# July 2004 Update and Meeting Materials

**(rev 07/26/04)**

July 23, 2004

Price Responsive Load Working Group

# EDRP/SCR Registration by Zone

Breakdown Effective July 9, 2004

| | EDRP | | | | ICAP | | | | DADRP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Zone | Count | Load | Gen | Total MW | Count | Load | Gen | Total MW | Count | Load | Gen | Total MW |
| A | 46 | 33.0 | 14.3 | 47.2 | 56 | 355.9 | 0.5 | 356.4 | 9 | 162.4 | 0.0 | 162.4 |
| B | 16 | 19.9 | 16.5 | 36.4 | 27 | 45.8 | 6.5 | 52.3 | | | | |
| C | 95 | 15.2 | 17.0 | 32.2 | 42 | 99.7 | 3.4 | 103.1 | 4 | 40.4 | 0.0 | 40.4 |
| D | 14 | 1.7 | 3.4 | 5.1 | 4 | 84.7 | 0.0 | 84.7 | | | | |
| E | 51 | 24.9 | 27.0 | 51.9 | 22 | 30.8 | 0.8 | 31.6 | 3 | 114.0 | 0.0 | 114.0 |
| F | 59 | 51.4 | 10.1 | 61.5 | 20 | 64.0 | 0.0 | 64.0 | 9 | 91.0 | 0.0 | 91.0 |
| G | 36 | 24.0 | 24.3 | 48.3 | 1 | 1.4 | 0.0 | 1.4 | | | | |
| H | 8 | 1.2 | 5.0 | 6.2 | 3 | 2.2 | 0.0 | 2.2 | 1 | 1.0 | 0.0 | 1.0 |
| I | 28 | 7.1 | 4.9 | 11.9 | 6 | 10.3 | 0.0 | 10.3 | | | | |
| J | 131 | 91.7 | 54.2 | 145.9 | 69 | 168.4 | 3.2 | 171.6 | 1 | 2.5 | 0.0 | 2.5 |
| K | 562 | 74.6 | 72.7 | 147.3 | 12 | 20.0 | 77.9 | 97.9 | | | | |
| | 1046 | 344.6 | 249.2 | 593.9 | 262 | 883.2 | 92.3 | 975.5 | 27 | 411.3 | 0.0 | 411.3 |
| | | | | | | | | 1569.4 | | | | 411.3 |

# EDRP/SCR Registration by Zone

Breakdown Effective July, 2003

| | EDRP | | | | ICAP | | | | DADRP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Zone | Count | Load | Gen | Total MW | Count | Load | Gen | Total MW | Count | Load | Gen | Total MW |
| A | 56 | 52.0 | 8.95 | 60.9 | 33 | 333 | 0 | 333 | 9 | 162.4 | 0 | 162.4 |
| B | 19 | 31.7 | 31.3 | 63.0 | 13 | 31.4 | 0 | 31.4 | | | | |
| C | 143 | 21.2 | 11.3 | 32.5 | 30 | 75.6 | 0 | 75.6 | 4 | 40.4 | 0 | 40.4 |
| D | 9 | 216.0 | 3.4 | 219.4 | 5 | 108.6 | 0 | 108.6 | | | | |
| E | 39 | 29.0 | 16.4 | 45.4 | 8 | 12 | 0 | 12 | 3 | 114 | 0 | 114 |
| F | 60 | 51.3 | 7.35 | 58.7 | 12 | 52.9 | 0.6 | 53.5 | 9 | 91 | 0 | 91 |
| G | 34 | 30.4 | 16.85 | 47.3 | 0 | 0 | 0 | 0 | | | | |
| H | 6 | 1.1 | 4.6 | 5.7 | 4 | 2.3 | 0 | 2.3 | 1 | 1 | 0 | 1 |
| I | 29 | 8.2 | 2.6 | 10.8 | 7 | 7.9 | 0 | 7.9 | | | | |
| J | 105 | 56.9 | 39.7 | 96.6 | 55 | 116.8 | 3.7 | 120.5 | 1 | 2.5 | 0 | 2.5 |
| K | 811 | 88.4 | 91.61 | 180.0 | 12 | 7.6 | 0 | 7.6 | | | | |
| | 1311 | 586.2 | 234.1 | 820.3 | 179 | 748.1 | 4.3 | 752.4 | 27 | 411.3 | 0.0 | 411.3 |
| | | | | | | | | 1572.7 | | | | 411.3 |

# RIP and CSP Total MW Registered

EDRP/SCR Breakdown Effective July 9, 2004

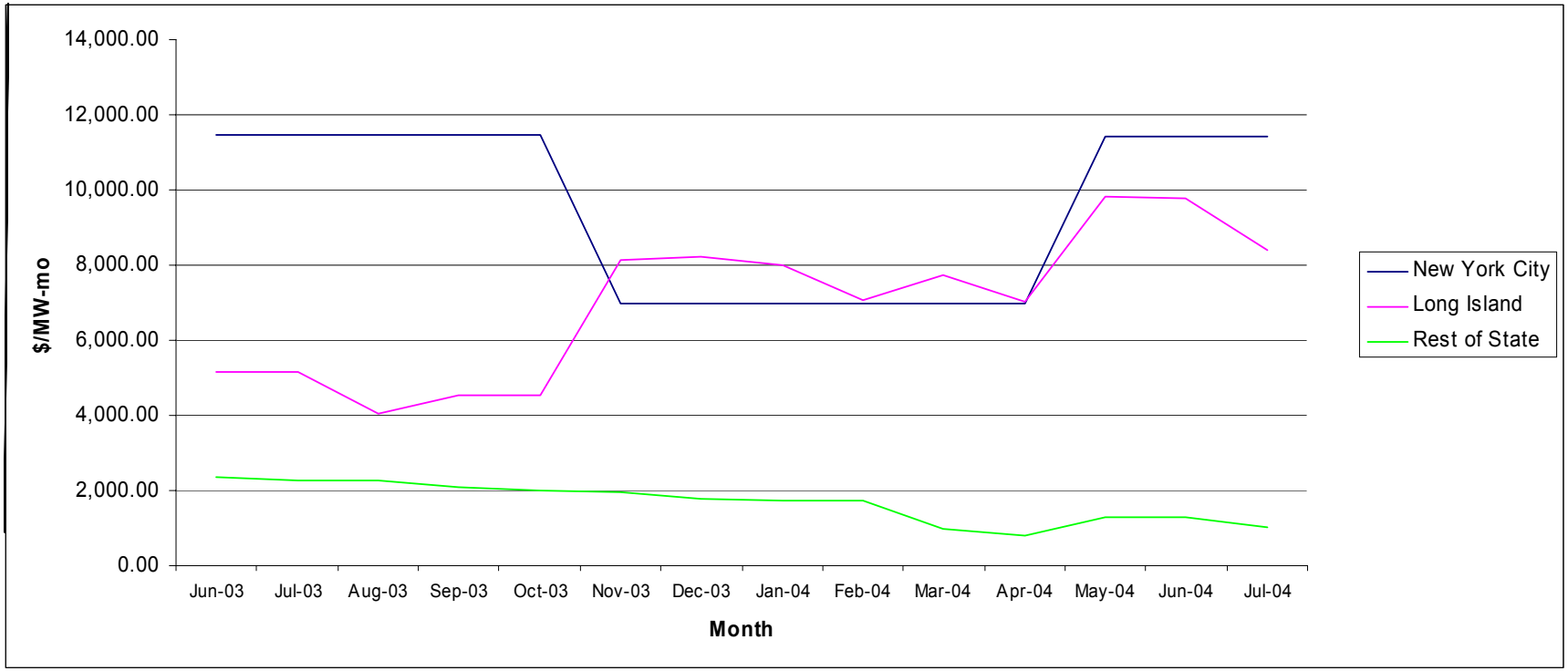
| *RIP/CSP/DRP Type* | *EDRP/SCR MW* | *DADRP MW* |
|---|---|---|
| 9 Aggregators | 387.5 MW | 46.5 MW |
| 9 LSEs | 335.4 MW | |
| 4 Direct Customers | 140.9 MW | 48.0 MW |
| 8 Transmission Owners | 705.5 MW | 316.8 MW |

# RIP and CSP Total MW Registered

EDRP/SCR Breakdown Effective June 30, 2003

| *RIP/CSP Type* | *MW* |
|---|---|
| Aggregators | 686.0 MW |
| Individual Customers | 155.9 MW |
| Transmission Owners | 620.0 MW |

# ICAP Spot Market Price History



# Voltage Support Service Is……

- **Voltage Support Service** is the ability to produce or absorb reactive power, and the ability to maintain a specific voltage level under both steady-state and post-contingency operating conditions subject to the limitations of the resources stated reactive capability.

# VSS - Specifications

- Voltage support service (VSS) is a product that is bought and sold through the NYISO
- VSS is provided directly by the NYISO
- LSEs serving load in the NYCA and transmission customers engaging in exports, purchase voltage support service from the NYISO
- The NYISO will coordinate the voltage support service provided by qualified suppliers throughout the NYCA
- Transmission owners are responsible for local control of the reactive power resources that are connected to their network

# VSS- Payments

- The annual **voltage support service payment** is specified in Rate Schedule 2 of the NYISO Open Access Transmission Tariff and is $3919/MVAr for 2004. The rate is reviewed annually
- The NYISO will pay a generator being dispatched by the NYISO for **lost opportunity costs (LOC)** when the generator is directed to reduce its real power output below its schedule in order to produce or absorb more reactive power.
- Suppliers must submit FERC Form 1 data or its equivalent detailing the following information:
  - Annual fixed charge rate associated with resource capital investment.
  - Current capital investment of the resources allocated for supplying voltage support service.
  - Operating & maintenance expenses for supervision and engineering allocated for supplying voltage support service

# VSS - Supplier Requirements

- Voltage support service providers must be located in the NYCA
- Voltage support service providers must provide a resource with the ability to produce and absorb reactive power and to maintain a specific voltage level under both steady-state and post-contingency operating conditions, subject to the limitations of the resource's tested reactive capability
- Voltage support service providers must provide a resource with an Automatic Voltage Regulator (AVR). The resource must be under the operational control of the NYISO
- Voltage support service providers are expected to operate their resources within their demonstrated reactive capability limits
- Resources selected to provide voltage support service are required to maintain voltage control equipment in operational order

# VSS - Testing Requirements

- Voltage support service providers must have performed a reactive capability test during the previous summer capability period
- Voltage support resources will be tested annually to determine, confirm and document their reactive capability for real-time system voltage control. The annual test must be performed during the peak load capability period for the transmission district where the resource is located
- Voltage support service providers must conduct a reactive capability test once a year on each of its units providing voltage support service. This test must measure the following:
  - Maximum lagging MVAr capability at the (at least) 90 percent of normal MW operating capability for at least one hour.
  - Maximum leading MVAr capability at the normal MW low limit for at least one hour.

# VSS - Sanctions for Non-Performance

- The NYISO will calculate and assess penalties for resources that fail to provide voltage support service when requested. Failure, measured at the end of 10 minutes, is defined as follows:
  - Failure to be within (+/–) 5 percent of the requested reactive power level of production or absorption as requested for any level below the resource's Normal Operating Limit (which must be at least 90 percent of its Dependable Maximum Net Capability (DMNC).
  - Failure to be at 95 percent or greater of the resource's demonstrated reactive power capability in the appropriate lead or lag direction when requested to go to maximum lead or lag capability.
  - Failure to automatically produce (or absorb), following a system contingency, the reactive power required in accordance with published system operating studies.
- A resource that fails to respond with a NYISO request for steady-state voltage control will pay the following charges:
  - Initial Failure**: one-twelfth of the annual payment** (or prior month's payment for non-ICAP providers) plus any additional cost in procuring replacement VSS including any resulting LOC incurred by the NYISO.
  - Repeated Failures: failure on three separate days within a thirty-day period will make the supplier ineligible for **VSS or LOC payments** until it passes a reactive power capability test and provides VSS (without compensation) for thirty consecutive days without any failures.
- A resource that fails to provide voltage support service when a contingency occurs will pay the following charges:
  - Initial Failure: **one-twelfth of the annual payment** (or prior month's payment for non-ICAP providers).
  - Second Failure in the same 30-day period: **one-fourth of the annual payment** (or three months' payments for non-ICAP providers) and no further **VSS or LOC payments** until it passes a reactive power capability test and provides VSS (without compensation) for 30 consecutive days without any failures.

# VSS – Demand Response Role

- Current tariff speaks to VSS being provided by generators only
- It appears unlikely that VSS requirements such as an Automatic Voltage Regulator would/could be met by DR
- Operations staff believes that the current technical requirements are appropriate and should not be waived or modified for DR, but are not adverse to DR providing VSS if they can meet those requirements
- Static VAR Compensators (SVCs) are not currently allowed to provide VSS
- Financial benefits appear to be incommensurate with likely impacts on participating facilities

**NYISO does not support opening VSS to DR at this time**