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WESTERN RESOURCE ADEQUACY PROGRAM

Program Design Webinar

June 30, 2022

AGENDA

- WRAP Update
- Transmission Demonstration and Exceptions
- Forward Showing Capacity Requirement
- How Loads Participate

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Program Design Updates

- South West/East Diversity Exchange
- VER Zone: Wind & Solar*
- Forward Showing Capacity Requirement**
- Capacity Accreditation of Legacy Agreements*
- Load Forecasting*
- Transmission Demonstration Req/Exceptions**
- Operations Program Settlement and Delivery Failure Charges *
- Forward Showing Deficiency Charge - CONE*
- Cost Allocation*
- How Loads Participate**
- Transition to Binding

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* previously presented at a public webinar ** will be presented today

Current Phase Activities

PO = Program Operator
LOLE = Loss of Load Expectation
ELCC = Expected Load Carrying Capacity

WRAP Update

Transmission Demonstration and Exceptions

Forward Showing Capacity Requirement

How Loads Participate

Transmission Demonstration and Exceptions
Background

» At the Forward Showing (FS) deadline, Participants demonstrate transmission service to deliver at least 75% of resources (by MW, from resource to load)

  – Transmission demonstrated must be NERC priority 6 or 7 or network service.

» Focus today on specific transmission demonstration requirements and exceptions

  – Objectively and consistently applied to ensure program rigor, fairness, and reliability.

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Transmission Demonstration

FS workbook includes tabs for a participant's approved Transmission Service Requests (TSR) or NITS agreement(s) and their relationship to resources and contracts claimed in the FS showing

- **TSR List** - participant will list all approved TSRs or NITS agreements
  - Terminology and functionality in workbook aligns with procurement and utilization of transmission to allow for easy cross-walking by participants and Program Operator
  - Includes monthly check on allocation of firm service
- **TSR Mapping** - participant identifies relationship between resources, transmission and load
  - Supports Network Service, Point-to-Point and multiple legs of transmission as necessary

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Exception Types

- Exceptions are not intended to undermine the reliability of the program
  - If exceptions are impacting the footprint's reliability, they will be reconsidered via a formal reevaluation of the exception process
  - **Approved exceptions do not excuse participants from their obligation to serve their load reliably, nor from any of the operations program requirements regarding transmission**
- WRAP is not intended to replace transmission planning
  - But will send signals to transmission and resource owners to build additional facilities if WRAP footprint becomes deficient or constrained
- WRAP allows/expects that a participant may change/optimize firm transmission for their portfolio after the FS deadline and before the operating day

Four primary **CATEGORIES** of exceptions:

1. Enduring Constraints
2. Future Firm ATC Expected
3. Outages and Derates
4. Counterflow of an RA Resource

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Transmission Exceptions

Enduring Constraints

- No firm ATC available
- Participant attests that a commercially reasonable effort was made, and participant has communicated need to participants (via WRAP-developed FS / Ops system) prior to FS deadline
- One segment limit
- Participant must demonstrate that:
  - There was remaining available transfer capability (i.e., non-firm ATC after the fact) for all capacity critical hours (CCH) in the same season in the previous year, OR
  - If path constrained on at least one CCH in the prior year's same season, then
    - Constructing or contracting for a new local resource for at least the amount of the exception requested, or
    - Pursuing long-term firm rights by entering the long-term queue and taking all appropriate steps for at least the amount of the exception requested

1. Enduring Constraints
2. Future Firm ATC Expected
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Transmission Exceptions

Future Firm ATC Expected

- TSP tariff/business practice
  - 7-F/6-NN ATC is not posted/available prior to the forward showing deadline (for duration of one year or less) at applicable OATT rate or less
  - Participant provides evidence that TSP has released additional 7-F/6-NN ATC in every one of the previous years' CCHs after forward showing on applicable path
- Limited Volume
  - Participant demonstrates that the volume being requested for exception is equal or less than the minimum volume of 7-F/6-NN rights ATC released in the CCHs in the same season of the previous year
- If transmission service is only available for *more than one year* (either from TSP or through secondary market) at applicable OATT rate or less, participant can seek an exception
  - If granted such an exception, participant will be ineligible for an exception on the same path (or across same constraint) in following year

1. Enduring Constraints
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Transmission Exceptions

Outages and Derates

- Provide evidence that a segment of their existing transmission rights on the path from their source to sink for RA resource is expected to be derated/out-of-service and 7F/6-NN ATC is not otherwise available
- Limited duration – demonstrate that the duration of the exception request coincides with the months of the outage or derate
- Limited volume – demonstrate that the volume being requested for exception is either:
  - Equal or less than the reduction in the participants existing 7-F/6-CF/6-NN rights on that path for the applicable derate/outage period, or
  - Equal or less than the 7-F/6-NN ATC for the applicable derate/outage period that would otherwise be posted and available for reservation were it not for the transmission limitation

1. Enduring Constraints
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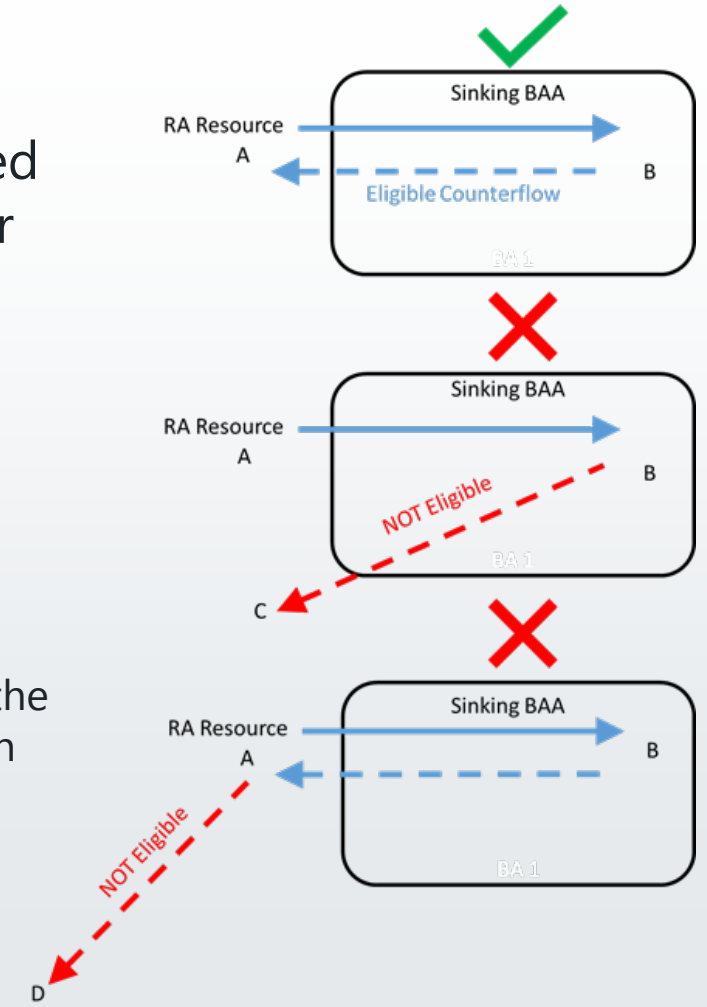
COUNTERFLOW OF AN RA RESOURCE

- The delivery of an RA resource to the participant's load will create direct and proportional counterflow on transmission used to support RA deliveries in the WRAP to other LREs
- Identify an RA Resource in FS showing
- Demonstrate support from TSP
- Limited volume
  - Volume being requested by the participant for the export transmission exception is equal or less than the amount of the expected counterflow associated with the delivery of the RA Resource



1. Enduring Constraints
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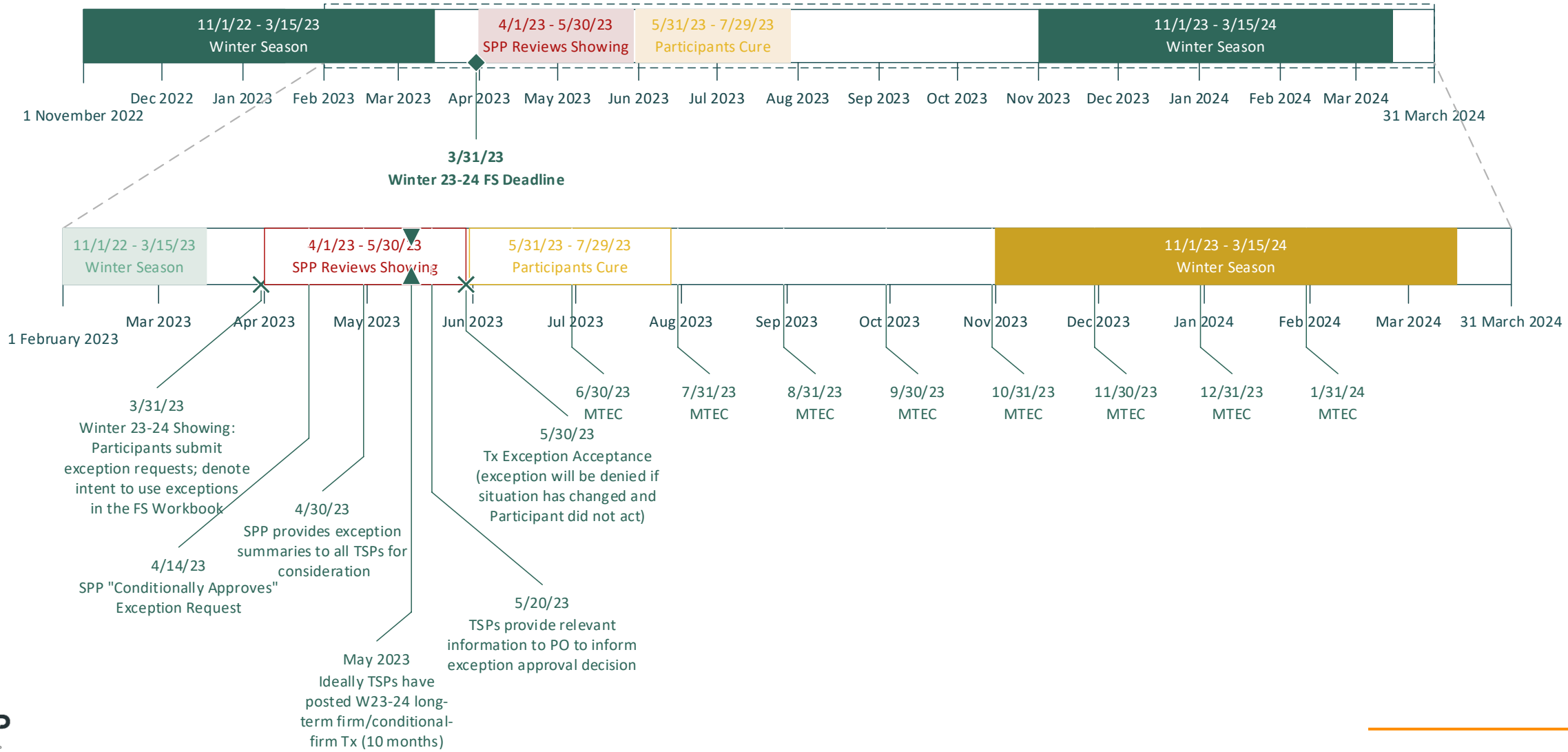
Applying for an Exception

Responsibility of participant to seek exception



WRAP Update

Transmission Demonstration and Exceptions

Forward Showing Capacity Requirement

How Loads Participate

Monthly Transmission Exception Check

- In every month following the review period, a participant with a Category 1 or 2 exception will perform a Monthly Transmission Exception Check (MTEC)
- To pass an MTEC, a participant must demonstrate either:
  - The circumstances necessitating the exception have not changed;
  - Transmission has become available, and they have acquired it; or
  - They have acquired a different resource and the necessary transmission, no longer needing the exception.
- Failing to complete an MTEC in any month following an exception's approval will result in a CONE charge for the amount of the exception

1. Enduring Constraints
2. Future Firm ATC Expected
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TSP ENGAGEMENT

- The Program Operator (PO) will provide TSPs summaries of the exceptions requested 30 days after the FS deadline
- TSPs are invited to provide information to inform the PO's decision to approve the exception requests within 20 days of receipt of these summaries
- *WRAP understands that TSPs are not obligated to participate in the program, as they are not the point of compliance - not intended to change the current practices of TSPs with respect to their customers*

WRAP Update

Transmission Demonstration and Exceptions

Forward Showing Capacity Requirement

How Loads Participate

FS Capacity Requirement

» In phase 2B Detailed Design: RA Program Metrics including the Forward Showing (FS) Capacity Requirement and the Planning Reserve Margin (PRM) calculated on a seasonal basis

Design refinements to accommodate the risk profile of meeting load in individual months and resource performance differences across months

» The monthly capacity requirement is a result of the model ensuring the 1-in-10 LOLE metric is not violated AND

» Loss of load risk is not concentrated in any one month (shoulder months have at least .01 LOLE)

» Monthly capacity requirement will vary month to month in the season (results in a shaped monthly PRM and participant FS capacity requirement)

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PRM and FS Capacity Requirement Calculation

- Establish capacity contribution of storage hydro and VERS + traditional generation derate for forced outages
- Perform LOLE simulation
- If the LOLE value is more reliable than 1-in-10, the inputs are adjusted to attain the required metric (addition of negative perfect capacity)
- Once the 1-in-10 metric is achieved (ensuring each month in the season has at leas .01 LOLE), the capacity requirement for each month is known
- The monthly PRM can now be calculated and expressed as a percentage of the P50 monthly peak of the aggregated load across the RA Program footprint
- Allocation to participants
  - To calculate the Participant-allocated share of the capacity requirement its P50 load (anchored to a season peak forecast) will be multiplied by 100% plus the Monthly PRM

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Planning Reserve Margin

» For this study, Planning Reserve Margin is defined as the following after the resource capacity was converted to UCAP values (next slide):

$$Monthly\ Planning\ Reserve\ Margin\ (UCAP) = \frac{(Monthly\ Capacity\ Needed\ to\ Maintain\ 1\ in\ 10\ seasonal\ LOLE\ - Non\ Coincident\ Peak\ Demand\ )}{Non\ Coincident\ Peak\ Demand} * 100\%$$

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Monthly PRM and FS Capacity Requirement Calculation

- LOLE studies performed to determine Monthly PRM
- Resources used in simulation will be evaluated

Resource type	Conversion to UCAP
Thermal Generation	The nameplate value of thermal generation capacity will be replaced with the qualifying capacity contribution (QCC) value of thermal generation
Variable Energy Resource (VER)	The nameplate value of VER capacity will be replaced with the monthly capacity contribution from the VERs as determined through effective load carrying capability (ELCC)
Storage Hydro	Storage hydro values as modeled in the LOLE study at their QCC values will be used in the PRM calculation
Short-term storage/ hybrid resources/ Demand Response	Installed capacity (ICAP) capacity (at the Program time duration requirement) is used for the calculation
Monthly Capacity Reduction	Negative adjustment to the capacity of each month that did not produce a measurable risk of lost load in the preliminary simulations
Pure Capacity adjustment to meet 1-in-10 LOLE	Adjustments to capacity to reach 1-in-10 metric for each binding season

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CALCULATION OF MONTHLY P50

» The P50 value utilized in the FS compliance metric will be calculated based on the program mandated methodology which is currently made up of the following key components *(see 1/26 and 3/2 webinars for additional detail on load forecasting)*

- A base monthly peak which is calculated as the median of that month's peak hourly load value for the last five years (net of historical additions and removals)
- Adjusted for any known additions or removals of load in the forecast window
- With a program developed growth factor applied

Monthly PRM Key Considerations

- Proposed methodology incorporates a monthly PRM that serves to **inform capacity needs on each month** of the binding season
- Monthly PRM is informed by monthly QCC of individual resources and **sends the correct signals** such that resources get the **appropriate credits in the months where they produce the most**
- The methodology **appropriately allocates the capacity requirement** to those participants contributing to the peak load

WRAP Update

Transmission Demonstration and Exceptions

Forward Showing Capacity Requirement

How Loads Participate

How Loads Participate in WRAP

WRAP aims to be able to accommodate many circumstances and needs for participation without impacting the reliability of the region

» Submission of FS Workbooks

- A single Load Responsible Entity (LRE) may need to submit multiple FS workbooks, and participate as separate loads in the Ops program
- Each workbook will have its own monthly FS capacity requirement assigned, and those requirements must be met individually and separately from any other submitted workbooks
- Load submitted by an LRE within a single FS workbook must be able to be interchangeably served by all resources in that workbook without expectation of procuring additional transmission rights between load locations across constraints during sharing events

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How Loads Participate in WRAP

- **Aggregating Loads** - load serving entities could decide to aggregate under a single Load Responsible Entity (LRE) acting as an agent for those loads for the purposes of program governance
- **Excluding Loads** - Some LREs may not be able to participate on behalf of all load for which they are responsible
  - LREs will not have discretion as to which load participates – loads seeking exclusion will work with their LRE and sign an attestation
  - LREs list **all** loads for which they are responsible in an FS Workbook, including excluded load
  - Excluded load will be documented and not included in determination of FS capacity requirement
  - Exclusion process intended for discrete loads served by disparate LSEs and/or in disparate balancing authority areas (BAAs)

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Operations Program

- Ops Program will have an instance of the sharing calculation for each FS workbook that is submitted
- Load that has been excluded is not eligible to participate in the Ops Program
- If it is found that an LRE was unable to deliver their holdback requirement due to:
    1. Serving load which was excluded from FS with program-related resources, or
    2. Submitting information about excluded loads in Ops program data inputs,

  That participant will no longer be eligible to exclude load in future forward showing submittals and non-delivery charges would apply at the maximum threshold

Calculation of P50

for Purposes of Cost Allocation and Voting

- P50 peak load will be established for both seasons for each FS Workbook submitted
- LRE's program P50 load will be the sum the higher of the two seasons' P50 loads from each of the workbooks - the P50 load will not include any excluded loads

LREs may split this single per-participant fee amongst aggregated loads, but that would be done outside of the program

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How Loads Participate in WRAP

Program Governance

- An LRE will always receive one senate vote
- Any LRE may divide their house vote as desired to reflect their loads; the total house vote cast will always equal the LRE's total P50 load in the program (as calculated for admin cost allocation)
- Though most RAPC meetings will be open to the public, only the identified LRE will participate in closed RAPC meetings (though they may relay anonymized summaries of the closed meetings to their constituent loads – same rules apply for COSR staff rep)

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Thank You

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APPENDIX
EXAMPLE PARTICIPANT CONFIGURATIONS

EXAMPLE PARTICIPANT CONFIGURATION #1

An LRE (happens to also be an LSE) has load in Montana and Oregon - two loads are served by different resources and have minimal/no transmission between them.

- FS: The LSE submits two FS workbooks (with distinct load and resource information) and must meet a separate FS capacity requirement (P50+PRM) with distinct resources demonstrated in each.
- Ops: The resources and load in each workbook are accounted for in two separate sharing calculations. The LSE provides data for each set of resources/load to facilitate the operations program's calculations; they may elect to provide two 24x7 contacts, one for each sharing calculation.
- Governance: When they vote, the LSE receives a single senate vote and a house vote accounting for the sum of the two winter P50 peak loads / the region's total NCP P50 load. A single voice represents them in RAPC discussions. Though they may choose to divide their house vote, that would be done outside of the RAPC meetings.
- Cost: The LSE pays one per-participant fee and pays a load-based fee based on the sum of their two winter P50 peak loads (NCP of their two loads).

Example Participant Configuration #2

A marketer serves retail access load for four customers/four loads across three different states - the customers are responsible for their own resource procurement and have minimal/no transmission between them; they are not operated collectively/to realize diversity benefit.

- FS: The marketer submits a separate workbook for each of their customers; each workbook must demonstrate that the customer has procured resources to meet their FS capacity requirement. The program deals only with the marketer serving as the LRE (i.e., if a workbook fails the forward showing, marketer likely passes the CONE on to the customer through means outside of the program).
- Ops: The resources and load in each workbook are accounted for in four separate sharing calculations. The marketer provides data for each set of resources/load to facilitate the operations program's calculations; likely the marketer is the single point of contact for the Ops program.
- Governance: When they vote, the marketer receives a single senate vote and a house vote accounting for the sum of the higher of either summer or winter seasons for each of the four loads / the region's total NCP P50 load. The marketer represents them in RAPC discussions. Though they may choose to divide their house vote, that would be done outside of the RAPC meetings.
- Cost: The marketer pays one per-participant fee (likely each customer pays ¼ of a per-participant fee) and pays a load-based fee for the total MW = sum of [higher of either summer or winter seasons P50 peak load] for each of the four loads.

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EXAMPLE PARTICIPANT CONFIGURATION #3

An agent represents five LSEs bringing load into the program - These LSEs want to participate in the program but either cannot devote the time necessary to fully engage, cannot participate fully in the operations program (due to technical or functional limitations), or do not want to pay the full per-participant fee. The agent dispatches resources for all of these LSEs and can meet operational program technical requirements. Three of the LSEs are geographically collocated and can share resource and load diversity in times of need.

- FS: The agent might determine that submitting three workbooks is appropriate (one for the three geographically collocated loads, one for each of the two disparate loads). Alternatively, the agent and/or their LSEs could decide to submit five separate workbooks if the loads' agreement with the agent was more conducive to such an arrangement. The program would be agnostic to which approach is taken, so long as the agent is able to attest that each workbook submitted can share resource and load diversity without additional transmission. Each workbook submitted must demonstrate that the customer has procured resources to meet the FS capacity requirement. The program deals only with the agent serving as the LRE (i.e., if a workbook fails the forward showing, agent likely passes the CONE on to the LRE(s) through means outside of the program).
- Ops: The resources and load in each workbook are accounted for in separate sharing calculations. The agent provides data for each set of resources/load to facilitate the operations program's calculations. The agent is the single point of 24x7 contact for the ops program, as they are dispatching resources to meet all five LSEs' load.
- Governance: When they vote, the agent receives a single senate vote and a house vote accounting for the sum of the higher of either summer or winter seasons for each of the workbooks submitted / the region's total NCP P50 load. The agent represents them in RAPC discussions. Though they may choose to divide their house vote, that would be done outside of the RAPC meetings.
- Cost: The agent pays one per-participant fee (likely each customer pays 1/5 of a per-participant fee) and pays a load-based fee for the total MW = sum of [higher of either summer or winter seasons P50 peak load] for each of the workbooks submitted.

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Example Participant Configuration #4

An entity assumes responsibility as an LRE for load outside the western US under a contract or other arrangement with one or more LSEs that operate in the relevant region. The LRE will be responsible as a participant in both the forward showing and the operations programs, and compliance with all applicable provisions of the FERC (license to import and export from US to relevant region) and WRAP Tariff.

For example, Canadian LSEs may contract with an affiliate or other third party in order to obtain some portion of the benefits of the program while preserving their own existing legal, regulatory or other status. In such a case, the Canadian LSE would not be a participant; rather, an affiliate or other third party would be assigned all authority and responsibilities necessary to fully participate in the program as the LRE for the Canadian LSE's service territory.

- FS: The assigned LRE will submit a workbook demonstrating the procurement of resources sufficient to meet the FS capacity requirement for each geographically collocated load for which it is responsible. Program costs, fees and obligations will be the responsibility of the assigned LRE.
- Ops: The assigned LRE will provide data for each set of resources/load to facilitate the operations program's calculations. The assigned LRE is the single point of 24x7 contact for the ops program, as it is responsible for overseeing and accounting for the dispatch of resources to meet program obligations.
- Governance: When voting, the assigned LRE receives a senate vote and a house vote based on load in the service territories associated with the relevant Canadian LSEs. The assigned LRE is expected to fully represent these interests in RAPC discussions.
- Cost: The assigned LSE pays the applicable participant fees and a load-based fee for the total MW = sum of [higher of either summer or winter seasons P50 peak load] for each of the workbooks submitted.

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