

MADRI MEETING – SEPTEMBER 6, 2012

THE ROLE OF DISTRIBUTED GENERATION IN DEMAND RESPONSE PROGRAMS

**New Jersey Department of Environmental Protection
Public Hearing Room - First Floor
401 East State Street
Trenton, NJ**

Topic 4 – The Role of Distributed Generation in Demand Response Programs – This meeting will expand upon a discussion that began at the June 8, 2012 MADRI meeting, where attendees examined the impacts and implications for demand response programs of new and upcoming environmental regulations. The June 8 meeting focused primarily on the federal Mercury and Air Toxics Standards (MATS) and Reciprocating Internal Combustion Engines (RICE) rules recently promulgated by USEPA, and specifically the implications for diesel generators. However, a number of related questions were raised concerning the broader topics of demand response and distributed generation that remain unanswered or require further clarification and discussion. What is the value of backup generation to the grid? What role have diesel generators actually played in demand response programs, compared to other types of distributed generation and other forms of demand response? What kinds of generators are actually being dispatched as part of demand response programs, and how often? What policies and market rules can be established to ensure that both our reliability goals and our environmental goals are served in a cost-effective way by demand response programs? What are the policy implications for customer-owned generation?

It is recommended that attendees to this meeting review the June 8 power point presentations on the MADRI website as well as any comments that may be posted in the MADRI Open Forum section of the webpage. The purpose of this meeting is to delve deeper and pick up threads of the conversation for a closer examination of policy questions.

AGENDA

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| 9:30 – 10:00am | Networking |
| 10:00 – 10:15am | Introductions
The Honorable Lawrence Brenner, Maryland Public Service Commission
Janine Migden-Ostrander, Regulatory Assistance Project |
| 10:15 – 11:15am | What is Back-Up Generation and What is its Value to the Grid?
John Citrolo, PSEG Energy Resources & Trade
Carolyn Jones, Maryland Department of the Environment
Dana Lowell, M.J. Bradley & Associates |

A team of experts will provide information to help regulators and other stakeholders understand how back-up generators contribute to the reliable operation of the grid. The discussion will include:

- Clarify terminology: are back-up generators the same as “emergency” generators?
- What services are back-up generators capable of providing (e.g. energy, capacity, ancillary services, and support of islanding)?
 - How does this compare with other demand-side resources such as other customer-sited generation, demand response, and energy efficiency programs?
 - How does this compare with other supply-side options such as combustion turbines (CT) or combined cycle (CC) units in terms of technical capability?
- What data do we have about the current contribution of back-up generators to the system? What role have diesel generators actually played, compared to other types of generation, distributed generation and other forms of demand response? What kinds of generators are actually being dispatched as part of demand response programs, and how often? What data do we *need* to make policy decisions?
- What is the cost of upgrading or replacing existing diesel generators to meet Tier 4 emission standards? For a new installation, what is the cost for a Tier 4 compliant unit compared to non-compliant diesel? Given the value of these generators to their owners and the grid, is the cost justified? What kinds of incentives, if any, should be put in place to encourage owners to upgrade (existing or new facilities) to Tier 4 generators? Are Tier 4 diesel generators sufficient to address some/most/all of the air quality concerns?

11:15am – 12:30pm

Moving Ahead with Back-Up Generators: Policies and Market Rules

Paul Sotkiewicz, PJM

Marc Wolman, Massachusetts Department of Environmental Protection

Chris Van Atten, M.J. Bradley & Associates

This session will address policies and market rules that heavily influence the commercial viability and environmental impacts of back-up generators.

Panelists will discuss the following questions:

- How do back-up generators participate in PJM markets and programs?
 - Brief review on how back-up generators participate in demand response programs and effect of new rules on participation.
 - Outside of demand response programs, how does PJM treat back-up generators in capacity, energy or ancillary service markets or other programs? Does PJM schedule or compensate back-up generators differently than other types of generation?
- What are the current air regulations in Massachusetts regarding the use of backup generators and do these interact with the practices and procedures in ISO New England?
- What are the key findings from NESCAUM’s recent report: *Air Quality, Electricity, and Back-up Stationary Diesel Engines in the Northeast*

12:30 – 1:30pm

Lunch and Networking

1:30 – 3:00pm

Discussion of Demand Response and Reliability

Joseph Kerecman, Calpine

The Honorable Robert Hanna, New Jersey Board of Public Utilities

Aaron Breidenbaugh, EnerNOC

Doug Hurley, Synapse

Many utilities have for a long time allowed industrial customers to enter into curtailment or interruptible load contracts, receiving a lower rate in exchange for giving the utility the right to require them to shed load during certain peak/emergency events. More recently, demand response (DR) has been aggregated by curtailment providers from multiple industrial, commercial and residential customers and sold into the PJM market. In addition, utilities are increasingly developing dynamic pricing options to provide incentives for customers to curtail during system peak. It is understood, however, that in some instances customers don't merely shed load in response to high demand or high price events; instead, they use diesel back-up generators to meet internal load and/or offer to provide emergency generation when system reliability is at risk. Accordingly, the panelists will address the following questions:

- How might DR programs, including those utilizing back-up generators, help utilities and system operators get through a transition period in which many coal-fired units retire or are temporarily off-line for pollution control retrofit projects?
- How can DR be used to achieve other system security goals like the ability to operate islanded microgrids when the main grid experiences problems?
- With respect to capacity products for DR, should there be different products (eliminate some, change some, add new ones)? For example, should DR backed by back-up generators be treated differently than curtailment DR?
- Should DR that is curtailed through automation by third parties be treated or compensated differently than DR that depends on the source responding to a curtailment request?
- How should changes in load caused by AMI-measured dynamic pricing such as peak-time rewards be treated for capacity market compensation?
- Are there persistence issues with DR that need to be studied or addressed?
- Should DR be viewed as replacing peaking units? Or, have current CC gas generators (with their more efficient heat rate and operational/ramp rate flexibility) blurred the line among base, mid-merit load following and peaking units?

3:00 – 3:15pm

Wrap-Up, Adjournment

The Honorable Lawrence Brenner, Maryland Public Service Commission

Janine Migden-Ostrander, Regulatory Assistance Project