

NWPP RESOURCE ADEQUACY PROGRAM

LOAD SERVICE INFORMATION FORUM (LIF) MEETING #2

JUNE 17, 2021



AGENDA

- » Recap of LIF and Timelines
- » Business Case Considerations
- » Participation Scenarios for Differently Situated LREs
- » Participation Costs
- » Load Forecasting
- » Contracting
- » Next Steps

RECAP

LIF OVERVIEW

- **Objective:** Build awareness and understanding of the NWPP RA program under development in order to encourage broad LRE participation in the program beginning in Stage 1
- Series of monthly webinars – May-July/August 2021
- Content will focus on addressing questions LREs have with respect to program design, eligibility, and business case considerations for joining the RA program

RECAP

PRELIMINARY TIMELINE

Starting Fall 2021, the ability to participate in Stage 1 (non-binding forward showing) begins

- Aiming for membership sign up mid-August through mid-September for Non-Binding Forward Showing Participation
 - › *Will need to collect data from LREs beginning in September*
 - › *Sign-up window will be defined, due to the need to begin data collection and run modeling.*
- Non-binding showing March/April 2022 for Winter 2022-23

RECAP

PROGRAM PARTICIPATION

- Load responsible entities (LREs) hold compliance obligation for RA program
- Voluntary entry (absent any contractual or other regulatory requirements), followed by obligation to comply
- Other option to engage in the RA Program is by contracting with Participants to provide capacity used for Participants' forward showing capacity requirements
- IPPs and LREs (program Participants and those not participating) are all eligible to contract with Participants

RECAP

PROGRAM BENEFITS

- LREs (*point of compliance for RA Program*)
 - › *Improved reliability/less risk of being short*
 - › *Lower cost relative to achieving RA on a stand-alone basis*
 - › *Increased opportunity for sales/compensation for capacity*
- IPPs/Contracting Entities
 - › *Increased ability to sell surplus capacity by demonstrating product is reliable, if registered*
 - › *Enhanced market visibility = better understanding of capacity picture in the region and awareness of capacity sales opportunities*
 - › *Longer-term contracting opportunities due to RA forward showing program requirements established 7 months in advance*

LREs BUILDING BUSINESS CASES

- Business cases for joining the program will be entity-specific by LRE
- Program design has significant identified benefits; NWPP's ability to help quantify these for all entities has some considerations:
 - › *Can illustrate the regional cost of meeting identified reliability targets and program requirements with or without a program – demonstrate the value of doing so **with** the program*
 - › *Potential participants are not currently participating in an RA program, nor meeting the metrics proposed – cost/benefit analysis must incorporate current practices*
 - › *A no-program option (or choice to not join) cannot be equated with historical experience or the status quo – the grid is changing with or without a program*
 - › *Non-binding Stage 1 is intended to give entities more information and time to assess their own interpretation of these benefits and the impacts of complying with the program*

POTENTIAL BUSINESS CASE CONSIDERATIONS

- › *What reliability metric and resource contributions does your utility use now?*

How is that metric used? In integrated resource planning, annual planning, shorter term trading?

How do you assess the capacity contribution of your resources? How does that methodology account for changing resource mixes?

How do your operations account for your reliability metric?

- › *How will you represent the likely future without the program? What alternatives to participation in the program are being considered?*

What are your assumptions about the availability of spot market supply from within or outside the region – are those assumptions reasonable/supportable in changing circumstances?

Likelihood of increased market price volatility might occur when the grid is tight – do you have confidence in your risk policies under these new conditions?

How likely are your neighbors to be able to support your reliability needs if the grid gets tight?

PARTICIPATION SCENARIOS

Four scenarios to look at from a resource capacity lens – *some transmission considerations*

1. A capacity-deficit entity that joins the RA Program
2. A capacity-deficit entity that does *not* join the RA Program
3. A capacity-surplus entity that joins the RA Program
4. A capacity-surplus entity that does *not* join the RA Program

1. CAPACITY-DEFICIT ENTITY JOINS THE RA PROGRAM

- Improved reliability compared to risk of relying on short-term markets
 - › *Avoid potential of being one of the entities unable to find and acquire supply or firm transmission in short-term markets when needed*
- Enjoys investment savings through a lower PRM (diversity) in the showing timeframe
- Receives independently determined capacity requirement (PRM) and capacity contribution metrics (QCC) of different resource technologies and contracts
- Continues to enjoy high level of autonomy in their planning processes to select particular resources and/or contracts along with acquiring transmission rights

2. CAPACITY- DEFICIT ENTITY DOES NOT JOIN THE RA PROGRAM

- » May experience increased reliability risk
 - Challenges in finding/acquiring surplus capacity in short-term markets*
 - Grid continues to tighten due to de-carbonization efforts*
 - RA Program provides situational awareness of state of the transmission and deploys diversity to participants in the program first*
- » Can expect to experience higher investment costs, in the form of a higher PRM to “build out” or “contract out” of their capacity deficit without the benefits of the program’s early warnings and utilizing the benefits of the diversity
- » Must determine and defend to their regulators their own determination of their capacity & transmission requirements (Load + PRM) and the capacity contribution (QCC) of different resource technologies and contracts
- » Continues to enjoy maximum autonomy in their planning processes to select resources versus contract

3. CAPACITY-SURPLUS ENTITY JOINS THE RA PROGRAM

- Registers their resources and can sell defined capacity quantity of resources/fleet to footprint with adequate required transmission rights
- Will not have to hold back from sales for “insurance” to cover forced outages, VER unavailability, load excursions, as surplus entities are similarly covered by operational program
- Will not have their capacity “leaned on” through energy-only payment in operational markets (i.e., without capacity compensation)
- Continues to enjoy high level of autonomy in their planning processes to select resources versus contract along with acquiring transmission rights

4. CAPACITY- SURPLUS ENTITY DOES NOT JOIN THE RA PROGRAM

- » May find it more difficult to sell surplus capacity, due to inability to demonstrate product is
 - Reliable (if not registered)*
 - Surplus (if not a participating LSE/LRE)*
 - Deliverable on firm transmission*
- » May have to continue to hold back from sales, extra “insurance” to cover own forced outages, VER unavailability, load excursions
- » May end up having capacity leaned on for program excursions and/or to support capacity needs in other regions through short-term markets, without capacity compensation (but rather energy-only compensation)
- » Continues to enjoy maximum autonomy in their planning processes to select resources versus contract along with acquiring transmission rights



PARTICIPATION COSTS- STAGE 1 NON-BINDING

- Methodology to determine costs is under consideration
 - › *Many factors (cost of NWPP and Program Operator (PO), small and large entities, etc.)*
- Rough order of magnitude estimate: likely on the order of \$50-300k through June 2022
 - › *Will depend on how many entities join and on cost allocation methodology*
 - › *PO cost approximations will be known by late June, more refined estimates will be known by then*
 - › ***All entities interested in joining will be provided costs before any decision to sign an agreement is required***

LIF PARTICIPANT QUESTIONS/TOPICS

LOAD FORECASTING

- » Participants will provide their load forecast and their load forecast methodologies to the Program Operator (PO) for review
- » PO will review forecasts and methodologies for consistency, accuracy and objectivity
- » PO will perform a post-season review to compare Participants' peak loads against the loads forecasted for that season
- » At some point, Participants may elect to have the PO develop its own load-forecasting function to make an independent load forecast
- » LREs that do not currently do probabilistic load forecasting are not ineligible for the program

CONTRACTING

RESOURCE PURCHASE TYPES

- Participants may **build/own** resources that provide capacity and these resources may be used for their forward showing obligations
- Participants may **contract** with third parties to provide capacity used for their forward showings
 - › *Participants may contract with other Participant owned resource*
 - › *Participants may contract with parties not participating in the RA Program*

CONTRACTING

REGISTRATION/CERTIFICATION

- The registration and certification process will be required for all resources of RA participants and encouraged for non-participants

The registration and certification process for all resources will require, but will not be limited to, the following items:	
Unit information	Owner, operator, technology, and fuel type
Name	Facility common name
Location	Balancing authority area (BAA) and physical location information related to zone determination (applicable for transmission, ELCC, and thermal QCC analysis)
Maximum capacity (nameplate)	Summer and Winter values
Demonstration of operational and capability testing	Historical performance showing Real Power output will meet the operational test requirements for existing resources Operational data from within the two years prior to the FS date is acceptable for the verification of Real Power Capability testing – Either the RA Program can develop its own testing requirements, or existing testing requirements may be adopted. Testing should, at a minimum, meet the requirements of North America Electric Reliability Corporation (NERC) MOD-025
Outage Data	NERC Generator Availability Data System (GADS) data (or equivalent) for thermal and storage hydro units will be incorporated into the determination of QCC. Outages will not be necessary for wind, solar, or run-of-river, as the ELCC methodology already considers that information.
Historical Output	Historical output shapes (hourly) to be provided for wind, solar and run-of-river resources. For storage hydro units, historical output shapes along with other data required by the NWPP Storage Hydro QCC Workbook.

CONTRACTING

EXTERNAL PURCHASE CONSIDERATIONS

Limited visibility into resources backing an external (non-participant) system purchase

- Must ensure external resources are held to comparable standards to internal resources
- All generation resources owned (or jointly owned) and/or operated by a Participant and any resources (e.g., contracts or demand-side resources) claimed by a Participant on its FS portfolio will be required to register with the PO in order to receive a QCC value
- Non-participants will have opportunity to register with the program (preferred option for transparency)
- Resources cannot be committed to another RA program
- Transmission provisions are currently under development

CONTRACTING SYSTEM SALES

Many NWPP (and external) contracts are for slices or portions of systems (vs. specific units or plants)

- Must properly assess the value of the system and track how it has been sold/allocated
- Additional complexity when considering non-participant system sales (attestation required)

CONTRACTING

GRANDFATHERING

- Anticipate process for “grandfathering” existing contracts – need to assign each contract an appropriate QCC
- Intend to look carefully at each contract to ensure it can be reliably counted on
 - › *Ideally, Participant would go through process for all contracts (registration or attestation)*
 - › *If not possible, need to pursue other process*
 - Need to specify system or source
 - If a system or source cannot be presumed, the contract would not count

NEXT STEPS

Future meeting topics we've identified:

- Transmission requirements
- Data collection requirements

What else?

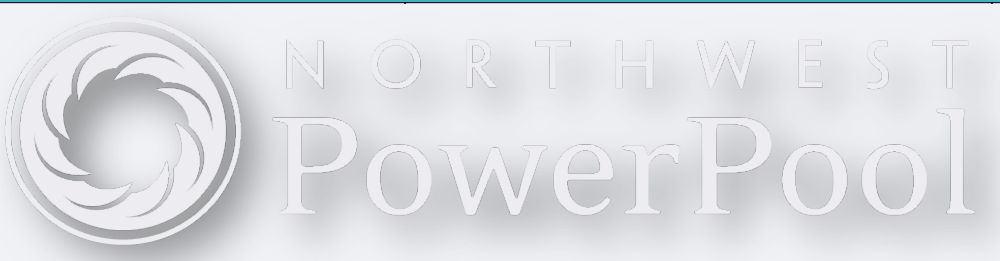
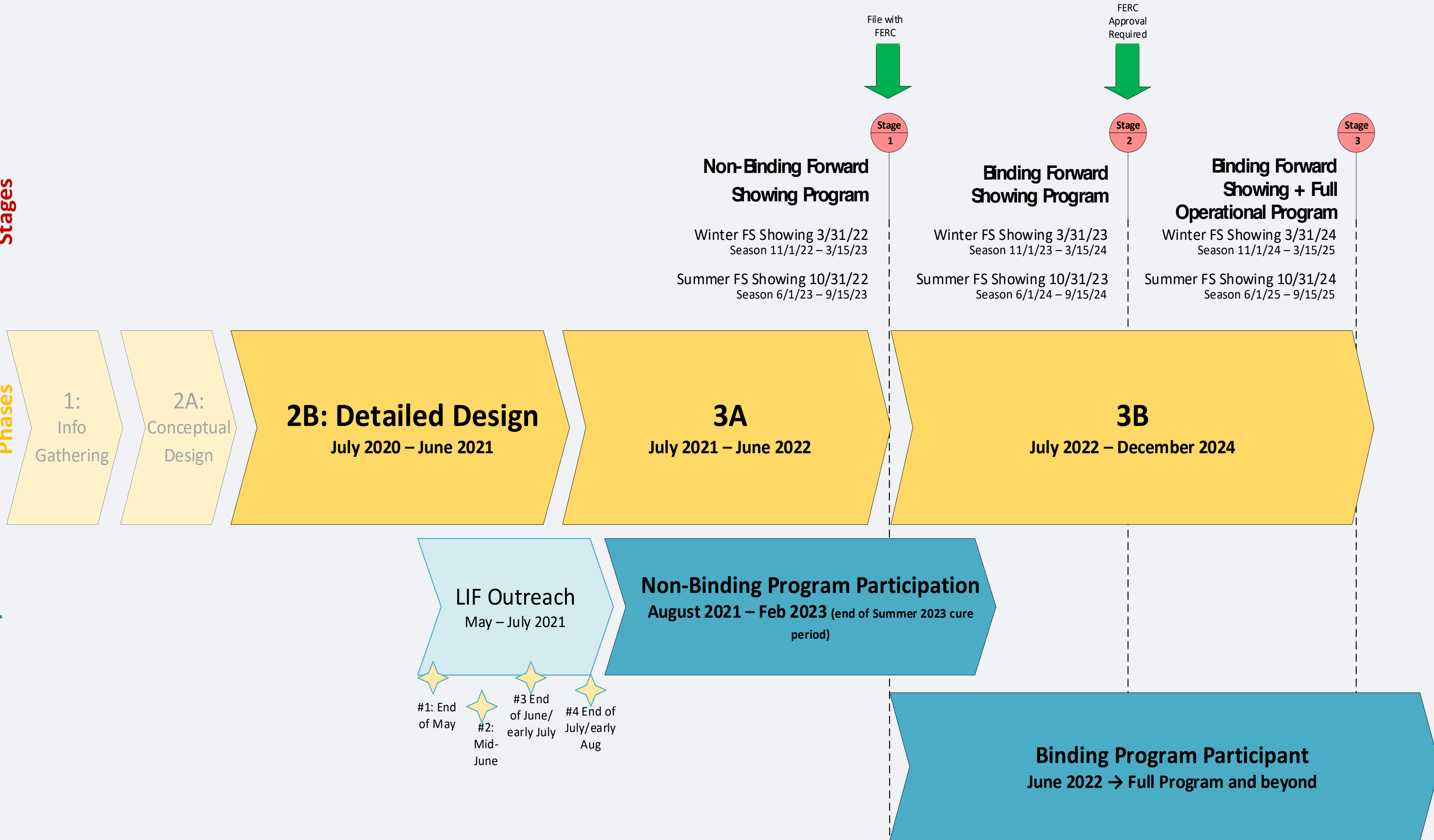
Next meeting will be held on July 14
11:00 am-1:00 pm PT

APPENDIX

Red: Functionality Stages

Yellow: Design Phases

Blue: Participation



Snapshot of NWPP RA Program

Preliminary Conceptual Design: Forward Showing Program

Program Structure	Bilateral - Participants will continue to be responsible for determining what resources and products to procure from other Participants or suppliers
Compliance Periods	Two binding seasons: Summer and Winter Fall and Spring seasons would be advisory (no penalties for non-compliance)
Forward Showing Deadline	Participants will demonstrate compliance with FS reliability metrics seven months in advance of the start of the binding seasons - if notified of deficiency by the PO, entities will cure issues by three months prior to the start of the binding season
Reliability Metric	FS Program is designed to identify the capacity needed to meet a 1 day in 10 years loss of load expectation (LOLE) target
Load Forecasting	Entities will forecast their own loads, working with the PO to use acceptable forecasting methodologies PO will use load forecasts and historical data to identify a P50 (1-in-2) peak load for each month in the binding season - the highest monthly P50 will be used for all months of that season
Planning Reserve Margin	Seasonal PRM will be determined for Summer and Winter seasons and expressed as a percentage of each Participant's identified seasonal P50 load forecast

Snapshot of NWPP RA Program

Preliminary Conceptual Design: Forward Showing Program

Resource Capacity Accreditation

Wind and Solar Resources: Effective Load-Carrying Capability (ELCC) analysis.
Run-of-River Hydro: ELCC analysis.
Storage Hydro: NWPP-developed hydro model that considers the past 10 years generation, potential energy storage, and current operational constraints.
Thermal: Unforced capacity (UCAP) method.
Energy Storage and Energy Storage Resources (ESR) hybrid resources: Determined by operational testing until higher penetrations show a need for a performance-based methodology
Customer Side Resources: Operational testing and historical performance.

Transmission

Rely on existing OATT frameworks to facilitate transmission-related requirements in FS and Ops - will not infringe on TSPs' and BAs' responsibilities, nor diminish Participants' OATT responsibilities
 Demonstrates deliverability of resources claimed in the FS on NERC priority 6 or 7 transmission (firm, conditional firm, network service – in some conditions) - demonstrate at FS deadline having procured or contracted for transmission rights to deliver at least 75% of the resources (or contracts) claimed in the FS portfolio from source to load
 When sharing is forecasted in the Ops program, prepare to demonstrate firm transmission for resources not previously shown to have NERC priority 6/7 transmission

Penalty for FS Non-Compliance

Deficiency payment based on cost of new entry (CONE) for a new peaking gas plant.

Snapshot of NWPP RA Program

Preliminary Conceptual Design: Operational Program

Framework for Accessing Pooled Capacity

Sequentially comparing forecasts to the FS metrics beginning six days before the preschedule day, identification of sharing events and required capacity holdback on the preschedule day, and energy deployments on the operating day

Accessing Entity:

- › Can only call on pool capacity when $\text{Load} + \text{Contingency Reserves} > \text{Forecasted peak load} + \text{Planning reserve margin (PRM)} - \text{forced outages} - \text{VER underperformance} + \text{VER over-performance}$
- › Participants can only access pooled capacity equal to the amount of load over their reliability metric

Providing Entity:

- › Administrator will ask those not experiencing loads over their RA obligations assist
- › Could request the difference between their RA obligations and forecasted load

Transmission and Deliverability

- › Will require modeling to identify any transmission considerations in the operational time frame
- › Recommendations associated with transmission availability in the operational time horizon will be made in Phase 2B