

# Operating Reserves

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## BPA Transmission Business Practice

Version ~~45~~16

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# Operating Reserves

## Version ~~45~~16

Pursuant to ~~its Tariff~~ (Schedules 5 ~~and~~ 6) ~~of the BPA OATT~~, ~~BPA makes~~ Operating Reserves ~~are~~ available to Customers to meet their Operating Reserve Requirement. This ~~b~~Business ~~p~~Practice describes the criteria a Customer must meet to fulfill its Operating Reserves Requirement.

Customers with load or generation located within ~~the~~ BPA's Balancing Authority Area (~~BAA~~) must provide Operating Reserves in accordance with ~~this business practice which follows~~ applicable Western Electricity Coordinating Council (WECC) ~~standards, and~~ North American Electric Reliability Council (NERC) standards, ~~and North West Power Pool Reserve Sharing Group rules.~~ ~~Operating Reserves are referred to as Contingency Reserves in NERC and WECC documents.~~

### BPA Policy References

- [Open Access Transmission Tariff \(OATT\)](#): Section 3; Schedules 5 and 6
- [Transmission Rate Schedules/Provisions](#): Operating Reserve

For more information, visit the [BPA Transmission Business Practices webpage](#) or submit questions to [techforum@bpa.gov](mailto:techforum@bpa.gov).

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## A. General Criteria

1. ~~Operating Reserves are also referred to as contingency reserves in WECC and NERC documents.~~
2. ~~BPA Transmission Services is obligated by the WECC and the NERC to carry reserves for contingencies within its Balancing Authority Area.~~
- 3.1. ~~Operating Reserve Requirements are identified in NERC standard BAL-002-WECC-2a BAL-002-WECC-3, Disturbance Control Standard Contingency Reserve for Recovery from a Balancing Contingency Event. The current standard requires the the greater of either three percent of hourly integrated load plus three percent of hourly integrated generation or the loss of the most severe single contingency (MSSC).~~
- 4.2. ~~Since BPA participates in the NWPP Reserve Sharing Group (RSG) and the BPA Operating Reserve Requirements are as follows:~~
  - a. The Operating Reserve - Spinning Requirement is equal to the sum of:
    - i. One and one-half percent (1.5%) of hourly integrated load; and
    - ii. One and one-half percent (1.5%) of hourly integrated generation.
  - b. The Operating Reserve - Supplemental Requirement is equal to the sum of:
    - i. One and one-half percent (1.5%) of hourly integrated load; and
    - ii. One and one-half percent (1.5%) of hourly integrated generation.

## B. Customer Obligation to Provide Operating Reserves

1. Customers are required to provide and must make arrangements for the provision of Operating Reserve ~~S~~services to support their transmission transactions with BPA ~~Transmission Services.~~
2. A Customer may meet its Operating Reserve ~~R~~Requirement under Schedules 5 ~~&~~ and 6 of ~~the BPA OATT's tariff~~ through one of the following alternatives:
  - a. The Customer may elect to purchase Operating Reserves from BPA ~~Transmission Services.~~ BPA is ~~the~~ the Operating Reserves Transmission Provider (Provider) and is responsible for meeting the Operating Reserve ~~R~~requirements.
  - b. Alternatively, the Customer may ~~S~~self-~~S~~supply its Operating Reserve Requirements from:
    - i. ~~T~~The Customer's own resources (the Customer and the Provider are the same); or
    - ii. ~~a~~ single third party. In this case, the Customer and Provider are different. BPA will measure the compliance of the Provider; however, it is the Customer who is ultimately responsible for meeting the Operating Reserve ~~R~~requirements.
3. A Customer may not obtain Operating Reserves from more than one third-~~p~~arty Provider.

4. If a Customer chooses BPA ~~Transmission Services~~ as its ~~Operating Reserve~~ Provider, BPA will be the Customer's ~~Operating Reserve~~ Provider through the next two (2)-year rate period.
5. A Customer that self-supplies or third-party supplies may change their ~~Non-BPA Operating Reserves~~ Provider on an annual basis, but must make this election no later than May 1 prior to the start of each year during the rate period.

## C. Electing to Self-Supply

1. A Customer who elects to ~~S~~self-~~S~~supply may provide either Spinning Reserve or Supplemental Reserve, or both.
  - ~~2~~a. If the Customer elects to ~~S~~self-~~S~~supply just one of these services, BPA will become the default Provider for the other service.
- ~~3~~2. A Customer that elects to ~~S~~self-~~S~~supply must:
  - a. Establish supply arrangements that are comparable to purchasing Operating Reserves from BPA ~~Transmission Services~~;
  - b. Execute an operating agreement with BPA ~~Transmission Services~~;
  - ~~c.~~ ~~If the Customer is obtaining Balancing Reserves from a third party, the Customer must also execute a three party operating agreement among the Customer, its third party Provider, and BPA Transmission Services;~~
  - ~~d.~~c. Complete implementation and acceptance testing of the necessary interfaces, systems, Dynamic Schedules, or software required in order to comply with this ~~B~~business ~~P~~practice by the start of the ensuing ~~F~~fiscal ~~Y~~year (October through September). See ~~S~~section L ~~below~~;
  - ~~e.~~d. ~~Comply with applicable WECC and NERC reliability standards; and~~
  - ~~e.~~ Provide sufficient Operating Reserves to meet ~~its~~applicable requirements at all times; ~~and~~
  - f. If the Customer is obtaining Balancing Reserves from a third-party, the Customer must also execute a three-party operating agreement among the Customer, its third-party Provider, and BPA.
- ~~4~~3. BPA ~~Transmission Services~~ may require the Customer to provide copies of its filings with WECC, if any.
- ~~5~~4. A ~~e~~Customer may not self-supply Operating Reserves from Slice.
- ~~6~~5. A ~~S~~self-~~S~~supplying Customer fails to meet its obligation if:
  - a. Their Provider does not meet NERC or WECC reliability standards;
  - b. Their Provider fails to comply with industry standards for communication or network security protocols;
  - c. The ICCP link between BPA and their Provider fails;
  - d. Their Provider's EMS status signal fails; or
  - e. Their Provider does not complete implementation and acceptance testing as defined in ~~s~~Section C.3.d2.c.

76. In the event the ~~sSelf-Ssupplying~~ Customer's Provider does not meet the obligations in this ~~Ssection-C~~, ~~BPA-Transmission Services~~ will become the Customer's default Provider until the Customer cures the deficiency.
87. A ~~Sself-Ssupplying~~ Customer must supply Operating Reserves ~~the service~~ from its own resources or from a single third party. However, the Provider must have more than one generation resource available to supply the Operating Reserves.

## D. Changing a Provider

1. Start of the Rate Period:-
  - a. A Customer may change its ~~Operating Reserve Service~~ Provider effective at the start of the next Rate Period, by providing notice to their assigned Transmission Account Executive BPA-Transmission Services in writing or by email no later than May 1 prior to the start of the next rate Period.
  - b. A notification of a change in Provider must state the Customer's election to (i) designate BPA ~~Transmission Services~~ as its Operating Reserve Services Provider; (ii) ~~Sself-Ssupply~~ Operating Reserve ~~Services~~ from its own resources; or (iii) ~~Sself-Ssupply~~ Operating Reserve Services from a third party.
    - i. If the Customer elects to ~~Sself-Ssupply~~ Operating Reserves, BPA ~~Transmission Services~~ will notify the Customer no later than July 1 prior to the start of the next Rate Period, whether the proposed supply arrangements are comparable to purchasing Operating Reserves from BPA ~~Transmission Services~~.
    - ii. If the proposed supply arrangements are not comparable-, BPA will not approve the requested change and provide an explanation to the Customer in writing.
      1. If the Customer wants to continue to pursue the self-supply of Operating Reserves, it will provide BPA with the date at which it expects to provide comparable arrangements.
      2. If the new date is after October 1<sup>st</sup> of the next Rate Period, BPA will remain the default Provider until the Customer is able to provide comparable arrangements.
2. During the Rate period:
  - a. A ~~sSelf-sSupplying~~ Customer may change its Provider for the second year of the Rate period by providing notice to BPA ~~Transmission Services~~ in writing or by email no later than May 1 during the first year of a Rate period.
    - i. BPA ~~Transmission Services~~ will notify the Customer no later than July 1 prior to the start of year 2 of the Rate period, whether the proposed supply arrangements are comparable to purchasing Operating Reserves Services from BPA ~~Transmission Services~~.
    - ii. If the proposed supply arrangements are not comparable to purchasing Operating Reserve ~~Services~~ from BPA ~~Transmission Services~~, BPA will not approve the requested change and provide an explanation in writing.

1. The ~~Sself-Ssupplying~~ Customer will provide BPA with the date at which it expects to be able to meet the applicable standard of service.
2. BPA will become the default Provider until the ~~eCustomer~~ is able to meet the applicable standard, unless the ~~Sself-Ssupplying~~ Customer elects to continue obtaining Operating Reserves from its then-current Provider.
3. BPA ~~Transmission Services~~ will provide the ~~Sself-Ssupplying~~ Customer with an approximate date in which BPA ~~Transmission Services~~ will implement the Operating Reserves ~~Services~~.
3. If the ~~Sself-Ssupplying~~ Customer is no longer able to ~~Sself-sSupply~~ Operating Reserves, or otherwise unable to meet applicable standards, BPA ~~Transmission Services~~ will become the default Provider for remainder of the ~~Rrate Pperiod~~.
4. If the Customer does not intend to change its ~~Operating Reserve Service~~ Provider, no action is required.

## E. Calculating the Self-Supplying Customer's Operating Reserve Requirement

1. BPA ~~Transmission Services~~ will determine the ~~Sself-Ssupplying~~ Customer's Operating Reserve Requirement for the current hour and an estimate for the next hour.
2. Each ~~Sself-Ssupplying~~ Customer shall carry its proportionate share of BPA's ~~Transmission Services'~~ total Operating Reserve ~~Obligation~~.
3. The amount of capacity that the ~~Sself-Ssupplying~~ Customer must hold for Operating Reserves ~~Services~~ is the Spinning Reserve ~~rRequirement~~, the Supplemental Reserve ~~rRequirement~~, or both, depending on whether the ~~sSelf-sSupplying~~ Customer has elected to supply Spinning Reserve, Supplemental Reserve, or both, respectively.
4. Calculating the ~~Sself-sSupplying~~ Customer's Operating Reserve Requirement:-
  - a. The Operating Reserve Requirement for a generator located within ~~the BPA's BAAalancing Authority Area~~ is the sum of (a) the generator's hourly transmission schedules or (b) the generator's hourly generation estimate if the generator is a behind the meter resource operating in the BPA ~~BAAalancing Authority Area~~, multiplied by the applicable percentage based on the ~~eCustomer's Sself-Ssupply~~ election.
  - b. The Operating Reserve Requirement for a load located within ~~the BPA's BAAalancing Authority Area~~ is the sum of (a) generation scheduled to that load and (b) that Customer's load estimates, if any, multiplied by the applicable percentage based on the Customer's ~~Sself-Ssupply~~ election.
  - c. A Customer with unscheduled generation or load must submit a daily estimate of generation or load, as the case may be, to BPA during the preschedule window.
    - i. If conditions change such that a ~~Sself-Ssupplying~~ Customer's generation or load estimate is no longer valid, the Customer must update their estimate during the ~~real-time~~ window.

- ii. Additional information about generation and load estimates may be found in the Scheduling Transmission Service Business Practice.
- d. Loss return schedules are treated the same as normal schedules. The Ssink (BPALOSS) is always in the BPA BAA control-area so there will always be a minimum 3% requirement for the Transmission Contract Holder (TCH). If the sSource is a generator in the BPA's BAAalancing Authority Area, there will be an additional 3% requirement.
- e. A Sself-Ssupplying Customer relying on a generator located outside the BPA's BAAalancing Authority Area must demonstrate that it has adequate fFirm transmission available to deliver Operating Reserves from that generator to BPA Transmission Services.

## F. Calculating the Self-Supplying Customer's Deployment Obligation

1. Calculation one of the Sself-Ssupplying Customer's reserve deployment obligation:-
  - a. The Operating Reserve Requirement will be used to calculate the Sself-Ssupplying Customer's Allocation Ratio and will change as transmission schedules are changed or generation output varies.
  - b. The sSelf-sSupplying Customer's Operating Reserve Requirement divided by the BPA BAAalancing Authority Area's Operating Reserve Requirement is the Sself-Ssupplying Customer's Allocation Ratio.
  - c. The Allocation Ratio is multiplied by the BPA BAAalancing Authority Area's energy deployment for the contingency event to establish the Sself-Ssupplying Customer's reserve energy delivery obligation.
2. The reserve deployment must be fully delivered within 10-minutes after BPA Transmission Services sends a signal for Operating Reserves; and sustained for 60 minutes unless otherwise requested by BPA Transmission Services.
3. If the Sself-sSupplying Customer plans to distribute its contingency response to multiple resources within the BPA BAAalancing Authority Area, a signal corresponding to the Participation Factor of each plant must be specified.
  - a. The Participation Factors of each resource denotes the percentage that the Sself-Ssupplying Customer wishes that resource to have deployed when Operating fReserves are called upon in order to distribute the response to multiple resources.
  - b. The total of all Participation Factors must equal 100%.
  - c. A zero Participation Factor means indicates the resource is not available for eOperating fReserves deployment.

## G. Measuring Compliance

1. In the event of a contingency, the megawatt amount of reserve energy the ~~S~~self-~~S~~upplying Customer must deliver will be sent from BPA ~~Transmission Services~~ over a data link to the Provider's resources or through the Provider's control center. If the resource is outside of the BPA ~~AAalancing Authority Area~~, the megawatt amount of reserve energy that the ~~S~~self-~~S~~upplying Customer must deliver will be sent from BPA ~~Transmission Services~~ to the Provider's control center.
2. BPA ~~Transmission Services~~ will send a signal and status verification flag to the ~~S~~self-~~S~~upplying Provider's Operating Reserve resource ~~representing the Plant Request or Setpoint for 60 minutes (or for up to 65 minutes for a NWPP Reserve Sharing event).~~ This signal is zero and a status verification flag is not set when there is no contingency reserve event and no testing. The ~~S~~self-~~S~~upplying Provider's Operating Reserve resource will use the signal Plant Request or Setpoint to deliver Operating Reserves ~~Services~~ as follows:
  - a. Plant ~~R~~request or Setpoint = Basepoint + (Transmission Services deployment requirement (or MW loss)) \* (Plant Participation Factor)\* (Operating Reserves Allocation Ratio); or
  - b. A Dynamic Schedule for the ~~S~~self-~~S~~upply Provider's system resources.  
Dynamic Schedule = (Transmission Services deployment requirement (MW loss))\*(Operating Reserves Allocation Ratio).
3. The ~~s~~Self-~~S~~upplying Provider's ~~r~~Recovery ~~E~~rror must reach zero or positive MW prior to 10-minutes after receiving the Plant Request or Dynamic Schedule and continuing through the end of the Contingency Reserve Restoration Period.
  - a. The ~~S~~self-~~S~~upplying Provider's ~~R~~recovery ~~e~~Error (~~RE~~) equals ~~A~~actual ~~G~~eneration in MW, minus the Setpoint in MW, measured over the Contingency Event Disturbance-Recovery Time-Period.
    - i. Recovery error~~RE~~ = ~~A~~actual ~~G~~eneration (MW) - Setpoint (MW)
  - b. The Load ~~R~~recovery ~~E~~rror, in MW, equals:
    - i. The scheduled load minus abs (~~d~~Dynamic ~~s~~Schedule) minus actual load, if the ~~S~~self-~~S~~upplying Provider's Operating Reserve resource is receiving a ~~d~~Dynamic ~~s~~Schedule, or;
    - ii. The load ~~s~~Setpoint minus actual load of plant if the ~~S~~self-~~S~~upplying Provider's Operating Reserve resource is receiving the plant ~~s~~Setpoint.
  - c. If the ~~R~~recovery ~~E~~rror does not reach zero within 10 minutes or remains ~~s~~ at or above zero for the remainder of the ~~e~~Contingency Reserve Restoration ~~p~~Period, it will be counted as a strike.
4. For circumstances where system resources are used, the ACE and ~~n~~Net ~~I~~nterchange ~~D~~eviation will be used as the ~~S~~self-~~S~~upplying Provider's ~~R~~recovery ~~E~~rror.

## H. Evaluating the Self-Supplying Customer's Performance

1. The following examples constitutes a strike(~~s~~) for the ~~s~~Self-~~S~~upplying Customer:

- a. One strike: the Provider failed to provide its capacity requirement for one hour in a given day or the Provider failed to sustain the capacity requirement for the duration of the contingency.
  - b. Three strikes: the Provider failed to provide its capacity requirement to BPA ~~Transmission Services~~ for three different hours in a given day.
2. If a ~~Self-S~~upplying Customer does not have ~~Firm~~ transmission available to deliver ~~its~~the Operating Reserves obligation, it will be assessed a strike for each hour it cannot do so.
3. BPA ~~Transmission Services~~ will notify the ~~Self-S~~upplying Customer of a strike by letter, email, or phone call.
4. BPA ~~Transmission Services~~ will perform unannounced capability tests to assure that capacity is fully available within 10-minutes.
  - a. BPA ~~Transmission Services~~ will work with the Provider, when necessary, to establish acceptable time frames when the Provider's system can accept energy.
  - b. The capacity test will net to zero integrated MWs over the test duration.
  - c. If the Provider fails the capability test, a strike is assessed to the ~~Self-S~~upplying Customer.
5. If a ~~Self-s~~upplying Customer receives six strikes during any consecutive ~~twelve~~12 month ~~period~~, the ~~Self-S~~upplying Customer's ability to supply Operating Reserves ~~Services~~ will be suspended for the remainder of the ~~R~~rate Period.
  - a. The ~~Self-s~~upplying Customer will be notified in writing of the effective date of the suspension of its right to supply Operating Reserves ~~Services~~.
  - b. A ~~Self-S~~upplying Customer that receives six strikes may requalify to self-supply ~~e~~Operating ~~r~~Reserves at the beginning of the next rate period provided they meet the requirements of this business practice.

## I. Declaring a Contingency

1. Plant operators must notify the ~~BPA-Transmission Services'~~ generation dispatcher (dispatcher) of any contingencies due to equipment problems that result in partial or total reduction of the generator's scheduled energy delivery for the hour, within four (4) minutes of the occurrence of the contingency.
2. The plant operator shall provide the following minimum information to the dispatcher:
  - a. The name of the plant.;
  - b. ~~What resources suffered a contingency, either by~~ The unit number or name of resource(s) suffering the contingency.;
  - c. The time of the contingency.;
  - d. The reason for the contingency.;
  - e. The amount of reserves required (in MW) reflecting the actual amount of generation lost.
  - e.f. How long the reserves are required (up to 60 minutes).; ~~and~~

- f.g. Other information as may be requested by the dispatcher.
3. A plant operator requesting reserves for a contingency will receive reserves from BPA for 60 minutes with the amount received ramping to zero from 55 to 60 minutes following the request.
  4. Reserves may not be requested twice for the same contingency event.
  5. Wind generators requesting reserves for a hi-speed cutout event may not request reserves again within two (2) hours from the start of the hi-speed cutout event.
  6. If a plant operator does not report a contingency within the specified time, the dispatcher may deliver the contingency energy at their discretion. Generation Imbalance or Energy Imbalance charges may apply.

## J. Contingency Energy Reserve Costs and Calculation

1. The generator having the contingency is responsible for the costs associated with the energy delivered from Operating Reserves ~~Services~~ on behalf of resources inside of the BPA ~~AA~~balancing Authority Area, consistent with the applicable ACS Rate Schedule.
2. BPA ~~Transmission Services~~ will determine how much energy each ~~S~~self-Ssupply Customer delivered and the settlement obligation of the generator experiencing the contingency event.
3. The Operating Reserves energy delivered is the difference between the Scheduled Generation for the hour and the energy produced by the resource that had the contingency:
  - a. Energy Delivered = Scheduled MWh – Actual MWh.
  - b. If the amount of energy supply produced is equal to or greater than the Scheduled Generation for the hour, no settlement of Operating Reserves energy is required.
4. Settlement covers contingency energy delivered for 60 minutes.—
- ~~5. Monetary settlement for energy delivered will be based on the Powerdex Mid-Columbia Hourly Energy Index, but not less than zero, applicable at the time of occurrence.~~
- ~~6.5.~~ BPA ~~Transmission Services~~ will notify each ~~S~~self-Ssupply Customer of the MWh of reserve energy it delivered for each hour of contingency by creating an e-Tag with the MWh of delivered energy.
  - a. The notification will occur shortly after the end of each hour in which the contingency reserve energy was delivered.—
  - b. BPA ~~Transmission Services~~ will coordinate settlement for reserve energy deliveries among responding ~~S~~self-Ssupplying Customers.
  - c. Each ~~S~~self-Ssupplying Customer that responded to a request for reserve energy will receive a credit for reserve energy delivered up to the amount requested by BPA.
  - d. If the ~~S~~self-Ssupplying Provider's Operating Reserve resource providing the Operating Reserves ~~Services~~ is an NWPP RSG participant; 1) a member of the

~~NWPP and 2) a participant in the RSG~~, then settlement procedures will follow those set forth in the NWPP RSG agreement.

- i. BPA ~~Transmission Services~~ follows the NWPP RSG agreement settlement procedures for reserve energy received from resources outside of the BPA's BA~~alancing Authority Area~~. This document is available at the following website address:  
<https://www.westernpowerpool.org/>, ~~http://www.nwpp.org/~~.
- ii. The ~~most recent~~ NWPP RSG agreement requires that all transactions for reserve deliveries be settled financially.
- iii. For these settlements, BPA ~~Transmission Services~~ will use the market index described in the NWPP RSG agreement procedures.

## K. Communicating with BPA

1. A sSelf-sSupplying Provider shall provide the following data to BPA ~~Transmission Services~~ for its resources internal to the BPA BA~~alancing Authority Area~~:
  - a. The maximum, minimum, and spinning capability available within the NERC defined Contingency Event Disturbance-Recovery ~~Time~~-Period refreshed (updated) continuously. Operating Reserves shall be held available at all times until a contingency occurs.
  - b. The actual instantaneous generation, in MW, of each resource that is providing reserves.
  - c. Status of the sSelf-sSupply Provider's EMS or equivalent, if a load.
2. A Sself-sSupplying Provider's Operating Reserve resource providing system responses shall provide the following data to BPA ~~Transmission Services~~:
  - a. Dynamic signal of its response to the BPA ~~Transmission Services~~ operating reserve deployment.
  - b. Net interchange deviation.
  - c. System error signal; (for BA'~~alancing Authority Areas~~, this is the Area Control Error (ACE)).
  - d. The status of the Sself-Ssupplying Provider's Operating Reserve resource's EMS.
- ~~2. In the absence of a contingency, BPA Transmission Services will send to the Sself-sSupplying Provider's Operating Reserve resource a Setpoint request signal with the BPA Transmission Services deployment requirement equal to zero, except when testing.~~
- ~~2. BPA Transmission Services will request and provide the following information to the Self-Supplying Provider's Operating Reserve resource following the declaration of a contingency:~~
  - ~~d. BPA will send a Setpoint request representing the Sself-sSupplying Customer's Ddeployment Oobligation, and~~
  - ~~d. BPA will send a verification status flag confirming that the new Setpoint represents a valid Operating Reserve delivery request.~~

## **P.L. Technical Requirements for Self-Supplying Customer's Operating Reserve Resources**

1. The Provider's Operating Reserves resources must respond to automated signals sent from BPA's ~~BAAalancing Authority Area~~ calling upon the resources. The response must be distinct and measurable, and an observable response must occur.
2. The Provider may use a resource in another ~~BAAalancing Authority Area~~ to supply Operating Reserves ~~Services~~ provided that the resource's deployment signal is automated and that BPA ~~Transmission Services~~ can observe a distinct measurable response.
3. The supply of Operating Reserves ~~Services~~ requires the ~~BPA Transmission Services'~~ Dittmer Control Center (DCC) and Munro Control Center (MCC) to communicate with the ~~Sself-sSupplying Customer's Operating Reserve resource's Energy Management System (EMS)~~ for deployment of reserves.
  - a. The ~~Sself-Ssupplying Customer~~ is responsible for the costs associated with the placement of the required communications and control equipment and systems.
    - i. If the infrastructure for implementing a Dynamic Schedule for a self-supply resource does not exist, it may take more than a year to put in place.
    - ii. ~~BPA Transmission Services~~ must approve the Provider's plans to assure that NERC and the WECC reliability requirements can be met when the plan is implemented.
  - b. The ~~Sself-sSupplying Customer~~ must pay all installation costs incurred by BPA ~~Transmission Services~~ for telemetry and monitoring. Costs will include labor, software for AGC, communication, as well as upgrade of both the Customer and BPA ~~Transmission Services'~~ facilities.
  - c. The Provider's ~~Operating Reserve resource's EMS~~ must be staffed 24 hours a day, seven (7) days a week to assure dispatch contact is available.
  - d. The Provider's Operating Reserve resources shall exchange real-time data with BPA ~~Transmission Services~~ using the ICCP or other BPA approved data link between BPA's two control centers, DCC and MCC, and the Provider's Operating Reserve resource's EMS (or resource).
    - i. Real-time data exchange shall conform to WECC standards for inter-utility data exchange, including availability, bandwidth, security, and reliability.
    - ii. Real-time data exchange and control signals must have a periodicity of 10 seconds or less.
  - e. Deployment of the Provider's Operating Reserve resources must be accomplished using automated response to electronic signals from BPA ~~Transmission Services~~.
    - i. The resources may be system rather than individual resources.
    - ii. System resources require independent response verification information.

- f. The Provider and its Operating Reserve resources shall exchange other types of data, such as schedules, generation estimates, meter readings, etc., with BPA ~~Transmission Services~~ using the WECC Electronic Industrial Data Exchange ~~p~~Protocol or Customer Data Entry.
4. A Provider must have an annual average Operating Reserve obligation of at least 8 MW so that BPA ~~Transmission Services~~ is able to verify the Provider's response.
    - a. The demonstration may be based on long-term contracts, reasonably expected short-term use, or a combination of both.
    - b. A Third-Party Provider may provide Operating Reserves ~~Services~~ to more than one ~~S~~self-~~s~~Supply Customer.
    - c. If the Provider's ~~Operating Reserve resources'~~ average requirement is less than 8 MW for the nine month period October 1 to June 30 in any ~~fiscal year~~FY during the two (2)-year election period, it will not be allowed to ~~s~~Self-~~s~~Supply for the remainder of the two (2)-year election period.
    - d. BPA ~~Transmission Services~~ will periodically check the Provider's deliveries to verify compliance with this requirement.