Market Operations Bulletin #32 – April 15, 2009

Balancing Energy Service Capable, Non-Spinning Reserve Service Implementation Guidelines

A. Background

Protocol Revision Request (PRR) 776, Automatic MCPE Adjustment During Intervals of Non-Spinning Reserve Service Deployment, was approved by the ERCOT Board on March 17, 2009. This PRR sets a floor price for the Market Clearing Price for Energy (MCPE) in Real Time when Non-Spinning Reserve Service (NSRS) is deployed. Under this proposal, Qualified Scheduling Entities (QSEs) have a mandatory Balancing Energy Service Up bid requirement when offering capacity reserved for their Balancing Energy Service Capable NSRS (BESCNSRS) obligation.

The purpose of this market bulletin is to provide Market Participants an overview of the implementation of PRR776 and describe the process QSEs will utilize when scheduling both 30-Minute Non-Spinning Reserve Service (30MNSRS) and BESCNSRS in accordance with the approved language in PRR776. This bulletin also describes the registration, modeling, telemetry requirements as well as other pertinent information for separated virtual Resources that are qualified to provide BESCNSRS in accordance with PRR776.

General Requirements

30MNSRS may only be supplied from Off-line generation capacity capable of reaching NSRS deployment within 30 minutes or Load that is capable of being interrupted within 30 minutes and being On-line or interrupted for at least one hour.

BESCNSRS may only be supplied from Off-line or On-line generation capacity capable of reaching BES awarded MW within 15 minutes or Load that is capable of providing Balancing Energy Service and not supporting any other Ancillary Service and qualified by ERCOT to provide Balancing Energy.

All Resources providing NSRS service must check the NSRS flag in the Resource Plan. The NSRS flag in the Resource Plan allows ERCOT to track the units that are providing NSRS and to ensure that these units are not committed by Replacement Reserve Service (RPRS).

BESCNSRS may be provided from a registered, separated virtual Resource (in accordance with Protocol Section 10.3.2.1, Generation Meter Splitting) that is “On-line” and capable of being ramped to a specific output level within 15 minutes for NSRS and through Balancing Energy Services. On-line means that the Resource being separated

into virtual pieces, is On-line and generating. The virtual piece that bids into BESCNSRS must be capable of ramping from 0 to full output in 15 minutes.

All Quick Start or separated virtual Resources providing BESCNSRS must be capable of passing a quick start test and must check the NSRS flag in the resource plan. These Resources must indicate “On-line” at 0 planned output level in the Resource Plan in order to be counted as supplying BESCNSRS.

Separated virtual Resources that are modeled for BESCNSRS purposes must be shown as ”Unavailable” in the Resource Plan when not providing NSRS or offered into the BES Up market. There are only three states for virtual Resources; “Available for BESCNSRS”, “Available for BES Only” or “Unavailable”. If the virtual Resource is only supplying BES and not supplying BESCNSRS, then the Resource must indicate “On-line” at 0 planned output level in the Resource Plan and must not check the NSRS flag in the resource plan.

The following table should be used to correctly indicate the planned state for the BESCNSRS Resource.

States	Non Spin Flag	Resource On	Planned Net MW	Resource Available
Available for BESCNSRS	Yes	Yes	0	Yes
BES Only	No	Yes	0	Yes
Unavailable	No	No	0	No

Any separated virtual Resource must be fully Quick Start capable and must follow all unit specific instructions. Verbal Dispatch Instructions (VDIs) will not be issued to exempt virtual Resources from unit specific instructions. Failure to follow unit specific instructions may lead to disqualification of quick start status.

For capacity reserved for BESCNSRS, a QSE shall submit a BES Up bid that is no lower than FIP * 18 MMBtu/MWh. The Fuel Index Price (FIP) to be used shall be the most currently available from the Platts Gas Daily FTP site. For example, for Day Ahead Thursday the FIP available no later than hour 2115 on Wednesday would be used.

Each separated virtual Resource will be treated like Quick Start Resources in ERCOT’s systems.

Pricing

When 30MNSRS is deployed, the MCPE for all Zones shall be the higher of 1) the posted MCPE or 2) FIP*15 MMBtu/MWh + $120 when there is no congestion. When congestion exists, the MCPE shall be the posted MCPE unless 30MNSRS is deployed

in a Zone, then the MCPE for that zone shall be the higher of 1) the posted MCPE or 2) FIP*15 MMBtu/MWh + $120.

Scheduling Requirements for NSRS

Day Ahead – Prior to the Day Ahead market clearing, there is no change to the existing scheduling procedures for offering and scheduling NSRS service in the Day Ahead Ancillary Service market. The Day Ahead Ancillary Service market will clear and awards will be sent out according to the existing timeline and procedure.

Adjustment Period – QSEs planning to offer BESCNSRS into the BES market, must adjust their NSRS scheduled obligations by removing the amount that is supplied by BESCNSRS and must provide BES Up bids after the Ancillary Services market clearing. There are no changes needed for the portion of NSRS schedule supplied from 30MNSRS.

Examples – The following are examples of bidding and scheduling alternatives per the implementation of PRR776

EXAMPLE 1:

QSE A has an Obligation to supply 200MW of NSRS calculated from their Load Ratio Share.

As shown below, QSE A decides to schedule 100MW of self provided conventionally deployed NSRS and 100MW of self provided BESCNSRS Resources. The following schedule depicts the appropriate entries needed to meet its requirements. All schedules are to be entered on a normal Ancillary Services timeline as required by ERCOT Protocols:

QSE A			
Resource		Obligation	
MW	Counterparty	MW	Counterparty
200	QSE A	200	ERCOT

After the Ancillary Services market is cleared (after 1330 in the Day Ahead), QSE A will remove schedules representing what will be provided from BES Up, leaving the below schedule:

QSE A			
Resource		Obligation	
MW	Counterparty	MW	Counterparty
~~200~~ 100	QSE A	~~200~~ 100	ERCOT

QSE A Resource		Obligation	
MW	Counterparty	MW	Counterparty
100	QSE A	100	ERCOT

By removing the internal Resources and an equal amount from the ERCOT obligation, QSE A's schedule will be balanced without mismatches. The ERCOT NSRS tool will only display to the ERCOT Operator the amount of conventionally deployable 30MNSRS available. ERCOT will monitor NSRS available in BES Up through the Resource Plan.

EXAMPLE 2:

In the next example QSE A has a Load Ratio Share obligation of 200MW, self provides 100MW of conventional NSRS, 50MW supplied from the ISO and 50MW of BESCNSRS Resources.

QSE A has also bid 100MW capacity into the Ancillary Service NSRS Market and was struck for the full amount. In addition, QSE A wishes to provide the awarded amount with 50MW of BESCNSRS Resources and 50MW of conventionally deployed NSRS. This will make its total Obligation to ERCOT 300MW.

Prior to Ancillary Service market clearing the schedule would be entered as below:

QSE A Resource		Obligation	
MW	Counterparty	MW	Counterparty
150 50	QSE A ERCOT	200	ERCOT

Following Market clearing QSE A will only show from its Resources only the amount provided by conventional NSRS and add the awarded value of only the portion of NSRS award that will be supplied with conventional NSRS resulting in the following schedule:

QSE A Resource		Obligation	
MW	Counterparty	MW	Counterparty
~~250~~ 150 50	QSE A ERCOT	~~300~~ 200	ERCOT

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
150	QSE A	200	ERCOT
50	ERCOT		

EXAMPLE 3:

QSE A has no Load Ratio Share Obligation but bids 200MW into the Ancillary Service NSRS capacity market and is struck for 100MW and wishes to use BESCNSRS capacity for 50MW. For this example it is not necessary to schedule prior to the Day Ahead Market since there is no Obligation, so QSE A's schedule would be entered as below after Ancillary Service market clearing:

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
50	QSE A	50	ERCOT

The part scheduled would be supplied through the conventional NSRS deployment and the remaining must be entered as a BES Up bid.

Using the preceding methods in entering NSRS Day Ahead schedules ensures the amounts of NSRS scheduled and available for deployment will be correctly displayed to the ERCOT Operator.

EXAMPLE 4:

QSE A has an Obligation to supply 200MW of NSRS calculated from its Load Ratio Share.

As shown below, QSE A decides to schedule 100MW of self provided conventionally deployed NSRS, 50 MW from QSE X and 50MW of self provided BESCNSRS Resources. The following schedule depicts the appropriate entries needed to meet its requirements. All schedules are to be entered on a normal Ancillary Service timeline as required by ERCOT Protocols:

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
150	QSE A	200	ERCOT
50	QSE X		

After the Ancillary Service market is cleared (after 1330 in the Day Ahead), QSE A will remove schedules representing what will be provided from BES Up, leaving the schedule shown below:

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
~~150~~ 100 50	QSE A QSE X	~~200~~ 150	ERCOT

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
100 50	ERCOT QSE X	150	ERCOT

By removing the internal Resources and an equal amount from the ERCOT Obligation, the schedule will be balanced and without mismatches. The ERCOT NSRS tool will only display to the ERCOT Operator the amount of conventionally deployable NSRS available. ERCOT will monitor NSRS available in BES Up through the Resource Plan.

EXAMPLE 5:

This final example should only be used when the above examples cannot be utilized without creating a mismatch with a counterparty.

QSE A is supplying 100MW of NSRS to QSE B and plans to schedule 50MW as conventionally deployed NSRS and 50MW of BES capable NSRS Resources. QSE A's Load Ratio Share of the NSRS Obligation is less than its BESCNSRS schedule. Therefore, QSE A cannot use examples 1 – 4 above without creating a mismatch with counterparty QSE B. The schedule, as entered prior to the

Prior to Ancillary Service market clearing the schedule would be entered as shown below:

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
100	QSE A	100	QSE B

After market clearing, QSE A will be required to adjust its schedules in the following manner to indicate its preference:

QSE A

Resource		Obligation	
MW	Counterparty	MW	Counterparty
~~100~~ 50	QSE A	100	QSE B
50	ISO		

The portion of the NSRS schedules intended for Balancing Energy Service deployment must be shown in the Ancillary Service schedule before 1300 in the Day Ahead in order for ERCOT to know the amount of NSRS that must be procured through the Day Ahead market. Otherwise, the QSE will incur a NSRS Obligation from the Day Ahead market.

Quick Start Resources providing BESCNSRS

Resources that are qualified as Quick Start Resources do need additional registration in order to bid BESCNSRS into the market.

Separated Virtual Resource Requirements

QSEs desiring to schedule BESCNSRS will need to register a separated virtual Resource by updating the registration database, network model, telemetry, and scheduling practices as indicated below. These changes must be made before the virtual Resource can begin to provide BESCNSRS. Once these minimum requirements are completed and verified by ERCOT, the QSE may request from ERCOT a 120-day provisional approval to supply BESCNSRS. The QSE will then be required to pass a quick start test within the 120-days in order to continue to provide this service.

Modeling – Resources intended to provide BESCNSRS from power augmentation devices shall be modeled in ERCOT's Market Systems and the Energy Management System (EMS) Automatic Generation Control (AGC) system as two virtual generating units for each physical Resource. They will remain modeled as a single physical unit in the Network Model. The modeling parameters are similar to those for a jointly-owned generating Resource. The virtual Resources shall be named with a suffix of _V1 for the primary virtual unit, and _V2 for the virtual unit intended to provide BESCNSRS.

Note: jointly-owned Resources cannot be split into virtual units.

Registration – Since ERCOT will be utilizing existing processes and procedures currently being used for jointly owned units for creating the separated virtual Resource for BESCNSRS, ERCOT requires that each Resource must be assigned to a separate Resource Entity. This will require that a new Resource Entity be registered with ERCOT that will represent the separated virtual Resource(s). Therefore the following registration is required before the virtual Resource can receive provisional qualification.

- Complete Resource Asset PRR776 Addendum
- Register new Resource Entity (representing separated virtual Resource(s)
- Complete QSE Acknowledgement for new Resource Entity

It is important to note that due to existing zonal to nodal data base conversion processes any non-combined cycle virtual Resource created for the purpose of this PRR will need to update that physical unit's registered codes (Mnemonic) for Nodal for historical settlement continuity.

Telemetry – All relevant Supervisory Control And Data Acquisition (SCADA) data as required under Section 10.3.2.1, Generation Meter Splitting, shall apply for each virtual unit.

Scheduling – Separated virtual Resources providing BESNSRS shall bid into the BES market and follow the scheduling requirements for BESNSRS. The _V1 virtual Resource will remain On-line and available to provide base power and other Ancillary Services. For Local Congestion management, it is desired that the "Inc Premium" on the _V2 virtual unit be scheduled in the Resource Plan such that it is one cent higher than the _V1 virtual Resource to ensure that the virtual unit intended to provide NSRS is utilized last for Local Congestion.