

Status of NYISO Demand Response Programs

August 6, 2003

Price Responsive Load
Working Group

RIP and CSP Total MW Registered

EDRP/SCR Corrected Breakdown for June, 2003

	<i>RIP/CSP Type</i>	<i>MW</i>
Aggregators		485.2 MW
Individual Customers		153.9 MW
Transmission Owners		876.5 MW

RIP and CSP Total MW Registered

EDRP/SCR Breakdown Effective August 5, 2003

	<i>RIP/CSP Type</i>	<i>MW</i>
Aggregators		496.1 MW
Individual Customers		153.9 MW
Transmission Owners		881.0 MW

EDRP/SCR Registration by Zone

EDRP/SCR Registration as of 8/05/2003				
Zone	SCR Registration		EDRP Registration	
	MW Registered	# Customers Registered	MW Registered	# Customers Registered
A	333	33	100.6	48
B	30.2	13	32.8	16
C	75.6	30	26.9	82
D	3.8	5	219.4	9
E	12	8	60	41
F	53.5	12	68.3	58
G	0	0	55	36
H	2.4	4	5.7	6
I	8	8	17.6	31
J	126.7	64	112.7	100
K	7.1	11	179.7	804
TOTAL	652.3	188	878.7	1231
TOTAL EDRP & SCR	1531 MW		1419 Customers	

Changes Made to RTDRP Con Op

- No Changes
- Next Step: Development of Functional Requirements Specification

Changes Made to DADRP Manual

- Revised Cost Allocation Ratios Based on 2002 Congestion
- See spreadsheet showing impact of revised congestion ratios

Small Customer Aggregation Metering and Verification Rules

- Small Customer Aggregation (SCA)
Currently Applies to DADRP, SCR and EDRP
- Proposed in RTDRP Con Op
- Proposed Generic Rules Would Guide Proposal-Specific Proposals

- Minimum Aggregation is Program-Specific
 - DADRP – 2 MW/Zone
 - RTDRP – 1 MW/Zone (proposed)
 - SCR/EDRP – 100 kW/Zone
- Each Proposal Reviewed by the NYISO staff, PRLWG, Must be Approved by a Majority of the Chairs and Vice-Chairs of the MC, BIC, and the Chairman PRLWG
- Must Comply with Proposed M&V Guidelines

Proposed M&V Guidelines

■ Issues

- *Monitored Parameter(s)*. At least three general options could be considered:
 - Facility-wide metering of demand (kW).
 - End-use interval metering of demand (kW).
 - End-use interval metering of a proxy variable for demand, such as current (amperage) or status (on/off).

- *Monitoring Interval and Period.* The M&V Plan should specify the period over which monitoring will be conducted and the interval over which monitored values will be averaged and recorded.
- *Instrumentation.* The M&V Plan should identify the type of monitoring and data logging equipment to be used, and its accuracy, as indicated by calibration or manufacturer's data.
- *Sampling.* If sampling will be conducted, the M&V Plan should define each population to be sampled, the sample size, and the target level of precision and confidence.



- ***Load reduction calculation methodology.***

The M&V Plan must describe how the Enrolling Participant will calculate their aggregate load reductions on an hourly and zonal basis, from the monitored data of individual end-use devices or customers. In general, this will require determining for each monitored point:

- The actual load or value of a monitored proxy variable (e.g., duty cycle) during each hour of the load curtailment event, and
- The baseline load or value of a monitored proxy variable during each hour of the event.


- *Calculating load reductions from a sample.* If sampling will be conducted, the Participant's aggregated load reduction in each hour and zone must be calculated from the monitoring data of the sample, and the M&V Plan should describe how this calculation will be performed.
- The calculation methodology will take one of two general forms:
 - Load reductions will be determined for each member of the sample and extrapolated to the population in terms of some average normalized value; or

- A proxy variable for load reduction (e.g., change in duty cycle) is determined for each member of the sample, and the load reduction for the entire population is calculated based on the average measured value of the proxy variable and additional stipulated or measured input parameters for each member of the population.

- *Identifying the Relevant Populations.*

Populations should consist of members that are similar with respect to:

- Type and size of equipment affected by the load curtailment strategy;
- Usage patterns (e.g., residential vs. commercial; coastal vs. inland weather zones); and
- Load control strategy (e.g., duty cycle control vs. thermostat set point control).

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- *Determining the Appropriate Sample Size.* The appropriate sample size depends on the target level of precision at some specified confidence interval.
 - For the Real Time Profiled Response Program, the default statistical target is 90/10 (10% precision at a one-tailed 90% confidence level).
 - In other words, the sample size should be sufficiently large such that there is a 90% probability that the average value of the sample will not exceed the average value of the population by more than 10%.
 - If monitoring has already been conducted, the *c.v.* should be based on the monitored data. Otherwise, a default initial value of *c.v.* = 0.5 should be used. For loads curtailments that are likely to have significant variations from one device to the next, a larger *c.v.* may be necessary.

DR Issues in RAM

- NYISO, ISO-NE and PJM Staff's Met 7/24/03
 - Objective: Identify DR Issues in RAM Process and Suggest Treatments
 - General Issue: Better Market Participant Understanding Needed on All RAM Issues
 - Specific Issues:
 - ***DR Is not the Same as Generation***
 - Forward Commitment is More Problematic for DR, the Farther Forward, the More Problematic
 - DR Needs a Short-Term (1 month, 6 month) Sale Option
- (cont.)

- DR Resource Bids Typically Smaller than Generator Bids
- Auction Should Not Favor Bids Based on Size
- **Eligibility Requirements**
 - All DR Capacity is Currently Obtained Through Reliability-Based Programs and Participation in Reliability/Emergency Programs should be Sufficient to Earn Capacity Credit under RAM
 - DR Should not be Required to Participate in Energy, Other Markets
 - Each ISO Should Determine Program/Eligibility Specifics
 - Reliability/Emergency DR Should be able to Receive Energy Credit/Payment, as well as Capacity Credit/Payment
 - Performance by DR Capacity Providers should be Mandatory, with Penalties/Derates Resulting from Non-Performance
- **Energy, Anc. Svc Markets**
 - DR Capacity Providers Should be Eligible to Participate in Energy, Anc. Svc. Markets (if qualified)
- **Tradability**
 - DR Capacity Should be Capacity, Should be as Tradable as Generator Capacity
 - Initially All Capacity Should Trade within Each Control Area
 - Ultimately All Capacity Should Trade Throughout the Northeast



□ **Credit**

- Applying Generator Credit Requirements to DR is Likely to Create Insurmountable Barriers due to Smaller DR, Aggregator Size
 - DR “Iron” is Already “In The Ground”, But Can Stop “Generating” at Any Time
 - Current SCR/DADRP – No/Significantly Relaxed Credit Requirements

□ **Key Questions:**

- If Participation in Reliability/Emergency Programs is Sufficient to Obtain Capacity Credit/Payment, How Are Resources Called?
 - Resource Called by ISO in which Capacity is Sold
 - Need to adjust DNI to ensure associated energy flows
 - Resource Called by ISO in which it is Located
 - How does purchasing ISO obtain energy benefit?
 - Would Capacity be Recalled Anyway?
- What Minimum Planning/Procurement Period is Required to Accommodate DR?
 - 1 year? 6 months? 1 month?
- What are DR Needs with Respect to Reconfiguration Market Design?
- What are Appropriate DR Credit Requirements?