

Western Resource Adequacy Program

Change Request Form

Lead Sponsor Information	
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Name:	Organization:
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Phone Number:	Email:

Type of Change Requested
Check one*: ☐ Correction (<i>i.e., revising erroneous language or language that needs clean-up for grammatical errors or inconsistency across governing documents - no changes to intent or policy</i>) ☐ Clarification (<i>i.e., revising language to better represent existing intent, no changes to functionality or policy</i>) ☒ Enhancement (<i>i.e., revising language to expand upon existing intent or functionality</i>) ☐ New Protocol, Business Practice, Criteria, Tariff (<i>i.e., new language to accommodate new functionality or policy not existing today</i>) ☒ Change (<i>i.e., a change in the existing policy – will replace an existing language</i>) ☐ Other (<i>i.e., changes that do not fall into the categories listed above</i>)

Description of Change

Provide a description of the issue*:

Currently, the WRAP Loss of Load Expectation (LOLE) model includes an additional 6% of load as a proxy for the 3% load/3% generation Contingency Reserve (CR) requirement established under BAL-002-WECC-3. This additional load is modeled in the same manner as other load, meaning that a loss of contingency reserves is treated as a "loss of load." Based on modeling experience, the Program Operator estimates that this treatment increases the Forward Showing Planning Reserve Margin (FSPRM) by approximately 4%.

FERC approved the retirement of BAL-002-WECC-3, effective April 14, 2026. Following its retirement, the Western Power Pool (WPP) Reserve Sharing Group (RSG) established a new CR methodology. Under the new methodology, the RSG footprint must carry CR equal to 200% of the previous calendar year's average Most Severe Single Contingency (MSSC). The total RSG CR requirement is allocated to individual Balancing Authorities (BAs) based on each BA's weighted pro rata share of generation plus load relative to total generation plus load across the RSG footprint.

The PRM Task Force reached consensus that the CR requirement reflected in the WRAP LOLE model should remain aligned with the CR requirement established by the RSG.

New Footprint Requirement

The previous WRAP methodology was based on the 3% load/3% generation requirement and was represented in WRAP as an additional 6% of Participant load. Under the new methodology, the CR requirement is instead based on 200% of the previous calendar year's average MSSC for the entire RSG footprint.

Because the WRAP Region is a subset of the RSG footprint, WRAP will reflect the portion of the RSG CR requirement attributable to WRAP Participants rather than the entire RSG requirement.

Allocation to WRAP Participants in Forward Showing

Within the RSG, each BA's CR requirement is calculated as follows:

BA CR Requirement (CRO) = (200% x Previous Year's Average MSSC) x (BA Average Hourly Gen + BA Average Hourly Load) / (RSG Average Hourly Gen + RSG Average Hourly Load).

Two adjustments are needed to translate the RSG methodology to WRAP.

First, WRAP Participants are required to bring sufficient capacity to meet their load obligations. Therefore, for purposes of allocating the CR requirement among WRAP Participants, the

allocation will be based on load rather than generation plus load. This is analogous to the existing WRAP methodology, which represents the 3% load/3% generation requirement as 6% of load.

Second, RSG requirements are established at the BA level, while WRAP participation occurs at the Load Responsible Entity (LRE) level. When a BA is the WRAP Participant and represents the entire BA load in WRAP, the BA CR requirement is the same as the LRE CR requirement. When a BA includes multiple LREs participating in WRAP or has only part of its load participating in WRAP, the BA's CR requirement will therefore be allocated among those LREs based on their respective shares of BA load:

WRAP LRE CR Requirement = BA CR Requirement x (LRE Average Hourly Load / BA Average Hourly Load)

A few additional points apply:

- If the entirety of a BA's load is represented in WRAP, the BA CRO and the aggregate WRAP CR requirement for all LREs within the BA are the same.
- All average hourly load values will be based on the previous calendar year.
- WRAP will coordinate with RSG leadership to obtain the data necessary to implement this methodology.
- The existing policy regarding CR adjustments will remain unchanged.

Application in the Operations Program

Unlike the previous 3% load/3% generation methodology, the new CR requirement produces a static value for the applicable period. As a result, the CR requirement used in the Operations Program will not vary from the CR requirement established for Forward Showing. Accordingly, no separate adjustment to the CR requirement will be needed in the Sharing Calculation.

Timing

The RSG establishes a new MSSC value each April using data from the previous calendar year. For each WRAP Advance Assessment, the Program Operator will use the RSG CR requirement in effect at the time the Advance Assessment is performed as an input to the LOLE modeling.

Implementation

This methodology is expected to be incorporated into WRAP modeling beginning with Binding Season Summer 2028.

WPP is in discussion on the approach to address the treatment of CR requirements for seasons that have already been modeled and for which PRM values have already been approved.

Please provide the following information if known and/or available.

1. Provide the specific document and language you would like changed:

The following documents contain references to Contingency Reserves and need updating to the proposed policy:

- WRAP Tariff (pages 6, 67 and 68)
- BPM 102 – Forward Showing Reliability Metrics
- BPM 103 – Forward Showing Capacity Requirements
- BPM 202 – Participant Sharing Calculation Inputs

2. Provide a suggestion for how language could be updated to address issue:

See redlines to the above documents attached.

Impact of Change

Describe the benefits that will be realized from this change*:

This change will align the WRAP Contingency Reserve (CR) requirement with the current WPP Reserve Sharing Group (RSG) methodology following the retirement of BAL-002-WECC-3. The updated approach reflects the determination that the prior regional requirement was no longer necessary and is expected to support more efficient use of resources while maintaining reliability. Using an RSG-based requirement also provides a more direct representation of the contingency reserve needs applicable to WRAP Participants, rather than continuing to rely on the existing 6% of load proxy.

Please provide the following information if known and/or available.

1. Any data/information available that would characterize the importance or magnitude of the issue (allows for file attachments):

The expected peak Summer load in WRAP required a total of 4781 MW of Contingency Reserves at the time of the Forward Showing in October 2025. This updated methodology represents over 2000 MW savings for the regions and underscores the importance of implementing this change.

Non-Task Force Proposal Request (optional)

A flag as a Non-Task Force Proposal indicates the Concept could be implemented without requiring further development into a Proposal by a Task Force. Please check the box below if you would like this to be considered as a Non-Task Force Proposal

☒ I would like this to be flagged as a Non-Task Force Proposal

WESTERN RESOURCE ADEQUACY PROGRAM

TARIFF

OF

NORTHWEST POWER POOL

D/B/A

WESTERN POWER POOL

Contingency Reserves NTEP

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SCHEDULE 1

WESTERN RESOURCE ADEQUACY PROGRAM ADMINISTRATIVE COST RECOVERY CHARGE

ATTACHMENT A

Western Resource Adequacy Program Agreement

PART I GENERAL PROVISIONS

Contingency Reserves NTFP

1. Definitions

Unless the context otherwise specifies or requires, capitalized terms used in this Tariff shall have the respective meanings assigned herein for all purposes of this Tariff (such definitions to be equally applicable to both the singular and the plural forms of the terms defined). Unless otherwise specified, all references herein to Parts, Sections, Schedules, or Attachments, are to Parts, Sections, Schedules, or Attachments of this Tariff.

Applicable Price Index: A published index of wholesale electric prices, or Locational Marginal Prices duly calculated and posted by a FERC-regulated market operator, in either case as designated under Part III of this Tariff for use in connection with an identified Subregion.

Administration Charge or WRAP Administration Charge: The charge established under Schedule 1 of this Tariff for recovery of the costs of the WRAP.

Advance Assessment: Analyses and calculations of Participant load, resource, and other information performed in advance of each Binding Season as set forth in Part II of this Tariff.

Aggregate Capacity Deficiency: As to a Binding Season, the sum of the maximum Monthly Deficiencies of all Participants that submitted FS Submittals for such Binding Season, as determined following completion of the Cure Period for such Binding Season.

Available Transfer Capability ("ATC"): Transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses.

Balancing Authority: The responsible entity that integrates resource plans ahead of time, maintains demand and resource balance within a Balancing Authority Area, and supports interconnection frequency in real time.

Balancing Authority Area: The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

Base Charge: A component of the WRAP Administration Charge as established under Schedule 1 of this Tariff.

Base Costs: Base Costs shall have the meaning provided in Schedule 1 of this Tariff.

Base Services Cost Centers: The cost centers comprising the Base Charge as defined in Schedule 1 of this Tariff.

Base Services Percentage: Base Services Percentage shall have the meaning provided in Schedule 1 of this Tariff.

Binding Season: The Summer Season or the Winter Season.

Board of Directors or Board: The Board of Directors of the Northwest Power Pool d/b/a Western Power Pool.

Business Day: Any Day that is a Monday through Friday, excluding any holiday established by United States federal authorities.

Business Practice Manuals: The manuals compiling further details, guidance, and information that are appropriate or beneficial to the implementation of the rules, requirements, and procedures established by this Tariff. Business Practice Manuals do not include such internal rules or procedures as the Western Power Pool may adopt for its operation and administration, including but not limited to any corporate by-laws of the Western Power Pool, or for any services or functions provided by the Western Power Pool other than those established by this Tariff.

CAISO: The California Independent System Operator Corporation, a California nonprofit public benefit corporation.

Capacity Benefit Margin: An amount of transmission transfer capability permitted under open access transmission rules to be reserved by load serving entities to ensure access to generation from interconnected systems to meet generation reliability requirements.

Capacity Critical Hours (“CCH”): Those hours during which the net regional capacity need for the WRAP Region is expected to be above the 95th percentile, based on historical and synthesized data for the WRAP Region’s gross load, variable energy resource performance, and interchange.

Capacity Deficiency: A shortfall in a Participant’s Portfolio QCC relative to that Participant’s FS Capacity Requirement, as further defined in Part II of this Tariff.

Cash Working Capital Fund: Cash Working Capital Fund shall have the meaning provided in Schedule 1 of this Tariff.

Cash Working Capital Support Charge: A charge assessed to Participants under Schedule 1 of this Tariff to fund the Cash Working Capital Fund.

Cash Working Capital Support Charge Rate: Cash Working Capital Support Charge Rate shall have the meaning provided in Schedule 1 of this Tariff.

Central Hub: A designated point or named group of points on the transmission system within a Subregion identified by the Program Administrator that permits energy deliveries from multiple points within such Subregion.

Cost of New Entry (“CONE”): The estimated cost of new entry of a new peaking natural gas-fired generation facility, as determined under, and used in, Part II of this Tariff.

CONE Factor: A factor employed in the calculation of Deficiency Charges under Part II of this Tariff, to reflect whether, and the extent to which, the WRAP Region as a whole is expected to have a capacity deficiency during the period for which the Deficiency Charge is being calculated or a factor employed when a Participant has had repeated deficiencies in sequential years.

Committee of State Representatives (“COSR”): Committee of State Representatives, as established in Part I of this Tariff.

Contingency Reserve: As more fully described in the NERC WECC-reliability standards, a quantity of reserves, consisting of generation, load, interchange, or other resources, that are deployable within ten minutes, ~~equal to the greater of (i) the MW quantity of the loss of the most severe contingency and (ii) the megawatt quantity equal to the sum of 3% of hourly integrated load plus 3% of hourly integrated generation.~~

Critical Mass: *The threshold level of participation in a Subregion, as established in the Business Practice Manuals, below which each Participant of such Subregion may elect to participate as a Non-Binding Participant.*

Cumulative Delivery Failure Period: Any period of five consecutive years, ending with and including the most recent Energy Delivery Failure as of the time of determination of a possible Delivery Failure Charge.

Day: A calendar day.

Day-Ahead Price: A price for wholesale electric transactions designated as a day-ahead price in an Applicable Price Index.

Default Allocation Assessment: A charge assessed on non-defaulting Participants to recover the costs associated with a default by a Participant, as set forth in Part I of this Tariff.

Deficiency Charge: A charge assessed for a Capacity Deficiency or Transmission Deficiency, as set forth in Part II of this Tariff.

Delivery Failure Charge: A charge assessed for a Participant's failure to deliver a required Energy Deployment, as set forth in Part III of this Tariff.

Delivery Failure Charge Rate: A rate employed in the determination of a Delivery Failure Charge as more fully set forth in Part III of this Tariff.

Delivery Failure Factor: A factor used in the determination of a Delivery Failure Charge to recognize the relative severity or impact of an Energy Delivery Failure, as set forth in Part III of this Tariff.

Demand Response: A quantifiable load reduction or otherwise controllable load for which a Participant has two mutually-exclusive options to use to affect its FS Capacity Requirements in a FS for a Binding Season: (1) leave the effects of historically deployed demand response as part of its load provided for the Advance Assessment; or (2) utilize as a Demand Response Capacity Resource.

Demand Response Capacity Resource: A Qualifying Resource with a demonstrated capability to provide a reduction in demand or otherwise control load in accordance with the requirements established under Part II of this Tariff utilized to meet a Participant's FS Capacity Requirement.

Demonstrated FS Transmission: A Participant's demonstration in its Forward Showing Submittal that it has secured firm transmission service rights of the type and quantity sufficient to provide reasonable assurance, as of the time of the Forward Showing Submittal, of delivery of

capacity from the Qualifying Resources and the resources associated with the power purchase agreements in the Participant's Portfolio QCC.

Discounted Deficiency Charge: *A reduced Deficiency Charge during the Transition Period that enables a deficient Participant that demonstrates commercially reasonable efforts but is unable to cure deficiencies to access Operations Program capacity.*

Dual Benefit Cost Centers: Dual Benefit Cost Centers shall have the meaning provided in Schedule 1 of this Tariff.

Effective Load Carrying Capability ("ELCC"): A methodology employed to determine the Qualified Capacity Contribution of certain types of Qualifying Resources, as more fully set forth in Part II of this Tariff.

Energy Declined Settlement Price: A pricing component used as part of the calculation of settlements for Holdback Requirements and Energy Deployments under Part III of this Tariff.

Energy Delivery Failure: A failure by a Participant to provide an Energy Deployment assigned to such Participant under Part III of this Tariff.

Energy Deployment: A delivery of energy that a Participant is required to provide during an Operating Day, as set forth in Part III of this Tariff.

Energy Storage Resource: A resource, not including a Storage Hydro Qualifying Resource, designed to capture energy produced at one time for use at a later time.

Excused Transition Deficit: A Participant's inability during the Transition Period to demonstrate full satisfaction of the Participant's FS Capacity Requirement, which, under certain conditions and limitations prescribed by Part II of this Tariff, permits *the Participant to pay a Discounted Deficiency Charge*.

Federal Power Marketing Administration: A United States federal agency that operates electric systems and sells the output of federally owned and operated hydroelectric dams located in the United States.

FERC: The Federal Energy Regulatory Commission.

Forced Outage Factor: The factor resulting from dividing the number of hours a generating unit or set of generating units is not synchronized to the grid system, not in reserve shutdown state and considered to be out of service for unplanned outages—or a startup failure, by the number of total hours in the period multiplied by 100% or a Program Administrator calculated equivalent forced outage factor that reflects the likelihood and extent to which a resource will be unavailable from time to time due to factors outside management control.

Forward Showing Program: The program and requirements as set forth in Part II of this Tariff.

Forward Showing Submittal (“FS Submittal”): The submissions a Participant is required to submit in advance of each Binding Season to demonstrate its satisfaction of the FS Capacity Requirement and FS Transmission Requirement, as set forth in Part II of this Tariff.

Forward Showing Year: A period consisting of a Summer Season and the immediately succeeding Winter Season.

FS Capacity Requirement: The minimum quantity of capacity a Participant is required to demonstrate for a Binding Season, as set forth in Part II of this Tariff.

FS Deadline: The deadline for Participants’ submissions of their FS Submittals for a Binding Season, as established under Part II of this Tariff.

FS Planning Reserve Margin (“FSPRM”): An increment of resource adequacy supply needed to meet conditions of high demand in excess of the applicable peak load forecast and other conditions such as higher resource outages, or lower availability of resources, expressed as a percentage of the applicable peak load forecast, as determined in accordance with Part II of this Tariff.

FS Transmission Requirement: The minimum quantity of transmission service rights a Participant is required to demonstrate for a Binding Season, as set forth in Part II of this Tariff.

High-Priced Day: The most recent day in the CAISO in which prices in the day-ahead market were at least \$200/MWh.

Holdback Capacity: Capacity that is voluntarily supplied or is the result of a positive Sharing Calculation result that is bindingly committed to the WRAP after it is claimed by one or more Participants with a negative Sharing Calculation result.

Holdback Requirement: A MW quantity, as determined on a Preschedule Day, that a Participant is required to be capable of converting into an Energy Deployment on a given hour of the succeeding Operating Day, as more fully set forth in Part III of this Tariff.

ICE Index: A wholesale electric price index prepared and published by the Intercontinental Exchange.

Incremental Cash Working Capital Support Charge: Incremental Cash Working Capital Support Charge shall have the meaning provided in Schedule 1 of this Tariff.

Independent Evaluator: An independent entity engaged to provide an independent assessment of the performance of the WRAP and any potential beneficial design modifications, as set forth in Part I of this Tariff.

Installed Capacity: Nameplate capacity adjusted for conditions at the site of installation.

International Power Marketing Entity: An entity that (i) owns, controls, purchases and/or sells resource adequacy supply and is responsible under the WRAP program for meeting LRE obligations associated with one or more loads physically located outside the United States.

Legacy Agreement: A power supply agreement entered into prior to October 1, 2021.

Load Charge: A component of the WRAP Administration Charge as established under Schedule 1 of this Tariff.

Load Charge Rate: Load Charge Rate shall have the meaning provided in Schedule 1 of this Tariff.

Load Services Costs: Load Services Costs shall have the meaning provided in Schedule 1 of this Tariff.

Load Services Cost Centers: Load Services Cost Centers shall have the meaning provided in Schedule 1 of this Tariff.

Load Services Percentage: Load Services Percentage shall have the meaning provided in Schedule 1 of this Tariff.

Load Responsible Entity (“LRE”): An LRE is an entity that (i) owns, controls, purchases and/or sells resource adequacy supply, or is a Federal Power Marketing Administration or an International Power Marketing Entity, and (ii) has full authority and capability, either through statute, rule, contract, or otherwise, to:

- (a) submit capacity and system load data to the WRAP Program Operator at all hours;
- (b) submit Interchange Schedules within the WRAP Region that are prepared in accordance with all NERC and WECC requirements, including providing E-Tags for all applicable energy delivery transactions pursuant to WECC practices and as required by the rules of the WRAP Operations Program;
- (c) procure and reserve transmission service rights in support of the requirements of the WRAP Forward Showing Program and Operations Program; and
- (d) track and bilaterally settle holdback and delivery transactions.

Subject to the above-mentioned criteria, an LRE may be a load serving entity, may act as an agent of a load serving entity or multiple load serving entities, or may otherwise be responsible for meeting LRE obligations under the WRAP.

Locational Marginal Price: The cost of delivering an additional unit of energy to a given node, as calculated under a FERC-regulated wholesale electric tariff.

Loss of Load Expectation (“LOLE”): An expression of the frequency with which a single event of failure, due to resource inadequacy, to serve firm load would be expected (based on accepted reliability planning analysis methods) to result from a given FS Planning Reserve Margin.

Make Whole Adjustment: A component used as part of the calculation of settlements for Holdback Requirements and Energy Deployments under Part III of this Tariff.

Maximum Base Charge: The maximum amount prescribed in Schedule 1 of the Tariff that the Base Charge cannot exceed.

Maximum Load Charge Rate: The maximum rate prescribed in Schedule 1 of the Tariff that the Load Charge Rate cannot exceed.

Median Monthly P50 Peak Loads: Median Monthly P50 Peak Loads has the meaning prescribed by Schedule 1 of this Tariff.

Month: A calendar month.

Monthly Capacity Deficiency: A Participant's Capacity Deficiency for a given Month.

Monthly Deficiency: An identification under Part II of this Tariff whether, and the extent to which, a Participant's need for capacity or transmission for a given Month is greater than the capacity or transmission, respectively, the Participant can demonstrate for such Month.

Monthly FS Capacity Requirement: FS Capacity Requirement determined as to a Month.

Monthly FSPRM: The FS Planning Reserve Margin applicable to a given Month of a given Binding Season, as determined in accordance with Part II of this Tariff.

Monthly Transmission Deficiency: A Participant's Transmission Deficiency for a given Month.

Monthly Transmission Demonstrated: A Participant's Demonstrated FS Transmission for a given Month.

Monthly Transmission Exceptions: Exceptions from the FS Transmission Requirement approved under Part II of this Tariff for a Participant for a given Month.

Multi-Day-Ahead Assessment: A period of days preceding each Operating Day, and ending on the Preschedule Day, during which Sharing Calculations are successively performed based in each case on Operating Day conditions expected at the time of calculation.

North American Electric Reliability Corporation ("NERC"): A not-for-profit international regulatory authority that serves as the designated electric reliability organization for the continental United States, Canada, and a portion of Mexico.

Net Contract QCC: The QCC, which may be a positive or negative value, calculated, in sum and on net, for a Participant's power purchase agreements and power sale agreements, in accordance with Part II of this Tariff.

Non-Binding Season: As to a Participant, *any* Binding Season during which the *provisions of Section 15A.1* of this Tariff *apply*.

Non-Binding Participant: For any Binding Season, a Participant that has made an election by which such Binding Season is a Non-Binding Season for that Participant.

Open Access Transmission Tariff: A governing document on file with FERC establishing the rates, terms, and conditions of open access transmission service, or equivalent tariff of a transmission service provider that is not required to file its transmission service tariff with FERC.

Operating Day: A current Day of actual electric service from resources to load, for which Sharing Events are determined and Energy Deployments may be required, as set forth in Part III of this Tariff.

Operations Program: The program and requirements set forth in Part III of this Tariff.

P50 Peak Load Forecast: A peak load forecast prepared on a basis, such that the actual peak load is statistically expected to be as likely to be above the forecast as it is to be below the forecast.

Participant: A Load Responsible Entity that is a signatory to the WRAPA.

Portfolio QCC: As to a Participant, the sum of the Resource QCC provided by all of a Participant's Qualifying Resources plus the Net Contract QCC of such Participant, as adjusted to reflect RA Transfers as described in Section 16.2.7 and Planned Outages as described in Section 16.2.8.

Preschedule Day: The applicable scheduling Day for a given Operating Day as defined in scheduling calendar established by WECC.

Program Administrator: The Western Power Pool, in its role as the entity responsible for administering the WRAP.

Program Operator: A third party that has contracted with the Program Administrator to provide technical, analytical, and implementation support to the Program Administrator for the WRAP.

Program Review Committee ("PRC"): The stakeholder sector committee as established in Section 4.2 of this Tariff.

Pure Capacity: A MW quantity of capacity without any assigned forced outage rate employed in ELCC determinations under Part II of this Tariff.

Qualifying Capacity Contribution ("QCC"): The MW quantity of capacity provided by a resource, contract, or portfolio which qualifies to help satisfy a Participant's FS Capacity Requirement, as determined in accordance with Part II of this Tariff.

Qualifying Resource: A generation or load resource that meets the qualification and accreditation requirements established by and under Part II of this Tariff.

Real-Time Price: A price for wholesale electric transactions designated as a real-time price in an Applicable Price Index.

Resource Adequacy Participant Committee ("RAPC"): The committee comprised of representatives from each Participant as established in Part I of this Tariff.

Resource QCC: The QCC provided by a Qualifying Resource, as determined in accordance with Part II of this Tariff.

Run-of-River Qualifying Resource (“ROR”): A hydro-electric power project that does not have the capability to store a sufficient volume of water to support continuous generation at the project’s stated maximum capacity for a period of one hour. Resource does not meet the definition of a Storage Hydro Qualifying Resource.

Safety Margin: An additional factor allocated among Participants with positive sharing calculations when warranted by certain conditions as prescribed by Part III of this Tariff.

Senior Official Attestation: A signed statement of a senior official of a Participant attesting that it has reviewed such Participant’s information submission required under this Tariff, that the statements therein are true, correct and complete to the best of such official’s knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed therein, and containing such further statements as required by this Tariff or the applicable Business Practice Manual for the information submission at issue.

Sharing Calculation: A calculation used in the Operations Program under Part III of this Tariff to identify any hour in which any Participant is forecast to have a capacity deficit.

Sharing Event: An hour or hours of an Operating Day for which one or more Participants has a negative Sharing Calculation result, as determined in accordance with Part III of this Tariff.

Storage Hydro Qualifying Resource: A hydro-electric power project with an impoundment or reservoir located immediately upstream of the powerhouse intake structures that can store a sufficient volume of water to support continuous generation at the project’s stated maximum capacity for a period of one hour or longer.

Subregion: An area definition approved by the Board of Directors and identified in the Business Practice Manuals, that is wholly contained within the WRAP Region, which is separated from one or more other Subregions by transmission constraints on capacity imports or on capacity exports that result, or are expected to result, in differing FSPRM determinations for that Subregion relative to such other Subregion.

Summer Season: A period of time that commences on June 1 of a Year and terminates on September 15 of the same Year.

System Sale: A bilateral agreement that conveys generating capacity from a group of generating resources from one party to another.

Transition Period: The Binding Seasons within the time period from June 1, 2025, through March 15, 2029, plus the time period required to implement the requirements and procedures of Part II of this Tariff applicable to such Binding Seasons.

Transmission Deficiency: A shortfall in a Participant’s demonstration of secured transmission service rights, after accounting for any approved transmission exceptions, relative to that Participant’s FS Transmission Requirement, as further defined in Part II of this Tariff.

Unforced Capacity: The percentage of Installed Capacity available after a unit's forced outage rate is taken into account.

Variable Energy Resource ("VER"): An electric generation resource powered by a renewable energy source that cannot be stored by the facility owner or operator and that has variability that is beyond the control of the facility owner or operator, including but not limited to a solar or wind resource.

VER Zone: A geographic area delineated in accordance with Section 16.2.5.2 of this Tariff for a given type of VER, where each VER of that type located in such area is anticipated to be comparably affected by meteorological or other expected conditions in such area to a degree that warrants distinct calculation of ELCC allocations for such VERs of that type in such area.

Voluntary Holdback: Capacity that is offered to the Operations Program by a Participant with excess supply that is not obligated to the WRAP through a positive Sharing Calculation result, some or all of which can be used as part of the offering Participant's Holdback Requirement. For a Participant in a Subregion without a Central Hub, Voluntary Holdback for an hour must additionally include a total quantity for all identified points from Section 19.4 at which it can deliver that is no less than the amount of the Voluntary Holdback capacity for such hour.

Western Electricity Coordinating Council ("WECC"): A non-profit corporation that has been approved by FERC as the regional entity for the western interconnection and that also has NERC delegated authority to create, monitor, and enforce reliability standards.

Western Resource Adequacy Program Agreement ("WRAPA"): The participation agreement for the Western Resource Adequacy Program, as set forth as Attachment A to this Tariff, or as set forth for an individual Participant in a non-conforming version of such participation agreement accepted by FERC.

Western Resource Adequacy Program ("WRAP"): The Western Resource Adequacy Program, as established under this Tariff.

Western Power Pool ("WPP"): Northwest Power Pool, d/b/a Western Power Pool, which serves as Program Administrator for the WRAP under this Tariff and holds exclusive rights under section 205 of the Federal Power Act to file amendments to this Tariff.

Winter Season: A period of time that commences on November 1 of a Year and terminates on March 15 of the immediately following Year.

WRAP Cost Assignment Matrix: The matrix set forth in Schedule 1 of this Tariff to identify which WRAP costs are assessed to the Base Charge and the Load Charge components of the WRAP Administration Charge.

WRAP Region: The area comprising, collectively, (i) the duly recognized and established load service areas of all loads in the United States that all Participants are responsible for serving, (ii) the duly recognized and established load service areas of all loads in the United States that all load serving entities, on whose behalf a Participant acts in accordance with this Tariff, are responsible for serving, and (iii) the applicable location(s) on the United States side of the United States

international border that form the basis for an International Power Marketing Entity's participation under the WRAP, in all cases excluding, for any Binding Season, any loads permitted by this Tariff to be excluded from Participants' Forward Showing Submittal for such Binding Season.

Year: A calendar year.

Contingency Reserves NTEP

2. Role of Western Power Pool

- 2.1 WPP, acting under the direction of its Board of Directors, shall administer the WRAP as Program Administrator. Except as specified in Section 3 of this Tariff, WPP, as authorized by its Board of Directors, shall have the sole authority to submit to FERC amendments to the rates, terms, and conditions set forth in this Tariff under section 205 of the Federal Power Act, 16 U.S.C. § 824d. Nothing contained herein shall be construed as affecting in any way the right of any Participant or any other entity to apply to FERC for amendments to the rates, terms, and conditions contained herein under section 206 of the Federal Power Act, 16 U.S.C. § 824e, or any other applicable provision of that Act.
- 2.1.1 WPP president and staff shall support the Board of Directors in overseeing all aspects of the WRAP, including oversight and management of the Program Operator(s) in accordance with any Program Operator agreement(s) entered into by WPP under Section 2.2 of this Tariff.
- 2.1.2 WPP and its staff shall provide all legal, regulatory, and accounting support for the WRAP, including support for making filings with FERC as authorized by the Board of Directors.
- 2.1.3 WPP staff shall provide all logistical support necessary to facilitate implementation of the WRAP and specifically all logistical needs of the Board of Directors and reasonable logistical assistance to facilitate meetings and activities of the RAPC, PRC, and all subordinate organizational groups.
- 2.2 As Program Administrator, WPP shall undertake all actions as necessary to implement and administer the WRAP, including but not limited to engaging one or more Program Operator(s) to perform technical operations of the WRAP including both the Forward Showing Program and Operations Program. Except as otherwise provided herein, WPP may contract for certain activities required by this Tariff to be provided by one or more Program Operator(s) subject to oversight by the Board of Directors, provided, however, that the Program Operator shall operate solely as a contractor under the oversight of WPP, and WPP shall remain the sole point of compliance with this Tariff. WPP shall have the sole authority to enter into contracts for such engagements and is responsible for providing support and compensation for such Program Operator(s) pursuant to any contract(s).
- 2.2.1 WPP will contract with Program Operator(s) to assist WPP with providing reasonable technical support and expertise to all WRAP organizational groups as governed by the Program Operator's contract with WPP.

3. Role of the Board of Directors and Limitations on Board Authority

- 3.1 Authority: Ultimate authority over all aspects of the WRAP as established under this Tariff shall be vested in the independent Board of Directors. Each member of the Board of Directors shall at all times exhibit financial independence from all Participants and classes of Participants, as further provided in the WPP Bylaws and policies. As set forth in Section 2.1 of this Tariff, the Board of Directors shall have the exclusive authority to approve and direct WPP to file amendments to this Tariff with FERC under section 205 of the Federal Power Act, 16 U.S.C. § 824d, subject to the limitations and prohibitions imposed under Section 3.4 of this Tariff. The Board of Directors shall also have the exclusive authority to approve the Business Practice Manuals and any amendments to the Business Practice Manuals, subject to the terms, conditions, and limitations imposed under this Tariff.
- 3.2 The Board of Directors generally shall meet in open session for all matters related to the WRAP; however, the Board of Directors may meet in closed session as the chair deems necessary to safeguard the confidentiality of sensitive information, including but not limited to discussing matters related to personnel, litigation, or proprietary, confidential, or security sensitive information. The Board of Directors shall not take action on any proposed amendment to this Tariff or the Business Practice Manuals in closed session. During open session, the chair of the Board of Directors will reasonably accommodate stakeholder requests to address the Board within the discretion of the chair.
- 3.3 The Board of Directors shall only consider amendments to this Tariff or the Business Practice Manuals after such amendments are first acted upon by the RAPC, subject to the following additional conditions:
- 3.3.1 In the event that the RAPC has voted to reject or has not voted to support a proposed amendment to this Tariff or the Business Practice Manuals, any stakeholder may appeal such decision to the Board of Directors, and the Board of Directors shall consider the appeal.
- 3.3.2 In the event that the RAPC has voted to reject or has not voted to support a proposed amendment to this Tariff or the Business Practice Manuals and a stakeholder has not appealed such decision, the Board of Directors may, on its own motion or motion of any member of the Board of Directors, consider the proposed amendment.
- 3.3.3 In the event that the COSR as a body opposes or appeals a RAPC decision to the Board of Directors regarding an amendment to this Tariff or the Business Practice Manuals, the process set forth in Section 4.3.3 of this Tariff shall apply prior to the Board of Directors' consideration of the RAPC decision.
- 3.3.4 In the event that the Board of Directors wishes to initiate an amendment to this Tariff or the Business Practice Manuals that has not undergone PRC

and RAPC review, the Board of Directors shall first submit such proposed amendment to the PRC for review under the processes set forth in Sections 4.1 and 4.2 of this Tariff.

3.3.5 Expedited Review Process: In the event that the RAPC determines that an expedited review process is necessitated by an exigent circumstance as set forth in Section 4.1.3.1.1 of this Tariff, the Board of Directors shall review the RAPC's recommended Tariff or Business Practice Manual amendment expeditiously and invite comment from the PRC, COSR, and stakeholders concurrently with its consideration of the RAPC proposal.

3.4 WPP is specifically prohibited from amending this Tariff to:

3.4.1 Alter, usurp, control, or otherwise materially modify the Participants' existing functional control and responsibility over their generation and transmission assets, including but not limited to planning and operation of such assets, Open Access Transmission Tariff administration, interfering with Balancing Authority duties and responsibilities, or imposing a must-offer requirement on any specific generation resources.

3.4.2 Administer Open Access Transmission Tariff service, engage in Balancing Authority operations, impose transmission planning requirements, or assume any transmission planning responsibilities with regard to any of the Participant's transmission assets.

3.4.3 Form any type of organized market, including but not limited to a capacity market, a regional transmission organization, a real-time market, or any other type of FERC-approved regional construct, unless such action is also approved by the RAPC under its voting procedures set forth in Section 4.1.6 of this Tariff.

3.4.4 Impose any requirements on Participants beyond the assessment of financial charges as specified in this Tariff or suspension or termination of participation for failure to meet any WRAP requirements.

3.4.5 Amend in any way this Section 3 of this Tariff without the approval of the RAPC under its voting procedures set forth in Section 4.1.6 of this Tariff.

3.4.6 Amend the RAPC voting thresholds set forth in Section 4.1.6 of this Tariff.

3.5 Subject to the limitations and prohibitions imposed under Section 3.4 of this Tariff, if the Board of Directors votes to file at FERC to expand the WRAP to include market optimization or transmission planning services, WPP will initiate a formal process with COSR and other stakeholders to conduct a full review of governance structures and procedures, including the role of states. If COSR does not support any revised governance structure that emerges from such WPP review process, the WPP will file, along with any WPP governance proposal to FERC, an alternative

governance structure on behalf of the COSR so long as such COSR alternative governance structure is supported by 75% of the COSR.

Contingency Reserves NTFP

4. Organizational Groups for the WRAP

4.1 Resource Adequacy Participants Committee

- 4.1.1 Authority and Purpose: The RAPC shall be the highest level of authority for representation by Participants in the WRAP governance structure and shall represent the interests of Participants directly to the Board of Directors.
- 4.1.2 Composition: The RAPC shall be composed of one representative from each Participant. Such representative shall be a senior management official with binding decision-making authority on behalf of the Participant, or a designated representative of a Participant's senior management official. A designated representative shall be required to have binding decision-making authority on behalf of the Participant and shall have all voting rights delegated from the senior management official. Participant shall appoint a designated representative no less than one Business Day in advance of a meeting for that designated representative to be eligible to vote during the meeting.
- 4.1.3 Functions: The RAPC:
 - 4.1.3.1 Shall consider and recommend that the Board of Directors approve or reject all proposed amendments to this Tariff or Business Practice Manuals prior to the Board of Directors considering such amendments, including any amendments reviewed and referred by the PRC.
 - 4.1.3.1.1 Exigent Circumstances: When the RAPC determines that an amendment to the Tariff or the Business Practice Manuals requires expedited Board of Directors review due to exigent circumstances, it may propose such amendment directly to the Board of Directors without awaiting review by other committees and stakeholders. Exigent circumstances include: (i) a FERC-mandated amendment to this Tariff or the Business Practice Manuals; (ii) an amendment to this Tariff or the Business Practice Manuals to address an immediate reliability impact; or (iii) an amendment to this Tariff or the Business Practice Manuals that the RAPC has determined has significant impacts to utility service.
 - 4.1.3.2 Shall consider and vote to recommend that the Board of Directors approve or reject any proposed amendments to this Tariff or the Business Practice Manuals.
 - 4.1.3.3 May provide input to the Board of Directors on any proposed WPP rules that apply both to the WRAP and other WPP services.

4.1.3.4 May evaluate and provide input to the Board of Directors on the WRAP administration budget and budget allocation to Participants, including amendments to the WRAP Administration Charge as calculated in accordance with Schedule 1 of this Tariff.

4.1.3.5 Shall form and organize all of the organizational groups under its responsibilities.

4.1.3.6 May take other actions reasonably related to its role as the senior-level Participant advisory committee to the Board of Directors regarding WRAP matters.

4.1.4 Leadership: The RAPC shall select from among its members a chair and vice chair.

4.1.5 Meetings:

4.1.5.1 Meetings of the RAPC will generally be open to all stakeholders. WPP shall provide advanced written notice of the date, time, place, and purpose of each RAPC meeting. All RAPC decisional items shall be placed on the open meeting agenda and allotted adequate time for public comment and deliberation.

4.1.5.1.1 The RAPC may meet in closed session as the RAPC chair deems necessary; provided, however, that the RAPC shall allow the designated COSR support staff member as specified in Section 4.3 of this Tariff to attend any closed meeting. The RAPC shall not take action on any proposed amendment to this Tariff or the Business Practice Manuals in closed session.

4.1.5.2 The quorum for a meeting of the RAPC or any organizational group organized under it shall be one-half of the representatives thereof, but not less than three representatives, provided that a lesser number may serve as a quorum for the sole purpose of voting to adjourn the meeting to a later time.

4.1.6 Voting:

4.1.6.1 Each RAPC representative shall have one vote.

4.1.6.2 Voting in the RAPC shall utilize a "House and Senate" model.

4.1.6.2.1 Each Participant's "House" vote shall represent the proportion of the Participant's Median Monthly P50 Peak Load, as described in Section 2 of Schedule 1 of this Tariff, compared to the sum of all Participants' Median Monthly P50 Peak Loads. A Participant may choose to divide its

House vote but is responsible for announcing such at the time of voting.

4.1.6.2.2 Each Participant shall receive a single, non-weighted “Senate” vote.

4.1.6.2.3 For an action to be approved by the RAPC, it must pass both “House” and “Senate” votes as follows. For purposes of voting, the percentages identified below specify the percentage threshold of the entire RAPC (whether in attendance or not) that is needed for passage of an action.

4.1.6.2.3.1 Actions to amend any of the limitations on Board authority set forth in Section 3.4 of this Tariff require an 80% affirmative approval by both the House and the Senate vote tallies to be approved.

4.1.6.2.3.2 Actions brought before the RAPC that have been approved by the PRC require a 67% affirmative approval by both the House and Senate vote tallies to be approved.

4.1.6.2.3.3 All other actions not specified in this Section 4.1.6.2.3 require a 75% affirmative approval by both the House and Senate vote tallies to be approved.

4.1.6.2.4 If at any time a single Participant’s P50 load for voting purposes would result in that Participant possessing a veto over any votes taken under Section 4.1.5.2.3, such Participant’s House vote shall be capped at 1% below the amount that would convey such a veto, such that no single Participant will possess a veto over any action taken under Section 4.1.6.2.3.

4.2 Program Review Committee

4.2.1 Authority and Purpose: The PRC is a sector-representative group comprised in accordance with Section 4.2.2 of this Tariff. The PRC is responsible for receiving, considering, and proposing amendments to this Tariff and the Business Practice Manuals. The PRC shall serve as a clearinghouse of all recommended amendments to this Tariff or the Business Practice Manuals, except for those designated by the RAPC as involving an exigent circumstance under Section 4.1.3.1.1 of this Tariff, amendments to Schedule 1 of this Tariff and cost allocation for the WRAP, and amendments to the WRAPA set forth as Attachment A of this Tariff. The PRC shall serve in an advisory capacity to the RAPC and, when applicable, the Board of Directors.

4.2.1.1 The PRC shall present all proposals received to the RAPC, along with the PRC's recommendation and summaries of all comments and feedback received.

4.2.1.2 The PRC's decisions are advisory-only and are not binding on the RAPC, the Board of Directors, or WPP.

4.2.2 Composition: The PRC shall be composed of up to twenty representatives from the following ten sectors: four representatives of RAPC Participant investor-owned utilities; four representatives of RAPC Participant publicly-owned (consumer or municipal) utilities; two representatives of RAPC Participant retail competition load serving entities; two representatives from RAPC Participant Federal Power Marketing Administrations; two representatives of independent power producers; two representatives of public interest organizations; one representative of retail consumer advocacy groups; one representative of industrial customer advocacy groups; one representative of load serving entities with loads in the WRAP that are represented by other LREs and are not otherwise eligible for any other sector; a representative from the COSR. Expectations for sectors to consider regional, operational, geographic, demographic, and other forms of diversity in selecting their sector representatives are set forth in more detail in the PRC charter, which shall be posted and maintained on the WRAP website or other appropriate public location.

4.2.3 The PRC shall establish a process and criteria for receiving and reviewing proposed amendments to this Tariff and the Business Practice Manuals. Such review will include procedures for stakeholder comment.

4.2.4 Meetings: The PRC shall meet primarily in open session; provided that the PRC may schedule closed meetings if it determines that doing so would be beneficial to safeguard the confidentiality of sensitive information. The PRC shall not take action on any proposed amendment to this Tariff or the Business Practice Manuals in closed session.

4.2.5 Voting: The PRC shall endeavor to operate by consensus. When voting is necessary, voting shall consist of one sector one vote, with an affirmative vote of six sectors (as specified in Section 4.2.2 of this Tariff) constituting approval of an action before the PRC.

4.2.5.1 For sectors with four seats, three sector representatives must agree with the action for the sector to be considered an affirmative vote for the action.

4.2.5.2 For sectors with two seats, both sector representatives must agree with the action for the sector to be considered an affirmative vote for the action.

- 4.2.6 Participants and other entities shall participate in no more than one PRC sector. If a Participant or other entity is eligible to participate in more than one sector, such Participant or other entity shall declare in which sector it will participate.

4.3 Committee of State Representatives

- 4.3.1. Composition: The COSR is a committee composed of one representative from each state or provincial jurisdiction (either public utility commission or state/provincial energy office) that regulates at least one Participant.

- 4.3.2 Leadership: The COSR shall determine its leadership, including a chair and vice chair. The chair or vice chair will be requested to attend all open sessions of the RAPC to provide input and advice.

- 4.3.2.1 The COSR shall designate a COSR support staff member to attend and audit closed meetings of the RAPC under a non-disclosure agreement.

- 4.3.3 Authority:

- 4.3.3.1 If the COSR determines that a proposal approved by the RAPC is substantially different from the proposal submitted to the RAPC by the PRC, the COSR may engage in additional public review and comment before the RAPC decision is presented to the Board of Directors; provided that this additional public review and comment does not unreasonably delay presentation to the Board of Directors.

- 4.3.3.2 If the COSR as a body opposes or appeals a RAPC decision to the Board of Directors, the Board of Directors will not consider the RAPC's decision until the RAPC engages with the COSR to discuss, in at least two public discussions, to attempt to reach a mutually agreeable solution.

- 4.3.3.2.1 If the appeal relates to an amendment that the RAPC designated as involving an exigent circumstance under Section 4.1.3.1.1 of this Tariff, COSR can require no more than one public discussion, provided that such additional discussion does not unreasonably hinder the timeline for Board of Directors consideration of the proposed amendment.

- 4.3.4 Voting, Meetings, and Quorum: The COSR may develop its own rules governing voting, meetings, and quorum for action. COSR shall be responsible for its own costs.

5. Independent Evaluator

- 5.1 WPP shall engage an Independent Evaluator to provide an independent assessment of the performance of the WRAP and any potential beneficial design modifications. The Independent Evaluator shall report directly to the Board of Directors.
- 5.2 The Independent Evaluator shall conduct an annual review of the WRAP, including but not limited to analyzing prior year program performance, accounting and settlement, and program design.
- 5.3 The Independent Evaluator shall prepare an annual report of its findings, and any recommended modifications to WRAP design, and present its findings to the WRAP committees and the Board of Directors, subject to any necessary confidentiality considerations. Any data included in the Independent Evaluator's report shall be reported on an aggregated basis as applicable to preserve confidentiality. The Independent Evaluator's annual reports shall be available to the public, except to the extent they contain information designated as confidential under this Tariff, or information designated as confidential by the Independent Evaluator.
- 5.4 The Independent Evaluator shall not:
 - 5.4.1 Evaluate individual Participants.
 - 5.4.2 Possess any decision-making authority regarding the WRAP or design modifications.
 - 5.4.3 Evaluate WPP's day-to-day operations of the WRAP (except as part of review of prior year program performance).

6. WPP Invoicing and Settlement

- 6.1 WPP shall be responsible for issuing invoices to, and collecting from, Participants all charges under Schedule 1 of this Tariff for recovery of all WPP costs associated with administering the WRAP.
- 6.2 WPP shall be responsible for invoicing, collecting, and (as applicable) distributing revenues from Deficiency Charges under Part II of this Tariff and Delivery Failure Charges under Part III of this Tariff.
- 6.3 Participants are not required to provide credit assurances to WPP to cover charges under Schedule 1 of this Tariff, Deficiency Charges under Part II of this Tariff, or Delivery Failure Charge under Part III of this Tariff.
- 6.4 Participants shall make full payment of all invoices rendered by WPP for which payment is required to WPP within thirty calendar days following the receipt of the WPP invoice, notwithstanding any disputed amount, but any such payment shall not be deemed a waiver of any right with respect to such dispute. Any Participant that fails to make full and timely payment to WPP of amounts owed upon expiration of the cure period specified in Section 6.4.1 of this Tariff will be in default.
 - 6.4.1 If a Participant fails to make timely payment as required by Section 6.4, WPP shall so notify such Participant. The notified Participant may remedy such asserted breach by paying all amounts due, along with interest on such amounts calculated in accordance with the methodology specified for interest on refunds in FERC's regulations at 18 C.F.R. § 35.19a(a)(2)(iii); provided, however, that any such payment may be subject to a reservation of rights, if any, to refer such matter to dispute resolution procedures under Section 9 of this Tariff. If the Participant has not remedied such asserted breach by 5:00 p.m. Pacific Prevailing Time on the second Business Day following WPP's issuance of a written notice of breach, then the Participant shall be in default.
 - 6.4.2 In the event of a Participant's default under Section 6.4.1 of this Tariff, WPP in its discretion may pursue collection through such actions, legal or otherwise, as it reasonably deems appropriate, including but not limited to the prosecution of legal actions and assertion of claims in the state and federal courts as well as under the United States Bankruptcy Code. After deducting any costs associated with pursuing such claims, any amounts recovered by WPP with respect to defaults for which there was a Default Allocation Assessment shall be distributed to the Participants who have paid their Default Allocation Assessment in proportion to the Default Allocation Assessment paid by each Participant, as calculated pursuant to Section 6.4.3 of this Tariff. In addition to any amounts in default, the defaulting Participant shall be liable to WPP for all reasonable costs incurred in enforcing the defaulting Participant's obligations.

6.4.3 In the event of a Participant's default with respect to an invoice issued by WPP for charges under Schedule 1 of this Tariff, in order to ensure that WPP remains revenue neutral, the Board of Directors may assess against, and collect from, the Participants not in default a Default Allocation Assessment to recover the costs associated with the default. Such assessment shall in no way relieve the defaulting Participant of its obligations.

6.4.3.1 The Default Allocation Assessment shall be equal to:

$$(20\% \times (1/N) + (80\% \times (\text{Participant Median Monthly P50 Peak Load} / \text{Sum Participants Median Monthly P50 Peak Load})))$$

where:

N = the total number of Participants, calculated as of the date WPP declares a Participant in default.

Participant Median Monthly P50 Peak Load = for each Participant included in factor "N" above, the Participant's Median Monthly P50 Peak Load as determined in Section 2 of Schedule 1 of this Tariff, recalculated on the day the WPP declares a Participant in default.

All Participants Median Monthly P50 Peak Load = the sum of the Participant Median Monthly P50 Peak Load values for all Participants included in factor "N" above.

7. Credit Requirements and Settlement for Holdback and Delivered Energy

7.1 Credit and Settlement for Holdback and Delivered Energy: Settlement of holdback and delivered energy shall be completed bilaterally between Participants, subject to the following:

7.1.1 Neither WPP nor the Program Operator(s) shall take title to energy or be party to any settlement of holdback or delivered energy.

7.1.2 Participants shall establish credit with each other through one of the following mechanisms. Neither WPP nor the Program Operator(s) shall be involved in the calculation of credit or credit limits.

7.1.2.1 Establish credit directly with each Participant: Participants may establish credit directly with other Participants from whom they may receive delivered energy.

7.1.2.1.1 Such credit should be established in advance of the applicable season.

7.1.2.1.2 The amount of such credit and any credit limit shall be at the discretion of each Participant.

7.1.2.2 WPP shall conduct a competitive solicitation process to identify a third-party service provider to serve as central credit organization and clearing house for credit and settlement. Once such central credit organization is selected, Participants that have not already directly established credit with all other Participants under Section 7.2.2.1 of this Tariff shall establish credit with the central credit organization.

7.1.2.2.1 WPP will provide the central credit organization any Operations Program related information necessary for them to perform their obligations as set forth in the agreement between WPP and the central credit organization.

7.1.2.2.2 All costs associated with the central credit organization service shall be borne by Participants as established in the agreement between WPP and the central credit organization and either billed directly on a transactional basis or else recovered under Schedule 1 of this Tariff.

7.1.2.3 The obligation to arrange sufficient credit shall at all times be on the deficient Participant (i.e., a Participant with a negative sharing calculation in the Operations Program). If a deficient Participant has not made good faith and commercially reasonable efforts to

obtain sufficient credit with a delivering Participant, such delivering Participant shall so notify WPP and shall be excused from any obligation to deliver to such deficient Participant. Nothing in this Section 7 requires a Participant to violate its written risk or credit policy.

7.2 All settlement pricing calculated under this Tariff shall be final and no adjustments to settlement prices shall be allowed after the later of: (1) ninety Days after such settlement prices are posted by WPP; or (2) the final outcome of any dispute resolution process that is initiated by a Participant to dispute a settlement price pursuant to the Dispute Resolution Procedures set forth in Section 9 of this Tariff.

7.2.1 A Participant may invoke the Dispute Resolution Procedures set forth in Section 9 of this Tariff to address calculation errors in any settlement price, but may not invoke the Dispute Resolution Procedures to dispute data sources or to request the use of alternative data sources.

Contingency Reserves

8. Force Majeure, Limitation of Liability, and Indemnification

- 8.1 Force Majeure: An event of Force Majeure means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, pandemic, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation, or restriction imposed by governmental military or lawfully established civilian authorities, or any other cause beyond a party's control. A Force Majeure event does not include an act of negligence or intentional wrongdoing. Neither WPP nor the Participant will be considered in default as to any obligation under this Tariff if prevented from fulfilling the obligation due to an event of Force Majeure. However, a Party whose performance under this Tariff is hindered by an event of Force Majeure shall make all reasonable efforts to perform its obligations under this Tariff. Notwithstanding the foregoing, the physical inability to perform because of an event of Force Majeure shall not relieve the party of any financial obligations incurred under this Tariff or as a result of the Force Majeure event, unless, and to the extent, such financial obligation is waived or excused under provisions of Part II or Part III of this Tariff expressly providing for such waiver or excuse.
- 8.2 Limitation of Liability:
- 8.2.1 Neither WPP nor the Program Operator shall be liable, whether based on contract, indemnification, warranty, tort, strict liability or otherwise, to any Participant, other entity owning a Qualifying Resource, third party, or other person for any damages whatsoever, including, without limitation, direct, incidental, consequential, punitive, special, exemplary, or indirect damages arising or resulting from any act or omission in any way associated with service provided under this Tariff or any agreement hereunder, including, but not limited to, any act or omission that results in an interruption, deficiency or imperfection of service, except to the extent that the damages are direct damages that arise or result from the gross negligence or intentional misconduct of WPP or Program Operator, in which case WPP shall only be liable for direct damages.
- 8.2.2 Neither WPP nor the Program Operator shall be liable for damages arising out of services provided under this Tariff or any agreement entered into hereunder, including, but not limited to, any act or omission that results in an interruption, deficiency, or imperfection of service, occurring as a result of conditions or circumstances beyond the control of WPP, or resulting from electric system design common to the domestic electric utility industry or electric system operation practices or conditions common to the domestic electric utility industry.
- 8.2.3 To the extent that a Participant or other person has a claim against WPP, the amount of any judgment or arbitration award on such claim entered in favor of such entity shall be limited to the value of WPP's assets. No party may seek to enforce any claims under this Tariff or any Agreements entered into

hereunder against the directors, managers, members, shareholders, officers, employees, or agents of WPP, or against the Program Operator, who shall have no personal liability for obligations of WPP by reason of their status as directors, managers, members, shareholders, officers, employees, or agents of WPP or by virtue of their status as Program Operator.

8.2.4 To the extent that WPP is required to pay any money damages or compensation or pay amounts due to its indemnification of any other party as it relates to any services provided, acts, or omissions under this Tariff or any agreement entered into hereunder, WPP shall be allowed to recover any such amounts under Schedule 1 of this Tariff as part of the WRAP Administration Charge. Notwithstanding the foregoing, WPP shall be prohibited from recovering under this Tariff any costs associated with any damages, compensation, or indemnification costs that arise: (i) with regard to any acts or omissions that occur outside of this Tariff and any agreements entered into hereunder, or (ii) if a court of competent jurisdiction determines that the damages are direct damages that arise or result from the gross negligence or intentional misconduct of WPP or the Program Operator.

8.2.5 A Participant's liability to another Participant under this Tariff for failure to comply with obligations under this Tariff shall be limited to any charges or payments calculated pursuant to this Tariff; provided, however, that nothing in this Section 8.2.5 shall limit or is intended to foreclose any Participant's liability that may arise under any bilateral agreements between Participants.

8.3 Indemnification: The Participants shall at all times indemnify, defend, and save WPP (and any of its Program Operator(s), agents, consultants, directors, officers, or employees) harmless from any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demands, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties arising out of or resulting from the performance of activities under this Tariff by WPP, any Program Operator(s), or agents, consultants, directors, officers, or employees of WPP, except in cases of gross negligence or intentional wrongdoing by WPP or the Program Operator. WPP shall credit any proceeds from insurance or otherwise recovered from third parties to Participants who have paid to indemnify WPP under this Section 8.3.

8.4 Actions upon Unavailability of Program Operator(s): In the event that the Program Operator(s) become(s) unwilling, unable, or otherwise unavailable to perform contractual duties necessary for WPP to discharge its obligations under this Tariff and WPP's agreement(s) with the Program Operator(s), WPP shall engage with Participants as soon as practicable to determine what actions to take, including but not limited to filing with FERC a request to waive one or more provisions of this Tariff up to and including immediate suspension of all rights and obligations under this Tariff until a replacement Program Operator(s) can assume all relevant Program Operator functions.

9. Dispute Resolution Procedures

- 9.1 Internal Dispute Resolution Procedures: Subject to the limitations set forth in Section 7.2.1 of this Tariff, any dispute between a Participant and WPP under the Tariff (excluding amendments to the Tariff or to any agreement entered into under the Tariff, which shall be presented directly to the FERC for resolution) shall be referred to a designated senior representative of WPP and a senior representative of the Participant for resolution on an informal basis as promptly as practicable. In the event the designated representatives are unable to resolve the dispute within thirty days (or such other period as the parties may agree upon) by mutual agreement, such dispute shall then be referred to the chief executive officer or comparable executive of each party for resolution. In the event the executives are unable to resolve the dispute within thirty days (or such other period as the parties may agree upon), such dispute may be submitted to arbitration and resolved in accordance with the arbitration procedures set forth below.
- 9.2 External Arbitration Procedures: Any arbitration initiated under the Tariff shall be conducted before a single neutral arbitrator appointed by the parties to the dispute. If the parties fail to agree upon a single arbitrator within ten days of the referral of the dispute to arbitration, each party shall choose one arbitrator who shall sit on a three-member arbitration panel. The two arbitrators so chosen shall within twenty days select a third arbitrator to chair the arbitration panel. In either case, the arbitrators shall be knowledgeable in electric utility matters, including electric transmission and bulk power issues, and shall not have any current or past substantial business or financial relationships with any party to the arbitration (except prior arbitration). The arbitrator(s) shall provide each of the parties an opportunity to be heard and, except as otherwise provided herein, shall generally conduct the arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association and any applicable FERC regulations.
- 9.3 Arbitration Decisions: Unless otherwise agreed by the parties, the arbitrator(s) shall render a decision within ninety days of appointment and shall notify the parties in writing of such decision and the reasons therefor. The arbitrator(s) shall be authorized only to interpret and apply the provisions of the Tariff and/or any agreement entered into under the Tariff and shall have no power to modify or change any of the above in any manner. The decision of the arbitrator(s) shall be final and binding upon the Parties, and judgment on the award may be entered in any court having jurisdiction. The decision of the arbitrator(s) may be appealed solely on the grounds that the conduct of the arbitrator(s), or the decision itself, violated the standards set forth in the Federal Arbitration Act and/or the Administrative Dispute Resolution Act. The final decision of the arbitrator must also be filed with the FERC if it affects jurisdictional rates, terms and conditions of service or facilities.
- 9.4 Costs: Each party shall be responsible for its own costs incurred during the arbitration process and for the following costs, if applicable: (i) the cost of the arbitrator chosen by the party to sit on the three-member panel and one half of the

cost of the third arbitrator chosen; or (ii) one half the cost of the single arbitrator jointly chosen by the Parties.

- 9.5 Rights Under the Federal Power Act: Nothing in this section shall restrict the rights of any person to file a complaint with the FERC under relevant provisions of the Federal Power Act or of WPP to file amendments to this Tariff under the relevant provisions of the Federal Power Act.

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10. Treatment of Confidential and Commercially Sensitive Information of Participants

10.1 Terms: For purposes of this Section 10 only, the term “WPP” shall also include, as applicable, any directors, officers, employees, agents, or consultants of WPP, the Independent Evaluator established under Section 5 of this Tariff, and any central credit organization established under Section 7 of this Tariff. WPP shall be bound by the rights, obligations, and conditions set forth in this Section 10. For purposes of this Section 10, the term “Disclosing Entity” shall include any Participant that discloses information to WPP that the Disclosing Entity deems and identifies as confidential or commercially sensitive. WPP’s collection and handling of non-Participant data shall be governed by separate non-disclosure agreements with such non-Participants.

10.2 Treatment of Confidential or Commercially Sensitive Information: WPP shall identify in the Business Practice Manuals categories of Participant-specific data and information received from Participants that shall be treated as confidential or commercially-sensitive, which WPP shall not disclose publicly or to any other Participant or other entity except as provided for in this Section 10. In addition, WPP shall maintain the confidentiality of all of the documents, data, and information provided to it by any Participant that such disclosing Participant deems and specifically identifies as confidential or commercially sensitive. Notwithstanding the foregoing, WPP need not keep confidential: (i) information that is publicly available or otherwise in the public domain; or (ii) information that is required to be disclosed under this Tariff or any applicable legal or regulatory requirement (subject to the procedures set forth in Section 10.4 of this Tariff).

10.2.1 WPP staff may develop and release publicly composite or aggregated data based upon Participant confidential or commercially sensitive information, provided that such composite or aggregated data cannot be used to identify or attribute a disclosing Participant’s confidential or commercially sensitive data. Such release of composite or aggregated data shall be governed by the following process.

10.2.1.1 Prior to the initial release of such composite or aggregated data, WPP staff shall present the form and format of such data to each Participant whose confidential information or data will be used to create the composite or aggregated data. If any such Participant objects to the form and format as revealing or allowing for attribution of confidential or commercially sensitive Participant-specific data, WPP staff shall determine whether to modify the form and format or to retain the proposed form and format for release. If WPP staff elects to retain the proposed form and format, the Participant shall have the right to appeal to the RAPC and WPP staff shall be prohibited from releasing the composite or aggregated data in the proposed form and format until the Participant’s appeal rights as specified in this Section 10.2.1

are exhausted.

- 10.2.1.2 If a Participant appeals a WPP staff decision regarding the form and format of composite or aggregated data to the RAPC, the RAPC shall consider whether the form and format reveals or allows for attribution of confidential or commercially sensitive Participant-specific data. If the RAPC determines that the proposed form and format is sufficient to protect against the release of confidential or commercially sensitive Participant-specific data, WPP staff is authorized to release the composite or aggregated data in the proposed form and format unless the Participant timely appeals the RAPC decision to the Board of Directors.
- 10.2.1.3 If a Participant appeals a RAPC decision regarding the form and format of composite or aggregated data to the Board of Directors, the Board of Directors shall consider whether the form and format is sufficient to protect against the release or attribution of confidential or commercially sensitive Participant-specific data. If the Board of Directors determines that the proposed form and format is sufficient to protect against the release of confidential or commercially sensitive Participant-specific data, WPP staff is authorized to release the composite or aggregated data in the proposed form and format.
- 10.2.1.4 Once a proposed form and format of composite or aggregated data is approved by the WPP staff and is not appealed or appeals are unsuccessful, such form and format may be used for all future disclosures of composite or aggregate information and no Participant may dispute such release. If WPP staff proposes to alter the form and format, including but not limited to changing the granularity of data, WPP staff shall be required to follow the process set forth in this Section 10.2.1 and Participants shall have the right to appeal such changes in form and format as set forth herein. Notwithstanding the foregoing, if the composition of Participants in the WRAP changes in such a way that the form and format of composite or aggregated data is no longer sufficient to protect against disclosure or attribution of confidential or commercially sensitive Participant-specific data, an aggrieved Participant shall have a one-time right to raise the issue promptly with WPP Staff for presentation to and review by the Board of Directors, and the Board of Directors in its sole discretion shall decide whether the change in composition results in the form and format of the composite or aggregated data becoming insufficient to

protect against the release or attribution of confidential or commercially sensitive Participant-specific data; provided, however, that if an aggrieved Participant does not raise its concerns with the Board of Directors promptly following the change in composition, such Participant shall have waived its right to contest the release of such composite or aggregated data.

10.2.2 Notwithstanding anything to the contrary in this Section 10.2, if the RAPC unanimously votes to disclose publicly any particular category of Participant-specific data, such data shall no longer be deemed confidential regardless of any such designation by a disclosing Participant, and this election shall be binding on any current and future Participants until such time as the RAPC votes unanimously to prohibit public release of such category of data. A list of the categories of Participant-specific data that the RAPC unanimously votes to make public shall be included in the Business Practice Manuals.

10.3 Access to Confidential or Commercially Sensitive Information: Except as otherwise provided in Section 10.2 of this Tariff, no Participant, entity owning a Qualifying Resource, or any third party shall have the right hereunder to receive from WPP or to otherwise obtain access to any documents, data or other information that has been identified as or deemed to be confidential or commercially sensitive under Section 10.2 of this Tariff by a disclosing Participant. The provisions of this Section 10.3 do not apply to WPP (including any Independent Evaluator, member of the Board of Directors, or any WPP officer, employee, agent, or consultant that requires access to confidential or commercially sensitive information); provided that access to Participant-specific confidential or commercially sensitive information shall be solely for the purpose of performing the duties or functions under this Tariff or otherwise advising or assisting WPP. WPP shall develop internal policies and controls governing the handling and protection of confidential or commercially sensitive Participant-specific data by members of the Board of Directors, officers, employees, agents, consultants, or any Independent Evaluator.

10.4 Exceptions: Notwithstanding anything in this Section 10 to the contrary:

10.4.1 If WPP is required by applicable laws or regulations, or in the course of administrative or judicial proceedings, to disclose information that is otherwise required to be maintained in confidence pursuant to this Section 10, WPP may disclose such information; provided, however, that as soon as practicable after WPP learns of the disclosure requirement and prior to making such disclosure, WPP shall notify any affected disclosing Participant of the requirement and the terms thereof. Any such disclosing Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and WPP shall cooperate with such disclosing Participant to take all reasonable available steps to oppose

or otherwise minimize the disclosure of the information permitted by applicable legal and regulatory requirements. WPP shall further cooperate with such disclosing Participant to the extent reasonably practicable to obtain proprietary or confidential treatment of confidential or commercially sensitive information by the person to whom such information is disclosed prior to any such compelled disclosure.

- 10.4.2 WPP may disclose confidential or commercially sensitive information, without notice to any affected disclosing Participant(s), in the event that FERC, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC, WPP shall take action, consistent with 18 C.F.R. §§ 1b.20 and/or 388.112, to request that the information be treated by FERC as confidential and non-public and, if appropriate, as Critical Energy Infrastructure Information and that the information be withheld from public disclosure. WPP shall provide the requested information to FERC within the time provided for in the request for information. WPP shall notify any affected disclosing Participant(s) within a reasonable time after WPP is notified by FERC that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time WPP and any affected disclosing Participant may respond before such information would be made public.
- 10.5 Notwithstanding any efforts undertaken pursuant to Section 10.4 to prevent or limit the release of a Participant's confidential or commercially sensitive information, in the event that FERC or a court of competent jurisdiction orders or otherwise permits the public release of a Participant's confidential or commercially sensitive information, the affected Participant shall have a one-time right to elect to terminate its participation in the WRAP under the expedited termination provisions set out in Section 11.2 of the WRAPA.
- 10.6 WPP shall handle any information identified or deemed to be Controlled Unclassified Information/Critical Energy Infrastructure Information in accordance with FERC's regulations set forth at 18 C.F.R. § 388.113 and any applicable FERC policies or other regulations, including but not limited to restricting access to such information on a password-protected portion of WPP's website or similar precautions.
- 10.7 Nothing in this Section 10 is intended to limit a Participant's ability to disclose or release publicly its own confidential or commercially sensitive information or data, or to limit a Participant's ability to authorize WPP's disclosure of such material to a specified recipient.

11. Timing

- 11.1 In the event that any deadline specified in this Tariff shall fall on a day that is not a Business Day, the deadline shall be extended to the next Business Day.

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12. Application and Registration

- 12.1 Any entity wishing to participate in the WRAP must submit an application and registration in accordance with the Business Practices Manuals and must execute the WRAPA as set forth in Attachment A of this Tariff, or a non-conforming version of such participation agreement that is approved by FERC for an individual Participant. Such application and registration must be submitted in accordance with the timelines set forth in the Business Practices Manuals in advance of the next Binding Season.
- 12.2 Each Participant must register all of its resources and loads, regardless of whether such resources will be used to satisfy the WRAP requirements and regardless of whether certain loads will be subject to the requirements of the WRAP. Participants may modify their registration of resources and loads in accordance with the timing procedures set forth in the Business Practices Manuals.
- 12.3 In the event that more than one Participant attempts to register the same resource or load, the following procedure will be used to assign the resource or load to a Participant:
 - 12.3.1 If a Participant attempts to register a load or resource that has already been registered by a different Participant, the resource or load will remain registered by the original Participant registering the resource or load until such time as both Participants mutually inform WPP that a change to the registration is required.
 - 12.3.2 If two or more Participants attempt to register the same resource or load during the same registration window, WPP shall request that the Participants determine among themselves the appropriate registration of the resource or load before that resource or load is included in the WRAP.

PART II FORWARD SHOWING PROGRAM

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13. Overview

- 13.1 In the Forward Showing Program, as set forth in this Part II of the Tariff, and as further detailed in the Business Practice Manuals, each Participant shall, in advance of each Binding Season, show as to such Binding Season: (i) the total capacity, referred to and defined herein as the FS Capacity Requirement, required by the provisions of this Tariff for such Binding Season for reliable service to the loads for which such Participant is responsible; (ii) the demonstration of capacity, referred to and defined herein as the Qualifying Capacity Contribution, or QCC, provided by the Qualifying Resources the Participant provides or procures to meet its FS Capacity Requirement; and (iii) at least the minimum level of firm transmission service, referred to and defined herein as the FS Transmission Requirement, needed for reliable delivery of the QCC of the Participant's Qualifying Resources from such resources to the loads for which the Participant is responsible.
- 13.2 As also set forth in this Part II of the Tariff, and as further detailed in the Business Practice Manuals: (i) WPP shall, in advance of each Binding Season, review the Forward Showing Submittals of each Participant for such Binding Season; (ii) WPP shall identify to the Participant any deficiencies in the Participant's Portfolio QCC (whether as to contracts or directly owned or controlled resources) relative to the FS Capacity Requirement, and any deficiencies in the identified firm transmission service relative to the FS Transmission Requirement, within sixty days of the Forward Showing Submittal deadline; (iii) the Participant shall have an opportunity to cure such deficiencies, within sixty days of notification of deficiency; and (iv) if the Participant fails to cure all such deficiencies on or before the deadlines prescribed herein, the Participant shall be assessed a Forward Showing Deficiency Charge.

14. Forward Showing Program Process and Timeline

14.1 The Forward Showing Program has two Binding Seasons, defined as the Summer Season and the Winter Season. The Summer Season is the period beginning on June 1 of each Year and ending on September 15 of that same Year. The Winter Season is the period beginning on November 1 of each Year and ending on March 15 of the succeeding Year. This Tariff does not establish resource or showing obligations outside the periods defined by the Summer Season and Winter Season.

14.2 Each Participant shall submit its Forward Showing Submittals for each Month of each Binding Season, with all required supporting materials and information as detailed in the Business Practice Manuals, on or before the FS Deadline for the Binding Season. The FS Deadline for each Binding Season shall be seven months before the start of such Binding Season.

14.2.1 Forward Showing Submittal:

14.2.1.1 Absent the exception in Section 14.2.1.2, each Participant shall submit a separate Forward Showing Submittal for loads for which it is responsible if transmission constraints between areas where its loads are located, including, without limitation, when Participant is responsible for loads in more than one Subregion, prevent application, in the manner more fully described in the Business Practice Manuals, of Resource QCC or Net Contract QCC from one load area to the FS Capacity Requirement of another load area.

14.2.1.2 Notwithstanding Section 14.2.1.1, a Participant responsible for loads in two Subregions may submit for a given Month a single Forward Showing Submittal for such loads, and may employ for determination of its FS Capacity Requirement for such Month the lower of the two FSPRM values determined for the Subregions where its loads are located, if the Participant demonstrates in such Forward Showing Submittal, in accordance with the procedures and requirements set forth in the Business Practice Manuals, transmission service rights of the type required by the FS Transmission Requirement, in a quantity, in addition to that required by the FS Transmission Requirement, equal to the difference in the two FSPRM values multiplied by the Participant's P50 Peak Load Forecast for such Month, with a point of delivery in the Subregion with the higher FSPRM value and the point of receipt in the Subregion with the lower FSPRM value. Each such showing shall identify the MW quantity, Month of service, point of receipt, and point of delivery of such transmission service rights, and such other information as specified in the Business Practice Manuals, and shall verify that the offered rights are NERC Priority 6 or NERC Priority 7 firm point-to-point transmission service.

14.2.2 Each Participant's Forward Showing Submittal shall include a Senior Official Attestation.

14.3 The FSPRM values used in the Forward Showing Submittals for a Binding Season shall be those values approved by the Board of Directors as the culmination of an Advance Assessment process. No later than twelve months before the FS Deadline for each Binding Season, WPP will determine and post the recommended FSPRM for each Subregion for each Month of such Binding Season. Participants shall provide their load, resource and other information reasonably required to perform the analyses and calculations required for the Advance Assessment, in accordance with the Advance Assessment information submission details and schedule specified in the Business Practice Manuals. No later than nine months before the FS Deadline for such Binding Season, the Board of Directors shall take its final action regarding approval of the FSPRM values for each Month of such Binding Season.

14.3.1 In connection with an Advance Assessment process, or otherwise in connection with consideration of a change to the Business Practice Manuals, the Board of Directors may determine that designation of Subregions would encourage the relief, in whole or part, of transmission constraints on the transfer of capacity within the WRAP Region (whether through development or commitment of transmission, of Qualifying Resources, or by other means) to the benefit of the WRAP Region and the advancement of the objectives of the WRAP. Each such Subregion shall be identified in the Business Practice Manuals.

14.3.2 Any Participant may choose to offer in the Advance Assessment process transmission service rights owned or controlled by such Participant for firm delivery of capacity from one Subregion to another Subregion, for use by other Participants under the terms of Part III of this Tariff during any or all identified Months of the applicable Binding Season. Each such offer shall identify the MW quantity, Month of service, point of receipt, and point of delivery of such transmission service rights, and such other information as specified in the Business Practice Manuals, and shall verify that the offered rights are NERC Priority 6 or NERC Priority 7 firm point-to-point transmission service. No Participant is obligated to offer any such transmission service rights in the Advance Assessment process, but any offer so made and not withdrawn before the deadline during the Advance Assessment process specified in the Business Practice Manuals shall be considered a binding offer of the identified transmission service rights which may not be withdrawn before the end of the last Day of the Month for which such transmission service is offered. WPP shall take account of such offered transmission service rights, along with other transmission deliverability reasonably anticipated to be available for use by Participants for WRAP purposes during the applicable Binding Season in its determination of the recommended FSPRM values for each Month of the

applicable Binding Season for the WRAP Region and for each affected Subregion.

- 14.4 No later than sixty Days after the FS Deadline for a Binding Season, WPP will (i) provide the values of the Participant's FS Capacity Requirement and FS Transmission Requirement for each Month of the Binding Season; (ii) affirm that the Portfolio QCC of such Participant for each Month of the Binding Season equals or exceeds the FS Capacity Requirement of such Month for such Participant or notify such Participants of any deficiencies in the Forward Showing Submittal that result in a failure to demonstrate satisfaction of the FS Capacity Requirement; and (iii) affirm that the Demonstrated FS Transmission plus approved Monthly Transmission Exceptions of such Participant for each Month of the Binding Season equals or exceeds the FS Transmission Requirement of such Month for such Participant or notify such Participants of any deficiencies in the Forward Showing Submittal that result in a failure to demonstrate satisfaction of the FS Transmission Requirement.
- 14.5 Within 120 Days after the FS Deadline, the Participant shall (i) submit revisions to its Forward Showing Submittal, including, without limitation, additions or revisions to the Participant's Resource QCC, Net Contract QCC, or Demonstrated FS Transmission; (ii) in order to fully cure all identified deficiencies and demonstrate that such Participant's Portfolio QCC for each Month of the Binding Season equals or exceeds its FS Capacity Requirement; and (iii) fully provide Demonstrated FS Transmission for each Month of the Binding Season that equals or exceeds its FS Transmission Requirement for the same Month of the Binding Season where WPP identified deficiencies.
- 14.5.1 Any Participant that fails to cure identified deficiencies in its Forward Showing Submittal within the period prescribed above shall be assessed a Deficiency Charge.

15. Transition Period

- 15.1 Except as specified in Section 15.1.1, the Binding Season beginning November 1, 2027, will be the first Binding Season for which all Participants will assume the obligations of demonstrating capacity and making surplus capacity available to other Participants and will receive the benefits of reliance upon other Participants' surplus capacity. Any Binding Season during the Transition Period occurring before November 1, 2027, shall be a Non-Binding Season, as specified in Section 15A of this Tariff.
- 15.1.1 No later than January 15, 2026, a Participant may elect the Binding Season beginning June 1, 2027, as the first Binding Season for which it will assume the obligations of demonstrating capacity and making surplus capacity available to other Participants and will receive the benefits of reliance upon other Participants' surplus capacity by providing written notice of its election.
- 15.2 Within two years prior to the start of the first Binding Season of the WRAP, a Participant who has elected to participate in the first Binding Season may request a vote of all Participants who have elected to participate in the first Binding Season to delay implementation of the first Binding Season for up to two Seasons. Delayed implementation of the first Binding Season shall be approved if 75% of the Participants who elected to participate in the first Binding Season vote in favor of such delay, with approval requiring a vote of 75% of both the House and Senate vote tallies (as described in Sections 4.1.6.2.1 and 4.1.6.2.2 of this Tariff) of all Participants who elected to participate in the first Binding Season.
- 15.2.1 The deferral vote may only occur for the first Binding Season of the WRAP. If the Participants who elected to participate in the first Binding Season of the WRAP vote to delay implementation of the first Binding Season, all compliance charges for the Forward Showing Program and Operations Program are automatically deferred; except that the Participants may vote to delay implementation only of the Operations Program portion of the first Binding Season and retain the binding Forward Showing Program portion of the first Binding Season.

15A. Non-Binding Seasons

15A.1 A Participant will participate as a Non-Binding Participant for certain Binding Seasons in the Transition Period, as detailed in Section 15.1 of this Tariff, and when Critical Mass is not achieved for a given Binding Season, as detailed in Section 15A.2 of this Tariff. As to a Non-Binding Season, the Participant:

- 15A.1.1 Shall not be subject to Deficiency Charges, Transmission Deficiency Charges, Holdback Requirements, Energy Deployment obligations, or Delivery Failure Charges;
- 15A.1.2 Shall submit Forward Showing Submittals but shall not be required to cure deficiencies;
- 15A.1.3 Shall not have a mandatory Holdback Requirement as a result of the Sharing Calculation;
- 15A.1.4 May only receive Holdback Capacity offered voluntarily by other Participants in accordance with Part III of this Tariff; and
- 15A.1.5 Shall have all rights and be subject to all obligations under Part I of this Tariff and the Participant's WRAPA, including, without limitation, voting rights, committee participation, and the obligation to pay the WRAP Administration Charge.

15A.2 Once WPP has given notice to Participants that their Subregion does not have Critical Mass for a given Binding Season, each such Participant will have 30 days to provide notice to WPP if it intends to participate as a Non-Binding Participant for that Binding Season. Such notice and election will be given similarly for each season without Critical Mass participation.

16. Components of the Forward Showing

16.1 FS Capacity Requirement. The FS Capacity Requirement shall be determined for each Participant on a monthly basis by applying the applicable Monthly FSPRM for a Month to such Participant's peak load forecast for that Month. The Participant's peak load forecast for a given Month of a Binding Season will be the P50 Peak Load Forecast for the Binding Season multiplied by a shaping factor based on the historical relationship, for such Participant, of the seasonal peak for the Winter Season or Summer Season, as applicable, and the monthly peaks for the Months in such season, as more fully described in the Business Practice Manuals.

16.1.1 P50 Peak Load Forecast. The P50 Peak Load Forecast is a peak load forecast prepared on a basis, such that the actual peak load is statistically expected to be as likely to be above the forecast as it is to be below the forecast. The Business Practice Manuals shall specify an approved load forecasting methodology for use by all Participants for their WRAP-required load forecasts which shall include (i) a base monthly peak derived from a recent historical period that recognizes additions and removals of load during the historical period, (ii) adjustments for known additions and removals of load during the forecast window; and (iii) a specified load growth factor.

16.1.2 FS Planning Reserve Margin

16.1.2.1 The FSPRM is an increment of resource adequacy supply needed to meet conditions of high demand in excess of the applicable peak load forecast and other conditions such as higher resource outages, expressed as a percentage of the applicable peak load forecast. The FSPRM shall be determined based on probabilistic analysis, taking account of uncertainties in generation and load, as the margin above peak load that provides an expectation of no more than a single event-day of loss of load in ten years (sometimes referred to herein as the "1-in-10 LOLE") for each Binding Season. The FSPRM shall be determined in a manner that accounts for the governing principles of QCC value determinations set forth in Section 16.2.5 of this Tariff and shall employ the applicable peak load for the applicable Binding Season and Months. Additional details, assumptions, methodologies, and procedures for determination of the FSPRM shall be as set forth in the Business Practice Manuals.

16.1.2.2 WPP shall calculate in the Advance Assessment process the recommended Monthly FSPRM for each Month of each Binding Season, for approval by the Board of Directors as set forth in this Part II.

16.1.2.3 The FSPRM shall employ (i) a simulated resource stack using capacity accreditation principles consistent with those used for WRAP QCC determinations; (ii) an adjustment in the total WRAP-required QCC value as needed to meet a 1-in-10 LOLE for each Binding Season, and (iii) while maintaining the 1-in-10 LOLE for each Binding Season in (ii), include a monthly reduction of capacity to ensure that each Month has at least 0.01 annual LOLE. The FSPRM for a Month shall be the simulated QCC as adjusted to meet the 1-in-10 LOLE for each Binding Season minus the P50 Peak Load Forecast for the Month, divided by the P50 Peak Load Forecast for the Month.

16.1.2.4 The FSPRM shall include an approximation of Contingency Reserves as set forth in the Business Practice Manuals.

16.1.3 Contingency Reserves Adjustment. A Participant's FS Capacity Requirement will be adjusted as set forth in the Business Practice Manuals to account for changes in Contingency Reserve requirements resulting from energy contract purchases and contract sales.

16.1.4 A Participant responsible for loads located in a Subregion for which an FSPRM value has been determined that is higher than the FSPRM value determined for a different Subregion may, in lieu of demonstrating a MW increment of Portfolio QCC otherwise required to satisfy such Participant's FS Capacity Requirement for a given Month, demonstrate in its Forward Showing Submittal, in accordance with the procedures and requirements set forth in the Business Practice Manuals, transmission service rights of the type required by the FS Transmission Requirement, in a quantity, in addition to that required by the FS Transmission Requirement, that is no greater than the difference in the two FSPRM values multiplied by the Participant's P50 Peak Load Forecast, with the point of delivery in the Subregion with the higher FSPRM value and the point of receipt in the Subregion with the lower FSPRM value. The MW quantity of the additional transmission so demonstrated shall reduce for such Month, by the same MW quantity, the Portfolio QCC the Participant would otherwise be required to demonstrate to satisfy its FS Capacity Requirement for such Month. Each such demonstration shall identify the MW quantity, Month of service, point of receipt, and point of delivery of such transmission service rights, and such other information as specified in the Business Practice Manuals, and shall verify that the offered rights are NERC Priority 6 or NERC Priority 7 firm point-to-point transmission service.

16.2 Qualified Capacity Contribution

16.2.1 For each Participant and each Binding Season, the Forward Showing shall show and support the Portfolio QCC, which shall be the sum of the QCC of the Participant's Qualifying Resources ("Resource QCC"), the QCC of its

contracted capacity (“Net Contract QCC”), and any transfers of capacity already accredited by another Participant (“Total RA Transfer,” which could be positive or negative). The Portfolio QCC effective for a Binding Season shall be the value determined by WPP.

- 16.2.2 A resource will not be assigned a Resource QCC or counted toward Portfolio QCC unless it is a Qualifying Resource. Qualifying Resources are those that, before they are included in a Forward Showing Submittal, are first registered with WPP. A Participant seeking registration of a resource must submit a request for registration providing the resource information described in the Business Practice Manuals.
- 16.2.3 The minimum resource size for registration of a resource is 1 MW, provided, however, that Participants with responsibility for individual resources of less than 1 MW may aggregate them to meet the 1 MW minimum requirement, under the conditions and limitations specified in the Business Practice Manuals.
- 16.2.4 A Participant may include in its Forward Showing Submittal a request for an exception from its FS Capacity Requirement for an insufficiency of its Portfolio QCC solely due to (i) a catastrophic failure of one or more Qualifying Resources due to an event of Force Majeure as defined by Section 8.1 of this Tariff that (ii) the Participant is unable to replace on commercially reasonable terms prior to the FS Deadline as a result of the timing and magnitude of such catastrophic failure and its consequences. As more fully set forth in the Business Practice Manuals, such exception request shall be supported by a Senior Official Attestation. The exception request must include complete information on the nature, causes and consequences of the catastrophic failure, and must describe the Participant’s specific, concrete efforts prior to the FS Deadline to secure replacement Qualifying Resources for the applicable Binding Season. WPP will consider the exception criteria established by this section, the information provided in the exception request, the completeness of the exception request, and other relevant data and information, in determining whether to grant or deny an FS Capacity Requirement exception request. WPP shall provide such determination no later than sixty days after submission of such Participant’s FS Submittal containing such FS Capacity Requirement exception request. A Participant granted an exception hereunder must complete a monthly exception check report demonstrating that either the circumstances necessitating the exception have not changed; or that Qualifying Resources have become available, and the Participant has acquired them and no longer requires the exception. Failure to timely submit a required monthly report will result in assessment of a Deficiency Charge, unless the deficiency is cured within seven days of notice of non-compliance. A Participant denied an exception request hereunder may appeal such denial to the Board of Directors in accordance with the procedures and deadlines set forth in the Business Practice Manuals. In

such event, the requested exception shall be denied or permitted as, when and to the extent permitted by the Board, in accordance with the procedures and timing set forth in the Business Practice Manuals. WPP shall give notice of any exception granted hereunder in the time and manner provided by the Business Practice Manuals.

16.2.5 QCC: WPP shall determine QCC values for the resource types specified below in accordance with the governing principles specified below for each resource type, and consistent with further details specified for each resource type in the Business Practice Manuals.

16.2.5.1 For resources that use conventional thermal fuels, including but not limited to, coal, natural gas, nuclear, and biofuel, WPP will determine QCC based on an Unforced Capacity methodology that employs resource-specific capability testing and capability requirements to determine an Installed Capacity value, and a forced outage calculation methodology based on historical performance during Capacity Critical Hours over a specified multi-year period (excluding outages properly reported as “outside management control”), or based on class-average forced outage data, as specified in the Business Practice Manuals, if there is insufficient data on historical performance.

16.2.5.2 For resources that are Variable Energy Resources, including, but not limited to, wind and solar resources, WPP will determine QCC based on an ELCC methodology, that accounts for synergistic portfolio effects within and among VER types at different resource penetration levels that influence the extent to which the WRAP Region can rely on those VER categories to meet overall capacity needs.

16.2.5.2.1 For such purpose, a separate ELCC value will be calculated in the aggregate for all VER resources of a given type in an identified VER Zone, to be delineated in the Business Practice Manuals based on factors such as geography, performance, meteorological considerations, and penetration.

16.2.5.2.2 As more fully described in the Business Practice Manuals, the zonal aggregate VER-resource-type value will be calculated by (i) conducting a benchmark LOLE study that includes all resource types except the VER resource type being studied, employing a model and assumptions consistent with those used to calculate FSPRM, and adding, or subtracting, the same MW quantity of Pure Capacity to every hour of the applicable Binding Season until,

respectively, an initial LOLE value above 0.1 day per Binding Season becomes 0.1 day per Binding Season, or an initial LOLE value below 0.1 day per Binding Season becomes 0.1 day per Binding Season; (ii) conducting an LOLE study that includes all resource types including the VER resource type being studied, employing a model and assumptions consistent with those used to calculate FSPRM, and adding, or subtracting, the same MW quantity of Pure Capacity to every hour of the applicable Binding Season until, respectively, an initial LOLE value above 0.1 day per Binding Season becomes 0.1 day per Binding Season, or an initial LOLE value below 0.1 day per Binding Season becomes 0.1 day per Binding Season; and (iii) subtracting the Pure Capacity value determined under subpart (ii) from the Pure Capacity value determined under subpart (i) (for which calculation a Pure Capacity value subtracted from each hour in either subpart (i) or subpart (ii) will be assigned a negative value; (iv) repeating steps (i) through (iii) for each Binding Season of the study period employing historical, or as necessary, synthesized, data; and (v) basing the aggregate value of the studied VER resource type for the studied VER Zone on the results of the calculation in step (iii) for the Binding Seasons studied, which may include differential weighting of the Binding Seasons studied as appropriate to improve the quality and predictive capacity of the final result.

16.2.5.2.3 The aggregate capacity calculated for each VER resource type in each VER Zone will then be allocated to VERs of that type in that VER Zone based on each such resource's average historical performance if at least three years of historical performance or three years of synthesized forecast data during the WRAP Region's CCH is available at the time of such allocation. If three years historical performance or synthesized forecast data is not then available, the average ELCC from the VER Zone will be assigned.

16.2.5.3 For resources that are Energy Storage Resources, WPP will determine QCC based on an ELCC methodology comparable to that used for VERs. The ELCC methodology will model Energy Storage Resources at the level of their usable capacity that can

be sustained for a minimum duration of four hours. An Energy Storage Resource need not have a nameplate rating that assumes a minimum of four hours in order to receive a QCC determination, but the QCC in that case will be scaled to reflect the capability that can be sustained for four hours, as more fully described in the Business Practice Manuals.

- 16.2.5.4 A Participant's Demand Response used as a Demand Response Capacity Resource must be controllable and dispatchable by the Participant or by the host utility, and must have met certain testing requirements consistent with Business Practice Manuals. WPP will determine Demand Response Load Modifier QCC by multiplying the load reduction in MWs by the number of hours the resource can demonstrate load reduction capability (for a period of up to five continuous hours) divided by five. The effects of Demand Response used as a Demand Response Capacity Resource must not be included in load provided for a Participant's Advance Assessment.
- 16.2.5.5 For Storage Hydro Qualifying Resources, the Participant will calculate a QCC based on a methodology detailed in the Business Practice Manuals that: (i) considers each resource's actual generation output, residual generating capability, water in storage, reservoir levels, and flow or project constraints over the previous ten-year historical period; (ii) determines the project's QCC by assessing the historical generation during CCHs on any given day and ability to increase generation during CCHs on the same day, subject to useable water in storage, inflows/outflows, and expected project operating parameters/constraints and limitations; (iii) incorporates forced outage rates; and (iv) determines QCC as average contribution to the CCH for each Winter Season and Summer Season over the previous ten years. If ten years of historical data is not available for the Storage Hydro Qualifying Resource, the Participant may alternatively employ data on the same metrics from a demonstrably comparable facility or apply another method that provides reasonable confidence in the reliability of the predicted values, as more fully set forth in the Business Practice Manuals. The Participant's QCC calculation shall be subject to review and validation by WPP. In connection with such review, the Participant shall provide WPP with the following information necessary to calculate a QCC for Storage Hydro Qualifying Resources: (i.a) historical reservoir elevation levels; (ii.a) historical plant generation; (iii.a) elevation versus capacity curves; (iv.a) any minimum or maximum reservoir level constraints; (v.a) forced outage rates; (vi.a) volume of water

versus reservoir elevation storage tables; and (vii.a) turbine discharge versus generation efficiency curve.

16.2.5.6 For Run of River Qualifying Resources, WPP will determine QCC based on the monthly average performance of such resource during Capacity Critical Hours, as further specified in the Business Practice Manuals

16.2.5.7 For resources that (i) are not within the meaning of any of Sections 16.2.5.1 through 16.2.5.5, and that (ii) either (a) are not dispatchable; or (b) require the purchaser of energy from the resource to take energy as available from such resource, including but not limited to a qualifying facility as defined under the Public Utility Regulatory Policies Act of 1978, WPP will determine QCC based on the monthly average performance of such resource during Capacity Critical Hours, as further specified in the Business Practice Manuals.

16.2.6 Net Contract QCC: WPP shall determine Net Contract QCC for the agreement types specified below in accordance with the governing principles specified below for each agreement type, and consistent with further details specified for each agreement type in the Business Practice Manuals. Net Contract QCC may be either positive or negative, to take account of, for example, a Participant's agreements for the sale of capacity to any other party.

16.2.6.1 Absent one of the exceptions described and limited below, capacity supply agreements qualifying for a Net Contract QCC in the WRAP must be resource specific, and therefore must include, among other requirements, an identified source, an assurance that the capacity is not used for another entity's resource adequacy requirements, an assurance that the seller will not fail to deliver in order to meet other supply obligations, and affirmation of NERC Priority 6 or 7 firm point-to-point transmission service rights or network integration transmission service rights from the identified resource to the point of delivery/load. The specific resources identified in a capacity supply agreement qualifying for Net Contract QCC shall meet the same Resource QCC accreditation requirements for the given resource type, as specified in Section 16.2.5.

16.2.6.2 A system sales contract can qualify for a Net Contract QCC value, provided that if the seller is not a Participant, the system capacity that is the subject of the agreement must be deemed surplus to the seller's estimated needs, there must be an assurance that the seller will not fail to deliver in order to meet other commercial obligations, and there must be NERC Priority

6 or 7 firm point-to-point transmission service rights or network integration transmission service rights from the identified resource to the point of delivery/load. Surplus status may be demonstrated by a Senior Official Attestation with pertinent supporting details for such surplus status, including written assent of the non-Participant Seller, secured by the purchasing Participant. Such attestation is not required if the seller is a Participant, because the information needed to verify surplus status is already available.

- 16.2.6.3 A supply agreement entered into prior to October 1, 2021 (“Legacy Agreement”) can qualify for a Net Contract QCC value; provided that where a legacy agreement does not identify the source, it must be possible for WPP to presume a source or sources for the contract, including with the written assent of the supplier under such Legacy Agreement, conveyed in the form and manner set forth in the Business Practice Manuals. A Legacy Agreement for which such resource determination cannot be reasonably made will not be counted as adding to the Portfolio QCC.
- 16.2.7 Total RA Transfer: A Participant may agree with another Participant on a transfer of a portion of its Portfolio QCC to meet the other’s FS Capacity Requirement (“RA Transfer”), provided that the details and duration of such transfer are reported to WPP for validation in accordance with procedures and information requirements specified in the Business Practice Manuals. Where such transfers have been duly reported and validated, an RA Transfer will be added to the purchasing Participant’s Portfolio QCC and subtracted from the selling Participant’s Portfolio QCC.
- 16.2.8 Planned Outages: Participants shall include in their Forward Showing Submittal for a Binding Season information on all Qualifying Resources that are currently out of service with a scheduled return date that falls during the Binding Season or after the Binding Season. Capacity associated with such resources must be deducted from Participants’ Portfolio QCC as specified in the Business Practice Manuals to ensure no credit is granted for such resources during the planned outage. The aggregate of any additional outages that are planned to occur during the Binding Season but have not yet begun at the time of submission must be within the Participant’s remaining surplus (or replaced with other supply). Participants may provide information on all Qualifying Resources that are planned to be out of service but if such data cannot be supplied with reasonable specificity, a Participant may provide a Senior Official Attestation at the time of the submission of its FS Submittal that it expects the sum of planned outages to be equal to or less than the surplus stated in its FS Submittal throughout the Binding Season.

- 16.2.8.1 If a Qualifying Resource is planned to return to service within the first five days of a Binding Season, WPP may approve a qualified acceptance of the FS Submittal, provided the deficiency is less than 500 MW.
- 16.2.8.2 A planned outage shall not justify a waiver of or exception to a Participant's holdback or energy delivery obligations under Part III of this Tariff. Participants will be expected to procure the necessary capacity or energy to meet the Operations Program requirements, regardless of planned outage schedules or FS Submittal acceptance.

16.3 FS Transmission Requirement

16.3.1 As part of its Forward Showing Submittal for a Binding Season, each Participant must demonstrate, as specified in the Business Practice Manuals, that it has secured firm transmission service rights, including under supply arrangements with a third party that holds or has committed transmission service rights, sufficient to deliver a MW quantity equal to at least 75% of the MW quantity of its FS Capacity Requirement. To the extent a Participant holds transmission service rights with a point of receipt at a Qualifying Resource, or in connection with an RA Transfer to such Participant, any such rights from such point in a MW quantity, respectively, in excess of the QCC of such Qualifying Resource, or in excess of the value of such RA Transfer, shall not contribute toward satisfaction of such Participant's FS Transmission Requirement. The FS Transmission Requirement must be met with NERC Priority 6 or NERC Priority 7 firm point-to-point transmission service or network integration transmission service, from such Participant's Qualifying Resource(s) or from the delivery points for the resources identified for its Net Contract QCC or for its RA Transfer to such Participant's load. Notwithstanding the foregoing, authorized use of Capacity Benefit Margin will satisfy the FS Transmission Requirement. Demonstration of the FS Transmission Requirement shall not, in and of itself, relieve any Participant of responsibility for a Delivery Failure Charge as determined under Section 20.7 if such Participant's failure to obtain or maintain firm transmission service of the type and quantity expected by the Operations Program, as described in Section 20.6 of this Tariff, caused or contributed to an Energy Delivery Failure.

16.3.2 A Participant may include in its Forward Showing Submittal a request for an exception from a limited part of its FS Transmission Requirement, provided the exception request meets the terms, conditions, and limitations of one or more of the following four exception categories below. As more fully set forth in the Business Practice Manuals, such exceptions may be subject to overall WRAP limits, and shall be supported by a Senior Official Attestation. WPP will consider the exception category terms, conditions and limitations set forth below, and may consider the completeness of the

exception request, information from transmission service providers, OASIS data, and data readily available to WPP from other reliable and validated sources concerning the duration, timing, firmness and quantity of available transmission service or equivalent options (including transmission construction), in determining whether to grant or deny a transmission exception request. WPP shall provide such determination no later than sixty days after submission of such Participant's FS Submittal containing such transmission exception request. A Participant denied an exception request hereunder may appeal such denial to the Board of Directors in accordance with the procedures and deadlines set forth in the Business Practice Manuals. In such event, the requested exception shall be denied or permitted as, when and to the extent permitted by the Board, in accordance with the procedures and timing set forth in the Business Practice Manuals. WPP shall give notice of any exception granted hereunder in the time and manner provided by the Business Practice Manuals. A Participant granted a transmission exception under either Section 16.3.2.1 or Section 16.3.2.2 must complete a monthly transmission exception check report demonstrating that either (i) the circumstances necessitating the exception have not changed; (ii) transmission has become available and the Participant has acquired it; or (iii) the Participant has acquired a different resource, and associated transmission service rights, and no longer requires the exception. Failure to timely submit a required monthly report will result in assessment of a Deficiency Charge, unless the deficiency is cured within seven days of notice of non-compliance.

16.3.2.1 Enduring Constraints. Participant is unable to demonstrate sufficient NERC Priority 6 or NERC Priority 7 firm point-to-point or network integration transmission service rights on any single segment of a source to sink path for a Qualifying Resource; and Participant demonstrates that no ATC for such transmission service rights is available (either from the transmission service provider or through a secondary market) at the FS Deadline on the applicable segment for the Month(s) needed (for a duration of one year or less) at the applicable Open Access Transmission Tariff rate or less; and Participant submits a Senior Official Attestation that Participant has taken commercially reasonable efforts to procure firm transmission service rights, and that Participant has posted Firm Transmission Requirements on a relevant bulletin board prior to the FS Deadline. In the event such transmission service rights are only available for a duration of more than one year (whether from the transmission service provider or through a secondary market) at the FS Deadline on the applicable segment for the Month(s) needed at the applicable Open Access Transmission Tariff rate or less, a Participant is not required to obtain such service in order to qualify for the Enduring Constraints exception hereunder. Notwithstanding the foregoing, if such Participant declines to obtain such available service and is granted the exception hereunder, such Participant shall not qualify

for an exception hereunder for the same path (or across the same constraint) for the same season of the subsequent year if the Participant again declines to obtain such transmission service rights that are available for a duration of more than one year. In addition to the foregoing, Participant must further demonstrate that there was remaining available transmission transfer capability (i.e., non-firm ATC after the fact) for all CCHs in the same season of the most recent year for which CCHs have been calculated; or, if the path was constrained in at least one CCH of the CCHs in the same season of the most recent year for which CCHs have been calculated, Participant in that case must demonstrate either that it is constructing or contracting for a new local resource for at least the amount of the exception requested, or that it is pursuing long-term firm transmission service rights by entering the long-term queue and taking all appropriate steps to obtain at least the amount of the exception requested.

16.3.2.2 Future Firm ATC Expected. Participant demonstrates that ATC for NERC Priority 6 or NERC Priority 7 firm point-to-point or network integration transmission service rights is not posted or available prior to the FS Deadline (for a duration of one year or less) at the applicable Open Access Transmission Tariff rate or less, and that the transmission service provider has, after the FS Deadline, released additional ATC for such transmission service rights in every one of the CCHs of the most recent year for which CCHs have been calculated on the applicable path. In the event ATC for such transmission service rights is only posted or available prior to the FS Deadline for a duration of more than one year (whether from the transmission service provider or through a secondary market) on the applicable segment for the Month(s) needed at the applicable Open Access Transmission Tariff rate or less, a Participant is not required to obtain such service in order to qualify for the Future Firm ATC Expected exception hereunder. Notwithstanding the foregoing, if such Participant declines to obtain such available service and is granted the exception hereunder, such Participant shall not qualify for an exception hereunder for the same path (or across the same constraint) for the same season of the subsequent year if the Participant again declines to obtain such transmission service rights that are available for a duration of more than one year. The Participant must also demonstrate that the exception request meets volume and duration limitations specified in the Business Practice Manuals.

16.3.2.3 Transmission Outages and Derates. Participant demonstrates that an applicable segment of its existing transmission service rights from its source to sink path for its Qualifying Resource is expected to be derated or out-of-service and the ATC

for NERC Priority 6 or NERC Priority 7 firm point-to-point or network integration transmission service rights is not otherwise available, and that the exception request meets volume and duration limitations specified in the Business Practice Manuals.

16.3.2.4 Counterflow of a Qualifying Resource. Participant demonstrates that either: (i) Participant's use of firm transmission service in connection with the delivery of capacity from Participant's Qualifying Resource (or from the resource associated with its Net Contract QCC) to Participant's load (or other qualifying delivery point permitted by the WRAP) or (ii) a second Participant's use of firm transmission service in connection with the delivery of capacity from the second Participant's Qualifying Resource (or from the resource associated with its Net Contract QCC) to the second Participant's load (or other qualifying delivery point permitted by the WRAP) provides a direct and proportional counterflow transmission that supports the first Participant's delivery of capacity from the first Participant's Qualifying Resource (or from the resource associated with its Net Contract QCC) to the first Participant's load (or other qualifying delivery point permitted by the WRAP) Qualifying Resource to their load. If the exception is requested under subpart (ii) of this subsection, the Participant requesting the exception shall include a written acknowledgement from the second Participant that it is aware of such exception request.

16.3.3 To the extent a Participant does not demonstrate satisfaction of its FS Transmission Requirement by the FS Deadline, the Participant may correct any such deficiency on or before the end of the cure period prescribed by Section 14.5 of this Tariff to avoid a Deficiency Charge.

16.3.4. Any deficiency of transmission service rights ultimately determined by WPP will be treated, for purposes of Deficiency Charge determinations, as in conjunction with, and not additive to, any deficiencies of QCC determined pursuant to Section 16.2.

17. Forward Showing Deficiency Charge

- 17.1 If a Participant fails during the cure period to demonstrate that it has resolved any identified deficiencies in either or both of its FS Capacity Requirement and its FS Transmission Requirement, the Participant will be assessed a Deficiency Charge for each Month for which a deficiency is identified in accordance with this section. In such case, the deficiency for which the Participant will be assessed a Deficiency Charge will be calculated in accordance with the following:

Participant's Monthly Capacity Deficiency = Maximum of (Monthly FS Capacity Requirement – Monthly Portfolio QCC, 0)

Participant's Monthly Transmission Deficiency (MW) = Maximum of ((75% × Monthly FS Capacity Requirement) – (Monthly Transmission Demonstrated + Approved Monthly Transmission Exemptions), 0)

Where Monthly Transmission Demonstrated is the amount of transmission service rights submitted by a Participant per the requirements in Section 16.3 and validated by WPP for each month.

Monthly Deficiency (MW) = Maximum of (Monthly Capacity Deficiency, Monthly Transmission Deficiency)

- 17.2 A Participant's Deficiency Charges shall be calculated as set forth in this Section 17.2, subject to the Transition Period rules in Section 17.3, and shall take account of multiple Monthly Deficiencies within a Forward Showing for a single Binding Season, multiple Deficiencies across a Forward Showing Year, consisting of a Summer Season and the immediately succeeding Winter Season, and any Monthly Deficiencies in a previous Forward Showing Year, in accordance with the following:

- 17.2.1 The Monthly Deficiency with the highest MW value in a Forward Showing for a Summer Season shall be assessed a Deficiency Charge equal to:

Max Summer Deficiency (MW) × Annual CONE (\$/kW-year) × 1000 × Summer Season Annual CONE Factor

- 17.2.2 Any other Monthly Deficiency in the Participant's Forward Showing for the same Summer Season shall be assessed a Deficiency Charge equal to:

Additional Summer Deficiency (MW) × (Annual CONE (\$/kW-year)/12) × 1000 × 200%

- 17.2.3 Any Monthly Deficiency in the Forward Showing for the immediately succeeding Winter Season with a higher MW value than the highest MW value of the Monthly Deficiency in the Summer Season shall be assessed a Deficiency Charge on the incremental MW value above the Summer Season equal to:

**Maximum of (Max Winter Deficiency – Max Summer Deficiency, 0)
(MW) × Annual CONE (\$/kW-year) × 1000 × Winter Season Annual
CONE Factor**

and in such case where there is a Monthly Deficiency in the Winter Season with a higher MW value than the highest MW value of any Monthly Deficiency in the Summer Season, the Monthly Deficiency with the highest MW value in the Summer Season shall be assessed an additional Deficiency Charge calculated in accordance with Section 17.2.2.

- 17.2.4 Any other Monthly Deficiency in the Participant's Forward Showing Submittal for the same Winter Season shall be assessed a Deficiency Charge equal to:

**Additional Winter Capacity Deficiency × (Annual CONE/12) × 1000 ×
200%**

- 17.2.5 For purposes of the above, CONE is the estimated cost of new entry of a new peaking natural gas-fired generation facility. The CONE estimate shall be based on publicly available information relevant to the estimated annual capital and fixed operating costs of a hypothetical natural gas-fired peaking facility. The CONE estimate shall not consider the anticipated net revenue from the sale of capacity, energy, or ancillary services from the hypothetical facility, nor shall it consider variable operating costs necessary for generating energy.

- 17.2.6 WPP shall review the CONE estimate annually for a possible update. Any proposed changes in the CONE estimate shall be subject to review through the stakeholder process for program rule changes.

- 17.2.7 The Summer Season Annual CONE Factor shall vary based on the ratio ("Summer % Deficit") of the Aggregate Capacity Deficiency for the WRAP as a whole for that Summer Season, divided by the P50 Peak Load Forecast for the Summer Season, as follows:

If the Summer % Deficit is less than or equal to 1%, the Summer Season Annual CONE Factor = 125%

If the Summer % Deficit is greater than 1% but less than or equal to 2%, the Summer Season Annual CONE Factor = 150%

If the Summer % Deficit is greater than 2% but less than or equal to 3%, the Summer Season Annual CONE Factor = 175%

If the Summer % Deficit is greater than 3%, the Summer Season Annual CONE Factor = 200%

17.2.8 The Winter Season Annual CONE Factor shall vary based on the ratio (“Winter % Deficit”) of the Aggregate Capacity Deficiency for the WRAP as a whole for that Winter Season, divided by the P50 Peak Load Forecast for the Winter Season, as follows:

If the Winter % Deficit is less than or equal to 1%, the Winter Season Annual CONE Factor = 125%

If the Winter % Deficit is greater than 1% but less than or equal to 2%, the Winter Season Annual CONE Factor = 150%

If the Winter % Deficit is greater than 2% but less than or equal to 3%, the Winter Season Annual CONE Factor = 175%

If the Winter % Deficit is greater than 3%, the Winter Season Annual CONE Factor = 200%

17.2.9 Notwithstanding Sections 17.2.7 and 17.2.8, if a *Participant incurred any FS Deficiency Charges* in a Forward Showing Year *after the Transition Period*, then for the immediately following Forward Showing Year, both the Summer Season Annual CONE Factor and the Winter Season Annual CONE Factor shall be 200% *for such Participant*.

17.2.10. Subject to the Transition Period rules in Section 15A.1, revenues from the payment of Deficiency Charges as to a Binding Season shall be allocated among those Participants with no Deficiency Charges for that Binding Season, pro rata based on each Participant’s share of all such Participants’ Median Monthly P50 Peak Loads for such Binding Season.

17.3 During the Transition Period, Deficiency Charges otherwise calculated under Section 17.2 shall be reduced as, when, and to the extent, and subject to the conditions, provided in Section 17.3.2; and revenue allocations otherwise calculated under Section 17.2 shall be adjusted as, when, and to the extent, and subject to the conditions, provided in Section 17.3.4.

17.3.1. During the Transition Period, a Participant with a Monthly Capacity Deficiency can pay a *Discounted* Deficiency Charge for so much of such Monthly Capacity Deficiency as was due to an Excused Transition Deficit. To obtain an Excused Transition Deficit for a Binding Season, the Participant must provide a Senior Official Attestation attesting that the Participant *or a relevant third party servicing load for which the Participant is the LRE* has made commercially reasonable efforts to secure Qualifying Resources in the quantity needed to satisfy the Participant’s FS Capacity Requirement for the Binding Season, but is unable to obtain Qualifying Resources in the quantity required for the Binding Season because the supply of such resources on a timely basis and on commercially reasonable

terms is at that time inadequate. *If the attestation relates to a third-party servicing load for which the Participant is the LRE, the Senior Official Attestation may be signed by a Senior Official of the third party load service provider, as further detailed in the Business Practices.* Excused Transition Deficits are not resource specific, relate to a MW quantity of the Participant's FS Capacity Requirement, and are limited for each Participant as to a Binding Season during the Transition Period to a maximum permissible MW quantity equal to a percentage value times the FSPRM applicable to such Participant for all Forward Showing Submittals submitted by such Participant for such Binding Season. For purposes of such calculation, the percentage value is: *200% for each of the 2027 Summer Season and 2027-2028 Winter Season; and 100% for each of the 2028 Summer Season and 2028-2029 Winter Season.*

- 17.3.2 A Participant will pay a *Discounted* Deficiency Charge as to the portion of its Monthly Capacity Deficiency for which it obtained an Excused Transition Deficit. The FS Deficiency Charge otherwise applicable to such Participant under Section 17.2 shall be reduced by a percentage value equal to 75% for each of the 2027 Summer Season and 2027-2028 Winter Season; *and 50% for each of the 2028 Summer Season and 2028-2029 Winter Season.* The Participant will be assessed an FS Deficiency Charge calculated under Section 17.2, without reduction or adjustment, for any of its Monthly Capacity Deficiency that is in excess of the amount of such deficiency for which it obtained an Excused Transition Deficit.
- 17.3.3 Whether or not a Participant obtains an Excused Transition Deficit as to a Binding Season, the Participant may reduce a Monthly Capacity Deficiency otherwise calculated under Section 17.1 for a Binding Season during the Transition Period to the extent such deficiency is due to the Participant's inability to obtain assent from the supplier under a Legacy Agreement to the accreditation required for such Legacy Agreement under Part II of this Tariff and the Business Practice Manuals. To obtain such relief, the Participant must provide a Senior Official Attestation attesting that the Participant made commercially reasonable efforts to execute the required accreditation form with the supplier under the Legacy Agreement, but the supplier was unable or unwilling to counter sign the accreditation form. The reduction in Monthly Capacity Deficiency permitted by this Section 17.3.3 as to any Participant for all Forward Showing Submittals submitted by such Participant for any Binding Season during the Transition Period shall not exceed a MW quantity equal to 25% times the FSPRM applicable for such Participant for such Binding Season. To the extent a Participant reduces a Monthly Capacity Deficiency under this subsection, the percentage of the Participant's FSPRM corresponding to the reduction hereunder shall reduce the maximum permissible percentage of FSPRM reduction allowed under Section 17.3.1 for Excused Transition Deficits for the same Binding Season.

- 17.3.4 A Participant that, as a result of application of this Section 17.3, pays no Deficiency Charge as to a Binding Season, shall not be deemed a “Participant[] with no Deficiency Charges” for purposes of Section 17.2.10, and shall not receive an allocation of revenues from the payment of Deficiency Charges as to such Binding Season.

Contingency Reserves NTFP

PART III OPERATIONS PROGRAM

Contingency Reserves NTFP

18. Operations Program Overview

- 18.1 The Operations Program facilitates access to collective capacity made available through regional load and resource diversity of all Participants under the terms of this Part III.
- 18.2 The Operations Program evaluates forecasted system conditions across the seven-day period (“Multi-Day-Ahead Assessment”) preceding the Operating Day, commencing at the outset of the assessment period with an initial Sharing Calculation and initial identification of potential Sharing Events for the Operating Day. The assessment is refined as forecasted conditions for the Operating Day are revised and established on the Preschedule Day, a Holdback Requirement for any Sharing Events is then identified. To the extent a Sharing Event continues to be identified for the Operating Day, Holdback Requirements shall be converted into Energy Deployments on the Operating Day.
- 18.3 The Operations Program prescribes pricing designed to incent Participants to resolve any forecast Operating Day deficiencies before the Operating Day, including through transactions outside the Operations Program, and to fully compensate Participants that provide support through the Operations Program to Participants with Operating Day deficiencies.

19. Operations Program Timeline and Supporting Information

- 19.1 The Operations Program includes a Multi-Day Ahead Assessment that looks ahead at the next seven Operating Days by performing an indicative Sharing Calculation from Participant forecast data for each future Operating Day up until the Preschedule Day. The Sharing Calculation for the Preschedule Day is not indicative but is binding, subject to Sections 20.2.4 and 20.3. Participants shall provide WPP with forecasts for the next seven Operating Days of expected (i) load, (ii) output of VERs, (iii) output of RORs, (iv) Contingency Reserves, and (v) forced outages, including outages on transmission facilities the Participant utilized to meet its Forward Showing Capacity Requirement, as further described in the Business Practice Manuals. WPP shall utilize the forecast data obtained in the Multi-Day-Ahead Assessment to calculate or revise the indicative Sharing Calculations for each day thereafter, up until the Preschedule Day, and will use such forecast data to revise the indicative Sharing Calculation hourly during the Operating Day. Such forecast data will also be used to calculate the binding Sharing Calculation for the Preschedule Day.
- 19.2 The Operations Program, during any Binding Season, shall rely on and employ (among other data) the following information from the Forward Showings for such Binding Season: (i) the P50 Peak Load Forecast for each Participant; (ii) the Monthly FSPRMs for each Participant during such Binding Season; (iii) expected performance by Qualifying Resource type and any RA Transfers; (iv) expected forced outage rates by resource type; (v) expected Contingency Reserves; and (vi) firm transmission service rights made available for purposes of regional diversity sharing under the WRAP, permitted under Part II of this Tariff, which shall be assumed to be available for all hours of each Month for which such firm transmission service rights were made available.
- 19.3 To facilitate WPP's conduct of the Multi-Day-Ahead Assessment, each Participant shall provide the Program Operator information relevant to the Participant's expected demand and supply conditions on each Operating Day, of the type, in the manner, and with the frequency, specified in the Business Practice Manuals.
- 19.4 Each Participant in any Subregion identified in the Business Practice Manuals as not containing a central transmission hub permitting energy deliveries to that hub from any point within such Subregion, shall, in addition to providing the information required by Section 19.3, identify, on or before the deadline during the Preschedule Day specified in the Business Practice Manuals, for each Hour of the Operating Day each point to which it can deliver energy, each point at which it can take receipt of energy, the quantity it can deliver or receive at each such point, and a numeric factor intended to prioritize use of transmission made available by Participants with positive Sharing Calculations and needed by Participants with negative Sharing Calculations for each such hour. A Participant with a positive Sharing Calculation for an hour must provide a total quantity for all identified points at which it can deliver that is no less than the amount of its positive Sharing Calculation for such hour (adjusted as necessary for any RA Transfer in accordance

with Section 20.1.2). A Participant with a negative Sharing Calculation for an hour must provide a total quantity for all identified points at which it can take receipt that is no less than the amount of its negative Sharing Calculation for such hour (adjusted as necessary for any RA Transfer in accordance with Section 20.1.2). Participants shall provide this same information for each Operating Day on an expected or preliminary basis on each day of the Multi-Day-Ahead Assessment following, and based on, the expected Holdback Requirement estimates provided on each such day for the Operating Day.

- 19.5 Any Participant with excess supply that is not obligated to the WRAP through a positive Sharing Calculation result may, at its sole election, offer such supply to the WRAP as Voluntary Holdback. If the offering Participant has a positive Sharing Calculation result, the offered capacity shall be in addition to that Sharing Calculation result; if the offering Participant has a negative Sharing Calculation result, the offered capacity will only be included in the allocation of Holdback Requirement so long as the offering Participant did not confirm a need for Holdback Capacity for such hour. Such offers must be submitted within the time window identified in the Business Practice Manuals, must include the information identified in Sections 19.3 and 19.4, as applicable, and must conform to the format and content identified in the Business Practice Manuals. An offer of Voluntary Holdback may become part of the Participant's Holdback Requirement when it is included in the allocation on the Preschedule Day prescribed by Section 20.2.

20. Components of the Operations Program

20.1 Sharing Calculation

20.1.1 WPP shall implement, as more fully described in the Business Practice Manuals, with respect to each Forward Showing Submittal accepted by WPP for a Participant under Part II of this Tariff, or with respect to each Subregion in which the Participant is responsible for load regardless of whether the Participant submitted a single Forward Showing Submittal encompassing its loads in both Subregions, the following Sharing Calculation to identify any hour in which any Participant is forecast to have a capacity deficit (known as a “Sharing Event”). This calculation takes into account changes in a Participant’s resource availability, resource performance, forecast load, and Contingency Reserve relative to the Forward Showing, plus an Uncertainty Factor. The Sharing Calculation is equal to:

$$[(P50) * (1 + FSPRM) + \text{Contingency Reserve Adjustment}] - [\text{Load Forecast} - \text{Demand Response Capacity Resources} + \text{Contingency Reserve Obligation} + \text{Uncertainty Factor}] + [\Delta \text{Forced Outages} + \Delta \text{RoR Performance} + \Delta \text{VER Performance}]$$

Where:

P50 refers to the Participant’s Monthly P50 Peak Load for that Binding Season’s Month;

FSPRM, as described in Section 16.1.2, is an increment of resource adequacy supply needed to meet conditions of high demand in excess of the applicable peak load forecast and other conditions such as higher resource outages and is expressed as a percentage of the applicable Participant P50 Peak Load Forecast for that Binding Season’s month;

Contingency Reserve Adjustment accounts for changes in Contingency Reserve expectations (relative to the ~~6%~~ Contingency Reserve assumed in the FSPRM) resulting from energy contract purchases and contract sales as set forth in the Business Practice Manuals;

Load Forecast refers to the forecast of expected load for the subject hour for the loads for which the Participant is the Load Responsible Entity and that have not been excluded from WRAP participation;

Demand Response Capacity Resource as described in Section 16.2.5.4.

Contingency Reserve Obligation refers to the amount of Contingency Reserve the Participant is carrying during the operating hour equal to ~~(i) 3% of Load Forecast for which the Participant is the WRAP LRE and maintains~~

~~its Contingency Reserve, (ii) plus 3% of WRAP load for which the Participant is not the LRE but has assumed the Contingency Reserve through a contractual arrangement, (iii) plus 3% of generation used to meet any load for which the Participant is the LRE and maintains the Contingency Reserve, (iv) plus 3% of generation utilized to meet WRAP Load the LRE's share of the Balancing Authority's total Contingency Reserve obligation modified by any Contingency Reserve Adjustment for which the Participant is not the LRE but has assumed the Contingency Reserve through a contractual arrangement, as set forth in the Business Practice Manuals;~~

Uncertainty Factor refers to a factor determined by WPP, as more fully set forth in the Business Practice Manuals, to account for the potential variance between forecasts of load, solar resources, wind resources, and run-of-river resources, and the Operating Day conditions of such load and resources;

Δ Forced Outages refers, for the subject hour, to the sum of:

- (i) any change in forced outages of any of the thermal resources included in the Participant's Portfolio QCC, relative to the forced outages assumed in the Forward Showing Submittal by application of the Forced Outage Factor; plus
- (ii) any change in forced outages of any of the Storage Hydro Qualifying Resources relative to the forced outages assumed in the calculation of the Participant's Resource QCC as more fully described in the Business Practice Manuals; plus
- (iii) any reduction in output capability of any of the Energy Storage Resources due to equipment failure or protection
 - a. In the first four (4) hours the Forced Outages MWs that can be claimed are equal to [(charge MW x duration)/4]
 - b. For all hours beyond four (4) hours, the Forced Outages MW amount that can be claimed for an Energy Storage Resource shall not be greater than the monthly QCC; plus
- (iv) any impacts of transmission conditions on previously acquired firm transmission service rights that result in capacity reductions up to the level of the Resource QCC of the associated Qualifying Resource;

Δ RoR Performance refers to any change, for the subject hour, in expected performance of any of the run-of-river resources in the Participant's Portfolio QCC relative to the QCC of those Qualifying Resources; and

Δ VER Performance refers to any change, for the subject hour, in expected performance of the VER Resources in the Participant's Portfolio QCC relative to the QCC of those Qualifying Resources;

20.1.2 In addition to the foregoing, the Sharing Calculation for a Participant that is a purchaser of an RA Transfer shall be performed in two passes, with and without such purchase. If the result of assuming in the first pass that the Participant had not purchased the RA Transfer is that the Participant has a negative Sharing Calculation, then the Participant that sold the RA Transfer must agree, for the time period addressed by the Sharing Calculation, to an energy delivery to the Participant that purchased the RA Transfer, in an amount equal to the lesser of: (i) the MW quantity needed to result in a net zero Sharing Calculation for the Participant that purchased the RA Transfer; and (ii) the MW amount of the RA Transfer. If the result of recognizing the Participant's purchase of the RA Transfer in the second pass is that the Participant has a positive Sharing Calculation, then the Participant that sold the RA Transfer must assume a share of the purchasing Participant's resulting obligation to the Operations Program in an amount equal to the MW quantity of the RA Transfer, minus the MW quantity of the delivery made by the seller of the RA Transfer to the purchaser of the RA Transfer as a result of the first pass.

20.1.3 The Sharing Calculation of any Participant that was found to have a Monthly Capacity Deficiency under Sections 16.1 and 16.2, for which such Participant paid a Deficiency Charge, including any Deficiency Charge reduced by application of Section 17.3 during the Transition Period, shall be reduced by the MW quantity of such Monthly Deficiency.

20.2 Holdback Requirement

To the extent that: (i) WPP's application of the Sharing Calculation identifies on the Preschedule Day a Sharing Event for any hour(s) of the Operating Day; and (ii) the Participant(s) found to be deficient for such hour(s) by the Sharing Calculation confirms to WPP on the Preschedule Day, in accordance with notification and confirmation procedures set forth in the Business Practice Manuals, such Participant's need for capacity for such hour(s), then WPP shall determine the Participants having a Holdback Requirement for such hour(s) and the quantity of the Holdback Requirement for each such Participant in accordance with this Section 20.2. The Operations Program will prioritize offers of Voluntary Holdback in the allocation and assignment of Holdback Requirements. Holdback Requirements shall be expressed as whole MWs for each hour for which they are estimated or established and shall not be specific to any Qualifying Resource.

20.2.1 Subregion with Central Hub

For any hour, as to any Subregion identified in the Business Practice Manuals as containing a central transmission hub permitting energy deliveries to that hub from any point within such Subregion ("Central Hub"), the aggregate of the holdback needed to meet the requirements of all Participants with negative Sharing calculation results that have confirmed their need for holdback will be allocated and assigned first among offers of

Voluntary Holdback, and second, to the extent such needs remain unmet, among Participants with positive Sharing Calculation results.

20.2.1.1 Allocation of Voluntary Holdback: Voluntary Holdback will be allocated in one of three alternative ways, based on comparing the aggregate confirmed need for holdback among Participants with negative Sharing Calculation results against the aggregate of all offers for Voluntary Holdback.

20.2.1.1.1 If the total MW quantity of all Voluntary Holdback offered is equal to the total MW quantity of all deficient Participants' confirmed requests for holdback, then each Participant that offered Voluntary Holdback is assigned its offered Voluntary Holdback as its Holdback Requirement.

20.2.1.1.2 If the total MW quantity of all Voluntary Holdback offered is more than the total MW quantity of all deficient Participants' confirmed requests for holdback, then each Participant that offered Voluntary Holdback is assigned as its Holdback Requirement a percentage of the total confirmed need for holdback based on the ratio of the Participant's MWs of offered Voluntary Holdback to the sum of all Participants' MWs of offered Voluntary Holdback.

20.2.1.1.3 If the total MW quantity of all Voluntary Holdback offered is less than the total MW quantity of all deficient Participants' confirmed requests for holdback, then each Participant's Holdback Requirement is determined as set forth in section 20.2.1.2.

20.2.1.2 Allocation of Remaining Holdback Requirement: Sharing Calculation Results

If the total MW quantity of all Voluntary Holdback offered is less than the total MW quantity of all deficient Participants' confirmed requests for holdback, then the maximum Voluntary Holdback offered is used as the first term in the Holdback Requirement. The remaining term of the Holdback Requirement is met by application of the Sharing Calculation, and the results of the two terms are summed for each Participant. The remaining need for holdback that is not met by Voluntary Holdback is allocated among all Participants with positive Sharing Calculation results pro rata based on the ratio for each

Participant of the Participant's positive Sharing Calculation result to the sum of the positive Sharing Calculation results. The sum of these two values for each applicable Participant is the Holdback Requirement for that Participant.

20.2.2 Subregion without Central Hub

For any hour, any Subregion not containing a Central Hub, the Program Operator shall conduct an optimization-based allocation to pair surplus and deficient Participants. The allocation methodology will utilize the points at which surplus Participants can deliver their Holdback Requirement, the points at which deficient Participants can take receipt of their allocation of the total Holdback Capacity, and the transfer capability that exists to the points at which surplus Participants can deliver and the points at which deficient Participants can take receipt.

The optimization will generally attempt to prioritize (i) Voluntary Holdback; (ii) Holdback Capacity matched pursuant to the information provided per Section 19.4 on a nearest neighbor and cluster basis, allocated pro rata among Participants within such cluster; (iii) Holdback Capacity matched pursuant to the information provided and allocated among Participants within the same Subregion to the extent not matched and allocated under category (ii); and finally (iv) Holdback Capacity from Participants in another Subregion, paired with any transmission service per Section 14.3.2.

20.2.3 Absent a Holdback Requirement Transfer as described below, a Participant's Holdback Requirement for any hour of an Operating Day shall not exceed the level first set by WPP on the Preschedule Day for that Participant for that hour.

20.2.4 Any Participant may agree with any other Participant for the first Participant to transfer to the second Participant some or all of the Holdback Requirement established for the first Participant for any hour on any Operating Day. Any such Holdback Requirement Transfer shall be a bilateral arrangement settled outside the Operations Program, provided, however, that both Participants must timely notify WPP, by the time and in the manner described in the Business Practice Manuals, of such Holdback Requirement Transfer. Any necessary transmission arrangements and any transaction settlements shall be the sole responsibility of the Participants that are the parties to such bilateral arrangement.

20.2.4.1 No Holdback Requirement transfer for any hour shall be permitted if notice of such bilateral transaction is not fully reported to WPP, in the form required by the Business Practice Manuals, by 120 minutes before the start of such hour.

20.3 Release of Surplus Capacity

20.3.1 As detailed in the Business Practice Manuals, WPP will review the indicative Sharing Calculation results from the Multi-Day Ahead Assessment and to the extent the WPP determines any indicative Sharing Calculations can be reduced, it may release all or a portion of Participants' future Holdback Requirements. WPP may permit a release of future Holdback Requirements to the extent WPP has not applied a Safety Margin for such hour and (i) WPP's continued Sharing Calculations determine that no Participant has a negative indicative Sharing Calculation result for such hour; and (ii) WPP determines there is a low probability of a Sharing Event for the hour; or (iii) WPP grants a Participant's request for extenuating circumstances of all or any portion of that Participant's future Holdback Requirement for the hour.

20.3.2 Upon release of all or any portion of a future Holdback Requirement, the quantity of future Holdback Requirement so released shall no longer be subject to an Energy Deployment requirement under the Operations Program for the subject hour.

20.4 Energy Deployment

20.4.1 Participants shall provide energy during an hour, in support of any Participants with a negative Sharing Calculation result and a confirmed need for energy under the Operations Program for such hour, in accordance with WPP's calculation of the Energy Deployment for such hour. The total Energy Deployment required of all Participants that are subject to Energy Deployment shall equal the sum, in MWh for that hour, of the energy confirmed as being needed in that hour by Participants in such Subregion with negative Sharing Calculation results in such hour, to the extent that can be supported by the Program. The Energy Deployment assigned to each Participant shall not exceed that Participant's Holdback Requirement calculated on the Preschedule Day, adjusted for any applicable transfer of Holdback Requirement as allocated and assigned for the Preschedule Day, and, as further adjusted to reflect the election, made after the Preschedule Day, of any Participant with a negative Sharing Calculation result on the Preschedule Day to decline all or any part of the Holdback Capacity to which it would have been entitled based on the Holdback Requirements determined on the Preschedule Day.

20.4.1.1 In Subregions with a Central Hub, Energy Deployments required hereunder shall be delivered to the Central Hub in such Subregion, or to an alternate delivery point mutually agreed by the parties to a specific Energy Deployment, provided both parties to the transaction report such alternative delivery arrangements to WPP in the form and manner described in the Business Practice Manuals.

20.4.1.2 In Subregions without a Central Hub, Energy Deployments required hereunder shall be delivered to the receipt point and delivery point as indicated by the optimization allocation, or to an alternate delivery point mutually agreed by the parties to a specific Energy Deployment, provided both parties to the transaction report such alternative delivery arrangements to WPP in the form and manner described in the Business Practice Manuals.

20.4.2 The Energy Deployment a Participant may receive for any hour shall be no greater than the negative Sharing Calculation result calculated for such Participant for such hour. Such Participant shall confirm, by no later than 85 minutes before the start of such hour, the quantity of Energy Deployment for which it requires delivery for such hour, through the procedures outlined in the Business Practice Manuals. Any Participant that does not confirm required Energy Deployment deliveries for such hour by such deadline will be deemed to waive all deliveries of Energy Deployment under the Operations Program for such hour.

20.4.3 The Energy Deployment a Participant can be required to supply for an hour shall not exceed the final Holdback Requirement calculated for such Participant on Preschedule Day, including any duly reported exchange of Holdback Requirement, as of 85 minutes before the start of such hour.

20.4.4 WPP shall advise each Participant with a required Energy Deployment for an hour of the required MWh quantity and delivery point of such Energy Deployment by no later than 80 minutes before the start of such hour.

20.5 Safety Margin

20.5.1 WPP may establish on the Preschedule Day a Safety Margin for the WRAP Region or any identified Subregion thereof for any hour of an Operating Day when warranted by such circumstances as potential large resource trips, heavy transmission outage conditions, significant environmental conditions, or other similar regional or subregional conditions, as more fully set forth in the Business Practice Manuals.

20.5.2 Any Safety Margin so determined for an hour shall be allocated pro rata among Participants with a positive Sharing Calculation result, based on their relative shares of the sum of all positive Sharing Calculation results for such hour, provided, however, that the Safety Margin allocated to a Participant may not result in a Holdback Requirement for such Participant greater than such Participant's Sharing Calculation result. A Participant allocated holdback for a Safety Margin hereunder does not receive compensation under this Tariff for such allocation of holdback.

20.5.3 WPP shall notify all Participants of application of a Safety Margin for any hour, including in such notice the total timeframe, the MW amount, and the rationale for such Safety Margin.

20.6 Operations Program Transmission Service Requirements

Participant shall have in place, prior to the Operating Day, transmission service satisfying NERC Priority 6 or 7 for each hour of such Operating Day for which a Sharing Event has been established, in a quantity sufficient for deliveries from the Qualifying Resources relied upon in such Participant's Forward Showing Submittal to demonstrate satisfaction of such Participant's FS Capacity Requirement (or from replacement Qualifying Resources) to serve such Participant's loads during such hours. In the event a Participant has an Energy Delivery Failure, the review associated with the possible assessment of a Delivery Failure Charge on such Participant shall, as further described in the Business Practice Manuals, include whether a failure to secure sufficient NERC Priority 6 or Priority 7 firm transmission service rights caused or contributed to such Energy Delivery Failure. For such purpose, the Participant will have been expected to have complied with the transmission service requirement stated in this subsection.

20.7 Failure to Deliver Energy Deployments

20.7.1 A Participant assigned a required Energy Deployment pursuant to Section 20.4.4 of this Tariff for any hour that fails to deliver the specified energy during such hour, and that does not obtain a waiver of its Energy Deployment obligation, shall be assessed a Delivery Failure Charge.

20.7.2 A Participant shall be deemed to have an Energy Delivery Failure if Participant fails to deliver the Energy Deployment quantity established under Section 20.4.1, absent grant of a waiver pursuant to Section 20.7.3 of this Tariff.

20.7.3 A Participant anticipating an Energy Delivery Failure should provide WPP notice of such expected Energy Delivery Failure as soon as practicable after becoming aware of the anticipated failure. Whether anticipated or not, a Participant may request a waiver of an Energy Deployment obligation after an Energy Delivery Failure has occurred. The WPP shall review all such waiver requests and shall determine whether the Participant's justification for the Energy Delivery Failure is valid and warrants waiver of its Energy Deployment obligation. The WPP also shall consider whether the Participant knew in advance, or reasonably should have known in advance, of an Energy Delivery Failure, and what efforts the Participant took to notify the WPP in advance of such Energy Delivery Failure. The procedures for addressing such waiver requests, including a non-exclusive list of valid justifications for an Energy Delivery Failure shall be set forth in the Business Practice Manuals. A Participant denied a waiver request hereunder may appeal such denial to the Board of Directors in accordance

with the procedures and deadlines set forth in the Business Practice Manuals. In such event, the requested waiver shall be denied or permitted as, when and to the extent permitted by the Board, in accordance with the procedures and timing set forth in the Business Practice Manuals. WPP shall report on the disposition of each waiver request received.

20.7.4 The Delivery Failure Charge for each hour shall be the Charge Rate applicable for such hour times the MWhs of energy that were required to be, but were not, delivered pursuant to an Energy Deployment during such hour. The Charge Rate shall be the higher of the Day-Ahead price or Real-Time price provided by the Day-Ahead Applicable Price Index and Real-Time Applicable Price Index as specified in the Business Practice Manuals for the Subregion applicable to the location of the delivering entity, applicable to the day and hour of the energy delivery, respectively, for the hour, times a Delivery Failure Factor, as follows:

20.7.4.1 If the deficit is fully covered by other Participants through the Operations Program, in each instance of failure, the Delivery Failure Factor shall be five for the first non-waived Energy Delivery Failure in a Cumulative Delivery Failure Period; ten for the second non-waived Energy Delivery Failure in a Cumulative Delivery Failure Period; and twenty for the third and subsequent non-waived Energy Delivery Failures in a Cumulative Delivery Failure Period. For purposes of applying the Delivery Failure Factors under this Section 20.7.4 or the review referenced in Section 20.7.5, multiple Energy Delivery Failures occurring in one day shall be treated as a single instance of failure.

20.7.4.2 If the deficit is not fully covered by other Participants through the Operations Program, the Delivery Failure Factor is twenty-five for the first non-waived Energy Delivery Failure in a Cumulative Delivery Failure Period; and fifty for the second and subsequent non-waived Energy Delivery Failures (regardless of whether the prior instance(s) of delivery failure were fully covered by other Participants) in a Cumulative Delivery Failure Period.

20.7.4.3 Revenues from Delivery Failure Charges assessed in cases where the deficit was fully satisfied by other Participants will be used to reduce WPP costs that are recovered under Schedule 1, WRAP Administration Charge. Revenues from Delivery Failure Charges assessed in cases where the deficit was not fully met by other Participants will be collected by the WPP and provided to the Participant that had an unserved deficit.

20.7.4.4 Notwithstanding anything to the contrary in this Section 20.7.4, the Delivery Failure Charges assessed on a Participant, regardless of application of the Delivery Failure Factor, shall not

exceed, over the course of a Summer Season and the immediately succeeding Winter Season, the dollar amount that, as more fully detailed in the Business Practice Manuals, would have been assessed cumulatively under Section 17 as Deficiency Charges if the Participant had one or more Forward Showing Capacity Deficiencies over the course of such Summer Season and Winter Season in the same MW amounts as the highest MW amount of Delivery Failure experienced by such Participant in each Month of such Summer Season and Winter Season. The maximum dollar amount described herein shall be calculated on an ongoing basis during such Summer Season and Winter Season, and increased or reduced accordingly, without awaiting the end of the combined period of such Summer Season and Winter Season.

20.7.5 In addition to assessment of the Delivery Failure Charge, a third or subsequent instance of non-waived delivery failure, when all such delivery failures are fully covered by other Participants, or a second or subsequent instance of non-waived delivery failure when such instance is not fully covered by other Participants, will subject the Participant to review for expulsion from the WRAP.

20.8 Voluntary Response to Increased Deficiencies Identified After Preschedule Day

20.8.1 A Participant that identifies an unmet need for energy for any hour of an Operating Day that is outside of assistance provided or to be provided by Holdback Requirements or Energy Deployments established hereunder may, in accordance with procedures specified in the Business Practice Manuals, notify WPP of the need for such assistance. WPP will establish a portal or other procedure, as specified in the Business Practice Manuals, to facilitate provision of assistance, on a voluntary, bilateral basis, by other Participants to the Participant that identified the unmet need. Compensation, terms, and conditions of any resulting bilateral transactions will be determined by the affected parties outside of this Tariff. While Participant response to any such notification is voluntary, Participants are encouraged to provide assistance to other Participants in the circumstances described in this subsection, in consideration of the mutual support each Participant has agreed to provide to each other Participant by its agreement to participate in the WRAP, including this Operations Program.

21. Operations Program Settlements

21.1 Nature of Operation Program Settlements

21.1.1 Operations Program settlements are bilateral transactions; they are not purchases from or sales to a central market.

21.1.2 Operations Program transactions use existing transaction systems and processes.

21.1.3 The WPP will calculate and post settlement quantities and prices based on the Energy Deployment and Holdback Requirement, in accordance with procedures specified in the Business Practice Manuals for provision of transaction information by and among Participants and WPP, but WPP has no role in the transaction itself. WPP is not a settlement entity.

21.1.4 Settlement Prices calculated under Section 21.2 shall recognize pricing differences among Subregions. Where the seller and buyer are located in the same Subregion, the Applicable Price Index shall be the price index specified for that Subregion in the Business Practice Manuals. Where the seller and buyer are located in different Subregions, the following components of the settlement price calculation in Section 21.2 will be calculated using the Applicable Price Index for the Subregion that provides the higher index price: (i) Possible Block Sale Revenue; (ii) Total Settlement Price; (iii) Energy Declined Settlement Price; and (iv) Realtime Value of Unheld Energy. If a third participant is involved by providing transmission service rights between Subregions, the Participant that provided holdback or Energy Deployment shall receive the settlement price of the Subregion from which the holdback or Energy Deployment was sourced, and the Participant that provided Subregion to Subregion transmission service rights pursuant to Section 19.4 shall receive the difference between each Subregion's Total Settlement Price, or zero, whichever is greater.

21.2 Settlement Price Calculation. Settlement prices shall be calculated in accordance with the following, as more fully set forth in the Business Practice Manuals.

21.2.1 A Participant assigned a Holdback Requirement on a Preschedule Day for any hour of an Operating Day shall be paid the Holdback Settlement Price times the MW quantity of the Holdback Requirement. A Participant that provides energy to another Participant pursuant to an Energy Deployment shall be paid the Energy Declined Settlement Price, defined in Section 21.2.4, times the MWhs of energy provided to such other Participant, and its total payments shall be reduced by the Energy Declined Settlement Price times the MWhs of energy that would have been provided under a Holdback Requirement but were declined by the other Participant. A Participant

assigned a Holdback Requirement also shall be paid, when applicable, a Make Whole Adjustment, as provided below in Section 21.2.5.

- 21.2.2 A Participant that had a negative Sharing Calculation result for any hour of an Operating Day, which was incorporated in the calculation of Holdback Requirements of any Participants for such hour, determined as of the Preschedule Day, shall pay the Holdback Settlement Price times the MW quantity of such negative Sharing Calculation result. In addition, any Participant that had a negative Sharing Calculation result that was incorporated in the calculation of a Holdback Requirement shall contribute to the payment of the Make Whole Adjustment based on its negative Sharing Calculation. A Participant that declines energy that would have been provided under a Holdback Requirement shall be credited the Energy Declined Settlement Price times the MWhs of energy declined by such Participant.
- 21.2.3 The Holdback Settlement Price shall equal the Total Settlement Price minus the Energy Declined Settlement Price.
- 21.2.4 The Energy Declined Settlement Price shall equal the Applicable Real-Time Index Price for the hour.
- 21.2.5 The Make Whole Adjustment is applied in the event that the settlement revenue and the estimated value of the non-dispatched energy is less than the estimated revenues the selling entity would have received had such entity not been subject to a Holdback Requirement and had sold a day-ahead block of energy with a MW value equal to the maximum amount of Holdback Requirement for the hours in the block. The Make Whole Adjustment has a minimum value of zero and is determined as follows:

Make Whole Adjustment (when applicable) =

Maximum of (Possible Block Sale Revenue
– Final Settlement Revenue
– Realtime Value of Declined Energy
– Realtime Value of Unheld Energy, 0)

Where:

Realtime Value of Declined Energy = Energy Declined × Energy Declined Settlement price

provided that Declined Energy is only applicable to those hours where there was a positive Holdback Requirement.

Realtime Value of Unheld Energy = (Maximum Holdback MW in Block – Holdback MW Requested) × Applicable Index Price

21.2.6 The Total Settlement Price used in the above calculations shall be determined in accordance with the following formula:

Total Settlement Price = Maximum of (Minimum of (Hourly Shaping Factor × Day Ahead Applicable Index Price × 110%, 2000 \$/MWh), 0)

where:

Hourly Shaping Factor is based on the most recent High-Priced Day for the relevant season, defined as a day in which at least one hour has a system marginal energy cost ("SMEC") greater than \$200/MWh, and shall be calculated as follows:

$1 + \{[\text{CAISO Hourly Day Ahead SMEC} - \text{CAISO Average Day Ahead SMEC (on- or off-peak hours)}] / [\text{CAISO Average Day Ahead SMEC (on- or off-peak hours)}]\}$

Day-Ahead Applicable Index Price is the day-ahead heavy load/light load ICE Index price that is specified in the Business Practice Manuals for the Subregion applicable to the location of the delivering entity, applicable to the day and hour of the energy delivery. If transmission via Section 14.3.2 was used to facilitate holdback, the Applicable Index Price shall be the higher of the two subregional day-ahead index prices for that portion of the holdback.

Real-Time Applicable Index Price is the real-time index price that is specified in the Business Practice Manuals for the Subregion applicable to the location of the delivering entity, applicable to the day and hour of the energy delivery.

SCHEDULE 1

WESTERN RESOURCE ADEQUACY PROGRAM ADMINISTRATIVE COST RECOVERY CHARGE

The Western Power Pool's Costs of administering and operating the Western Resource Adequacy Program including, without limitation, all costs incurred or obligated by WPP as Program Administrator, all costs paid or payable by WPP to the Program Operator or other service providers, all costs of the Board of Directors in directing, supervising, or overseeing the WRAP, and the costs of maintaining a reasonable reserve as provided in Section 1 of this Schedule 1, shall be recovered from Participants pursuant to the charges set forth in this Schedule 1.

Section 1. WRAP Costs

1. As used herein, Costs shall mean WPP's costs, expenses, disbursements and other amounts incurred (whether paid or accrued) or obligated of administering and operating the WRAP as described above, including, without limitation, operating expenses, general and administrative expenses, costs of outside services, taxes, fees, capital costs, depreciation expense, interest expense, working capital expense, any costs of funds or other financing costs, and the costs of a reasonable reserve as provided herein.
2. The Costs included in a WRAP Administration Charge assessed for a Month shall be the Costs determined as being incurred for that Month, including, without limitation, for each Month, one-twelfth of any annual charge(s).
3. The Costs included in the WRAP Administration Charge for a reasonable reserve shall be those designed to establish over the first twelve months that this WRAP Administration charge is in effect an amount equal to 6% of the expected Costs, exclusive of such reserve, for one year; and to maintain such reserve thereafter at an amount equal to 6% of the expected Costs, exclusive of such reserve for the then-current year. WPP shall record on its income statement deferred regulatory expense, and WPP's balance sheet will reflect as a cumulative deferred regulatory liability, revenues collected under this Schedule 1 that are in excess of the Costs exclusive of such reserve and taking account of and including any accrued tax expense effects of this regulatory liability. The deferred regulatory liability will be reduced when after-tax WPP revenues collected under this Schedule 1 during any Month are less than the Costs exclusive of such reserve. Within thirty days after the end of each Year, to the extent WPP determines that the deferred regulatory liability exceeds 6% of WPP's revenues that were collected under this Schedule 1 during such Year, such excess amounts in the deferred regulatory liability shall be refunded evenly over the applicable billing determinant volumes in the remainder of the subsequent Year through credits to charges to then-current customers under this Schedule 1.

Section 2. WRAP Administration Charge

Each Participant shall be assessed each Month a WRAP Administration Charge equal to the sum of the Base Charge and the Load Charge,

where:

The Base Charge for each Participant equals the Base Costs divided by the number of Participants being assessed the Base Charge for the Month for which the WRAP Administration Charge is being calculated;

The Load Charge for each Participant equals the Load Charge Rate of the Load Services Costs divided by the sum of the Median Monthly P50 Peak Loads of the Participants being assessed the Load Charge for the Month for which the WRAP Administration Charge is being calculated, times that Participant's Median Monthly P50 Peak Load;

And where:

Base Costs means the Costs for the Month of the Base Services Cost Centers shown in the WRAP Cost Assignment Matrix, plus the Base Services Percentage times the Costs for that Month of the Dual Benefit Cost Centers shown below in Section 4: WRAP Cost Assignment Matrix;

Load Services Costs means the Costs for the Month of the Load Services Cost Centers shown in the WRAP Cost Assignment Matrix, plus the Load Services Percentage times the Costs for that Month of the Dual Benefit Cost Centers shown in the WRAP Cost Assignment Matrix; and

Median Monthly P50 Peak Loads means, for each Participant, the median of the Monthly P50 Peak Loads used in the FS Capacity Requirement of such Participant for two Binding Seasons corresponding to the two FS Submittal most recently validated by WPP.

If before or during a Binding Season, a Participant has need to update their Monthly P50 Peak Load for allowable reasons, those updated Monthly P50 Peak Loads will be replaced and the Median Monthly P50 Peak Load value recalculated upon validation of the change in participating load.

A Participant joining the Program will supply data such that WPP can validate Monthly P50 Peak Loads for the first two Binding Seasons for which the Participant will submit an FS Submittal for use in calculating Load Services Costs until these FS Submittals are submitted and reviewed in the normal timeframe.

Section 3. Maximum Charge Rates

- 3.1 Notwithstanding anything to the contrary in this Schedule 1, the sum of the Base Charges for all Months in a Year shall not exceed the Annual Maximum Base Charge of \$59,000/Year, and the sum of the Load Charge Rates for all Months in a Year shall not exceed the Annual Maximum Load Charge Rate of \$199/MW. WPP shall, to the extent reasonably practicable, provide two-months' notice prior to WPP's filing at FERC of an application to change the Maximum Base Charge or the Maximum Load Charge Rate, provided that nothing herein shall limit the Board of Director's authority and discretion to seek at FERC a change in the maximum rates in the time and manner the Board determines in the best interests of the Western Resource Adequacy Program. For purposes of clarity, these specified maximum rates on the Base Charge and the Load Charge do not limit the level of the Cash Working Capital Support Charge established under Section 5 of this Schedule 1, nor do they limit the amount of the default Allocation assessment provided under Part I of this Tariff.
- 3.2 To facilitate Participant planning, the WPP shall prepare, and provide to the RAPC, good faith, non-binding estimates of: (i) reasonably anticipated WRAP budgets for three Years beyond the most recently approved WRAP budget, including sensitivity analyses for reasonably identified major contingencies; (ii) reasonably anticipated numbers of Participants and MWs of Winter and Summer P50 Loads for each such Year; and (iii) reasonably anticipated highest monthly Base Charges and Load Charge Rates for each such Year. All assumptions and estimates in such forecasts and analyses shall be in WPP's sole discretion, which may be informed by RAPC discussion of such topics.

Section 4. WRAP Cost Assignment Matrix

	BASE COSTS	LOAD COSTS	DUAL BENEFIT
PROGRAM ADMINISTRATION (NON-PARTICIPANT)	100%		
PROGRAM ADMINISTRATION (PARTICIPANT ENGAGEMENT, RAPC FACILITATION)	100%		
WRAP PORTION OF WPP BOD COSTS	50%/50%		
PROGRAM OPERATIONS STAFFING AND OVERHEAD	100%		
PROGRAM OPERATIONS TECHNOLOGY	100%		

LEGAL SERVICES	100%
INDEPENDENT EVALUATOR	100%

Section 5. Cash Working Capital Support Charge

- 5.1 In addition to the WRAP Administration Charge, each Participant shall be assessed a Cash Working Capital Support Charge, to support WPP's maintenance of sufficient funds on hand to make payments required for the operation and administration of the WRAP on a timely basis. Cash Working Capital Support Charges shall be designed to maintain a Cash Working Capital Fund that, at its maximum level over a twelve-month cycle, equals approximately nine-twelfths of the expected annual payment due from the WPP to the Program Operator for its Program Operator services.
- 5.2 A Participant shall pay a Cash Working Capital Support Charge no later than thirty days after that Participant executes a WRAPA. The Cash Working Capital Support Charge due following WRAPA execution equals the Cash Working Capital Support Charge Rate, calculated as the Cash Working Capital Fund at its required maximum twelve-month cycle level divided by the sum of the Median Monthly P50 Peak Loads of all Participants, times that Participant's Median Monthly P50 Peak Load.
- 5.3 To the extent the Cash Working Capital Fund is adequately funded at the time a new Participant executes a WRAPA, the revenue from such Participant's payment of the Cash Working Capital Support Charge shall be distributed to all Participants that previously have paid a Cash Working Capital Support Charge, pro rata based on the Median Monthly P50 Peak Loads of all Participants that have previously paid such charge.
- 5.4 To the extent, and at such time, WPP determines that an incremental addition to the Cash Working Capital Fund is needed due to such causes as, for example, an expected increase in the annual payment to the Program Operator, each Participant shall be assessed an Incremental Cash Working Capital Support Charge equal to the desired incremental addition, divided by the sum of the Median Monthly P50

Peak Loads of all Participants being assessed the Incremental Cash Working Capital Support Charge for the Month for which the Incremental Cash Working Capital Support Charge is being calculated, times that Participant's Median Monthly P50 Peak Load.

Contingency Reserves NTFP

ATTACHMENT A

Western Resource Adequacy Program Agreement

This Western Resource Adequacy Program Agreement (“Agreement”) dated as of _____ (“Effective Date”) is entered into by and between Western Power Pool Corporation (“WPP”) and _____ (“Participant”). WPP and Participant are each sometimes referred to in the Agreement as a “Party” and collectively as the “Parties.”

In consideration of the mutual promises contained herein, and other good and valuable consideration, the receipt of which is hereby acknowledged, the Parties agree as follows:

1. The Parties agree that this agreement shall be governed by the rates, terms, and conditions of the Western Resource Adequacy Program Tariff (“Tariff”) and all such rates, terms, and conditions contained therein are expressly incorporated by reference herein. All capitalized terms that are not otherwise defined herein shall have the meanings ascribed by the Tariff.
2. Participant wishes to participate in the Western Resource Adequacy Program (“WRAP”) administered by WPP under the Tariff.
3. Participant certifies that it satisfies all of the following qualifications:
 - 3.1 Participant is a Load Responsible Entity as that term is defined in the Tariff.
 - 3.2 Participant commits to complying with all applicable terms and conditions of WRAP participation as set forth in the Tariff and Business Practice Manuals adopted thereunder, including all Forward Showing Program and Operations Program requirements.
4. Participant will register all resources and supply contracts and shall disclose any other obligations associated with those resources and supply contracts.
5. Participant represents and warrants that it is authorized by all relevant laws and regulations governing its business to enter into this Agreement and assume all rights and obligations thereunder.
6. It is understood that, in accordance with the Tariff, WPP, as authorized by its independent Board of Directors, may amend the terms and conditions of this Agreement or the Tariff by notifying the Participant in writing and making the appropriate filing with FERC, subject to any limitations on WPP’s authority to amend the Tariff as set forth therein.
7. Participant agrees to pay its share of all costs associated with the WRAP, as calculated pursuant to Schedule 1 of the Tariff. The manner and timing of such payment shall be as specified in Schedule 1 of the Tariff.
8. WPP agrees to provide all services as set forth in the Tariff.

9. Term and termination. This Agreement shall commence upon the Effective Date and shall continue in effect until terminated either by WPP by vote of its Board of Directors or by Participant's withdrawal as set forth herein. WPP and Participant agree that participation in the WRAP is voluntary, subject to the terms and conditions of this Agreement and the Tariff. The date upon which a Participant's withdrawal is effective and its participation in the program terminates is referred to as the "Withdrawal Date."

9.1 Normal Withdrawal: In general, Participant may withdraw from this Agreement by providing written notice to WPP no less than twenty-four months prior to commencement of the next binding Forward Showing Program period. Once notice has been properly given, Participant remains in a "Withdrawal Period" until the Withdrawal Date.

9.1.1 During Participant's Withdrawal Period, Participant remains subject to all requirements and obligations imposed by the Tariff and this Agreement, including but not limited to all obligations imposed in the Forward Showing Program and Operations Program and obligation to pay Participant's share of all costs associated with the WRAP.

9.1.2 All financial obligations incurred prior to and during the Withdrawal Period are preserved until satisfied.

9.1.3 During the Withdrawal Period, Participant is not eligible to vote on any actions affecting the WRAP that extend beyond the Withdrawal Period.

9.2 Expedited Withdrawal: Participant may withdraw from this agreement with less than the required twenty-four month notice as set forth below. Participant shall negotiate with WPP regarding the timing of the Expedited Withdrawal.

9.2.1 Extenuating Circumstances: The following such events and circumstances shall constitute "extenuating circumstances" justifying a withdrawal on less than twenty-four months. Participant invoking an extenuating circumstance shall negotiate with WPP regarding potential ways to minimize the impact of the expedited withdrawal on all other Participants and WPP. Such extenuating circumstances and any mitigation plan to minimize the impact of the expedited withdrawal must be reviewed and approved by the Board of Directors prior to termination of Participant's WRAP obligations. Regardless of the extenuating circumstance, all financial obligations incurred prior to the Withdrawal Date remain in effect until satisfied.

9.2.1.1 A governmental authority takes an action that substantially impairs Participant's ability to continue to

participate in the WRAP to the same extent as previously; provided, however, that Participant shall be obligated to negotiate with WPP regarding potential ways to address the impact of the regulatory action without requiring a full withdrawal of Participant from the WRAP if possible.

9.2.1.2 Continued participation in the WRAP conflicts with applicable governing statutes or other applicable legal authorities or orders.

9.2.1.3 Participant voted against a RAPC determination and disagreed with a Board of Directors decision to release composite or aggregated data under Section 10.2.1 of the Tariff, provided that such right to expedited withdrawal is exercised promptly after the first time that the Board of Directors determines that the form and format of composite or aggregated data sufficiently protects against the release of confidential or commercially sensitive Participant data. Failure to exercise this right promptly upon the first occurrence of the Board of Directors voting on a specific form and format of composite or aggregated data shall constitute a waiver of the right to expedited withdrawal for any future disclosures of composite or aggregated data in the same or substantially similar form and format.

9.2.1.4 FERC or a court of competent jurisdiction requires the public disclosure of a Participant's confidential or commercially sensitive information, as further described in Section 10.5 of the Tariff; provided however that such right to expedited withdrawal shall be exercised promptly upon the exhaustion of all legal or administrative remedies aimed at preventing the release.

9.2.2 Exit Fee: If the impact of Participant's withdrawal on WRAP operations can be calculated with a high degree of confidence and mitigated by the payment of an "exit fee" to be calculated by WPP, an expedited withdrawal will be permitted. Such exit fee shall include (but not be limited to): (i) any unpaid WRAP fees or charges; (ii) Participant's share of all WRAP administrative costs incurred up to the next Forward Showing Program period; (iii) any costs, expenses, or liabilities incurred by WPP and/or the Program Operator directly resulting from Participant's withdrawal; and (iv) any costs necessary to hold other participants harmless from the voluntary expedited withdrawal. The exit fee may be waived to the extent that it would violate any federal, state, or local statute, regulation, or ordinance or exceed the statutory authority of a federal

agency. The exit fee shall be paid in full prior to the Withdrawal Date.

- 9.2.3 Amendments to Section 3.4 of the Tariff: In the event that amendments to Section 3.4 of the Tariff are approved by the RAPC and Board of Directors, a Participant that voted against such a change may withdraw with less than the required twenty-four month notice, provided that the Participant satisfy all obligations in the Forward Showing Program and Operations Program and satisfy all other financial obligations incurred prior to the date that the amendments to Section 3.4 of the Tariff are made effective by FERC.
- 9.2.4 Expulsion: The Board of Directors, in its sole discretion, may terminate Participant's participation in the WRAP and may terminate this Agreement with Participant for cause, including but not limited to material violation of any WPP rules or governing documents or nonpayment of obligations. Prior to exercising such right to terminate, the Board of Directors shall provide notice to Participant of the reasons for such contemplated termination and a reasonable opportunity to cure any deficiencies. Such Board of Directors termination shall be after an affirmative vote consistent with the Board of Directors standard voting procedures. Such termination shall not relieve the Participant of any financial obligations incurred prior to the termination date, and WPP may take all legal actions available to recover any financial obligations from Participant.
10. No Waiver of Non-FERC-Jurisdictional Status. If Participant is not subject to the jurisdiction of FERC as a public utility under the Federal Power Act, Participant shall not be required to take any action or participate in any filing or appeal that would confer FERC jurisdiction over Participant that does not otherwise exist. Participant acknowledges that FERC has jurisdiction over the WRAP, including Participant's activities in the WRAP.

[SIGNATURE BLOCKS]



WESTERN
POWERPOOL

Western Resource Adequacy Program

102 Forward Showing Reliability
Metrics

Revision History

Manual Number	Version	Description	Revised By	Date
102	0.1	RAPC Glance Version	Michael O'Brien	1/18/2024
102	0.2	Public Comment Version	Michael O'Brien	1/19/2024
102	0.3	RAPC & PRC Discussion	Michael O'Brien	2/14/2024
102	0.4	RAPC Endorsement	Michael O'Brien	7/11/2024
102	0.5	Board Consideration	Michael O'Brien	9/13/2024
102	1.0	Board Approved	Rebecca Sexton	9/19/2024
102	2.0	Expedited Proposal	Rebecca Sexton	12/10/2025
102	3.0	Annual BPM Review	Maya McNichol	3/29/2026
<u>102</u>	<u>3.1</u>	<u>NTFP-07 Contingency Reserves</u>	<u>Maya McNichol</u>	<u>9/10/2026</u>



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102 Forward Showing Reliability Metrics

1. Introduction

The Forward Showing Reliability Metrics Business Practice Manual (BPM 102) provides an overview of how the Program Operator will conduct the Loss of Load Expectation (LOLE) Study and set the Monthly FS Planning Reserve Margins (FSPRM) to be approved by the Board. In addition to the guidance provided in this BPM, the Program Operator will provide scoping documents with additional technical details on the modeling approach prior to conducting the LOLE Study each year.

1.1 Intended Audience

BPM 102 is intended for WRAP Participants and other interested individuals or entities and will be particularly useful for individuals that are responsible for their Participant organization's Forward Showing Submittal or that need to ensure their organizations are submitting the required MW quantity of Qualifying Resources to meet the Forward Showing Capacity Requirement. BPM 102 will be most informative to individuals in Participant organizations that have an interest in the LOLE Study and the setting of FSPRMs. Qualifying Capacity Contribution (QCC) methodologies - such as Effective Load Carrying Capability (ELCC) for Variable Energy Resources (VER) and Unforced Capacity (UCAP) for thermal resources - can be found in [BPM 105 Qualifying Resources](#).

1.2 What You Will Find in This Manual

BPM 102 provides details, assumptions, methodologies, and procedures for conducting the LOLE Study and determining Monthly FSPRMs. This BPM explains how the Program Operator models variations in load and variations in generation, how numerous scenarios of variations in weather and variations in resource performance and outages are simulated from historical data, the Load and Resource Zones used in the LOLE Study simulations, the Subregions for which potentially differing FSPRM values are studied, how Contingency Reserves (CR) are accounted for, how the LOLE threshold is identified, how the simulations are conducted, and how FSPRMs are calculated.

1.3 Purpose

BPM 102 details the components of the LOLE Study and how the Program Operator will determine the FSPRMs in the LOLE Study for the Binding Seasons.

1.4 Definitions

All capitalized terms that are not defined in BPM 102 have their meaning set forth in the [Tariff](#) or in another BPM.

Capability Test: As defined in [BPM 105 Qualifying Resources](#).



Change Request Form: As defined in [BPM 301 Program Review Committee Workplan Development and Approval](#).

Fuel Type: As defined in [BPM 105 Qualifying Resources](#).

Historical Load Data: As defined in [BPM 101 Advance Assessment](#).

LOLE Study: A probabilistic simulation of variations in load and variations in generation to determine the amount of capacity needed for each Month of a Binding Season to meet the no more than a single event-day of loss of load in ten years reliability metric across a Binding Season.

Net Generating Capability: As defined in [BPM 105 Qualifying Resources](#).

Regional P50 Peak Load Forecast: Forecast based on total Participant load in the WRAP Region or total Participant Load in a Subregion depending on results being sought.

Study Scope Document: a document that defines the scope of an LOLE Study.

2. Background

The FSPRMs are the capacity margins above a Participant's monthly P50 Peak Load Forecast required to meet the reliability metric of no more than a single event-day of loss of load in ten years across a Binding Season (as calculated per Section 8). The total amount of monthly qualifying capacity needed to meet the reliability metric will be simulated in the LOLE Study using probabilistic analysis (see Section 7), taking into account variability in load (see Section 5) and variation in generation (see Section 6) while maintaining Contingency Reserves (see Section 6.10).

The [Tariff](#) provides that the FSPRM determination employs:

- i. a simulated resource stack using capacity accreditation principles consistent with those used for WRAP QCC determinations (see Section 6);
- ii. an adjustment in the total WRAP-required QCC value as needed to meet a one event-day in ten years LOLE across a Binding Season (see Section 8), and
- iii. a standard that each Month will have at least 0.01 annual LOLE (i.e., one event-day in 100 years), while maintaining the overall one event-day in ten years LOLE across a Binding Season (see Section 8).

FSPRMs are determined for each Month of the Binding Season and for each Subregion (see Section 4.1) as well as the WRAP Region as a whole (see Section 4.1.1) in connection with the Advance Assessment. The timing and deadlines for data collection and study completion for the Advance Assessment can be found in [BPM 101 Advance Assessment Timeline](#). The LOLE Study will be defined by a Study Scope Document (see Section 3).

3. Study Scoping Process

The LOLE Study for each Binding Season will be preceded by a Study Scope Document that will define the scope of work. The Study Scope Document will adhere to applicable [Tariff](#) requirements and the further guidance and implementing details described in BPM 102. The Study Scope Document may also specify additional technical details as necessary to complete the applicable LOLE Study for the subject Binding Season. The Program Operator will provide the Board and RAPC a timely opportunity to review and comment upon the Study Scope Document prior to the Program Operator's commencement of the applicable LOLE Study and will highlight any notable changes in scope or methodology compared to prior LOLE Studies. In addition to other key study methodologies and assumptions, the Study Scope Document will identify the planning software or system modeling software to be utilized for the subject LOLE Study.

4. Load and Resource Zones

The WRAP Region will be modeled in each LOLE Study as divided among the separate load and resource zones (LRZs) shown below in Figure 1, in order to consider weather variability across the WRAP Region and within Subregions. LRZs will be used primarily to distinguish weather modeling for loads and associated resources. To that end, the LOLE Study will not limit the import and export capabilities between LRZs when determining the FSPRMs for the WRAP Region or within Subregions. Changes to the LRZs shown in Figure 1 will be as noted in the Study Scope Document for the Binding Season to which such changes will apply.



Figure 1 - WRAP Load and Resources Zones (LRZs)¹ as listed in Section 4.1

4.1 Subregions Used for Determination of Monthly FSPRMs

Two Subregions have been identified in the WRAP Region: the Northwest Subregion and the Southwest and East Subregion. LOLE Study simulations are conducted separately for each of the Subregions. Each Subregion is comprised of load and generation from within certain Balancing Authority Areas, and the boundaries of each Subregion are defined by the boundaries of the combined area of the component Balancing Authority Areas. The component Balancing Authority Areas for each Subregion are as follows:

- Northwest Subregion (Zones 1, 2, 3, 4)
 - Avista Corporation
 - BC Hydro and Power Authority¹
 - Bonneville Power Authority
 - Chelan County PUD #1
 - Douglas County PUD #1
 - Grant County PUD #2

¹ The WRAP Region is solely located within the United States of America, and any transactions required by the WRAP Operations Program associated with loads or resources located in Canada are effected inside the borders of the United States.

- NorthWestern Energy
 - PacifiCorp West
 - Portland General Electric
 - Puget Sound Energy
 - Seattle City and Light
 - Tacoma Power
- Southwest and East Subregion (Zones 5, 6, 7, 8, 11)
 - Arizona Public Service
 - Basin Electric
 - Black Hills
 - Idaho Power Company
 - NV Energy
 - PacifiCorp East
 - Public Service Company of New Mexico
 - Salt River Project

Beginning with the Winter 2027–2028 Binding Season, the LOLE Study to determine the FSPRM values will reflect the following, updated Balancing Authority Areas for the Northwest Subregion and Southwest and East Subregion, respectively:

- Northwest Subregion (Zones 1, 2, 3, 4, 5)
 - Avista Corporation
 - BC Hydro and Power Authority¹
 - Bonneville Power Authority
 - Chelan County PUD #1
 - Douglas County PUD #1
 - Grant County PUD #2
 - Idaho Power Company
 - NorthWestern Energy
 - PacifiCorp West
 - Portland General Electric
 - Puget Sound Energy
 - Seattle City and Light
 - Tacoma Power
- Southwest and East Subregion (Zones 5, 6, 7, 8, 11)
 - Arizona Public Service
 - Basin Electric
 - Black Hills
 - NV Energy
 - PacifiCorp East

- Public Service Company of New Mexico
- Salt River Project
- Tucson Electric Power

Any load for which a Participant is responsible (that has not been excluded – see [BPM 103 Forward Showing Capacity Requirement](#)) that does not reside within one of the Balancing Authority Areas listed above will be added to one of the Subregions.

In the event a significant change to the transmission system is identified (e.g. new transmission capacity, changes in transmission rights ownership), the boundaries of the Subregions above may be reconsidered. A Participant may:

1. Request the Program Administrator conduct analysis of the potential impact of the change to the Subregion. The Program Administrator will take input from the requesting Participant and will determine the appropriate form and focus of such analysis. As possible, this analysis will be made public, in accordance with confidentiality guidelines set out in the [Tariff](#).
2. File a Change Request Form (see [BPM 301 Program Review Committee Workplan Development and Approval](#)) requesting the Balancing Authority Area within which some portion of its load (for which it is the LRE) be reassigned to another Subregion.
 - a. Following submission of the Change Request Form, other Participants with loads within the identified Balancing Authority Area will be given 30 days to provide comment. Any comments received will be added to the Change Request Form as appendices.
 - b. Following the comment period in step 2a, the Change Request Form will be treated as a Non-Task Force Proposal (see [BPM 301](#)).
 - c. Such Change Request Forms must be submitted at least 9 months prior to the deadline for the Advance Assessment Data Request for the Binding Season such change is requested (see [BPM 101 Advance Assessment](#)). For example, if a change to Subregion boundaries is requested for Summer 2032, the Advance Assessment Data Request for Summer 2032 is due March 1, 2030, so such a request would need to be submitted by June 1, 2029.

A new Participant will be assigned by WPP to an appropriate Subregion (and thus modify the boundary thereof) subject to objection of the RAPC to such assignment,

expressed by action of the RAPC. During the Transition Period, the Program Administrator may include in the Advance Assessment new participants committed to binding participation in the season being studied

4.1.1 WRAP Region Analysis

In addition to the Subregion analyses, WRAP Region FSPRMs will be determined by running LOLE Study simulations on the entire WRAP Region with unconstrained transmission (i.e., assuming no transmission constraints) between the Subregions.

5. Load Modeling in the LOLE Study

The FSPRMs are the capacity margins above a Participant's monthly P50 Peak Load Forecast required to meet the reliability metric of no more than a single event-day of loss of load in ten years across a Binding Season. The total amount of monthly qualifying capacity needed to meet the reliability metric will be simulated in the LOLE Study using probabilistic analysis (see the Study Scope Document for further details), taking into account variability in load (as well as variations in generation – see Section 6). For each Winter Season and each Summer Season, the Program Operator will model the effects of weather variability by developing a minimum of forty historical weather years that reflect the impact of weather on load. To model the effects of weather variability on load, a load shape provided by Participants for recent years (e.g. five most recent years of Historical Load Data) will be combined with historical weather data to synthesize at least forty years of synthetic historical weather data. Relationships between weather observations and load will be developed based on the historical weather and Historical Load Data (see [BPM 101 Advance Assessment](#) and [BPM 103 Forward Showing Capacity Requirement](#)) from recent data sets. The historical weather data will consist of hourly temperature data from a representative selection of weather stations in each Subregion. Weather data will be used from a back-up weather station if there are data quality issues for some periods in an initially selected station. The Study Scope document will identify when synthesized load shapes will be redetermined by the Program Operator; frequency of such updates will consider factors such as changes in load patterns, sharp increases in load due to large new customers, or changes in climate.

Other inputs into historical weather data will include an hour-of-week factor (in determining temperature-to-load comparisons for daylight hours versus darkness hours, as well as weekends versus Business Days) as well as temperature and average temperatures from the preceding eight, 24, and 48 hours. Different weather and load relationships will be built for the Winter Season and Summer Season. These weather and load relationships will be applied to the multiple years of weather data to develop



synthetic load shapes for the study years. Equal probabilities will be given to each of the forty annual load shapes in the simulations.

6. Generator Modeling in the LOLE Study

The FSPRMs are the capacity margins above a Participant's monthly P50 Peak Load Forecast required to meet the reliability metric of no more than a single event-day of loss of load in ten years across a Binding Season. The LOLE Study will simulate the aggregated stack of Qualifying Resources provided to the Program Operator by Participants in the Advance Assessment data collection, using the methodologies described below. In summary, the LOLE Study will model:

- The qualifying capacity of thermal resources based on Net Generating Capability (interchangeable with ICAP for thermal resources) taking into account equivalent forced outage rate-demand (EFORD) (see Section 6.1); note that EFORD is different than the equivalent forced outage factor during Capacity Critical Hours (EFOFcch) used to determine thermal resource QCC (see Table 1).
- QCC values for Storage Hydro (see Section 6.2)
- Participants' wind Qualified Resources as a single wind resource per LRZ using historical and synthesized resource performance profiles (see Section 6.3)
- Participants' solar Qualified Resources as a single solar resource per LRZ based on solar profiles developed from weather data (see Section 6.4)
- Energy Storage Resources (ESRs) as dischargeable only when there is a lack of other Qualified Resources available to serve load (see Section 6.5)
- Participants' Run-of-River (ROR) Qualified Resources as a single ROR resource per LRZ, using historical and synthesized resource performance profiles (see Section 6.6)
- Demand Response (DR) with properties provided by Participants (see Section 6.7)
- Dispatchable and controllable behind-the-meter Qualified Resources as equivalent sized resources (see Section 6.8)
- Capacity transactions resulting in either a net import or net export from the WRAP Region as hourly generators in the applicable LRZ (see Section 6.9)

- Contingency Reserves to maintain the required amounts (see Section 6.10).

The total amount of monthly qualifying capacity needed to meet the reliability metric will be simulated as a resource stack in the LOLE Study using probabilistic analysis, taking into account variations in generation (as well as load – see Section 5). The monthly Qualifying Resource simulated capacities (in MWs) needed to meet the reliability metric each month will then be converted to unforced capacity (UCAP) values (see Section 8) to calculate the FSPRMs (as a percentage).

6.1 Thermal Generator Modeling

Thermal Resources and Long Duration Storage Resources will be modeled in the LOLE Study at their Net Generating Capability value (as indicated by the Capability Test – see [BPM 105 Qualifying Resources](#)) while forced outages for each resource will be modeled in accordance with their EFORD when determining the amount of monthly qualifying capacity to meet the reliability metric.² The Capability Test data will be provided by each Participant in its FS Submittal as discussed in [BPM 105 Qualifying Resources](#) and [BPM 108 Forward Showing Submittal Process](#). All Thermal Resources and Long Duration Storage Resources will be modeled in the LOLE Study, unless information provided by the relevant Participant in the Advance Assessment Data Request indicates the resource will not be available in the study period, such as a retirement date, future in-service date, or similar reason.

Forced outage modeling for Thermal Resources and Long Duration Storage Resources will use annual EFORD values (based on the EFORD equation as defined by NERC GADS³), forced outage durations, and outage events sourced from NERC GADS (or equivalent) data provided by Participants. For Thermal Resources and Long Duration Storage Resources that do not submit such data, an average forced outage rate will be applied based on size, technology type, Fuel Type and resource age. At a minimum, the most recent five years of historical NERC GADS (or equivalent) data will be considered in the LOLE Study. The models will be updated every Year to reflect the latest outage rates.

² Note: Resource EFORD is used in LOLE Study for determination of FSPRMs, and differs from the EFOF (Equivalent Forced Outage Factor) used for the determination of QCC for thermal resources during Capacity Critical Hours (CCHs) – see [BPM 105 Qualifying Resources](#).

³ NERC, 2023 GADS Data Reporting Instructions, January 2023, Appendix F, p9, Section 25, available at: [GADS DRI 2023.pdf \(nerc.com\)](#)



Planned outages for thermal resources will not be modeled in the LOLE study. All Thermal Resources and Long Duration Storage Resources will be modeled as available at any given hour if the Qualifying Resource is not on a forced outage.

6.2 Storage Hydro Qualifying Resources

The LOLE Study will model Storage Hydro Qualifying Resources utilizing the Monthly QCC values determined with the methodology described in [BPM 105 Qualifying Resources](#) for such resources. The methodology utilized to assess QCC values for Storage Hydro Qualifying Resources accounts for the availability of storage such that it is appropriate in the LOLE modeling to assume the facility can output the Monthly QCC value for each hour in the LOLE Study. No additional outage modeling will be applied to the Storage Hydro Qualifying Resources in the LOLE Study, since the QCC values consider historical outages.

6.3 Wind Resources

Wind resources provided by Participants will be modeled together as a single wind resource per LRZ in the LOLE Study. Operational wind data (preferred and used when available) and synthesized wind data will be utilized for the analysis: recent historic wind resource performance is correlated to the corresponding peak load profiles so that synthesized wind performance data can be developed from similar load profiles in earlier years for use in the resource variability simulations. For example, actual historical resource performance profiles from a recent period (e.g., 2014-2020) are taken, and the load profiles for those days are matched with daily load profiles (+/-25 days) from older years (e.g., 1980-2014) that best align with the peak load profile of the day in question. Actual resource output will be used when available. The Program Operator will identify in the Study Scope Document whether synthesized wind shapes for years where historical data is insufficient or not available will be redetermined for the upcoming LOLE Study. Wind resources provided that have not gone through the above synthesis process will use wind operational and synthesized data that is similar (i.e. the same LRZ) as the resource being added.

6.4 Solar Resources

Solar resources provided by Participants will be modeled together as a single solar resource per LRZ in the LOLE Study. When operational solar data is unavailable, solar profiles for resources will be developed using irradiance and weather data that will be obtained for weather station sites for the years after 1998 from the National Renewable Energy Laboratory's (NREL) National Solar Radiation Database (NSRDB) Data Viewer. Data will be obtained from the NREL System Advisor Model (SAM) for each Year and site to generate 8,760 hourly profiles. Profiles from 1980-1998 will be selected by using



daily profiles from the day that best matches the peak load out of all the days +/- 3 days of the source day of the 7-year period from 1998 to the most current year. The Program Operator will identify in the Study Scope whether synthesized solar shapes for years where historical data is insufficient or not available will be redetermined for the upcoming LOLE Study. Solar resources provided that have not gone through the above synthetization process will use previous solar operational and synthesized irradiance data that is similar (e.g. the same LRZ) as the resource being added.

6.5 Energy Storage Resources

ESRs will be modeled in the LOLE Study as energy limited devices that will charge and discharge in accordance with their equipment specifications. ESRs will be modeled to charge and discharge in a 'preserve reliability' mode, meaning that they will only be discharged when there is a lack of other resources available to serve load. ESRs will be discharged prior to Demand Response (DR) programs. ESRs will not be restricted to charging from co-located resources or in a hybrid configuration unless specified by the Participant.

6.6 Run of River Qualifying Resources

ROR Qualifying Resources provided by Participants will be modeled together as a single ROR per LRZ in the LOLE Study. Operational and synthesized ROR data will be utilized for the analysis. Recent historic ROR resource performance is correlated to the corresponding peak load profiles so that synthesized ROR resource performance data can be developed from similar load profiles in earlier years for use in the resource variability simulations. For example, actual historical ROR resource performance profiles from a recent period (e.g., 2014-2020) are taken, and the load profiles for those days are matched with daily load profiles (+/-25 days) from older years (e.g., 1980-2014) that best align with the peak load profile of the day in question. The Program Operator will identify in the Study Scope whether synthesized ROR shapes for years where historical data is insufficient or not available will be redetermined for the upcoming LOLE Study. ROR resources provided that have not gone through the above synthetization process will use previous ROR operational and synthesized river flow data that is similar (e.g. on the same river system) as the resource being added.

6.7 Demand Response Programs

The LOLE Study will include properties and values of DR programs provided by Participants. DR programs will be modeled, such that these representative resources would be dispatched last in the LOLE Study to reflect DR operating scenarios. Forced outage rates will not be assigned to DR programs.

6.8 Behind-the-Meter Generation

Behind-the-meter generation reported by Participants as capacity resources that are controllable and dispatchable by the Participant will be modeled in the LOLE Study as generation (per the aggregation requirements in [BPM 105 Qualifying Resources](#)). These resources will be assigned parameters and forced outage information from equivalent-sized resources.

6.9 External Capacity Modeling

Any external capacity transactions that are supported by firm commitments in the Advance Assessment Data Request (see [BPM 101 Advance Assessment](#)) will be modeled as hourly generators in the applicable LRZ in the LOLE Study. External transactions include any firm capacity transactions from or obligations to non-participating entities external to the WRAP Region. If the transaction is a sale to a non-participating entity, it will be an export of capacity. If the transaction is a purchase from a non-participating entity, it will be modeled as an import of capacity; forced outage rates will not be assigned to these transactions.

6.10 Contingency Reserves Modeling

In accordance with [BAL-002-3](#) and ~~standard BAL-002-WECC-3, Balancing Authorities (and the WPP Reserve Sharing Group (RSG)s), a WRAP Participant is required to maintain its allocated share of the total Contingency Reserve requirement of the RSG footprint which is and required to maintain a minimum CR amount that is equal to 200% times the previous Year's average most severe single contingency (MSSC). the greater of either:~~

- ~~i. the loss of the most severe single contingency or~~
- ~~ii. the sum of three percent (3%) of hourly integrated load and three percent (3%) of hourly integrated generation.~~

Within the RSG, each BA's Contingency Reserve requirement is calculated as follows:

$$\begin{aligned} & \text{BA Contingency Reserve requirement} \\ &= (200\% * \text{Previous Year's Average MSSC}) \\ & \quad * \frac{\text{BA Average Hourly Gen} + \text{BA Average Hourly Load}}{\text{RSG Average Hourly Gen} + \text{RSG Average Hourly Load}} \end{aligned}$$

RSG requirements are established at the BA level, while WRAP participation occurs at the Load Responsible Entity (LRE) level. When a BA is the WRAP Participant and represents the entire BA load in WRAP, the BA Contingency Reserve requirement is the same as the LRE Contingency Reserve requirement. When a BA includes multiple LREs participating in WRAP or has on part of its load participating in WRAP, the BA's Contingency Reserve



requirement will therefore be allocated among those LREs based on their respective shares of BA load:

LRE Contingency Reserve Obligation

$$= \text{BA Contingency Reserve requirement} * \frac{\text{LRE Average Hourly Load}}{\text{BA Average Hourly Load}}$$

The total WRAP Contingency Reserve requirement is the sum of all WRAP LRE Contingency Reserve requirements.

The LOLE Study will ensure all Contingency Reserve amounts are maintained during tallied loss of load events. WPP RSG will provide data on the MSSG, BA loads, and BA CR requirements. To ensure this, the LOLE Study will assume an average six percent (6%) of the Regional P50 Peak Load Forecast CR requirement when determining the capacity requirements to maintain the one event-day in 10-year LOLE requirement.

WRAP uses the most up-to-date MSSC value provided by the RSG at the time of modeling.

7. LOLE Study

Once the capacity contributions of the components of the resource stack have been determined (see Section 6) the LOLE Study simulation will be performed for the Subregions and WRAP Region to determine the capacity needed each Month to meet the reliability metric.

The probabilistic LOLE Study will model load variability (i.e., one of the forty (or more) synthetic load shapes) for all hours of the Year and random forced outages for Qualifying Resources in the WRAP Region and Subregions during each hour of the study. The LOLE Study will count loss of load events (insufficient Qualified Resource capacity to meet load) during all hours of the Binding Season against the reliability metric of the no more than one event-day in ten-year LOLE across a Binding Season. Loss of load events that occur during hours outside of the Binding Season will not be considered.

If an LOLE Study simulation has excess capacity in a Binding Season, pure negative capacity (with no outage rate) will be added in all hours of the applicable Binding Season until the WRAP Region or any Subregion arrive at the no more than one event-day in ten years across a Binding Season reliability threshold. If an LOLE Study simulation has insufficient capacity in a Binding Season, pure positive capacity (with no outage rate) will be added in all hours of the applicable Binding Season until the WRAP Region or any Subregion reaches the no more than one event-day in ten years across a Binding Season

reliability threshold. In addition, to ensure the amount of qualifying capacity is not leading to excessively low LOLEs, pure capacity will be adjusted to ensure that all Months of the applicable Binding Season have at least 0.01 day per Year LOLE in that given Month, while at the same time ensuring the LOLE for the entire Binding Season does not exceed 0.1 day per Year LOLE.

Once the reliability metric is achieved, the capacity requirement (as represented by the resource stack and pure capacity) for each Month of the Binding Season (by Subregions and WRAP Region) is converted to UCAP for calculation of the FSPRMs (see Section 8).

8. FSPRMs Calculations

The monthly capacity values of the resource stack that result from the LOLE Study simulation (see Section 7) will be replaced with UCAP values as indicated in Table 1. The intent of the UCAP approach is to represent Qualified Resources with respect to their availability.

Table 1 - Resource capacity value to calculate UCAP FSPRMs

Resource type	Conversion to UCAP Values
Thermal	The Net Generating Capability will be replaced by QCC values calculated by the Program Operator using the QCC methodology (see BPM 105)
Wind, Solar and ESR	Values for wind, solar, and ESR resources will be determined by using an ELCC analysis (see BPM 105). The capacity values attributed to wind and solar resources and ESRs will be consistent with the QCC values assigned to such resources in the QCC analysis (see BPM 105).
Storage Hydro	QCC values submitted by the Participants calculated using the Storage Hydro QCC methodology (see BPM 105).
Run-of-River Hydro	QCC values calculated by the Program Operator using the ROR QCC methodology (see BPM 105).
Demand Response	No conversion needed. Modeled maximum monthly capacity of all programs submitted by the Participants.



Pure Capacity adjustment to meet reliability metric	No conversion needed.
--	-----------------------

After the monthly capacity values of a resource stack are converted into UCAP values, the FSPRMs will be calculated separately for each Month of the Binding Seasons based on the Regional P50 Peak Load Forecast for each Month (Month also refers to a partial calendar month that is part of a Binding Season) as follows:

$$FSPRM (\%) = \frac{UCAP_{1-in-10} - \text{Regional P50 Load Forecast}}{\text{Regional P50 Load Forecast}} * 100$$

Where:

FSPRM(%) is the FSRPM for a specified Month in a Binding Season

UCAP_{1-in-10} is the UCAP required to meet the reliability metric for a specified Month in a Binding Season

Regional P50 Peak Load Forecast is the P50 Peak Load Forecast for the specified Month

Requirements as described in [BPM 103 FS Capacity Requirement](#). However, it should be noted that while Regional P50 Peak Load Forecasts are calculated using the same methodologies as Participant P50 Peak Load Forecasts the former use a Load Growth Factor specific to the LOLE Study (see [BPM 103 FS Capacity Requirement](#)).

Western Resource Adequacy Program

103 Participant Forward Showing
Capacity Requirements

Revision History

Manual Number	Version	Description	Revised by	Date
103	0.1	RAPC Glance Version	Michael O'Brien	5/28/2024
103	0.2	Public Comment Version	Michael O'Brien	5/30/2024
103	0.3	RAPC & PRC Discussion	Michael O'Brien	8/28/2024
103	0.4	RAPC Endorsement	Michael O'Brien	9/4/2024
103	0.5	Board Consideration	Michael O'Brien	9/12/2024
103	1.0	Board Approved	Rebecca Sexton	9/19/2024
103	2.0	2024-NTFP-4 Redlines	Michael O'Brien	3/13/2025
103	3.0	Firm Tx TF Updates	Maya McNichol	3/17/2026
103	4.0	Annual BPM Review	Maya McNichol	3/19/2026
<u>103</u>	<u>4.1</u>	<u>NTFP-07 Contingency Reserves</u>	<u>Maya McNichol</u>	<u>9/10/2026</u>



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103 Participant Forward Showing Capacity Requirements

1. Introduction

The Forward Showing (FS) Capacity Requirement is the minimum quantity of capacity a Participant is required to demonstrate for a Month of a Binding Season. Business Practice Manual (BPM) 103 describes the process for determining the components of the FS Capacity Requirement (the FS Planning Reserve Margin [FSPRM] calculations can be found in [BPM 102 Reliability Metrics](#)). BPM 103 also includes directions for a Participant seeking to exclude load from its FS Capacity Requirement, along with a discussion of the effect of using another Subregion's lower FSPRM on a Participant's FS Capacity Requirement, and considerations for load aggregation and disaggregation.

1.1. Intended Audience

BPM 103 is intended for WRAP Participants and other interested individuals or entities. BPM 103 will be particularly useful for those responsible for their Participant organization's FS Submittal as it pertains to meeting the FS Capacity Requirement, as this BPM provides an overview of the Monthly P50 Peak Load Forecast, load growth and load change considerations, and the Contingency Reserve Adjustment.

1.2. What You Will Find in This Manual

BPM 103 has the following sections: FS Capacity Requirement; P50 Peak Load Forecast; Load Growth Factor; Contingency Reserve Adjustment; Excluding Load; Submitting Loads from Multiple ; Load Aggregation/Disaggregation; and LOLE Study Load Forecast and Load Growth Rate. BPM 103 also includes Appendix A - P50 Peak Load Forecast Modifications and Appendix B - Load Exclusion.

1.3. Purpose

BPM 103 provides an overview of the components of the monthly FS Capacity Requirements calculations, including the Monthly P50 Peak Load Forecast methodology.

1.4. Definitions

All capitalized terms that are not defined in BPM 103 or another BPM have their meaning set forth in the [Tariff](#).

Contingency Reserve Adjustment: An adjustment to the FS Capacity Requirement to account for changes in Contingency Reserve requirements resulting from a Participant's contractual purchases and sales that include the Contingency Reserve as a specific part of the contract. The Contingency Reserve Adjustment has two components: Contingency Reserve Adjustment - Generation and Contingency Reserve Adjustment - Load.



Contingency Reserve Adjustment - Generation: The component of the Contingency Reserve Adjustment that accounts for differences between the system average Contingency Reserve requirement assumed in the LOLE Study and a Participant's actual purchases and sales.

Contingency Reserve Adjustment - Load: The component of the Contingency Reserve Adjustment that accounts for a Participant's specific Contingency Reserve purchases and sales.

Forward Showing (FS) Capacity Requirement Unadjusted: The FS Capacity Requirement Unadjusted takes into account the monthly P50 Peak Load Forecast and the monthly FSPRM. The FS Capacity Requirement Unadjusted does not take into account the Contingency Reserve Adjustment.

Historical Load Data: As defined in [BPM 101 Advance Assessment](#).

Load Forecast Ratio: The Load Forecast ratio for each Month of a Binding Season is the ratio of the monthly average of the peak loads of a Month for the last five years to the maximum of the monthly average of the peak loads of the months of a Binding Season for the last five years.

Load Growth Factor: A program-wide load growth factor applied to P50 Peak Load Forecasts that may take into account location, weather, Participant type, and Participant customer composition (balance between retail, commercial, and industrial) among other factors.

LOLE Study: As defined in [BPM 102 Forward Showing Reliability Metrics](#).

Regional P50 Peak Load Forecast: As defined in [BPM 102 Forward Showing Reliability Metrics](#).

Seasonal Peak Months: The Winter Season months of December, January, and February.

2. Demand Response Utilization

A Participant has two options when choosing how to use Demand Response to affect its Monthly FS Capacity Requirements in its FS Submittal (see [BPM 108 Forward Showing Submittal Process](#)).

- Option 1: A Participant may leave the effects of its historically deployed Demand Response included in its Historical Load Data (see [BPM 101 Advance](#)

[Assessment](#)). This will have the effect of reducing the amount of load in the LOLE Study (see [BPM 102 Forward Showing Reliability Metrics](#)), reducing maximum loads in the P50 Peak Load Forecast (see Section 4) ultimately leading to lower Monthly FS Capacity Requirements.

- Option 2: If a Participant removes the effects of historically deployed Demand Response from its Historical Load Data, the Participant may choose to utilize Demand Response as a Qualifying Resource (see attestation in [BPM 108 Forward Showing Submittal Process](#)). As described in [BPM 105 Qualifying Resources](#), a Demand Response program registered as a Qualifying Resource will require a Capability Test to confirm the claimed capability and duration of load reduction, along with a more frequent Operational Test at a portion of the program's claimed capability and duration.

3. FS Capacity Requirement

The FS Capacity Requirement is the minimum quantity of capacity a Participant is required to demonstrate for each Month of a Binding Season in its FS Submittal (see [BPM 108 Forward Showing Submittal Process](#)). As shown in Equation 1, a Participant's FS Capacity Requirement begins with the Participant's monthly P50 Peak Load Forecast (see Section 4), which is multiplied by one plus the applicable Monthly FS Planning Reserve Margin (FSPRM - see [BPM 102 Forward Showing Reliability Metrics](#) for a Month (the net result is known as the FS Capacity Requirement Unadjusted). The Contingency Reserve Adjustment (see Section 6) is then added to the FS Capacity Requirement Unadjusted to arrive at a Participant's monthly FS Capacity Requirement.

Equation 1 – FS Capacity Requirement

$$\text{FS Capacity Requirement} = \text{FS Capacity Requirement Unadjusted} + \text{Contingency Reserve Adjustment}$$

where

$$\begin{aligned} \text{FS Capacity Requirement Unadjusted} \\ = (\text{P50 Peak Load Forecast}) * (1 + \text{FSPRM}) \end{aligned}$$

and

$$\begin{aligned} \text{Contingency Reserve Adjustment} \\ = \text{Contingency Reserve Adjustment_Generation} \\ + \text{Contingency Reserve Adjustment_Load} \end{aligned}$$

4. P50 Peak Load Forecast

A Participant's monthly P50 Peak Load Forecast for the Binding Season is calculated to determine a Participant's FS Capacity Requirement Unadjusted. The monthly P50 Peak



Load Forecast will be calculated using the following methodologies for the Winter Seasons (Section 4.1) and Summer Seasons (Section 4.2).

4.1. Winter P50 Peak Load Forecast

Example monthly P50 Peak Load Forecasts for a Winter Season is shown in Table 1 and referred to in the methodological steps below.

							2023/2024 Monthly P50 Peak Load Forecast - unadjusted	2023/2024 Monthly P50 Peak Load Forecast - adjusted for load growth
Month	Season	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022		
November	Winter	2098	1998	1899	1958	2468	1998	2042
Seasonal Peak Months	December	2060	2206	2241	2202	2273	2448	2502
	January	2363	2381	2239	2521	2302	2448	2502
	February	2448	2072	2213	2476	2477	2448	2502
	March	2070	2253	2047	1959	1806	2047	2093
Maximum		2448	2381	2241	2521	2477		

Table 1 - Example Winter Season P50 Peak Load Forecast

1. Determine the peak load for each Month of the Winter Season for the last available five Winter Seasons using the Historical Load Data submitted as part of the Advance Assessment (see [BPM 101 Advance Assessment](#)). These are the load values populating the light blue section of Table 1 (e.g., November peak load from 2019/2020 is 1899 MW).
2. Calculate the maximum peak load for each of the last available five Winter Seasons. For example, the maximum peak load for 2020/2021 is 2521 MW.
3. The Monthly P50 Peak Load Forecast for the Seasonal Peak Months is the median of step 2 which in Table 1 is 2448 MW.
4. The Monthly P50 Peak Load Forecasts for November and March are the median of the respective load values from step 1, which in Table 1 are respectively 1998 MW and 2047 MW.

An example spreadsheet showing steps 1 through 4 is posted on the WPP website.

5. Per the [Tariff](#), a Participant can modify the results of Step 1 to capture load changes during the forecast window and ensure the results of Step 3 and Step 4 are correct. If historical load data is available the affected Participants are responsible for adjusting any monthly peak loads in Step 1 that do not capture the load change. If historical load data is unavailable (e.g., a new data center) the affected Participant is responsible for generating synthetic load data and adjusting any monthly peak loads in Step 1 that do not capture the load change. Amending the results of Step 1

will be necessary until the peak load for each Month of the Winter Season for the last available five Winter Seasons automatically fully capture the impacts of the load change through the Historical Load Data submitted as part of the Advance Assessment. A Participant will need to attest to the accuracy of any modification (see Appendix A - P50 Peak Load Forecast Modifications Senior Official Attestation). Additions and removals of load are separate and distinct from Load Growth Factors discussed in Section 5 and are intended to capture significant one-time changes such as the addition or loss of a large industrial customer.

6. Per the [Tariff](#), a specified Load Growth Factor will then be applied to the results of step 5 (see Section 5) for each year following the last year in the Historical Load data. For example, the Monthly P50 Peak Load Forecast – unadjusted is multiplied by the Load Growth Factor once for 2022/2023 and again to arrive at the 2023/2024 Monthly P50 Peak Load Forecast – adjusted for load growth value in the last column in Table 2.

4.2. Summer P50 Peak Load Forecast

The monthly P50 Peak Load Forecast for the Summer Seasons utilizes a Load Forecast Ratio to reflect the potential for a Participant to experience peaks in different months of the Summer Season from year to year. An example monthly P50 Peak Load Forecast for a Summer Season is shown in Table 2 and referred to in the methodological steps below.

Month	Season	2018	2019	2020	2021	2022	Monthly Average of Peak Loads	Maximum Monthly Average of Peak Loads	Median of Maximum of Peak Loads for the last five Seasons	Load Forecast Ratio	2024 Monthly P50 Peak Load Forecast - unadjusted	2024 Monthly P50 Peak Load Forecast - adjusted for load growth
June	Summer	3071	3571	1903	2496	1957	2600	2960	3571	0.88	3136	3206
July	Summer	3672	1761	2434	3219	3715	2960			1.00	3571	3650
August	Summer	2049	2929	2661	2939	2347	2585			0.87	3119	3188
September	Summer	2308	1698	1880	1664	2443	1999			0.68	2411	2465
Maximum		3672	3571	2661	3219	3715						

Table 2 - Example Summer Season P50 Peak Load Forecast

1. Determine the peak load for each Month of the Summer Season for the last available five seasons using the Historical Load Data submitted as part of the Advance Assessment (see [BPM 101 Advance Assessment](#)). These are the load values populating the light blue section of Table 2 (e.g. June peak load from 2020 is 1903 MW).
2. Calculate the maximum peak load for each of the last available five seasons. For example, the maximum peak load for 2021 in the yellow section of Table 2 is 3219 MW.
3. Calculate the median of step 2, which in Table 2 is 3571 MW.

4. Calculate the Load Forecast Ratio.
 - 4.1. For each of the last available five Summer Seasons calculate the average of the five peak loads for each Month. For example, in August in Table 2 the average of the peak loads is 2585 MW.
 - 4.2. Identify the maximum load value from step 4.1. In the example shown in Table 2 this is the July average of 2960 MW.
 - 4.3. The Load Forecast Ratio for each Month of the Summer Season is the result of step 4.1 divided by the MW value identified in step 4.2. In the example shown in Table 2, this is 1.00 for July (and will always be 1.00 for the maximum Summer month) and 0.68 for September.
5. Multiply the Load Forecast Ratios for each Month of the Summer Season from step 4.3 by the result of step 3. These are the Monthly P50 Peak Load Forecast values unadjusted for load growth or load additions/removals (seen in red in Table 2). In the example shown in Table 2 the Monthly P50 Peak Load Forecast - unadjusted value for September is 2411 MW (0.68 multiplied by 3571 MW).

An example spreadsheet showing steps 1 through 5 is posted on the WPP website.

6. Per the [Tariff](#), a Participant can modify the results of Step 1 to capture load changes during the forecast window and ensure the results of Step 5 are correct. If historical load data is available the affected Participants are responsible for adjusting any monthly peak loads for in Step 1 that do not capture the load change. If historical load data is unavailable (e.g. a new data center) the affected Participant is responsible for generating synthetic load data and adjusting any monthly peak loads in Step 1 that do not capture the load change. Amending the results of Step 1 will be necessary until the peak load for each Month of the Summer Season for the last available five season automatically fully capture the impacts of the load change through the Historical Load Data submitted as part of the Advance Assessment. A Participant will need to attest to the accuracy of any modification (see Appendix A - P50 Peak Load Forecast Modifications Senior Official Attestation). Additions and removals of load are separate and distinct from Load Growth Factors discussed in Section 5 and are intended to capture significant one-time changes such as the addition or loss of a large industrial customer.
7. Per the [Tariff](#), a specified Load Growth Factor will then be applied to the results of step 6 (see Section 5) for each year following the last year in the Historical Load Data. For example, the Monthly P50 Peak Load Forecast – unadjusted is multiplied by the Load Growth Factor once for 2023 and again to arrive at the 2024 Monthly P50 Peak Load Forecast – adjusted for load growth value in the last column in Table 2).

5. Load Growth Factor

A Participant will have the option of using either a WPP-established WRAP-wide growth rate(s) (Section 5.1) or developing its own alternative growth rate (Section 5.2). Load growth is separate and distinct from the additions and removals of load discussed in Section 4.1 step 5 and Section 4.2 step 6.

5.1. Established Growth Rate

A WRAP-wide established growth rate (or set of established growth rates) may account for location, weather, Participant type, Participant customer composition (balance between retail, commercial, and industrial). The established growth rate is currently set at 1.1%. Changes to the established growth rate for the P50 Peak Load Forecast in BPM 103 will be reviewed, endorsed, and approved as described in the *BPM 300's Stakeholder Engagement* series.

5.2. Participant Alternative Growth Rate

If a Participant believes the established growth rate discussed in Section 5.1 does not accurately represent its anticipated loads in the Binding Season, the Participant may request an alternative growth rate that will be validated by the Program Administrator and Program Operator (using the form found on WPP website). The Program Administrator will consider the data presented in support of the Participant's request for an alternative growth rate, which could potentially relate to weather, economic growth, or climate. As part of the request, the Participant will demonstrate that the alternative growth rate (applied to each year following the last year in the Historical Load Data) results in a P50 Peak Load Forecast that is (in total) 5% higher or lower than the P50 Peak Load Forecast calculated using the growth rate in Section 5.1 in the Month of the Binding Season with the highest P50 Peak Load Forecast. For example, the Participant with data from Table 1 would provide an alternative load growth factor that, when applied for two years of growth, results in a P50 Peak Load value of greater than 2,627MW or less than 2,377MW for December, January, or February, and would provide supporting information for said load growth factor.

6. Contingency Reserve Adjustment

As discussed in BPM 102 Forward Showing Reliability Metrics, the LOLE Study and resulting monthly FSPRMs ensure Contingency Reserve is maintained by assuming a proxy Contingency Reserve requirement ~~of six percent (6%) of the Regional P50 Peak Load Forecast across~~ equal to the portion of the WPP Reserve Sharing Group (RSG) total Contingency Reserve Obligation requirement attributable to the LRE's in the WRAP Region. ~~However, as the BAL-002 WECC-3 standard requires a reserve equal to three percent (3%) of hourly integrated load and three percent (3%) of hourly integrated~~



~~generation, the individual Participants' Contingency Reserve requirements (and therefore FS Capacity Requirements) will be different depending on the load and generation profiles specific to them. For instance, some Participants may utilize contracted capacity to meet their FS Capacity Requirement where the seller, through a contractual arrangement, is responsible for carrying the Contingency Reserve obligation of contracted capacity, or some Participants may purchase Contingency Reserve to cover some or all of their Contingency Reserve requirements. These are categorized as Contingency Reserve adjustments and the intent is to ensure that the portion of the FSPRM attributable to Contingency Reserve is included in the FS Capacity Requirement of the LRE with the actual responsibility, whether that responsibility is driven by a BAL-002-WECC-3 compliance obligation or through a contractual arrangement. A Participant may contract with another entity to either cover Contingency Reserves for that entity or for that entity to take on some of the Contingency Reserves for the Participant. The FS Capacity Requirements Unadjusted are therefore adjusted for a Participant's Contingency Reserve requirements (plus or minus). A Participant's Contingency Reserve Adjustment has two components: Contingency Reserve Adjustment-Generation and Contingency Reserve Adjustment-Load.~~

~~7.—~~

~~7.1.—Contingency Reserve Adjustment Generation~~

~~8.—A Participant's sale or purchase of capacity where there is an accompanying contractual transfer of obligation for Contingency Reserve may impact the amount of Contingency Reserve needed in the Participant's FS Submittal.~~

~~9.—Participants selling capacity that is utilized to meet another Participant's FS Capacity Requirement will get a positive value for the Contingency Reserve Adjustment Generation, meaning the Participant will demonstrate additional capacity to cover Contingency Reserve for the generating resources serving the export contracts. Participants meeting some or all of the FS Capacity Requirement with contracts where the seller carries the Contingency Reserve obligation will have a negative Contingency Reserve Adjustment Generation, meaning the Participant demonstrated less capacity, as the seller is carrying the Contingency Reserve for the resources serving the contract(s).~~

~~10.—Exceptions to the aforementioned are possible when contractual arrangements dictate alternative treatment as indicated in the workbook.~~

~~10.1.—Contingency Reserve Adjustment Load~~

~~11.—For a Participant with Contingency Reserve contracts, the Participant's Contingency Reserve Adjustment Load is the net of the Participant's sales of such contracts less purchases for each Month of a Binding Season.~~

~~12.—If a Participant is a net seller of Contingency Reserve contracts to a Participant assumed to have a Contingency Reserve obligation on its WRAP load, it will carry additional Contingency Reserve to cover such contracts (with a positive Contingency Reserve Adjustment Load). If a Participant is a net purchaser of Contingency Reserve contracts, it will carry fewer Contingency Reserve (having contracted away the obligation), resulting in a negative Contingency Reserve Adjustment Load.~~

13.7. Excluding Load

As described in [BPM 108 FS Submittal Process](#), a Participant will include all loads in its FS Demonstration for which it is responsible: i.e. all loads within the Western Interconnect (that are not participating in another resource adequacy program or represented by another WRAP LRE) for which the Participant has an obligation to forward procure capacity to meet any portion of the load or for which the Participant is the exclusive wholesale electricity provider to a load serving entity.



A Participant may seek to exclude loads from WRAP participation. This is distinct from a Participant modifying its P50 Peak Load Forecast to account for additions and removal of load. This is distinct from a Participant modifying its P50 Peak Load Forecast to account for additions and removal of load. As part of its FS Demonstration, the Participant will attest that the Participant is not the exclusive wholesale provider for the load (see Appendix B - Load Exclusion). As part of its FS Demonstration, the Participant will also provide documentation of notice to the end-use customer of the Participant's intent to exclude the load from WRAP in the form provided on the WPP website and acknowledged via signature by a senior official of the end-use customer. Excluded load may not be included in the Operations Program. Excluded load must be separately metered, such that the excluded load may be removed from load forecasting information to be provided in the Operations Program, as further discussed in [BPM 202 Participant Sharing Calculation Inputs](#), and from the Historical Load Data utilized in Section 4. Loads may not be partially excluded.

14.8. Submitting Loads from Multiple Subregions

As described in [BPM 108 Forward Showing Submittal Process](#), a Participant responsible for loads in two Subregions seeking to submit a single workbook using one monthly FSPRM may do so if the Participant can demonstrate WRAP Qualifying Transmission from the load in the Subregion with the utilized monthly FSPRM to the load in the Subregion with the higher monthly FSPRM (see [BPM 108](#) for additional information). When submitting a single FS Submittal for loads in multiple Subregions, the Participant will use historical load data including all loads when calculating the FS Capacity Requirement for that Month according to Sections 2 through 7 of this BPM. Subregion loads will be combined on a coincident peak basis to determine monthly P50 Peak Loads when submitting a single FS Submittal.

~~15.9.~~ Load Aggregation/Disaggregation

As described in [BPM 108 Forward Showing Submittal Process](#), all loads submitted by a Participant within a single FS Submittal must be able to be served interchangeably by all Qualifying Resources and Qualifying Contracts in that same FS Demonstration, without the expectation that additional transmission rights will be required to deliver resources to load. In accordance with this, a Participant may be required to submit separate FS Demonstrations, even as to loads residing in the same Subregion, if the Program Administrator determines it is not practicable to treat such loads as if they can share in load and resource diversity for reasons that may diminish the integrity of WRAP reliability metrics, including but not limited to, if loads and resources are not operated collectively.

~~16.10.~~ LOLE Study Load Forecast and Load Growth Rate

A LOLE Study (see [BPM 102 Forward Showing Reliability Metrics](#)) is undertaken as part of the Advance Assessment (see [BPM 101 Advance Assessment](#)) to determine a Binding Season's monthly FSPRMs. The Regional P50 Peak Load Forecasts for the Binding Seasons in the LOLE Study are calculated using the same Participant P50 Peak Load Forecast methodologies outlined in Section 4. An LOLE Study-specific program-wide load growth rate is then applied to the results. The current Load Growth Factor for the LOLE Study is set to 1.1%. Changes to the established growth rate for the LOLE Study in BPM 103 will be reviewed, endorsed, and approved as described in the BPM 300's Stakeholder Engagement series.

Appendix A - P50 Peak Load Forecast Modifications Senior Official Attestation

I, the undersigned, who as [title], serves as a senior official of [Participant], hereby attest that the peak loads for each month of the Season for the last available five seasons have been modified accurately to the best of my knowledge and belief following due inquiry to account for discrete additions and removals of load planned to take place by the corresponding Months of the Binding Season, not to include speculative or estimated load growth, to ensure accurate Monthly P50 Load Forecast values included with this attestation. Also included with this attestation is a narrative description of the loads added and/or removed from the Monthly P50 Load Forecast, including their magnitude and applicable Months.

Appendix B - Load Exclusion Senior Official Attestation

I, the undersigned, who as [title], serves as a senior official of [Participant], hereby request that the [load identifier from FS Submittal] be excluded from [Participant's] P50 Load Forecast calculation. I attest that [Participant] is not the exclusive wholesale electricity provider for this load.



WESTERN
POWERPOOL

Western Resource Adequacy Program

202 Participant Sharing
Calculation Inputs

Revision History

Manual Number	Version	Description	Revised By	Date
202	0.1	RAPC Glance Version	Beau Beljean	7/5/2024
202	0.2	Public Comment	Beau Beljean	7/9/2024
202	0.3	RAPC & PRC Discussion	Beau Beljean	8/14/2024
202	0.4	RAPC Endorsement	Beau Beljean	9/4/2024
202	0.5	Board Consideration	Beau Beljean	9/13/2024
202	1.0	Board Approved	Rebecca Sexton	9/19/2024
202	2.0	Firm Tx TF Updates	Maya McNichol	3/17/2026
202	3.0	Annual BPM Changes	Michael O'Brien	3/19/2026
202	4.0	2026-NTFP-02	Dave Zvareck	6/4/2026
<u>202</u>	<u>4.1</u>	<u>NTFP-07 Contingency Reserves</u>	<u>Maya McNichol</u>	<u>9/10/2026</u>



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1. Introduction

The Participant Sharing Calculation Inputs Business Practice Manual (BPM 202) outlines data inputs submitted by Participants in the Operations Program and used in the Sharing Calculation to identify any hour in which a Participant is forecast to have a capacity deficit and other Participants are forecast to have a capacity surplus (a Sharing Event). BPM 202 describes each of these Participant inputs and explains the Sharing Calculation.

1.1 Intended Audience

BPM 202 is intended for individuals or entities that are interested in or currently participating in the Western Resource Adequacy Program (WRAP). BPM 202 is particularly useful for those that support and have responsibility for the Operations Program on a day-to-day basis. This could include trading and scheduling staff, front-office technology and systems support staff, or other similar roles.

1.2 What You Will Find in This Manual

BPM 202 contains an explanation on all inputs to the Sharing Calculation that Participants submit for the Operations Program.

1.3 Purpose

The purpose of BPM 202 is to explain Participant-supplied inputs to the Sharing Calculation and how they are used in the Operations Program.

1.4 Definitions

All capitalized terms that are not otherwise defined in BPM 202 or another BPM have the meaning set forth in the [Tariff](#):

Contingency Reserves Adjustment: As defined in [BPM 103 Forward Showing Capacity Requirement](#).

Contingency Reserves Obligation (CRO): The amount of contingency reserves the Participant is carrying during the operating hour equal to:

$$\begin{aligned} & \text{LRE Contingency Reserve Obligation} \\ &= \text{BA Contingency Reserve requirement} * \frac{\text{LRE Average Hourly Load}}{\text{BA Average Hourly Load}} \end{aligned}$$

where the BA Contingency Reserve requirement is:



BA Contingency Reserve requirement

$$\begin{aligned} &= (200\% * \text{Previous Year's Average MSSC}) \\ &\quad * \frac{\text{BA Average Hourly Gen} + \text{BA Average Hourly Load}}{\text{RSG Average Hourly Gen} + \text{RSG Average Hourly Load}} \end{aligned}$$

adjusted for any Contingency Reserve Adjustment.

- ~~i) 3% of Load Forecast for which the Participant is the LRE and maintains the contingency reserve requirement~~
- ~~ii) plus 3% of load for which the Participant is not the LRE but has assumed an obligation to carry Contingency Reserve through a contractual arrangement~~
- ~~iii) plus 3% of generation used to meet any load for which the Participant is the LRE and maintains its Contingency Reserve requirement~~
- ~~iv) plus 3% of generation utilized to meet load for which the Participant is not the LRE but has assumed an obligation to carry Contingency Reserve through a contractual arrangement.~~

Forced Outages: For Thermal Resources, Storage Hydro Qualifying Resources (using QCC MWs) or Energy Storage Resources, the immediate reduction in capacity, output, unanticipated failure, curtailment or derate of WRAP Qualifying Transmission or other cause that is beyond the control of the owner or operator of the resource.

Operations Program Capacity Need: A Sharing Calculation component that refers to the total hourly capacity requirement a Participant has forecasted in the Operations Program. The Hourly Capacity Need is the sum of a Participant's Load Forecast adjusted for Demand Response Capacity Resource (i.e. load reduction) plus the hourly forecasted CRO and the Uncertainty Factor.

Performance Adjustments: A Sharing Calculation component that is the sum of variances of over and under performance for hourly forecasts of Run-of-River, wind and solar resources and the net hourly value of Forced Outages relative to the monthly value submitted in the Participant's FS Submittal.

Program Interface Tool (PIT): As defined in [BPM 201 Operations Program Timeline](#).

Resource-Specific Capacity Agreements: As defined in [BPM 106 Qualifying Contracts](#)

Thermal Resource: As defined in [BPM 101 Advance Assessment](#).

2. Background

Participants are required to submit specific data for the Forward Showing (see [BPM 108 Forward Showing Submittal Process](#)). Some of these data are also used as inputs into the



Operations Program. For example, VERs, ROR, Contingency Reserves, and Forced Outages included in or submitted as part of the FS Submittal are compared to nearer term forecasts submitted during the Operations Program. This leads to a comparison between near term forecast values in the Operations Program and the values submitted in the Forward Showing, resulting in delta values for the inputs that are used in the Sharing Calculation. BPM 202 describes the required Participant inputs to the Sharing Calculation.

3. Components of the Sharing Calculation equation

The Sharing Calculation compares each Participant's FS Capacity Requirement (see [BPM 103 Forward Showing Capacity Requirement](#)) - adjusted for Forced Outages and hourly forecasts of resource availability, resource performance, load, and Contingency Reserves relative to those included in or submitted as part of the FS Submittal - to each Participant's capacity need for each hour in the Multi-Day-Ahead Assessment, Preschedule Day, and Operating Day. The values submitted by the Participant for each hour are compared to the values submitted in the in the corresponding monthly FS Submittal. For a given hour the Sharing Calculation identifies Sharing Events in which any Participants are forecast to have negative Sharing Calculation results. Additional program (i.e., non-Participant) inputs to the Sharing Calculation, such as the Uncertainty Factor, are described in [BPM 203 Program Sharing Calculation Inputs](#). The Sharing Calculation is defined as:

Equation 1 – Simplified Sharing Calculation	
Sharing Calculation	= FS Capacity Requirement – Operations Program Capacity Need + Performance Adjustments
where	FS Capacity Requirement = (P50 Peak Load Forecast) * (1 + FSPRM) + Contingency Reserve Adjustment
and	Operations Program Capacity Need = Load Forecast – Demand Response Capacity Resources + Contingency Reserve Obligation + Uncertainty Factor
and	Performance Adjustments = ΔForced Outages + ΔRoR Performance + ΔVER Performance
Where:	
Demand Response Capacity Resource , as defined in the Tariff , refers to a capacity resource with a demonstrated capability to provide a reduction in load or otherwise control load.	

Its value is treated as a reduction to the hourly Load Forecast in the Operations Capacity Need component of the Sharing Calculation.

Load Forecast is the hourly forecast of a Participant's WRAP load, expressed in MW, and to be submitted for each operating hour.

Uncertainty Factor, as described in the [Tariff](#), is an input to the Sharing Calculation and is meant to account for the variances between forecasts of load, VERs, and Run-of-River Qualifying Resources for each operating hour on the Preschedule Day and the actual load and resource performance during such hour on the Operating Day. See [BPM 203 Program Sharing Calculation Inputs](#) for more details.

Δ Forced Outages refers, for any given operating hour, to the sum of:

- (i) any change in Forced Outages of any of the Thermal Resources included in a Participant's Portfolio QCC, relative to the Forced Outages assumed in the FS Submittal by application of the Forced Outage Factor;
- (ii) any change in Forced Outages of any of the Storage Hydro Qualifying Resources relative to the Forced Outages assumed in the calculation of a Participant's Resource QCC (expressed as forced QCC MWs);
- (iii) any reduction in output capability of any of the Energy Storage Resources due to equipment failure or protection.
 - a. In the first four (4) hours the Forced Outages MWs that can be claimed are equal to [(charge MW x duration)/ 4].
 - b. For all hours beyond four (4) hours, the Forced Outages MW amount that can be claimed for an Energy Storage Resource shall not be greater than the monthly QCC.
- (iv) any reduction in capacity of a Participant's Portfolio QCC resulting curtailment or derate on WRAP Qualifying Transmission.

Δ ROR Performance refers to any change, for any given operating hour, in expected performance of any of the ROR in the Participant's Portfolio QCC relative to the QCC of that Qualifying Resource.

Δ VER Performance refers to any change, for the subject hour, in expected performance of the VERs in the Participant's Portfolio QCC relative to the QCC of that Qualifying Resource. As defined in the [Tariff](#), VERs are resources powered by a renewable energy source that cannot be stored by the facility owner or operator and that has variability that is beyond the control of the facility owner or operator, including but not limited to a solar or wind resource.

In summary:



Equation 2 – Detailed Sharing Calculation

Sharing Calculation =

$$\begin{aligned} & [(P50 \text{ Peak Load Forecast}) * (1 + FSPRM) + \text{Contingency Reserve Adjustment}] \\ & - [\text{Load Forecast} - \text{Demand Response Capacity Resource} \\ & \quad + \text{Contingency Reserve Obligation} + \text{Uncertainty Factor}] \\ & + [\Delta \text{Forced Outages} + \Delta \text{RoR Performance} + \Delta \text{VER Performance}] \end{aligned}$$

4. Inputs from Forward Showing Submittal

The Operations Program relies on data submitted in the Forward Showing Submittal (FS Submittal) that includes monthly values of the following:

- (i) P50 Peak Load Forecast
- (ii) FSPRM
- (iii) Forced Outages
- (iv) ROR QCC
- (v) Solar QCC
- (vi) Wind QCC
- (vii) Contingency Reserves Adjustments

In addition, for Resource-Specific Capacity Agreements included in the FS Submittal such as “slice” contracts, adjustments are applied to the calculation of Forced Outages and Over/Under Performance. These adjustments are accounted for in data sent to the Operations Program, prior to the start of each Binding Season.

5. Inputs from the Operations Program

In the Operations Program, Participants are required to prepare and provide data in a format specified by the Program Operator. This data must adhere to a submission schedule to allow the Sharing Calculations to run with as up-to-date and complete data as possible. The Program Operator is responsible for the transfer of input data that is processed according to a predefined schedule to inform Participants of any Sharing Events. A user interface provides Participants the means to view input upload status and error details, notifications and alerts, and Sharing Calculation results – this is called the Program Interface Tool (PIT) or Ops Client.

Moreover, it is the responsibility of the Program Operator to develop, test, implement and maintain the form and format of all inputs and to ensure the latest version of these are made available to Participants. The Program Operator also ensures that Participants are given access to portals, links, and/or any other data upload protocols prior to the start of any Binding Season to allow successful participation in the Operations Program. Any



procedures, guides or reference materials can be found in the Input Data File Specification document located on the WPP website.

The Sharing Calculation, which is the mechanism to determine whether a participant is surplus or deficit on any given hour of the operating day, relies on data submitted in the Operations Program by the Participant which includes hourly values of the following:

- (i) Load Forecast
- (ii) Forced Outages
- (iii) Forecasted ROR output
- (iv) Forecasted wind output
- (v) Forecasted solar output
- (vi) Contingency Reserves Obligation

The Sharing Calculation also includes an Uncertainty Factor as a term in the equation. The Uncertainty Factor is not a Participant provided value and is described in more detail in [*BPM 203 Program Sharing Calculation Inputs*](#).

5.1 Load Forecast

The Load Forecast is the Participant's hourly forecast of its WRAP load, expressed in MW, submitted for each operating hour. The data submitted for Load Forecasts shall account for the total load the Participant is responsible for serving under WRAP and be based on the same load that was utilized in the FS Submittal. If there are additional third-party loads or excluded loads within a Participant's Balancing Authority Area (BAA), these shall not be accounted for in the Load Forecasts submitted in the Operations Program.

5.2 Forced Outages Forecast

The Forced Outage is the hourly forecast of a Participant's Forced Outages (including derate), expressed in MW, and to be submitted for each operating hour. The data submitted for Forced Outages forecasts shall account for MW reduction in:

1. Total generating capability portfolio where the portfolio is defined as:
 - a. Any resource in the Forward Showing for which the Program Operator has calculated an Equivalent Forced Outage Factor (EFOF) or the Participant has supplied a Forced Outage Factor.
 - b. Any Resource-Specific Capacity Agreement in the Forward Showing where the Participant has assumed the outage risk as the purchaser. It is the responsibility of the Participant to work with the seller to determine how much of an outage is attributable to the Participant's contract.

2. A curtailment or derate of WRAP Qualifying Transmission being utilized to bring resources and/or contracts shown in the Forward Showing Submittal to load. Curtailments and derates to non-firm transmission shall not be accounted for in the Forced Outages forecasts.

Additionally, the Forced Outages or derate must result in an actual loss of generating capability. If, for example, the outage is on a hydro unit and there is insufficient water in storage or inflow to utilize the lost capacity then the outage may not be claimed.

Due to limited dispatchability and dependency on fuel supply, must-take Thermal Resources are not given a Forced Outage Factor. Any derate, outage, or transmission curtailment resulting in a reduction of generation capability for must-take resources, shall not be accounted for and shall be excluded from Forced Outages forecasts.

5.3 Forecasted ROR

The ROR forecast is the hourly forecast of a Participant's ROR performance, expressed in MW, and to be submitted for each operating hour. The data submitted for ROR forecasts shall account for the forecasted MW output on any given operating hour for the Participants' ROR included in the FS Submittal.

Unless specified under a Resource-Specific Capacity Agreement listed in a Participant's FS Submittal, a Participant with ROR will be responsible for over/under performance of ROR forecasts.

5.4 Forecasted Wind Output

The wind resource forecast is the hourly forecast of a Participant's wind resource performance, expressed in MW, and to be submitted for each operating hour. The data submitted for wind resource forecasts shall account for the forecasted MW output on any given operating hour for the Participant's wind resources included in the FS Submittal.

Unless otherwise specified under a Resource-Specific Capacity Agreement listed in the FS Submittal, a Participant with wind resources will be responsible for over/under performance of wind resource forecasts.

5.5 Forecasted Solar Output

The solar resource forecast is the hourly forecast of a Participant's solar resources performance, expressed in MW, and to be submitted for each operating hour. The data submitted for solar resource forecasts shall account for the forecasted MW output on any given operating hour for the Participants' solar resources included in the FS Submittal.

Unless otherwise specified under a Resource-Specific Capacity Agreement listed in a Participant's FS Submittal, a Participant with solar resources will be responsible for over/under performance of solar resources forecasts.

5.6 Contingency Reserves Obligation

As defined above, the CRO is the total amount of contingency reserves the Participant is carrying during the operating hour. Because the CRO is a fixed obligation this is the same numerical value that the Participant was required to show qualifying capacity for in the Forward Showing.

The data submitted for CRO is intended to help ensure that sufficient capacity is withheld to cover a Participant's CRO in MW for any given hour.

5.7 Uncertainty Factor

The Uncertainty Factor is meant to account for the variances between forecasts of load, VERs, and ROR for each operating hour on the Preschedule Day and the actual load and resource performance during such hour on the Operating Day. The Uncertainty Factor helps ensure that Participants retain capacity to account for near-term forecast error that would underestimate capacity needs, overestimate generation capability/availability (i.e., variances in the upward direction for load and variances in the downward direction for resource performance). See more details in [BPM 203 Program Sharing Calculation Inputs](#).

6. Forecasting Methodology and Data Evaluation

There are two (2) types of forecast methodologies a Participant may use for forecasting Load, ROR, wind output and solar output:

- (i) a third-party forecasting tool/software or
- (ii) a proprietarily developed algorithmic forecasting tool.

A Participant may elect to use one or both of these methodologies, but in any case, is required to submit to the Program Administrator, at least 90 days prior to the start of its first Binding Season, a narrative description of the methodology used for forecasting. This narrative shall include at minimum and without limitation:

- Type of methodology (i.e., third-party or proprietarily developed)
- Description of methodology
- List of data types forecasted using the methodology submitted in the Operations Program (i.e., Load, ROR, wind output and solar output)

- Description of limitations of methodology, particularly describing any inability to manually override forecast data and inputs to the Sharing Calculation. The purpose here is to demonstrate that the Participant is not able to manually modify forecasts with the intent of increasing a Participant's access to Holdback Capacity in the Operations Program or limiting their requirement to provide Holdback Capacity in the Operations Program.

In the event there is a change in methodology, the Participant must provide an updated narrative description to the Program Administrator as soon as practicable.

In addition, the Program Administrator and the Program Operator shall monitor and evaluate on a regular basis forecast data performance and ensure feedback is provided back to Participants to help identify inaccurate data.

7. Input Data Files

7.1 Multi-Day File

The data requested in the Multi-Day (MD) file is necessary to run the Operations Program Sharing Calculation, which is the mechanism to determine whether a Participant is surplus or deficit on any given hour of the Operating Day.

MD files shall include at least seven Operating Days' worth of forecast data.

Per [BPM 201 Operations Program Timeline](#), Participants are required to submit a MD file no later than 05:20 Pacific Prevailing Time (PPT) on the Preschedule Day and according the WECC scheduling calendar.

7.2 Operating Day File

The data requested in the Operating Day files (OD files) is mainly used for informational purposes in the Operations Program. As the binding obligations are set on the Preschedule Day under the [Tariff](#), input data submitted in the OD files is used to post updated Sharing Calculation results, hour by hour, for the Operating Day. These updated Sharing Calculation results help inform a Participant about its position relative to the Sharing Calculation result posted on the Preschedule Day.

OD files include at least 24 (or 23 for the spring transition to daylight savings time) operating hours' worth of forecast data and are to be submitted every hour throughout the Binding Season.

Per [BPM 201 Operations Program Timeline](#), Participants are required to submit an Operating Day file no later than one hundred and twenty (120) minutes prior to the start of any given operating hour.

7.3 Point Limit File

The data requested in the Point Limit (PL) files is to inform the Operations Program about the transmission points a Participant can deliver to and take receipt from other Participants. PL file inputs are essential to determine allocation and deliverability of any Holdback Requirement in a Subregion without a Central Hub.

PL files shall include at least 24 (or 23 for the spring transition to daylight savings time) operating hours' worth of data including but not limited to transmission points for delivery of any Holdback Requirement and order of priority.

Per [BPM 201 Operations Program Timeline](#), Participants shall ensure the PL files are submitted after 05:20 PPT when the Sharing Calculation results post and before 06:35 PPT. Data submitted in the PL files serve as input needed for optimization and validation in the Operations Program.

7.4 Point-To-Point Limit File

The Operations Program is designed to optimize allocation and deliverability of any Holdback Requirement. Given potential transmission constraints within a Subregion and the desire to share as much diversity as possible, the data requested in the Point-To-Point Limit (PTPL) is to inform the Operations Program about the transmission points where wheeling capability may occur. Inputs from the PTPL files are essential to determine a Participant's ability and order of priority to deliver any Holdback Requirement on defined transmission wheeling paths and inter-Subregion transmission connectivity.

PTPL files shall include at least 24 (or 23 for the spring transition to daylight savings time) operating hours' worth of data including but not limited to point-to-point transmission wheeling paths and order of priority.

Per [BPM 201 Operations Program Timeline](#), Participants shall ensure the PTPL files are submitted after 05:20 PPT when the Sharing Calculation results are posted and before 06:35 PPT. Data submitted in the PTPL files serve as input needed for optimization and validation in the Operations Program.

7.5 Voluntary Holdback File

The Voluntary Holdback data submission allows Participants to indicate to the WRAP the amount of Holdback Capacity that they would like to make available in excess of the surplus resulting from the Sharing Calculation. The intent of this submission is to indicate

the MW value that can be made available. The points at which the Voluntary Holdback could be made available must be included in the Point Limits File.

The data requested in the Voluntary Holdback (VH) files is to inform the Operations Program about any additional capacity made available to the Subregion for any given hour. Input from the VH files is essential to determine allocation and prioritization of any Holdback Requirement.

Per [*BPM 201 Operations Program Timeline*](#), Participants shall ensure the VH files are submitted after 05:20 PPT when the Sharing Calculation results are posted and before 06:35 PPT. Data submitted in the VH files serve as input needed for optimization and validation of the Operations Program, particularly for any given Sharing Event.

7.6 Actuals File

The data requested in the Actuals (AC) files is after-the-fact in nature - equivalent to the data submitted in the MD and OD files - reflecting the actual values of the data that was forecasted. The data collected from AC files is not a Sharing Calculation input. The Program Administrator and Program Operator use AC files data for analysis and reporting, particularly for data accuracy and performance.

Participants shall ensure that AC files are submitted no later than 168 hours after any given operating hour.

8. Sharing Calculation Results

The Sharing Calculation relies on inputs from both the Forward Showing and Operations Program. The Sharing Calculation result for any operating hour is calculated using the Sharing Calculation equation and its inputs listed in the sections above.

If a Sharing Calculation result for any given hour is positive, this indicates the Participant has surplus capacity.

Conversely, if a Sharing Calculation result for any given hour is negative, this indicates the Participant is capacity deficient and therefore would constitute a potential Sharing Event.

The forecast data submitted for each operating hour is compared to the values assumed in the FS Submittal. This means the values submitted for each operating hour should use the same assumptions and the same general source data as the values submitted in the Forward Showing. Any mismatch can result in a Participant being erroneously identified as surplus or deficient. A Participant's ability to ensure that the Forward Showing and the Operations Program data submissions align with one another will streamline testing and trials and maximize both individual and group benefits.

9. Planned Outages

In the FS Submittal, Participants are required to provide information on all Qualifying Resources that are currently out of service with a scheduled return date that falls during or after the Binding Season. Capacity associated with such resources is then deducted from Participants' Portfolio QCC to ensure no credit is granted for such resources during the planned outage.

The aggregate of any additional outages that are planned to occur during the Binding Season but have not yet begun at the FS Submittal deadline must be within the Participant's remaining surplus or replaced with other supply. If a Participant takes a planned outage during the Binding Season, they are responsible for backfilling for the entirety of the reduction in capacity and shall submit zero Forced Outage MWs for that resource during the period of the planned outage.

A planned outage shall not justify a waiver of or exception to a Participant's holdback or energy delivery obligations under the [Tariff](#). It is the Participant's responsibility to ensure necessary capacity is available to meet the Operations Program requirements, regardless of planned outage schedules or FS Submittal acceptance. In addition, planned outages MW amounts will not be included in the Forced Outages hourly data submitted in the Operations Program. Furthermore, if a planned outage that was included in the FS Submittal ends earlier in the month than expected and the resource becomes available, the Participant shall not include any Forced Outages MWs for that resource in the Operations Program.