Operating Reserve Credits Settlements Education
Day-ahead Operating Reserves Credits

- Pool scheduled generators, demand response and transactions scheduled for PJM are eligible
- For each eligible resource, daily credit is day-ahead offer amount in excess of day-ahead market revenue
  - calculation uses day-ahead scheduled MWh, offer data, and day-ahead LMPs
  - Total day-ahead offer includes start-up, no-load costs, and energy determined based on the resource’s scheduled output
  - Total day-ahead market revenue determined based on the resource’s scheduled output using Day-ahead LMPs
Balancing Operating Reserve Credits

• Daily credits for specified operating period segments provided to:
  • Pool-scheduled generators, Demand response, and Import transactions

• Credits are for any portion of their offer amount in excess of:
  • DA Market Value (Scheduled MWh times day-ahead LMP)
  • Balancing Market Value (MWh deviation from DA schedule times RT LMP)
  • Any DA operating reserve credits
  • Any DASR market revenues in excess of offer plus opportunity cost
  • Any Synchronized reserve market revenues in excess of offer plus opportunity, energy use and startup costs
  • Any Non-synchronized reserve market revenues in excess of opportunity cost
  • Any Reactive Services revenues
• Cancellation, manning, and quick start reserve credits are based on actual costs submitted to PJM market settlements
  • Allocated to RTO Deviations (except manning costs when the unit runs which would be allocated according to BORCA process)

• Credits for lost opportunity costs are also provided to generators reduced or suspended by PJM for reliability purposes
  • Allocated to RTO Deviations
• Segmented Make-Whole Payments as a function of the greater of the DA Schedule, or Min Run Time
• A resource will be made whole for up to two periods for each synchronized start. The two periods are as follows:
  1. greater of the DA Schedule or Min Run time
  2. hours in excess of #1 (above)
• Segment does not “carry over” to the next day
• Start-up costs (and applicable no-load costs) will be in the segment “greater of the DA Schedule or Min Run Time”
• Segmented Make-Whole Payments are an overall benefit to resources
Example 1: Unit was extended in real time for two hours beyond its day ahead schedule. (LMP is less than offer during extended period)

**Explanation:**

**Segment 1: Day Ahead Schedule**

- DA Energy = (4 hours * $100 * 150 MW) = $60,000
- DA Offer = (4 hours * $75 * 150 MW) = $45,000
- Day Ahead OR Credit: $0
- Balancing OR Credit: $0

**Segment 2: Extended Period**

- RT Energy = (2 hours * $50 * 150MW) = $15,000
- RT Offer = (2 hours * $75 * 150MW) = $22,500
- Balancing OR Credit: $7,500
Example 2: Unit was extended in real time through the midnight period. The unit was uneconomic for most of the extended period.

**Explanation:**

**Segment 1: Day Ahead Schedule**
- DA Energy = (16 hours * $100 * 150 MW) = $240,000
- DA Offer = (16 hours * $75 * 150 MW) = $180,000
- DA OR Credit: $0
- Balancing OR Credit: $0

**Segment 2: Extended Period**
- RT Energy = (4 hours * $25 * 150 MW) + (3 hours * $50 * 150 MW) + (1 hour * $110 * 150 MW) = $54,000
- RT Offer = (8 hours * $75 * 150 MW) = $90,000
- Balancing OR Credit: $36,000
Example 3: Unit was extended in real time for four hours beyond its min run time. (LMP is less than offer during extended period)

**Explanation:**

**Segment 1: Min Run Time**
- RT Energy = (4 hours * $80 * 150 MW) = $48,000
- RT Offer = (4 hours * $75 * 150MW) = 45,000
- Balancing OR Credit: $0

**Segment 2: Extended Period**
- RT Energy = (4 hours * $50 * 150MW) = $30,000
- RT Offer = (4 hours * $75 * 150MW) = $45,000
- Balancing OR Credit: $15,000
Example 4: Unit was extended in real time for four hours beyond its min run time. (LMP is greater than offer during extended period)

**MIN RUN TIME – 4 HOURS**

**REAL TIME DISPATCH**
(beyond min run time)

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**Segemented Make-Whole Payments**

**Example 4 – Unit Y Extended Beyond Min Run Time**

**Explanation:**

**Segment 1: Min Run Time**
- RT Energy = \((2 \text{ hours} \times 100 \text{ $} \times 150 \text{ MW}) + (2 \text{ hours} \times 25 \text{ $} \times 150 \text{ MW})\) = $37,500
- RT Offer = \((4 \text{ hours} \times 75 \text{ $} \times 150 \text{ MW})\) = $45,000
- Balancing OR Credit: $7,500

**Segment 2: Extended Period**
- RT Energy = \((2 \text{ hours} \times 75 \text{ $} \times 150 \text{ MW}) + (2 \text{ hours} \times 100 \text{ $} \times 150 \text{ MW})\) = $52,500
- RT Offer = \((4 \text{ hours} \times 75 \text{ $} \times 150 \text{ MW})\) = $45,000
- Balancing OR Credit: $0

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