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# Local Reliability Rule Cost Allocations

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BAWG March 21,2007

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# Objectives:

- Define Reliability Rules
- Examine the 4 main Local Reliability Rule adjustments
  - Quick Start Reserve payments
  - Thunder Storm Alert – Storm Watch
  - Black Start Payment
  - Minimum Oil Burn
- Determine how payments and charges are calculated
- Describe the process behind each settlement type

# Reliability Rules

- Definition:
  - Transmission Owners in the NYCA have recommended various local rules required to maintain system reliability in their respective areas. These recommendations are evaluated and potentially adopted by the NY State Reliability Council (NYSRC ).
- Reliability rules are those rules, standards, procedures and protocols developed and promulgated by NYSRC including Local Reliability Rules in accordance with NERC, NPCC, FERC, PSC and NRC Standards, rules and regulation and other criteria and pursuant to NYSRC Agreement.
- TO's responsibility to develop and maintain procedures and requirements necessary to meet these local reliability rules.
- NYISO is responsible for review and approval of any modifications to these procedures or additional procedures developed by the transmission owners

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# Settlement Calculation Rules:

- Suppliers committed for Local Reliability by the ISO will recover start up and minimum generation costs not recovered in the dispatch day.
- Where the costs are incurred to compensate generating facilities for satisfying Local Reliability rules, the associated charge shall apply only to Transmission Customers serving load in the load zones where the rule is applied.

# Quick Start Mode

- Setting of a block of generator units capable of remote start up by a TO so that it can synchronize and reach full out put within 15 minutes
  
- **Payment to Supplier**
  - $\text{Capacity MW} * (.85 (10 \text{ min DA Non Sync price}) + .15(30\text{minute DA Reserve price})) - \text{Capacity MW} * (30 \text{ minute DA reserve price})$
  
- Example:
  - Group Unit receives a 142 MW reserve call for HB 19
  - UOL 142 MW
  - 10 min non sync price = \$2.20 (weighted total)
  - 30 minute price = \$.08 (weighted total)
  - $142 * (.85(2.59) + (.15(.50))) - 0$
  - $142 * (2.28) = \$323.76$
  
- Example:
  - Group Unit receives a 70 MW reserve call with energy schedule for HB 19
  - UOL 142 MW
  - Energy Schedule = 72 Mw
  - 10 min non sync price = \$2.20 (weighted total)
  - 30 minute price = \$.08 (weighted total)
  - $70 * (.85(2.59) + (.15(.50))) - 0$
  - $70 * (2.28) = \$159.60$

# Quick Start Mode

- Charge to LSE's to support payments
  - Amounts owed to the Supplier will be recovered from the LSE's in the Transmission District of the Supplier selling the Quick Start reserve on the basis of each LSE's contribution to load ratio share in the month the payment obligation is incurred.

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# Process to call a Quick Start Mode

- TO requests via phone the block of units, the estimated Mw amount and the estimated length of time needed. This request is then followed up by an email or fax sent by the TO to the Supplier and the ISO.
- TO notifies the Supplier via phone when it no longer requires the unit to operate in Quick Start mode. The TO will follow up the request with an electronic notification which is sent to the Supplier and the ISO.
- It is up to the Supplier to alert the TO and ISO if written notification was NOT received by the TO with the same information via the phone request.

# Black Start

- Per MST Rate Schedule 5, payments made to generators, who provide black start and system restoration services for their Transmission District, are to recover the costs of maintenance, annual costs of training operators for the restoration services and the costs of the annual testing.
  
- Calculation:
  - Suppliers annual cost divided by the number of days in the year
  - Daily rate
  
- Eligible existing suppliers in the ConEd Transmission District
  - Compensation is based on the unit type and interconnection level:
    - Steam Unit
      - 345 kV 350,000/yr/unit
      - 138 kV 300,000/yr/unit
    - Gas Turbine
      - 345kV 350,000/yr/site
      - 138kV 300,000/yr/site
  - 12 equal monthly payments



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# Local Black Start

- Charge to LSE's to support payments
  - Transmission Customers load ratio share in the Transmission District by the total payments for existing black start and system restoration services in that Transmission District.
- Process to qualify for Black Start
  - Tests are required to demonstrate the ability to provide black start services for the Transmission District.

# Thunder Storm Alert – ‘Storm Watch’

## Costs

- Initiation of multiple contingency cases causes the re-dispatching of the system resulting in the reduction of transfer capability into NYC and requiring local generation to increase output or to come on line increasing the prices locally.
- **Charge to support payments**  
The costs incurred are allocated to zone J on a monthly basis.
- **Settlement Calculation:**
- Multiply the shadow price of any binding constraint associated with the Storm Watch (TSA) by the difference between the scheduled DA flow and the constraint applied in RT at each RTD interval.
  - LECG performs the analysis and NYISO staff verifies the cost calculation

# Thunder Storm Alert (TSA)– “Storm Watch” Costs

- **Example:**
- TSA Activated 12:20
- DA Scheduled flow 2082
- RT Limit applied 1538 Pleasant Valley 345 – Leeds
- Adjusted difference between the DA and RT contingency is 544.
- Shadow price for the following intervals:
  - HB 12:20:00 = \$688.35
  - HB 12:22:54 = \$876.69
  - HB 12:33:12 = \$865.16
  - HB 12:40:00 = \$1760.56
  - HB 12:45:00 = \$2740.43
  - HB 12:50:00 = \$3320.44
  - HB 12:55:00 = \$3320.44
- **Time weighted effect =**
  - $544 * 688.35 * .0483 = \$18,086.53$
  - $544 * 876.69 * .1717 = \$81,887.05$
  - $544 * 865.16 * .1133 = \$53,324.31$
  - $544 * 1760.56 * .0833 = \$79,780.13$
  - $544 * 2704.43 * .0833 = \$122,551.79$
  - $544 * 3320.44 * .0833 = \$150,466.40$
  - $544 * 3320.44 * .0833 = \$150,466.40$
- total for the hour = \$656,562.60

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# Process to activate a Storm Watch

- Con Ed Energy Control Center calls the ISO to request the Storm Watch alert
- ISO confirms the Storm Watch request and activates the defined cases in Ranger which monitors the multiple contingency events to appropriately reduce the flow on the line(s)

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# Minimum Oil Burn

- Put in place so that if the loss of a single gas facility occurs it will not disrupt electric service within NYC or LI zones.
  - The application of this rule requires select units under defined load conditions to operate the generation with the alternative fuels or combination of fuels
  - Currently drafting language for the Tariff to address issue
  - See MC presentation March 2007 settlement proposal
- Settlement Calculation
  - Still under discussion with the Market place
  - Monthly manual calculation

# TIME LINE EXAMPLE:

- Bold type is a description of the day provided by a hypothetical Market Participant.
- The remaining information is the NYISO response based on actions which would impact the market financially. NYISO Operations utilize procedures to adjust to system conditions which do not necessarily impact market pricing.
- **HOT and Humid night and day**
- **High load conditions exist in city throughout the day**
  
- **HB 0:00**
- **HB 1:00 – 1:45 – Low voltage in Zone G – Hudson Valley** – OOM for ISO Voltage Support if low voltage is occurring on Bulk Power System zone wide for the hour. If the TO calls requesting a unit to alleviate the voltage problem as an underlying (Non-Bulk Power) issue within the TO district, then the OOM is entered as TO voltage support. The cost incurred is applied to the TO Transmission District.
- **3:30 – 5:15 Thunderstorm alert called.** Storm cases activated to determine the effect on the Bulk Power System. Costs incurred in the Transmission District, zone J for this time period only.
- **5:30 – 6:15 High voltage in Zone G – Hudson Valley – Units in zone G dispatched to alleviate high voltage.** Since this is the beginning of the load pick up as well as being under high load conditions, we wouldn't expect high voltage problems. If so, OOM for ISO Voltage Support if it is occurring on Bulk Power System zone wide. If this is an underlying voltage issue within the TO's district then the OOM would be applied for TO voltage support.
- **9:15 – 18:00 – East River 1 and East River 2 are OOM on Basepoint 10 MWh below DA schedule.** ER1 and 2 have financial contracts to provide steam for outside entities. If the units can not make their DA schedule due to providing steam, then an OOM Generator Request is applied to those hours. This will require the unit to buy out of their DA schedule. If the OOM was due to TO security, then the ER1 and 2 are eligible for DAMAP.

# TIME LINE EXAMPLE:

- **11:15 Gowanus Barges 3 and 4 put into Quick Start mode.** The units will be paid a portion of 10 minute and 30 minute reserve prices to provide reserves for the ConED Transmission District. The cost will be allocated to the LSE's within the ConEd Transmission District.
- **13:45 – 14:30 Transmission line through Central East in overload condition forcing units to be backed down on west side of interface.** This will increase congestion prices east of the Central East.
- **14:45 Indian Point 2 trips and does not return to service causing NYISO to bring up other generation in Hudson Valley and NYC.** Typically, resulting in a Reserve pick up which would re dispatch the system, set prices and commit additional units.
- **16:30 – 19:45 – Line 72 is forced out and does not return causing in-city units to be re-dispatched upward by 300 MW.** The line being forced out may cause other lines to be above their normal ratings which could cause more generation to be dispatched to relieve the constraint. Therefore, the increase in the output of units will increase congestion price.
- **16:40 – 19:30 Gowanus GT Barges 3 and 4 on line.** Based on the scenario given, the ISO re-dispatched the units to provide energy in response to the loss of line 72. Given the scenario, the unit is providing energy and no longer providing reserves for the TO. Therefore, the unit is no longer eligible for Quick Start payments.
- **No Quick Start termination notice sent by TO.** Per the MST, If no communication is sent by the TO, the Supplier is responsible to send notification to the TO and to the ISO stating the instructions given by the TO, which would be to terminate the Quick Start mode.

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# Supporting documentation

- Technical Bulletin 111
- Market Services Tariff, Article 4
- OATT Rate Schedules 1,5 and 6
- MC presentation March 2007