

Draft – For discussion only

Issues Identified During the Billing and Accounting System Review

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Introduction to the BAS Review

- ◆ As part of the NYISO's Excellence-in-Execution initiative, the NYISO reviewed its billing and accounting system (BAS) software to verify that its computations are fully in accord with the NYISO tariffs.
- ◆ This has been a significant undertaking. The NYISO has undertaken a comprehensive, line-by-line review of its BAS software. The process has taken nearly one year.
- ◆ The NYISO has separately retained an independent consultant (PA Consulting) to independently verify that the BAS software is fully tariff compliant.
- ◆ The NYISO will not implement the replacement BAS software until the current BAS software is certified as tariff compliant.

Summary of Results

- ◆ Overall: Among thousands of lines of code and hundreds of settlement calculations, few issues were identified.

- ◆ In the course of its review, the NYISO identified 8 issues that need to be addressed through tariff revisions (excluding the Operating Reserves issue, separately discussed).
 - *6 issues – NYISO making settlements as designed and intended, but tariff is ambiguous or reflects an obvious drafting error*
 - *1 issue – NYISO not making settlements as intended (Black Start)*
 - *Rate Schedule 1 – see separate presentation*

ISSUE 1:

Erroneous Cross-Reference in Section 4.5C(3) of the Services Tariff

1. Erroneous Cross-Reference in Section 4.5C(3) of the Services Tariff

- Section 4.5C(1) of the Services Tariff contains the general rule for calculating the charges to suppliers for imbalances that arise when the amount of energy actually injected is less than the amount of energy scheduled in the Day-Ahead Market.
- Section 4.5C(3) establishes that the general rule is applicable to generators deemed “Capacity Limited Resources”.

1. Erroneous Cross-Reference in Section 4.5C(3) of the Services Tariff

- However, an administrative error in Section 4.5C(3) incorrectly makes reference to the general rule in the first paragraph of Subsection B. The general rule is located in the first paragraph of Subsection C.
- The NYISO proposes to replace “Subsection B” with “Subsection C”.

ISSUE 2:

Defining Terms in the Voltage Support Lost Opportunity Cost Payment Formula

2. Defining Terms in the Voltage Support Lost Opportunity Cost Payment Formula

- Section 2.0(b) of Rate Schedule 2 of the Services Tariff provides that a generator that is dispatched out of merit in real-time to provide voltage support services will receive a Lost Opportunity Cost payment to offset any lost revenue to the generator in the energy markets.
- The Lost Opportunity Cost payment formula in Section 2.0(b) uses the terms “Original Dispatch Point” and “New Dispatch Point,” but fails to define them.

2. Defining Terms in the Voltage Support Lost Opportunity Cost Payment Formula

- The NYISO proposes to clarify the meaning of the two terms:
 - **Original Dispatch Point** shall be equal to the Generator's Economic Operating Point.
 - **New Dispatch Point** shall be the greater of the Generator's Real-Time Scheduled Energy Injection, the Generator's Actual Energy Injection, or the amount of Energy the Generator is scheduled to produce for the hour in the Day-Ahead Market.
- ◆ Also, the graph in Section 2.0(b), which visually describes the formula, incorrectly places the New Dispatch Point above the Original Dispatch Point. The NYISO proposes to correctly identify the points on the graph by switching the variables D_1 and D_2 .

ISSUE 3:

Clarification of the Cost Allocation Method for Bilateral Transactions Charges

3. Clarification of the Cost Allocation Method for Bilateral Transactions Charges

- Section 4.0 of Attachment J of the OATT provides that if a bilateral transaction is scheduled in the DAM but the supplier of energy for the bilateral transaction is scheduled day-ahead to produce less than the full amount of energy associated with the bilateral transaction, the “Transmission Customer” must cover the incremental amount of MWs at the market price.
- “Transmission Customer” is defined in the OATT as any customer that takes service under the OATT. Bilateral transactions involve two “Transmission Customers”: loads and suppliers. The tariffs are not clear which of the two “Transmission Customers” in a given bilateral transaction will bear the costs.

3. Clarification of the Cost Allocation Method for Bilateral Transactions Charges

- The NYISO currently imposes these balancing costs on the power supplier supporting the bilateral. In its manuals and other documents, the NYISO has clearly presented to its MPs that a power supplier supporting a bilateral is responsible for buying replacement energy at its bus to fully support the bilateral if its dispatch is below the full amount of the bilateral.
- To clarify that power suppliers bear these costs, not the load related to the bilateral, the NYISO proposes to clarify the language by replacing “Transmission Customer” in the appropriate sections of Section 4.0 with the term “supplier of energy for the bilateral transaction.”
- The NYISO proposes to make identical changes in Section 3.5 of Attachment B of the Services Tariff.

ISSUE 4:

Drafting Error in Attachment T Formula for Allocating Certain BPCG Costs

4. Drafting Error in Attachment T Formula for Allocating Certain BPCG Costs

- If, as a result of the actions of underbidding LSEs and virtual suppliers, the NYISO's day ahead load forecast is not met, the NYISO must commit additional generation to secure system reliability.
- Attachment T of the OATT establishes the formula that the NYISO uses to allocate the costs for BPCG payments needed to cover the additional generation caused by underbidding LSEs and virtual suppliers.
- The NYISO has identified a minor drafting error in the calculation of the variable K_L^{fe} in the cost allocation formula.

4. Drafting Error in Attachment T Formula for Allocating Certain BPCG Costs

- The variable K_{L}^{fe} determines which portion of the additional generation committed by the NYISO was actually required to meet the actual load in real-time. The costs of making BPCG payments for this portion of additional generation is then allocated according to the Attachment T formula to the parties responsible for the added costs.
- The NYISO presented K_{L}^{fe} to MPs during the stakeholder process as a number ranging *between* zero and one, and the NYISO's software calculates it in this way.
- However, due to a drafting error, Attachment T currently requires that the variable be *equal to* zero or one.

4. Drafting Error in Attachment T Formula for Allocating Certain BPCG Costs

- The tariff states: “ K_{L}^{fe} shall be calculated as shown below except that the value zero shall be used if the expression below yields a negative number and the value one shall be used if the expression yields a number greater than zero.” (emphasis added)
- As written, this method of calculating K_{L}^{fe} would allocate more BPCG costs under Attachment T than intended.
- This clearly was an error, as the NYISO presented this variable as being in the *range* of 0 and 1 during the stakeholder process.

4. Drafting Error in Attachment T Formula for Allocating Certain BPCG Costs

- The NYISO proposes to correct the drafting error by replacing the number “zero” with the number “one” in the tariff so that the tariff matches the intent of the NYISO and MPs.

ISSUE 5:

Clarification in the Calculation of DAMAP

5. Clarification in the Calculation of DAMAP

- Section 3.0 of Attachment J of the Services Tariff establishes the formula for the Day-Ahead Margin Assurance Payment (“DAMAP”), which is a payment to a power supplier that is economically disadvantaged by being required to balance its Day-Ahead schedule by purchasing energy or ancillary services in the NYISO’s Real-Time Market as a result of being dispatched in real-time at a level different than its Day-Ahead schedule.
- The NYISO proposes to clarify the formula so that it clearly specifies that a power supplier’s DAMAP does not protect its Day-Ahead margin to the extent that the supplier is operating below its DAM schedule as a result of its own operations, rather than as a result of NYISO instructions.

5. Clarification in the Calculation of DAMAP - EXAMPLE

In the first example below, the power supplier's DAMAP should be paid in full because it was following NYISO base point instructions. In the second example, the power supplier's DAMAP should be reduced because the supplier's reduction is not entirely the result of complying with NYISO base point instructions.

Reduced DAMAP for Generator Lagging Base Point Instructions

| DAM Schedule (MWh) | NYISO Base Point Instruction (MWh) | Actual Energy Injection (Average MWh) | MWhs Eligible for DAMAP | Reduction Occurred for Lagging Base Point Instruction? |
|---------------------------|---|--|--------------------------------|---|
| 100 | 95 | 95 | 5 | No |
| 100 | 95 | 90 | 5 | Yes |

5. Clarification in the Calculation of DAMAP

- The current formula would not, however, reduce the DAMAP for suppliers lagging behind their base points.

Application of Current DAMAP Formula for Generator Lagging Base Point Instructions

| DAM Schedule (MWh) | NYISO Base Point Instruction (MWh) | Actual Energy Injection (Average MWh) | MWhs Eligible for DAMAP | Reduction Occurred for Lagging Base Point Instruction? |
|--------------------|------------------------------------|---------------------------------------|-------------------------|--|
| 100 | 95 | 95 | 5 | No |
| 100 | 95 | 90 | 10 | No |

5. Clarification in the Calculation of DAMAP

- This is a formula error. T.B. #36 clearly shows that DAMAP is not intended to cover reductions below Day-Ahead schedules resulting from a supplier lagging behind its real-time base points.
- Settlements have been consistent with intent and DAMAP has not been paid to the extent a supplier is lagging.

5. Clarification in the Calculation of DAMAP

- Existing formula:

$$\text{CDMAPen}_{iu} = \left\{ \begin{array}{l} [\text{DASen}_{hu} - \text{LL}_{iu}] \times \text{RTPen}_{iu} \\ - \int_{\text{LL}_{iu}}^{\text{DASen}_{hu}} \text{DABen}_{hu} \end{array} \right\} * \frac{\text{Seconds}_i}{3600}$$

- The NYISO proposes to revise the formula to replace the variable LL_{iu} with the following (which uses variables currently defined in the tariffs):

$$\text{Max}(\text{RTSen}_{iu}, \text{Min}(\text{AEI}_{iu}, \text{L}_{iu}))$$

ISSUE 6:

Clarifications Regarding BPCG Payments for Imports

6. Clarifications Regarding BPCG Payments for Imports

- The NYISO pays Day-Ahead Market and Real-Time Market BPCG (“DAM BPCG” and “RT BPCG”) payments to power suppliers committed in the NYISO’s DAM or RTM when LBMP revenues do not cover as-bid costs.
- The BPCG payments have been available to all power suppliers, and the NYISO has never differentiated between generation within the NYCA and imports scheduled from outside the NYCA. However, in a 2005 compliance filing, the NYISO inserted into the tariffs a few words to clarify that customers that schedule imports are eligible for RT BPCG. See Services Tariff, Section 4.10 (“In addition, the ISO shall: (i) use Real-Time Market prices and schedules to calculate and pay real-time Bid Production Cost guarantee payments to ISO-Committed Flexible Generators and to Customers that schedule imports. . . .”) (emphasis added to show changes made in 2005).

6. Clarifications Regarding BPCG Payments for Imports

- The NYISO did not make parallel changes with regard to DAM BPCG payments.
- To avoid any ambiguity, the NYISO proposes to clarify the availability of parallel DAM BPCG payment provisions: “The ISO shall determine, on a daily basis, if any ISO-Committed Fixed or ISO-Committed Flexible Generator, Customer that schedules imports, or, when the ISO’s software can support their provision of non-synchronized Operating Reserves, an ISO-Committed Flexible Demand Side Resource providing such Operating Reserves, that is committed by the ISO in the Day-Ahead Market will not recover its Minimum Generation Bid. . . .” (emphasis added to show proposed changes).

6. Clarifications Regarding BPCG Payments for Imports

- With regard to RT BPCGs, the text of the tariffs already provides that RT BPCG payments are available to imports. See Services Tariff, Section 4.10.
- Separately, the NYISO proposes to clarify the formulas for RT BPCG in Subsections B and C of Attachment C of the Services Tariff so that the formulas function with regard to scheduled imports.

6. Clarifications Regarding BPCG Payments for Imports

- The title to Subsection B of Attachment C will be defined as: “Real-Time Bid Production Guarantee Formulas for All Imports and Real-Time Bid Production Guarantee Formulas for All Intervals With No Maximum Generation Pickups or Large Event Reserve Pickups For All Other Generators.” (emphasis added to show proposed changes).
- Variable “N” in Subsection B will be redefined as “except for imports, the number of eligible RTD intervals in 24-hour day excluding any maximum generation pickups or large event reserve pickups (which are addressed separately in subsection 1.3 below) and, excluding any RTD intervals where EI_{gi}^{RT} is less than EI_{gi}^{DA} . For imports the variable N is the number of eligible RTD intervals in 24 hour-day excluding any RTD intervals where EI_{gi}^{RT} is less than EI_{gi}^{DA} .” (emphasis added to show proposed changes).

6. Clarifications Regarding BPCG Payments for Imports

- Variable “M” in Subsection C will be defined as the: “number of eligible RTD intervals in the 24 hour day associated with maximum generation pickups or large event reserve pickups in the 24 hour day but excluding RTD intervals associated with any maximum generation pickups or large event reserve pickups where EI_{gi}^{RT} is less than EI_{gi}^{DA} .” (emphasis added to show proposed changes).

ISSUE 7:

Correction to Cost Allocation Methodology for Black Start Charges

7. Correction to Cost Allocation Methodology for Black Start Charges

- The NYISO reported this issue to MPs on 10/27/2006 at MSWG meeting.
- The NYISO pays the supplier of black start services the supplier's costs for providing the statewide black start service.
- The NYISO recovers these costs from loads. Section 1.0 of Schedule 5 of the OATT allocates the total costs for each *month* to customers based on each customer's *monthly* load ratio share. However, the NYISO's software allocates the total costs for each *hour* based on each customer's *hourly* load ratio share.

7. Correction to Cost Allocation Methodology for Black Start Charges

- Example of difference:

| HOURLY V. MONTHLY ALLOCATION OF BLACK START COSTS | | |
|--|------------------------|--|
| <ul style="list-style-type: none"> • Assume 2 hours in month • Assume 2 MPs: | | |
| | Hour 1 | Hour 2 |
| Load A | 1 MWh (50% load share) | 1 MWh (40% load share) |
| Load B | 1 MWh (50% load share) | 1.5 MWh (60% load share) |
| <ul style="list-style-type: none"> • Assume monthly Black Start costs equal \$200 (\$100 per hour) | | |
| Hourly Allocations | | Monthly Allocations |
| Hour 1: <ul style="list-style-type: none"> • Load A: $\\$100 \times 50\% = \\50 • Load B: $\\$100 \times 50\% = \\50 Hour 2: <ul style="list-style-type: none"> • Load A: $\\$100 \times 40\% = \\40 • Load B: $\\$100 \times 60\% = \\60 Totals: <ul style="list-style-type: none"> • Load A: \$90 • Load B: \$110 | | Totals: <ul style="list-style-type: none"> • Load A: $\\$200 \times (2 \text{ MWh} / 4.5 \text{ MWh}) = \\88.89 • Load B: $\\$200 \times (2.5 \text{ MWh} / 4.5 \text{ MWh}) = \\111.11 |

7. Correction to Cost Allocation Methodology for Black Start Charges

- The NYISO proposes to revise Section 1.0 of Schedule 5 of the OATT to replace “monthly” with “hourly”: “The charge for LSEs in Local Transmission Owner areas shall be equal to the product of (a) the Transmission Customer's hourly Load Ratio Share of Load requiring local Black Start and System Restoration Services, and (b) the hourly embedded cost charge” (emphasis added to show proposed changes).

7. Correction to Cost Allocation Methodology for Black Start Charges

- The total impact of this difference in settlement methodologies is quite small. For all months now open, the impact was ~\$2,300, and no single customer was impacted by more than ~\$850.
- It would cost the NYISO significantly more than \$2,300 to make the necessary software revisions.
- Either hourly or monthly allocations would work, and the NYISO has no position on which allocation rule is better, except that it will take significant resources and time to change the code. Therefore, from a cost / benefit perspective the NYISO recommends the tariff change be made and the code stay the same.

Next Steps

- ◆ No changes to previous settlements are expected.
- ◆ The NYISO anticipates submitting a tariff filing to address the 7 identified issues and, for all 7 issues, to request any waivers necessary to avoid making refunds.
- ◆ Schedule:
 - *BIC* *February 7*
 - *MC* *February 28*
 - *BOD* *March 12*
 - *FERC Filing* *March 15*
 - *FERC Response* *Early May*
 - *PA Certification* *May*
 - *Replace BAS* *Early June*