

Demand Response Data Task Force – Draft Report Outline and Work Plan

DRDTF Objectives:

1. Identify how the Demand Response (DR) resource data will be used by NERC
 - Work backward from NERC’s operational needs to develop the data to be collected and reported.
2. Agree upon a set of DR definitions.
 - NERC definitions are a good starting point.
3. Agree upon the metrics NERC will calculate to satisfy its objectives (1)
4. Agree upon the data to support the metrics
5. Design a data collection system
6. Begin data collection

DRDTF Work Plan Schedule:

Complete Definition/Metric review	30 April
Review with PC	4-5 June
Develop Draft Data Collection Manual	30 June
Test Manual and make adjustments	30 July
PC Review	10-11 September
Post DAR	30 September
Respond to Comments	30 October
Obtain BOT Agreement	31 December
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Begin Data collection	1 January, 2009

Report Outline

Introduction

DRDTF Objectives:

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Objectives and Data Collection Discussion by Topic Area

Identify how the Demand Response (DR) resource data will be used by NERC

- *Work backward from NERC's operational needs to develop the data to be collected and reported.*

Demand Response Resource Characteristics:

- What products can DR resources provide in the Balancing Authority's (BA) control area (i.e., energy, capacity, non-spinning reserve, spinning reserve, regulation)
- What is the BA's minimum and maximum size for DR resources by product?
- How is the load being reduced at the DR resource?
- What types of loads are being reduced at the DR resource?
- What percentages of the DR resources are dispatchable?
- What percentage of non-dispatchable (passive) DR resources is distributed generation?
- How does the BA distinguish between and report on active versus passive DR resources (i.e., direct load control vs. distributed generation)
- What is the BA's estimate of the likelihood of a passive resource not performing?
- What is the ramp rate of the DR resources?
- What is the maximum response time allowed by the BA by product (i.e., 10-minutes, 30-minutes, etc.)?
- What, if any, are the limitations of dispatchability (i.e., hours per week, days of the week, number of times per day, week, month, etc) for the different products?

DR Resource Capability:

- What are the hours and conditions established by the BA that DR resources are expected to operate to qualify as different products?
- How do the DR resource performance hours and conditions vary by product (i.e., energy, capacity, ancillary services)?
- What objective criteria does the BA use to estimate a DR resource's capability prior to registering the resource (i.e., comparable to name-plate rating of a generation unit)?
- What are the BA's on-going auditing and testing requirements for the DR resources?
- How does the DR aggregator report to the BA what their DR resource's hour-to-hour capability will be at some future date (i.e., report today for tomorrow's capability)?
- How does the DR aggregator determine their DR resources' future hour-to-hour capability?

DR Resource Performance

- What are the performance hours in the reporting period
- What is the DR resource's Load Reduction during the performance hours (MWh) in the reporting period.
- What is the DR resource's Minimum, Maximum and Average Load Reduction during the performance hours (MW) in the reporting period?

DR Resource Activation and Control:

- What economic and/or system conditions initiate the BA's dispatching of DR resources by DR resource type?
- What flexibility does the BA have in how DR resources are dispatched (i.e., individual assets, groups by location, groups by size, etc.)?
- How does the DR aggregator notify and coordinate with the BA that a DR resource will be unavailable for maintenance?
- What outage coordination protocols does the BA follow with respect to DR resources?
- How does the BA cycle DR resources to maximize performance?
- How does the BA account for DR resources in cold load pickup upon restoration?
- How does the BA integrate DR resources into Day-Ahead commitments?

DR Communications Infrastructure:

- What are the data communication protocols (i.e., internet, frame relay, ICCP) between the BA and the DR aggregators?
- What are the voice communications protocols between the BA and DR aggregators?
- What are the data and voice communications protocols between the DR aggregators and the individual DR resources (i.e., retail customers)?
- What are the cyber security protocols and standards to the data communications?
- What are the backup communications protocols for data communications, voice communications and metering?
- How are DR resources integrated with the BA's Energy Management System (i.e., state estimator, advanced study applications, etc)?
- What system(s) are used to dispatch and communicate with DR resources?
- How visible are the DR resources to the BA in its various operating systems?

DR Measurement and Verification:

- What are the telemetry and revenue metering requirements for DR resources?
- What is the minimum accuracy of the telemetry and revenue metering equipment?
- How frequently is the telemetry and revenue metering calibrated and tested?

- What is the frequency of data collection at the DR resource (i.e., seconds, minutes, hours, etc.)?
- What is the frequency of data reporting to the BA (i.e., real-time, hourly, monthly) from the DR resource and/or DR aggregator?
- What is the geographic granularity of data collection for DR resources (i.e., node, bus, interface, system wide)?
- How does the frequency of data collection and reporting vary by product (i.e., energy, capacity, ancillary services)?
- What methodology does the BA use to establish a DR resource's baseline conditions in order to calculate the DR resource's Load Reduction?
- Can statistical sampling be used to estimate a DR resource's Load Reduction? If so, what are the statistical sampling criteria (i.e., sample size and precision)?
- What are the BA's data validation requirements?

DR Resource Registration and Coordination:

- Does the BA register DR resources with NERC similar to generation assets?
- How do DR aggregators communicate the availability and performance of the DR resources to other Market Participants (i.e., local distribution companies, energy commodity suppliers, transmission owners)?
- What are the interconnection requirements to add or retire a DR resource?
- How does the BA integrate DR resources in its performance studies?
- How does the BA integrate energy efficiency and DR resource load reductions into its long term, short-term (tomorrow) and very-short-term (5 minutes ahead) forecasts?

Definitions

Agree upon a set of DR definitions.

- NERC definitions are a good starting point.

Metrics

Agree upon the metrics NERC will calculate to satisfy its objectives

Data

Agree upon the data to support the metrics

Data Collection System Design

Design a data collection system

Test data collection System (“Test Drive”)

Conclusions & Recommendations