Cost Allocation Principles for Seams Transmission Expansion Projects

SPP's seams agreements currently contain requirements for SPP to develop coordinated system plans with its neighbors. The extent and nature of the coordinated planning required in SPP's seams agreements varies with each neighbor. In all cases, SPP's agreements lack systematic requirements describing how costs for upgrades identified in these coordinated plans should be allocated between SPP and its neighbors. SPP's agreements generally describe that cost allocation for these projects will be determined on a case-by-case basis. To promote improved transmission planning coordination at SPP's seams and facilitate more cost-effective and efficient interregional solutions, a more structured set of cost allocation requirements should be developed and included in SPP's seams agreements.

When developing cost allocation requirements for coordinated expansion at SPP's seams, principles should be considered in the following areas:

1. Seams Projects Classification and Applicability
2. Seams Project Designation Criteria – OATT Compatibility
3. Models and Modeling Assumptions
4. Metrics and Criteria
5. Cost Allocation

1. Seams Projects Classification and Applicability

Inter-regional transmission projects (IRTPs) are 100KV and above solutions that are impacted by or beneficial to two or more seams parties, either interconnections between the seams parties or wholly contained within one party[1]. Generally, these solutions should be identified as part of coordinated system planning and modeling efforts between SPP and its neighbors over a mutually agreeable planning horizon. Allowances should be made for individually identified projects to be considered for multi-party cost allocation. With respect to the major driver, these projects can be classified as: 1) driven by reliability needs (IRTP-R); driven by economic improvements (IRTP-E); or driven by policy requirements (IRTP-P). IRTP-Rs are cost effective solutions necessary to "keep the lights on" and meet NERC planning standards, SPP Criteria or

[1] Use of the term "party" in this document shall be deemed to mean "transmission service provider".

other mandates. IRTP-Es are those that enhance interregional market activity by reducing congestion, and may replace and/or delay IRTP-Rs or other projects, and provide greater flexibility allowing members to access multiple lower-cost energy supplies on behalf of their consumers. IRTP-Ps are cost-effective transmission upgrades that are required to meet policy objectives, such as transmission upgrades needed to accommodate: 1) the addition of renewable resources to meet state or federal Renewable Energy Standards; 2) carbon caps; or 3) other similar types of policy objectives. Consistent project designation criteria, benefit assessment methods, and cost allocation rules should be developed for each class of projects; however, the selection process should allow sufficient flexibility for customized cost allocation solutions between the seams parties on a project-by-project basis.

2. Seams Project Designation Criteria – OATT Compatibility

For a project to be designated as an IRTP project that is eligible for cost sharing, such projects should result from coordinated system planning as described in the agreements between seams parties, and both parties must have appropriate cost recovery provisions, as necessary, that allow the party to recover its share of costs related to an IRTP upgrade. This is important to ensure that shared project costs can be allocated within each party's region under appropriate OATT provisions[2].

To be designated as an IRTP project, estimated project costs should be large enough to warrant pursuit of treatment as an IRTP. This is necessary to minimize the need to analyze smaller projects that are unlikely to provide sufficient benefits to both parties. As a guideline, a total engineering and construction costs for a project should be estimated at $20,000,000 or more to be considered an IRTP project. Other solutions of lesser amounts could be considered upon mutual agreement of the parties.

To be considered an IRTP-R, both parties should impact the need for the project by a significant amount, ensuring that some level of benefits can be realized and warranting cost allocation. Impacts of the parties serving their network load from designated resources on the constrained facility that is creating the need for improvement should be determined. The seams party not constructing the IRTP-R facility should contribute at least 5% of the loading on the constrained

[2] For IRTPs, regardless of voltage class, costs allocated to SPP should be recovered using SPP's then current regional cost allocation method at the time IRTPs are approved. These costs should be recovered under SPP's Region-wide Charge on the same basis as Base-Plan Upgrades whose nominal operating voltage level is greater than or equal to 300 kV.

facility for the project to be considered an IRTP-R. Other RTOs, including MISO and PJM, use this same basis for reliability-driven seams projects.

To be considered an IRTP-E, each party should, at a minimum, receive sufficient benefits from reduced exposure to congestion. At least one generator in a party's dispatch footprint should have a Generation-to-Load Distribution Factor (GLDF) of 5% or greater on one or more constraints being addressed. Using a GLDF of 5% or greater is reasonable because that is how Market Flows and Network/Native Load (NNL) impacts are determined in the TLR process. Other RTOs, including MISO and PJM, use this basis for economically-motivated seams projects.

For a project to be considered an IRTP-E, each party's projected benefits should be equal to or greater than its allocated share of the project cost. This is reasonable because the planning analyses performed in support of these projects generally do not adequately represent the myriad real-time operating conditions that often reflect even more need and potential benefits than can be reflected in planning models.

Projects related to policy driven upgrades (IRTP-P) will likely require a different analysis from that used for IRTP-R or IRTP-E projects because of their unique nature.[3] In order to qualify as an IRTP-P project, such upgrades should be determined through the parties' coordinated system planning processes as necessary to meet the policy needs of at least one of the parties.

3. Models and Modeling Assumptions

Models used to develop solutions, determine benefits, and allocate costs should be those used in coordinated planning efforts between seams parties; this will help ensure that assumptions used and results achieved are consistent and acceptable to the parties. Generation, transmission, load, interchange, and policy impact (especially related to renewables) assumptions over the mutually accepted planning horizons will be essential to IRTP-R and E screening, selection, and cost allocation solutions.

4. Metrics and Criteria

Benefits calculations for IRTP-Es should at a minimum include the following metrics:

[3] An example of an IRTP-P project is one involving upgrades necessary to integrate renewable energy into the supply party's footprint at a level that meets the targeted energy requirements, but where some portion of that renewable energy is then delivered to an entity in the other party. In this example, it is important to note that the IRTP-P project is not the same as upgrades required to meet a request for transmission service or a request for generation interconnection.

- Adjusted Production Cost (APC) Savings[4]
- Project deferrals and/or displacements
- Reduced system losses.

Other factors - such as metrics established by the SPP Economic Studies Working Group, including those that represent reliability benefits, and policy or regulatory-driven needs - should be considered to the extent they are applicable and agreeable to both parties. Using APC savings is a reasonable benefit metric to employ in considering seams solutions because it is widely utilized and understood in the industry. Other metrics that should be considered may be more difficult to quantify and may not always be acceptable or applicable with each neighbor. Nevertheless, the results of any metric calculations performed should be agreed upon by the parties.

Specific reliability criteria for IRTP-Rs should be those applicable in the transmission system in which the reliability upgrade is required. For upgrades associated with increased delivery of energy across a seam, if the upgrades are agreed to prior to requests for transmission service, the criteria should generally follow those required to deliver the energy to the border of the transmission provider in which the energy is sourced. If these upgrades are associated with specific transmission service requests, the costs would be assigned to the transmission customer(s) requesting the transmission service, and would be subject to receipt of revenue credits from additional use of the upgrades pursuant to the party's applicable tariff provisions.

5. Cost Allocation

For IRTP-Rs, allocation of transmission costs should take into consideration the loading each party contributes on the constrained facility(ies) by serving its network load from its designated resources. Using this as a metric for allocating costs of an IRTP-R project would reflect the relationship between the costs allocated and the cost causers. This approach is similar to that currently being used by other RTOs, including MISO and PJM, for their reliability-driven seams projects. While cost causation is one principle for cost allocation, there may be other such measures of reliability benefits that could be considered[5]. For IRTP-Es, transmission costs

[4] APC is production cost + purchase power cost – revenues from sales. APC savings is the APC before the upgrade(s) minus APC after the upgrade(s).

[5] For example, previous to the change to Highway-Byway, the SPP tariff allocated two thirds of the cost of reliability upgrades to zones based on positive MW-mile impact, and the Midwest ISO tariff allocates the majority of the costs of reliability upgrades to zones using a similar measure of benefits – line outage distribution factor (LODF). Both of these metrics are rough approximations to reliability benefits that do take into account the loading each party contributes on the constrained facilities, but takes into account the loading before and after the upgrade.

should be allocated to each party based on the net present value of total quantifiable benefits calculated for each party, provided that the parties should be allowed to consider other arrangements, such as allocating costs based on allocation of physical transmission capacity rights, as long as those arrangements result in mutually agreeable benefits. For projects justified on economic benefits, it is reasonable to assign costs to those parties that benefit in accordance with their expected benefits. Assigning costs based on share of total benefits is the approach is currently being used by other RTOs, including MISO and PJM, for their economically-driven seams projects.

For IRTP-Ps, the benefits of IRTP-P projects are found in their ability to cost-effectively meet the stated policy objectives. The level at which such objectives are met among the parties should provide the basis for cost allocation between those parties.

For IRTPs, regardless of voltage class, costs allocated to SPP should be recovered using SPP's then current regional cost allocation method at the time IRTPs are approved. These costs should be recovered under SPP's Region-wide Charge on the same basis as Base-Plan Upgrades whose nominal operating voltage level is greater than or equal to 300 kV.

Finally, while projects are driven by specific needs (reliability, economics or policy), they can have multiple impacts across the seams. For example, a reliability project in one party's region can provide economic benefit to the other party. An economic project in one party's region may alleviate a reliability project in the other party's region, or may result in a reliability upgrade needed in the other party's region. A policy project in one party's region can impact economics and reliability in the other party's region. All of these residual impacts need to be taken into account regarding allocation of cost across seams.