



Transmission Services

DRAFT - NT Redispatch Protocols

A. DNRs Considered to Provide NT Redispatch

The following table identifies which types of Designated Network Resources (DNRs) will be considered for the NT Redispatch program and, if considered, may provide INC or DEC capacity.

	Considered for NT Redispatch?	Considered for INC?	Considered for DEC?
On-System DNRs: DNRs associated with specific generation, not including variable generation, located within BPA's balancing authority area and designated for a period greater than one year; includes designation of BPA regional dialogue contract (FCRPS system)	Yes	Yes	Yes
Off-System DNRs: DNRs located outside of BPA's balancing authority area and designated for a period greater than one year, not including Market Purchase DNRs or Variable DNRs	Yes	Yes	Yes
Market Purchase DNRs: DNRs not associated with specific generation (e.g. off-system seller's choice contract)	Yes	No	Yes
Variable DNRs: DNRs associated with variable generation, such as wind	Yes	No	Yes

B. Eligibility Criteria for DNRs

DNRs satisfying the eligibility criteria must participate in NT Redispatch program:

1. *Duration of designation:* The DNR is designated for a period greater than one year ("long-term"). At this time, DNRs designated for a period less than one year ("short-term") are not eligible to participate in the NT redispatch program.
2. *Effectiveness:* Based on the designated MW demand of a resource and its ramp rate, the DNR is paired to all other DNR's, federal and nonfederal, on all flowgates to calculate flowgate relief. If the flowgate relief for at least one pair is 3 MW or greater over a 10-minute period on any one flowgate, the resource is deemed "effective" unless
 - a. the transmission provider determines, based upon customer demonstration, that increasing or decreasing the generation output of the resource to provide INC or DEC capacity would cause the generator to operate outside of its normal operating parameters/curve and such operation could damage the resource or cause it to violate operating/regulatory restrictions. Customer demonstration may include providing the transmission provider with the operating specifications, warranties and/or manuals for the resource.
3. *Dispatchability and Controllability:* Generation levels can be adjusted remotely or by staff within 10 minutes in order to achieve the ramp rates assumed in criteria B.2. above.

C. DNR Informational Requirements

For DNRs participating in the NT Redispatch program, the NT customer must provide the following information:

1. 10-minute response capability (if applicable, at various generation levels);
2. Future hourly generation forecast
 - a. Required monthly forecast prior to the start of each month.
 - b. May be updated as frequently as customer desires.
3. Forecasted (anticipated) INC or DEC capacity that the DNR is capable of providing and/or minimum and maximum generation levels.
 - a. Customer will be required to provide this information on a monthly basis prior to the start of each month over a system interface, as specified in the customer's NT agreement.
 - b. May be updated as frequently as customer desires

4. Forecasted INC or DEC cost information
 - a. Customer will be required to update this information on a regular basis over a system interface.
 - b. May be either \$/MWh estimate or market +/-adder
5. Real-time response from resource/operator on whether NT Redispatch can be provided from DNR when requested. This response is provided as specified in the customer's NT agreement.

D. Compensation Mechanism

The customer will be held whole financially when they provide NT Redispatch. NT Customers who INC will be paid their costs by BPA. NT Customers who DEC will pay to BPA the net of their savings and costs. If costs are greater than savings for NT customers who DEC, BPA will pay costs minus savings.

1. Hydro Generation
 - a. INC Pricing
 - i. Actual cost or opportunity cost, whichever is greater. Both actual and opportunity cost must be documented unless the customer deems its opportunity cost to be the highest hourly energy index in the Pacific Northwest during the 24-hour period after the hour in which the DNR is requested to provide NT redispatch.¹
 - b. DEC Pricing
 - i. Actual cost minus actual savings or opportunity cost, whichever is lower. Actual cost and savings as well as opportunity cost must be documented unless the customer deems its opportunity cost to be the lowest price of the 24-hour period starting with the interval for which NT Redispatch is requested (based on an hourly energy index in the Pacific Northwest).
 - ii. If the customer's hydro system providing the DEC is in a spill condition the opportunity cost is deemed zero.
2. Thermal Generation
 - a. INC Pricing
 - i. Actual cost or opportunity cost, whichever is greater.
 - ii. Both actual cost and opportunity cost must be documented unless the customer deems its opportunity cost to be the hourly

¹ If no adequate hourly index exists, an alternative index will be used. At least 30 days prior to the use of such index BPA will post on its OASIS Web site the name of the index to be used. BPA will not change the index more often than once per year unless BPA determines that the existing index is no longer a reliable price index.

energy index in the Pacific Northwest for the interval in which NT Redispatch was requested.

- b. DEC Pricing
 - i. Net of actual cost and savings.
- 3. Variable Generation
 - a. INC Pricing
 - i. Not applicable.
 - b. DEC Pricing
 - i. Net of actual cost and savings.
- 4. Market Purchases
 - a. INC Pricing
 - i. Not applicable.
 - b. DEC Pricing
 - i. Net of actual cost and savings.
- 5. Determining “actual cost and actual savings”
 - a. Actual cost may include:
 - i. Cost of fuel
 - ii. Variable operation and maintenance expense
 - iii. Start-up cost
 - iv. Cost of additional operating reserves
 - v. Cost related to minimum run times
 - vi. Lost tax credits, renewable credits
 - vii. Liquidated damages, penalties (if applicable)
 - viii. Other related verifiable and quantifiable costs
 - b. Actual savings may include:
 - i. Avoided fuel cost
 - ii. Other verifiable and quantifiable costs

E. Creating the NT Redispatch Resource Stack

The NT Redispatch resource stack for each flowgate/path will be determined for each congestion event based on a forecast of cost per MW of congestion relief. The resource stack will consist of the eligible DNRs, paired and ranked in the following manner:

1. NT Redispatch pairs will be created using all the possible combinations of INC and DEC DNRs, both federal and nonfederal. The maximum MW quantity

available for Redispatch for each Redispatch pair will be the lesser of the INC or DEC quantities (PairMW).

2. The MW quantity of relief each NT Redispatch pair is capable of providing for the congested flowgate/path (pair flowgate/path relief) will be calculated as follows:
 - a. Subtract the power transfer distribution factor (PTDF) corresponding to the DEC DNR (POD) from the PTDF corresponding to the INC DNR (POR) to calculate the impact on the specified flowgate/path (PairPTDF).
 - b. If the PairPTDF is a negative value, the NT Redispatch pair will provide Pair flowgate/path congestion relief and is retained.
 - c. If the PairPTDF is zero or a positive value, the NT Redispatch pair will not provide Pair flowgate/path congestion relief and is eliminated.
 - d. The Pair flowgate/path congestion relief available for each remaining NT Redispatch pair is the PairMW multiplied by the PairPTDF.
 - e. The cost of the Pair flowgate/path congestion relief is calculated by subtracting the DEC price for the DEC resource from the INC price for the INC resource and then dividing the result by the PairPTDF, as measured in \$/MWh of relief on the flowgate/path. The INC and DEC prices will be forecast as follows:
 - i. Hydro generation:
 1. If the NT customer does not provide the forecasted actual INC and/or DEC cost for the DNR, then INC and/or DEC cost will be based on BPA's forecast of market prices for a rolling 24-hour period beginning with the hour in which congestion occurs.
 2. If the NT customer provides the forecasted actual INC cost for the DNR, then the INC price will be the higher of the forecasted market price or the forecasted actual INC cost. If the NT customer provides the forecasted actual DEC cost for the DNR, then the DEC price will be the lower of the forecasted market price or the forecasted actual DEC costs.
 - ii. Thermal generation: BPA will compare (greater of for INC, lower of for DEC) its forecast of market prices for the hour in which redispatch will occur to the forecasts of actual prices provided by customers to determine the appropriate INC and DEC price.
 - iii. Variable generation: DEC price will be based on the estimate provided by customer.
 1. If the customer does not provide an estimate of its actual costs, BPA will use the forecast of market prices as a substitute.
 - iv. Market purchases: DEC price will be based on the most recent estimate provided by the customer.

1. If the customer does not provide an estimate of its actual costs, BPA will use the forecast of market prices as a substitute.
- f. The NT Redispatch stack for each flowgate is determined by ranking the NT Redispatch pairs based on the \$/MWh of relief on the flowgate/path in ascending order (i.e., least cost of relief at the top, and greatest cost of relief at the bottom).

F. Communicating an NT Redispatch Request

An NT Redispatch request to a DNR may be communicated in the following manners. The customer's NT Agreement will indicate the type of communication:

1. DNRs in BPA's Balancing Authority Area
 - a. Web-based signal via Integrated Curtailment and Redispatch System (iCRS),
 - b. Signal via SCADA/ICCP System, or
 - c. Curtailment of transmission schedule (e-tag) or creation of Emergency E-Tags
2. Market Purchase DNRs
 - a. Via curtailment of transmission schedule (e-tag)
3. DNRs outside of BPA's Balancing Authority Area
 - a. Via creation of Emergency E-Tags; or
 - b. Via Dynamic Signal
4. Following a request to the DNR for NT Redispatch, the customer/resource will be required to provide a response on whether redispatch can be provided as requested.
 - a. The response must be provided to BPA within 5 minutes of receiving communication of an NT Redispatch request whether redispatch can be provided as requested.
5. The NT customer must communicate that a DNR is not available (in full or in part) to provide NT Redispatch within 5 minutes of receiving communication of an NT Redispatch request. Examples include:
 - a. DNR used to make a third-party sale and the sale is for less than one year.
 - b. Providing INC or DEC will cause damage to the resource.
 - c. DNR is shut down for maintenance.
 - d. Lack of water or fuel.

6. Customers must provide supporting documentation, after the fact, that the DNR was not available.
 - a. Documentation must be provided to BPA within 30 calendar days through their Transmission Account Executive.

G. Reporting Costs of NT Redispatch

BPA will post the costs incurred as a result of NT Redispatch on OASIS on a monthly basis consistent with appropriate NAESB standard.