NPRR 821 Elimination of the CRR Deration Process

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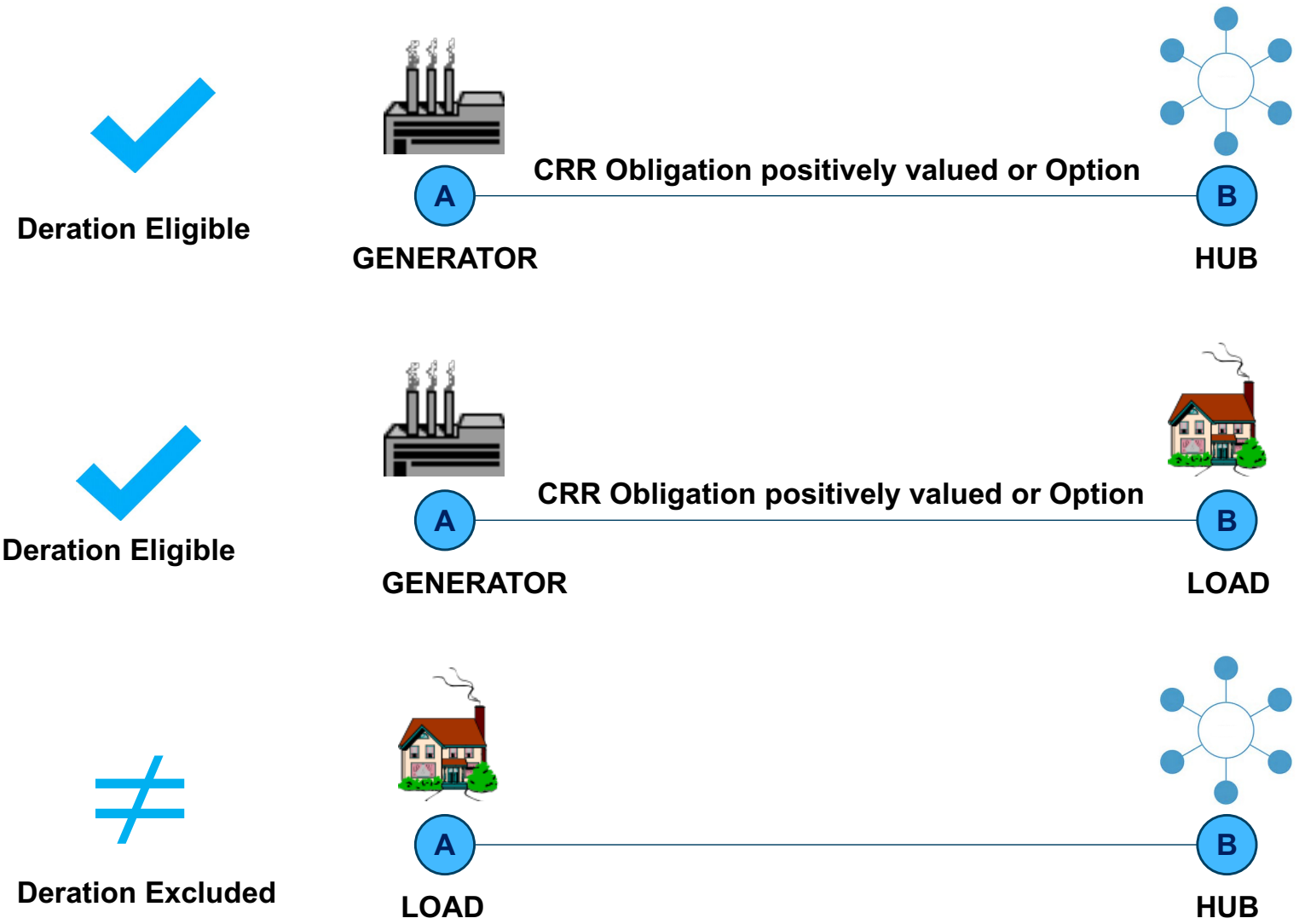
CRR Deration Process

- **The deration settlement mechanism was introduced in order to deter market gaming**
  - Addresses the ability for related positions to influence outcomes at the expense of market efficiency
- **Applies to CRR PTP Options with a Resource Node at its sink or source and positively valued CRR PTP Obligations with a Resource Node (RN) at its sink or source**
- **The deration price for a CRR path is determined at the constraint level**
  - It is product of the Deration Factor (DRF), Day-Ahead Shadow Price, and the CRR's positive Day-Ahead Shift Factor impacts and is performed for each constraint
  - DRF = MW oversold / prevailing direction flow on the constraint (see appendix)
- **The derated amount is subtracted from the CRR Target Payment**
- **Hedge Values can keep you whole**
  - Designed to ensure target payment for 'hedge' activity
  - Hedge Value dependent on resource type at source and sink and the day-ahead SPP

The deration process is only applied to certain CRRs with a Resource Node at its source or sink

CRR Deration Process



The CRR deration process raises market equitability and efficiency issues

CRR Deration Process Problem List

- **Dr. William W. Hogan: "The details for CRR obligation settlements remind of the admonition never to look at how sausage is made. What is going on here, why, and what are the incentives?"** -ERCOT Energized Conference Austin, TX May 2, 2008
- **CRR holders do not cause un-modeled or forced outages, but yet pay for the full value of the CRR that is forfeited through the deration process**
- **Erodes the ability of the CRR product to serve as an effective risk management tool**
  - Congestion is often caused by transmission outages and this the very time the CRR hedge is needed, but unfortunately also the very time derations can erode the CRR hedge
- **The deration process is clearly unreasonable as a mitigation tool, as it can impact entities that do not hold an open Day-Ahead Market position**

The CRR deration process raises market equitability and efficiency issues

CRR Deration Process Problem List

- **It is not equitable that certain CRRs involving RNs are subject to the deration process while CRRs involving only Hubs and Load Zones are not**

- **The cost of CRR Deration is reflected in the value of CRR Auction Revenues that are directly paid to Load Serving Entities**
  - Dr. David Patton: “To the extent that people buy FTR's that are underfunded -- and let's say they're underfunded at a ten percent level -- they're going to pay a price that is 10 percent less for that FTR than they would have paid. That revenue goes back to transmission customers, so they bear it in that way. The problem is if there's uncertainty with that funding, they're actually going to bear a bigger cost not just receiving the direct underfunding allocation than they do -- than the result of allocating the FTR holders where there's uncertainty and they're going to price that uncertainty in.” –FERC Technical Conference In the matter of PJM'S FTR/ARR ALLOCATION (ER16-121-000 and EL16-6-001 5) at 82, February, 4, 2016

Eliminating CRR deration delivers numerous market benefits

Elimination of the CRR Deration Process

- **Addresses previously stated market equitability issues**
  - By eliminating the deration process market hedges for generation to Hub would be honored in the same manner as Load Zone to Hub
  - Leveling the playing field helps to foster competition
- **Moves toward a more fully funded CRR product**
  - ERCOT's backtest demonstrated CRR Target Payments were satisfied by available funds in the CRR Balancing Account*
- **DC Energy proposed 'circuit breaker' provides added protection against CRR shortfall**
- **Reinforces the CRR product as an effective risk management tool**
- **Market participants no longer need to account for the highly uncertain deration cost in their CRR bids**

*Source: ERCOT Deration Change Effect presentation, http://www.ercot.com/calendar/2017/1/27/116920-CMWG

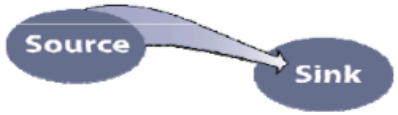
CRR Deration Process

Calculation of Deration Factor

If a Constraint C, has both a positive DASP (Day Ahead Shadow Price) and CRRSFTVIOL:

Calculate Deration Factor per Constraint for each Operating Hour of the Operating Day:

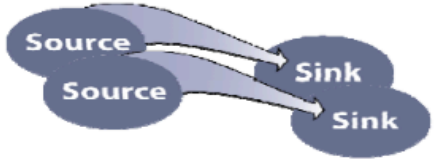
DRF_<C> = CRRSFTVIOL_<C> / CRRPOSTOT_<C>



CRRSFTVIOL
CRR SFT Violated Amount – the MW amount by which the constraint is oversold for the Operating Hour.

Calculate only CRR Total Positive Impact per Constraint for each Operating Hour of the Operating Day:

$$CRRPOSTOT\_<C> = \sum_{SKSP} \sum_{SRSP} \text{Max}(0, DAWASF\_<SRSP>\_<C> - DAWASF\_<SKSP>\_<C>) * PTPSRSKTOT\ <SRSP>\ <SKSP>$$



PTPSRSKTOT
Point to Point Source and Sink Total – the total DAOBL, DAOBLR, OPT, and OPTR for all CRR Owners for a source and sink Settlement Point pair, for the Operating Hour.

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Source: ERCOT Training Slide (http://www.ercot.com/content/wcm/training_courses/68/CRR___WKSHP__V2.pdf

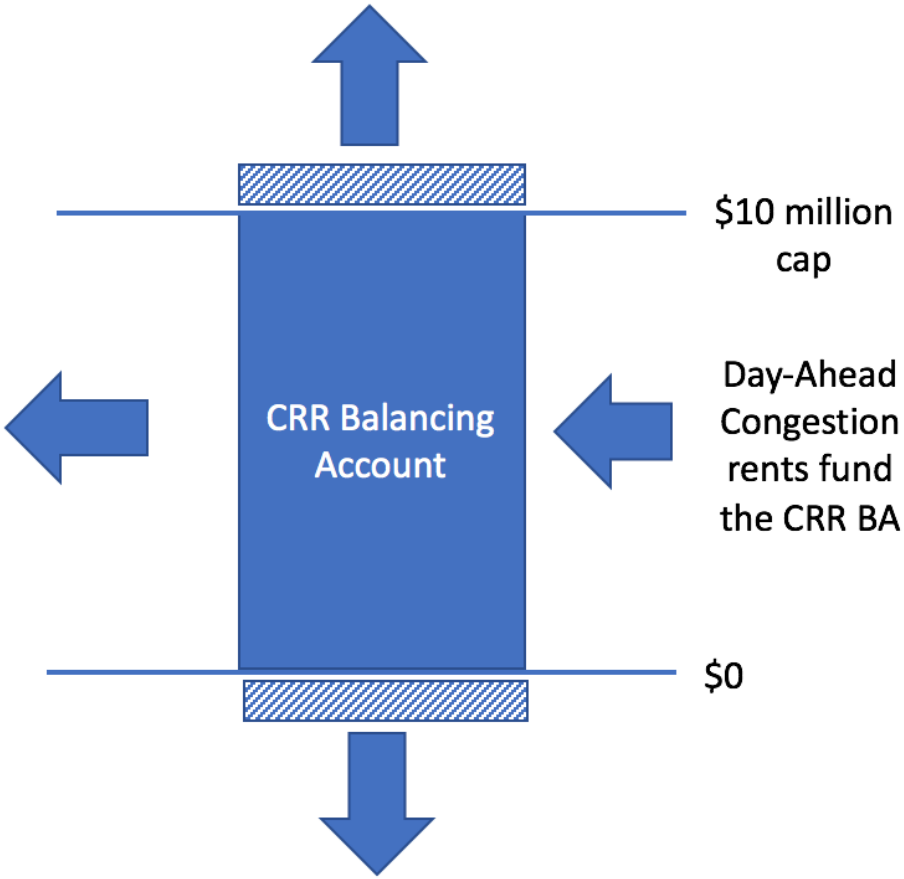
Appendix

CRR Market Settlement

Auction Revenues are distributed to load ratio shares: intrazonal CRR Auction revenues go to load within the Load Zone and interzonal CRR Auction revenues go to system-wide load

DAM: CRRs settle on DAM prices and the CRR BA is used to fund payment. CRR deration and hedge values impact this settlement

If there is end of month surplus, it is allocated to load ratio share



If there is end of month deficiency, the shortfall is allocated to CRR holders

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