 \text{ (from Customer C)} = \mathbf{\$3,428,571}$$

**APPENDIX B**  
**EXAMPLES OF DOLLAR FLOWS**  
**FOR VARIOUS APPLICATIONS OF**  
**HIGHER OF PRICING FOR PTP SERVICE**

**Example 1: Basic Calculations**

- The attachment J assignment of costs to the new transmission customer from the Directly Assigned Network Upgrade costs exceeds the safe-harbor provision of \$180,000/MW.
- The excess over the safe-harbor limit are directly assigned to the new transmission customer.

<b>Example 1: Basic Parameters Assumed</b>		
Upgrade Original Cost	\$65,000,000	Gross Plant
Depreciation Life	30	Years
Accum. Depreciation	\$6,500,000	after 3 years
Cost Included	\$58,500,000	Net Plant
PTP Reservation	100	MW
Trans Serv Term	5	Years
PTP Service Charge	\$1,200,000	Assumed \$1/kW/Month
% Distribution Factor	20%	Impact on Upgrade

<b>Attachment Z Calculation</b>		
Cost Included	\$58,500,000	Net Plant
Initial TC MW Impact	40	Assumed
New TC MW Impact	20	(%DF)*(MW Resrv)
Total MW Impact	60	Sum
% New TC	33%	(New TC MW) / (Total MW)
New TC \$	<b>\$19,500,000</b>	(New TC %) * (Cost Included)

<b>Attachment J Calculations</b>		
Cost / MW	\$195,000	(New TC %) / (MW Resrv)
Safe Harbor Limit	\$18,000,000	(180,000/Mw) * (MW Resrv)
Eligible for BPF	<b>\$18,000,000</b>	Min (New TC \$, Safe Harbor)
Direct Assign	<b>\$1,500,000</b>	(New TC\$) - (Eligible for BPF)

**Example 1: Dollar Flows**

**SPP Revenue Sources**

- BPF upgrade costs are collected through zonal rates per the cost allocation in Attachment J.
- The revenue requirements associated with these directly assigned costs to the new transmission customer are less than the PTP rate, resulting in the new transmission customer paying only the PTP rate.

<b>BPF Rate Calculations</b>		
Eligible for BPF	\$18,000,000	(180,000/Mw) * (MW Resrv)
Annual Revenues BPF	<b>\$3,060,000</b>	17% Fixed Charge times BPF Costs

<b>"Higher of" Rate Calculations</b>		
Direct Assign	\$1,500,000	(New TC\$) - (Eligible for BPF)
Fixed Charge %	32%	Calc for 5 yr. Trans Serv Resrv
Annual Cost	\$480,000	per year
PTP Service Charge	\$1,200,000	per year
Customer Pays Higher of	<b>\$1,200,000</b>	Max (Annual Cost, PTP Serv Chrg)

**SPP Revenue Payments**

- The original transmission customer receives all the revenues from the BPF.
- The revenues collected from the PTP rate are split between the original transmission customer (to cover the costs directly assigned to the new transmission customer) and the other transmission owners (TO's) per the standard SPP revenue distribution formula.

<b>Dollar Flows</b>		
Payments to SPP	<u>\$4,260,000</u>	
FROM		
New TC	\$1,200,000	PTP Rate
BPF	\$3,060,000	Rolled into Zonal Rates
Payments by SPP	<u>\$4,260,000</u>	
TO		
Initial TC	<u>\$3,540,000</u>	
	\$3,060,000	From BPF Rates
	\$480,000	Direct Assigned to new TC
Other TOs	<u>\$720,000</u>	From PTP Rate - New TC

**Example 3: Basic Calculations**

- The attachment J assignment of costs to the new transmission customer from the Directly Assigned Network Upgrade costs are less than the safe-harbor provision of \$180,000/MW.
- There are no directly assigned costs to the new transmission customer.

<b>Example 3: Basic Parameters Assumed</b>		
Upgrade Original Cost	\$10,000,000	Gross Plant
Depreciation Life	30	Years
Accum. Depreciation	\$1,000,000	after 3 years
Cost Included	\$9,000,000	Net Plant
PTP Reservation	100	MW
Trans Serv Term	5	Years
PTP Service Charge	\$1,200,000	Assumed \$1/kW/Month
% Distribution Factor	20%	Impact on Upgrade

<b>Attachment Z Calculation</b>		
Cost Included	\$9,000,000	Net Plant
Initial TC MW Impact	40	Assumed
New TC MW Impact	20	(%DF)*(MW Resrv)
Total MW	60	Sum
% New TC	33%	(New TC MW) / (Total MW)
New TC \$	\$3,000,000	(New TC %) * (Cost Included)

<b>Attachment J Calculations</b>		
Cost / MW	\$30,000	(New TC %) / (MW Resrv)
Safe Harbor Limit	\$18,000,000	(180,000/Mw) * (MW Resrv)
Eligible for BPF	<b>\$3,000,000</b>	Min (New TC \$, Safe Harbor)
Direct Assign	<b>\$0</b>	(New TC\$) - (Eligible for BPF)

**Example 3: Dollar Flows**

**SPP Revenue Sources**

- BPF upgrade costs are collected through zonal rates per the cost allocation in Attachment J.
- With no directly assigned costs to the new transmission customer, that customer only pays the PTP rate.

<b>BPF Rate Calculations</b>		
Eligible for BPF	\$3,000,000	(180,000/Mw) * (MW Resrv)
Annual Revenues BPF	<b>\$510,000</b>	17% Fixed Charge times BPF Costs

<b>"Higher of" Rate Calculations</b>		
Direct Assign	\$0	(New TC\$) - (Eligible for BPF)
Fixed Charge %	32%	Calc for 5 yr. Trans Serv Resrv
Annual Cost	\$0	per year
PTP Service Charge	\$1,200,000	per year
"Higher of" Charge	<b>\$1,200,000</b>	Max (Annual Cost, PTP Serv Chrg)

**SPP Revenue Payments**

- The original transmission customer receives all the revenues from the BPF.
- The revenues collected from the PTP rate all go to other transmission owners (TO's) as the original transmission customer is fully compensated for the costs assigned out through Attachment J.

<b>Dollar Flows</b>		
Payments to SPP	<u>\$1,710,000</u>	
FROM		
New TC	\$1,200,000	PTP Rate
BPF	\$510,000	Rolled into Zonal Rates
Payments by SPP	<u>\$1,710,000</u>	
TO		
Initial TC	<u>\$510,000</u>	
	\$510,000	From BPF Rates
	\$0	Direct Assigned to new TC
Other TOs	<u>\$1,200,000</u>	From PTP Rate - New TC

**Example 2: Basic Calculations**

- The attachment J assignment of costs to the new transmission customer from the Directly Assigned Network Upgrade costs exceeds the safe-harbor provision of \$180,000/MW.
- The excess over the safe-harbor limit are directly assigned to the new transmission customer.

<b>Example 2: Basic Parameters Assumed</b>		
Upgrade Original Cost	\$100,000,000	Gross Plant
Depreciation Life	30	Years
Accum. Depreciation	\$10,000,000	after 3 years
Cost Included	\$90,000,000	Net Plant
PTP Reservation	100	MW
Trans Serv Term	5	Years
PTP Service Charge	\$1,200,000	Assumed \$1/kW/Month
% Distribution Factor	20%	Impact on Upgrade

<b>Attachment Z Calculation</b>		
Cost Included	\$90,000,000	Net Plant
Initial TC MW Impact	40	Assumed
New TC MW Impact	20	(%DF)*(MW Resrv)
Total MW	60	Sum
% New TC	33%	(New TC MW) / (Total MW)
New TC \$	\$30,000,000	(New TC %) * (Cost Included)

<b>Attachment J Calculations</b>		
Cost / MW	\$300,000	(New TC %) / (MW Resrv)
Safe Harbor Limit	\$18,000,000	(180,000/Mw) * (MW Resrv)
Eligible for BPF	<b>\$18,000,000</b>	Min (New TC \$, Safe Harbor)
Direct Assign	<b>\$12,000,000</b>	(New TC\$) - (Eligible for BPF)

## Example 2: Dollar Flows

### SPP Revenue Sources

- BPF upgrade costs are collected through zonal rates per the cost allocation in Attachment J.
- The revenue requirements associated with these directly assigned costs to the new transmission customer are greater than the PTP rate, resulting in the new transmission customer paying more than the PTP rate.

<b>BPF Rate Calculations</b>		
Eligible for BPF	\$18,000,000	(180,000/Mw) * (MW Resrv)
Annual Revenues BPF	<b>\$3,060,000</b>	17% Fixed Charge times BPF Costs

<b>"Higher of" Rate Calculations</b>		
Direct Assign	\$12,000,000	(New TC\$) - (Eligible for BPF)
Fixed Charge %	32%	Calc for 5 yr. Trans Serv Resrv
Annual Cost	\$3,840,000	per year
PTP Service Charge	\$1,200,000	per year
Customer Pays Higher of	<b>\$3,840,000</b>	Max (Annual Cost, PTP Serv Chrg)

### SPP Revenue Payments

- The original transmission customer receives all the revenues from the BPF.
- The revenues collected from the PTP rate all go to the original transmission customer to cover the costs directly assigned to the new transmission customer. Other transmission owners (TO's) receive no revenues from the new transmission customer.

<b>Dollar Flows</b>		
Payments to SPP	<u>\$6,900,000</u>	
FROM		
New TC	\$3,840,000	PTP Rate
BPF	\$3,060,000	Rolled into Zonal Rates
Payments by SPP	<u>\$6,900,000</u>	
TO		
Initial TC	<u>\$6,900,000</u>	
	\$3,060,000	From BPF Rates
	\$3,840,000	Direct Assigned to new TC
Other TOs	<u>\$0</u>	From PTP Rate - New TC