NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Demand Response Availability Data System (DADS):

Phase I & II Final Report

to ensure the reliability of the bulk power system

Revised

January 7th, 2011

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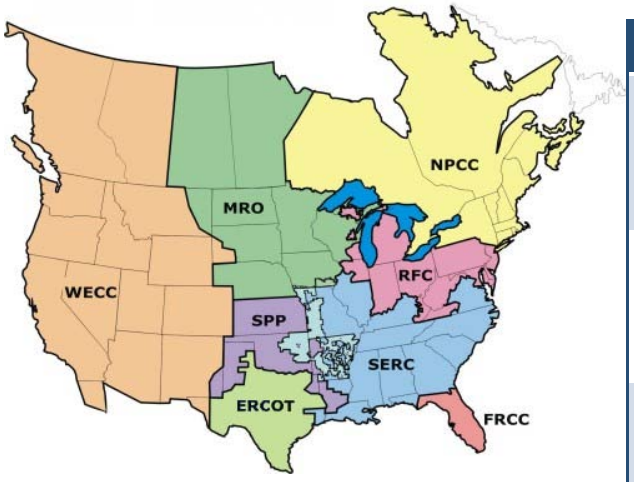
NERC's Mission

The North American Electric Reliability Corporation (NERC) is an international regulatory authority charged with ensuring the reliability of the North American bulk power system. NERC develops and enforces Reliability Standards; assesses adequacy annually via a 10-year forecast and winter and summer forecasts; monitors the bulk power system; and educates, trains, and certifies industry personnel. NERC is a self-regulatory organization, subject to oversight by the U.S. Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada.[1]

NERC assesses and reports[2] on the reliability and adequacy of the North American bulk power system divided into the eight Regional Areas as shown on the map below (See Table A).[3] The users, owners, and operators of the bulk power system within these areas account for virtually all the electricity supplied in the U.S., Canada, and a portion of Baja California Norte, México.



Note: *The highlighted area between SPP and SERC denotes overlapping Regional area boundaries: For example, some load serving entities participate in one Region and their associated transmission owner/operators in another.*

Table A: NERC Regions

ERCOT Electric Reliability Council of Texas	**RFC** Reliability*First* Corporation
FRCC Florida Reliability Coordinating Council	**SERC** SERC Reliability Corporation
MRO Midwest Reliability Organization	**SPP** Southwest Power Pool, Incorporated
NPCC Northeast Power Coordinating Council, Inc.	**WECC** Western Electricity Coordinating Council

[1] As of June 18, 2007, the U.S. Federal Energy Regulatory Commission (FERC) granted NERC the legal authority to enforce Reliability Standards with all U.S. users, owners, and operators of the bulk power system, and made compliance with those standards mandatory and enforceable. Reliability Standards are also mandatory and enforceable in Ontario and New Brunswick, and NERC is seeking to achieve comparable results in the other Canadian provinces. NERC will seek recognition in Mexico once necessary legislation is adopted.

[2] Readers may refer to the *Definitions of Terms Used in This Report* Section for more information on NERC's reporting definitions and methods.

[3] Note ERCOT and SPP are tasked with performing reliability self-assessments as they are Regional planning and operating organizations. SPP-RE (SPP – Regional Entity) and TRE (Texas Regional Entity) are functional entities to whom NERC delegates certain compliance monitoring and enforcement authorities.

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Executive Summary

Demand response is one of many resources needed to satisfy the increasing demand for electricity in North America. In addition to providing capacity for resource adequacy and planning purposes, capacity and ancillary services provided by Demand Response helps ensure resource adequacy while providing operators with additional flexibility in maintaining operating reliability. However, Demand Response is still a relatively new resource, and both NERC and stakeholders need to measure its performance in order to gauge its benefits and impacts on reliability. Better performance measures will also help develop industry confidence in Demand Response use.

NERC established a Demand Response Data Task Force (DRDTF) in early 2008 based on recommendation from the Demand-Side Management Task Force (DSMTF) that industry needed a more systematic approach for collecting and quantifying Demand Response performance. In its final report, *Data Collection for Demand-Side Management for Quantifying its Influence on Reliability,*[4] the DSMTF concluded a uniform system measuring delivered Demand Response performance should be established by NERC, together with a system to collect these performance data on an ongoing basis. The DRDTF has specified statistics to quantify demand response performance and the data collection requirements referred to as the Demand Response Availability Data System (DADS).

The goal of the DADS is to collect Demand Response enrollment and event information to measure its actual performance including its contribution to improved reliability. Ultimately, this analysis can provide industry with a basis for projecting contributions of dispatchable and non-dispatchable (e.g., price-driven) Demand Response supporting forecast adequacy and operational reliability. DADS specification provides a consistent and timely basis for counting and validating the contributions at the balancing area level.

The task force members represented many of the NERC Regions and both wholesale and retail electricity organizations (Appendix IV lists the DRDTF roster). Members researched current industry practices for Demand Response performance metrics and data reporting, carefully comparing the burden of collecting each data component against its usefulness. Further, the task force coordinated closely with the North American Energy Standards Board (NAESB) subcommittee responsible for developing Business Practice Standards for measuring and verifying wholesale Demand Response. The DRDTF recognizes the structure proposed in this report can be enhanced and improved over time as the industry gains experience. While some of the information specified for collection is based on data already being reported to various regulatory agencies, additional data collection requirements may be added as in future DADS phases. Additionally, as Demand Response is evolving through increased market activity, much of the requested data is not being provided in existing reports to regulatory agencies.

The DRDTF proposes to implement DADS in two initial phases. DADS Phase I and Phase II both support the collection of dispatchable Demand Response that are used to support bulk power system reliability. The Phase I pilot program will establish a voluntary reporting system to collect dispatchable and controllable Demand Response Event data while beta-testing an internet-based

[4] http://www.nerc.com/docs/pc/drdtf/NERC_DSMTF_Report_040308.pdf

system to receive the submittals. This pilot program, to be launched in 2010, will test both the ability of wholesale and retail electricity organizations to provide the requested data and the ability of NERC systems to receive it. Phase I uses Excel spreadsheets to collect data in a standard template. Phase II data submittal will become mandatory for all electricity organizations operating dispatchable and controllable Demand Response Programs. Activities to support Phase I have already begun and DRDTF is in the process of developing (in coordination with the Data Coordination Subcommittee) an implementation plan for the *Section 1600: Request for Information or Data* needed to justify a new NERC mandatory data submission requirement. High level specifications for Phases I and II are outlined in Table B.

Table B: DADS Phase I & II

Phase	Implementation Year	Responsible Entities[5]	Reporting Requirement	Demand Response Type(s)	Reporting Frequency	System Design
I	2010	BA, LSE, DP, PSE	Voluntary	Dispatchable, Controllable	Semi-annual	In-house
II	2011	BA, LSE, DP, PSE	Mandatory	Dispatchable, Controllable	Semi-annual	RFP w/software developer

Because Phase I involves voluntary data collection, no formal request will be produced. Phase I and Phase II milestones are provided in Table C.

Table C: DRDTF and DADS Phase I & II Milestones for Implementation

Date	Action
September 2009	PC approval of Final Report (Phase I & II) in September 2009
September 2009	Submit preliminary request for mandatory data collection through a *Section 1600* (in Draft Report)*: Request for Information or Data*
September 17th - October 8th, 2009	File Section 1600 with FERC: 21 Day Comment Period
October 9th - November 23rd, 2009	Post data request for a 45-day public comment period
November – December, 2009	Incorporate comments received, and include comment matrix with responses in the Final Report
November	Formal announcement to industry commencing DADS Phase I
November	DADS Phase I Data Reporting Instruction Manual
February 2010	DADS Technical Workshop for Phase I
March 2010	PC for final approval (Contingent on any changes to the report received from comments)
May 2010	Submit Final DADS Report: Phase I & II for Board approval

[5] Responsible Entities include the Registered Entities identified in this table and must also meet the criteria listed in Chapter 2 – Entities Required to Submit Data. In addition Demand Response Programs that are reported must also meet the listed criteria.

May 2010	Issue RFP for DADS system
July 2010	Implement the DADS Phase I with voluntary data submittals
July 1st, 2010	DADS Phase I Q1 2010 data due to NERC
July - November 2010	Evaluate DADS proposals and contract with vendor
June 2011	DADS Technical Workshop for Phase II
July 2011	Beta version of DADS for market trials
August 2011	Market trials review and updates
September 2011	DADS system goes live (DADS Phase II begins)
December 2011	DADS Phase II Summer 2011 data due to NERC

During Phase I, where reporting will be on a voluntary basis, the DRDTF will develop prototype reports and metrics that will be incorporated into DADS. Beginning with Phase II, results from DADS analysis will be issued in semi-annual summary reports and an annual report. Phases III and IV will introduce reporting requirements for non-dispatchable Demand Response, once again on an initially voluntary basis followed by mandatory reporting. Table D describes the periodic deliverables for each phase of DADS. The DRDTF will seek appropriate approvals, determined by the NERC Planning Committee, for published documents.

Table D: Phase I & II DADS Data Collection & Deliverable Schedule

Date	Action
April 1st – September 30th	Summer DADS reporting period
December 15th	Summer DADS data due to NERC
October 1st – March 31st	Winter DADS reporting period
June 15th	Winter DADS data due to NERC

Chapter 1—Introduction

Demand Response Data Task Force

The Demand Response Data Task Force (DRDTF) was initiated by the NERC Planning Committee (PC) in December of 2007 based on recommendations from the Demand-Side Management Task Force (DSMTF). The DRDTF[6] reports directly to the Data Coordination Subcommittee of the Planning Committee.

The DSMTF recommended that NERC continue developing a uniform set of definitions and performance metrics for Demand Response, and once procedures were in place, begin collecting both historical data and projected values for availability and performance of Dispatchable and Controllable Demand Response. The DSMTF also recommended that data collection be expanded in phases to collect Dispatchable Economic Demand Response and Non-Dispatchable Demand Response.

The DRDTF has carried forward the viewpoint expressed in both the DSMTF Report and NERC's *2008 Long-Term Reliability Assessment* that identify Demand Response "as an important option to meet the growing electricity requirements in North America…Demand Response supports (both) operational and long-term planning margins".[7] Accordingly, and in step with industry's growing use of Demand Response, NERC's data collection and reliability assessment process needs to highlight those emerging programs and demand-side service offerings which can impact bulk system reliability.

The work of the DRDTF is based on the premise that Demand Response availability data is needed to help address and quantify Demand Response resource performance and its impacts on reliability. The task force was formed to pursue the following objectives:

1. Identify how the Demand Response resource data will be used by NERC
   - Semi-annual Summary and Semi-annual Reports on Demand Response Performance
   - Support of NERC's independent Reliability Assessments
2. Agree upon a set of Demand Response and DSM definitions
3. Coordinate with North American Energy Standards Board (NAESB) to support the development of Measurement & Verification Business Practice Standards for Demand Response
4. Review current NERC Modeling and Data (MOD) Standards for Demand Response reporting applicability
5. Review the NERC Rules of Procedure for mandating data reporting
6. Agree upon the metrics NERC will calculate to satisfy its objectives.
7. Agree upon the data to support the metrics
8. Design a data collection system
9. Begin data collection

[6] Approved scope and additional task force information is included in Appendix IV.
[7] *2008 Long-Term Reliability Assessment*: http://www.nerc.com/files/LTRA2008v1_2.pdf

To accomplish these objectives the task force took the following approach:

1. Catalogued the Demand Response data currently being recommended and/or collected by NERC members and other industry groups as well as the uses of the data.
2. Recommended a common data reporting framework and protocol.
3. Developed a mechanism for reporting historic Demand Response Event and performance data.
4. Developed definitions and procedures for computing availability and performance statistics and metrics from the collected data.
5. Recommended guidelines for sharing and release of the data.

Future efforts of the DRDTF will include:

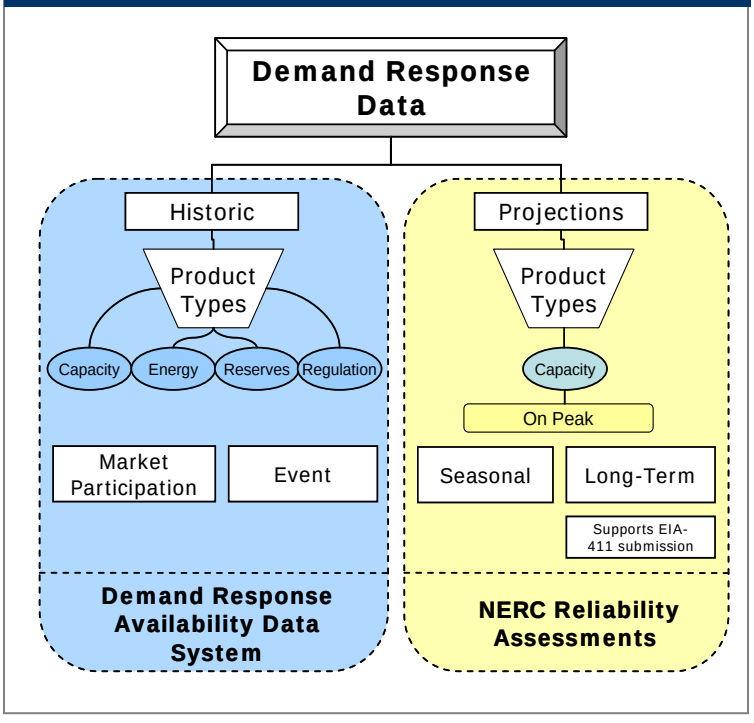
1. Developing the functional requirements of a Demand Response Data Availability System (DADS)
2. Outlining a systematic approach for implementation.
3. Testing the DADS during the voluntary data submission period (Phase I)
4. Rolling out the DADS as a mandatory NERC data reporting requirement.

NERC's Role in Assessing Demand Response Performance

Demand response is an important component in the overall portfolio of resources required to reliably meet the increasing demands for electricity in North America. In order for NERC to carry out its responsibility to ensure the reliability of the North American bulk power system, NERC must be able to evaluate and understand the benefits of Demand Response and its impact on reliability.

The principle venue for NERC to incorporate the historical and projected impacts of Demand Response on reliability is NERC's independent Reliability Assessments. As part of its Seasonal and Long-Term Reliability Assessment data collection, NERC collects Demand Response peak projections from Regional Entities.[8]

Figure 1: Current and Proposed Demand Response Data Collection Mechanisms



[8] NERC 2008 Long-Term Reliability Assessment: Pages 18-21 show the data that was collected in 2008 for a 10 year projection. Pages 270-271 define the terms of the Demand Response categories. http://www.nerc.com/files/LTRA_2008_v1.2.pdf

The data is aggregated from the members within each Region and is the expected reduction at time of peak. At present this data provides NERC with only a limited understanding of Demand Response, as it emphasizes seasonal peak-load reductions provided by dispatchable, controllable Demand Response resources (See Figure 1). Some data is also collected for Demand Response resources providing ancillary services, which provide round-the-clock reliability and by design are not used exclusively to reduce peak demand. However, there are other successful Demand Response products and services that do not fit into either of these categories. For NERC to provide a comprehensive reliability assessment of Demand Response, more data and metrics are needed – covering market-based energy and capacity products, price-responsive Load, and potentially in the future extending to energy efficiency and demand-side management programs as well. Demand Response resources can contribute to grid stability and reliability even if they are not always dispatchable or controllable by the System Operator.

That said, historical data on Demand Response availability and performance plus projected participation levels can provide accurate projections of Demand Response for use in planning and operating the bulk power system. Such projections of Demand Response availability can be adjusted to reflect day-to-day variations in weather, customer load variability, and other factors.

As participation in Demand Response Programs grow, it will be increasingly important to fully characterize and continuously update these programs by including their load impact, predictability, and availability with frequent use.[9] For all these reasons NERC is proposing to collect Demand Response Event and market participation data in order to develop accurate performance metrics reflective of a range of system conditions. In terms of a Demand Response as a long-term capacity resource, Demand Response Program performance metrics will help to improve Demand Response projections by providing forecasters with metrics based on historical data along with increased confidence in Demand Response availability and reliability for resource planners.

Overview of Demand Response Availability Data System

The NERC Demand Response Availability Data System (DADS) will enable NERC to receive, manage, assess, and disseminate data on Demand Response Programs, products and services administered by retail and wholesale entities throughout North America. The goal of the DADS is to collect Demand Response enrollment and event information to measure the ongoing influence of Demand Response on reliability and provide a basis for projecting the impacts of both dispatchable and non-dispatchable (price-driven and/or not under control of a System Operator) Demand Response on planning (demand reduction) and operational reliability. This data collection system specification provides a basis for counting and validating Demand Response resources as part of meeting operational and resource adequacy requirements. Phases I (voluntary) and II (mandatory) of DADS will focus on dispatchable Demand Response resources. Phase III (voluntary non-dispatchable data) and IV (all data mandatory) will supplement Phase I and II DADS with non-dispatchable Demand Response data. The final product will be an integrated system, capable of assessing the current impact of Demand Response resources in North America. DADS will also serve as a resource to the industry for information about Demand Response participation and performance.

[9] As Demand Response displaces supply-side resources, services provided by Demand Response resources are likely to be deployed more frequently.

The first step in the DADS development was to specify the Demand Response metrics of interest and the Demand Response data to be collected to compute these metrics. The task force agreed that the proposed data and metrics should be:

- Comprehensive
- Comparable
- Verifiable
- Attainable
- Easy to Understand
- Useful and Relevant to users, including
    - Power industry professionals (Demand response providers, Load Forecasters, and Resource Planners)
    - NERC (the Electric Reliability Organization)
    - Government and Regulatory Organizations (e.g., FERC, EIA)

The second step in DADS development is to establish the specific data to be collected and the collection forms to be used. Key data include Demand Response Program information, registered or committed quantity of Demand Response, Demand Response Event data for controlled load programs, and market participation for Demand Response providing ancillary services. DADS Phase I and Phase II will not, at this time, collect data on non-dispatchable Demand Response such as pricing or energy efficiency programs or permanent load reductions (e.g., installation of load reducing equipment, implementation of load reducing operational procedures). Also to be excluded is any financial data (e.g., capacity payments, non-performance penalties, or dynamic (interval) pricing data) or descriptive data on Demand Response Program design characteristics.

A mandatory data request will be issued to gather the data required in order to achieve a complete picture of Demand Response penetration, use, availability, and potential.[10] NERC has the authority to require data from Registered Entities, according to the NERC *Rules of Procedure*. This request is outlined in further detail later in this report.

Most of the burden of data collections and system management will fall on NERC and the Responsible Entities. The primary responsibility of the Responsible Entities will be to comply with reporting requirements and intervals, provide updated data as it becomes available, and maintain transparency, traceability, and audit trails. Responsible Entities should be reporting data which already exists in their information systems and therefore, all data submitted to DADS should be mapped, referenced, and up-to-date. The primary responsibility of NERC is to manage the DADS system, assess the availability and performance of these resources, and report the findings. An optimal data collection design structure should balance tradeoffs in the level of data detail, the level of effort required to collect the data, and the value of the data. The DRDTF has designed the DADS in such a way to minimize the burden to Responsible Entities. All requested data should be readily available to Responsible Entities and little change to reporting systems is expected.

[10] The DADS system is a historical data system. Potential, in this context, refers to the total amount of unique Demand Response that was committed, contracted, and/or otherwise counted as an expected reduction during a specific reporting period.

Chapter 2—Data Collection & Reporting Process

Entities Required to Submit Data

Entities responsible for reporting to DADS were identified using Version 4 of the NERC Functional Model[11] and the Compliance Registry.[12] Responsible Entity is a term used by NERC which applies to an organization that carries out the Tasks within a Function. Responsible Entities are registered by the Electric Reliability Organization (ERO) in the U.S. along with NERC in Canada/Mexico and maintained in its registry as described in the NERC Rules of Procedure[13] and Regional Delegation Agreements.[14] Such organizations are "responsible" to NERC for meeting the standards requirements assigned to the particular Responsible Entity.

While the Functional Model is used to identify Responsible Entities in NERC Reliability Standards and not support data requests, the DADS system used the Functional Model as a guide to identify Responsible Entities to acquire the needed data through the Rules of Procedure, *Section 1600: Request for Information or Data.* Responsible Entities are limited to the Registered Entities listed in the Compliance Registry. As such, these Responsible Entities will be classified as the Responsible Entity, responsible for submitting DADS data.

Responsible Entities will be required to maintain Demand Response data in DADS. A Responsible Entity, responsible for submitting DADS data, is defined as a NERC Registered Entity that either dispatches a Demand Response Resource and/or administers a Demand Response Program, product or service. Responsible Entities for DADS data submittals are limited to the NERC Registered Entities listed in Table 1.

Table 1: NERC Responsible Entities for DADS Data

Function Name	Responsible Entity
Balancing	Balancing Authority
Distribution	Distribution Provider
Load-Serving	Load-Serving Entity
Purchasing-Selling	Purchasing-Selling Entity

All Registered Entities designated as a Responsible Entities in Table 1 and satisfy the criteria above, will be required to submit DADS data. It is common for one Registered Entity to serve multiple functions, based on the NERC Functional Model. Multi-functional Registered Entities will be responsible for only one submission. Non-NERC Registered Entities will not be required to submit DADS data. This includes, but is not limited to a third-party service organization (e.g., Demand Response providers, curtailment service providers, load aggregators, etc.) that may dispatch Demand Response when a signal is received from a Registered Entity.

[11] http://www.nerc.com/files/Functional_Model_V4_CLEAN_2008Dec01.pdf
[12] http://www.nerc.com/page.php?cid=3|25
[13] http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20081219.pdf
[14] http://www.nerc.com/page.php?cid=1|9|119|181

Description of Data Requested

This section provides an overview of the requested data. Refer to Appendix IV for more detailed specifications.

Demand Response Program Criteria
DADS requires data for all Demand Response Programs currently in effect. However, Responsible Entities are only required to register and submit data on Demand Response Programs if:

1) The Demand Response Program has been commercially in-service for more than 12 months; or
2) The Demand Response Program has enrolled 10 MW or more of combined Demand Response Resources.

The above thresholds serve to not discourage small scale Demand Response deployment and to encourage the development of pilot Demand Response.

Responsible Entities will be required to submit information about their individual Demand Response Programs and each event where Demand Response was used, during a specified reporting period. Responsible Entities must first register their Demand Response Programs in the system prior to providing any program data for a Demand Response Program.

Form 1: Demand Response Program Registration Data
Demand Response Resources are structured into programs, administered by various entities functioning on the Bulk Power System. For Phase I, all Responsible entities are required to register their Demand Response Programs by June 1, 2010. For Phase II, registration must be complete by June 1, 2011. Registration of new programs and updates to existing programs, including registration and enrollment information, are required each reporting cycle.

Demand Response Program information includes information that will be used within DADS to associate other types of reported data to a given Demand Response Program. Data to be collected on this form include:

- Responsible Entity Information
- Demand Response Program Information
- Contact Information
- Relationship with other Programs (e.g., mutually exclusive)
- Program Enrollment Data

Program Enrollment data includes aggregate information at zonal level (zones defined by the Responsible Entity) about the number of resources and enrolled Demand Response capability (MW) on a monthly basis, updated according to the reporting schedule. DADS will not require reporting of enrollment data at the individual resource or aggregator level within a Responsible Entity's program. Enrollment data is limited to the aggregated program-level detail. Data or information on individual Demand Response Resources is not in the scope of DADS.

A Responsible Entity must identify whether Reliability Event (Form 2A) or Market Participation (Form 2B) data will be reported for this program. When registering or updating on this form, a Responsible entity may request that NERC treat program data as confidential.[15]

Form 2: Reliability Event/Market Participation Data

The DADS system will collect data for dispatchable events (reliability-driven) and market participation Demand Response in Phases I and II. Phases III and IV will include non-dispatchable Demand Response. This report will focus on the Phase I and II data request for Reliability Event Data.

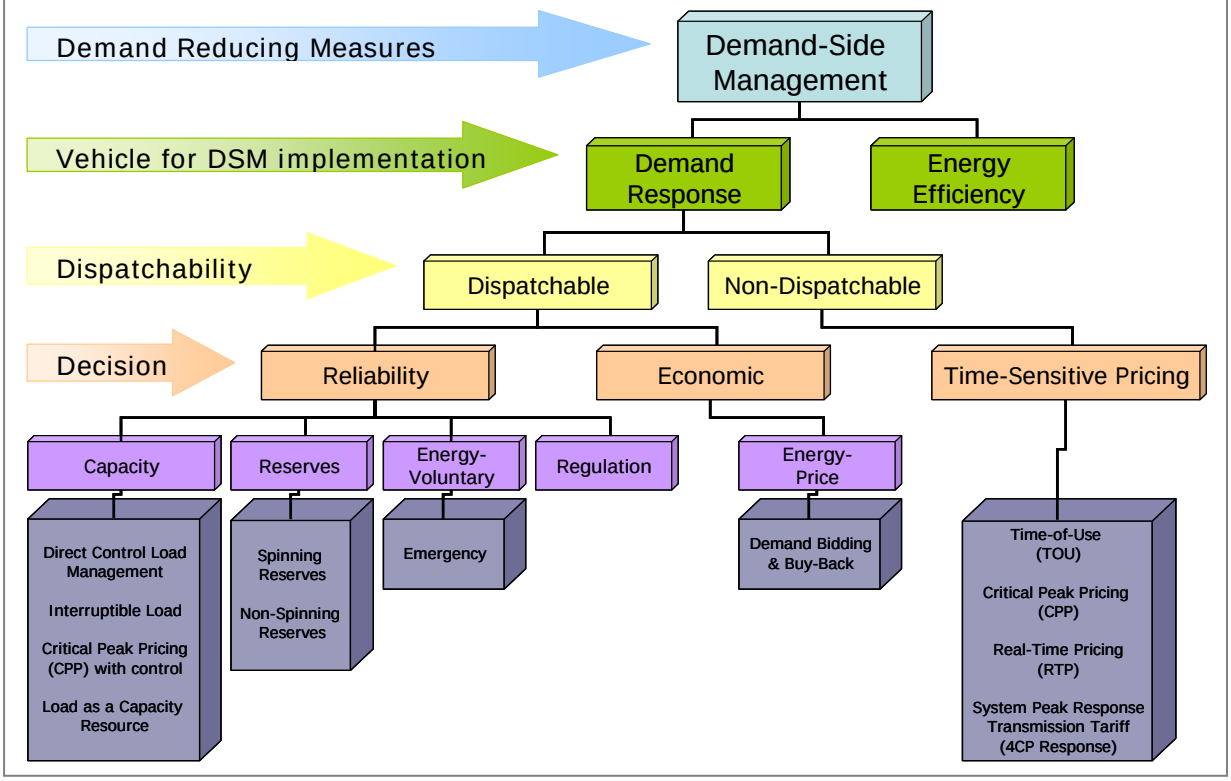
All Demand Response will be categorized as one of the following products:

- **Energy**
  Demand Resources are compensated based solely on demand reduction performance during a Demand Response Event.
- **Capacity**
  Demand Resources are obligated over a defined period of time to be available to provide Demand Response upon deployment by the System Operator. (Not limited to demand response procured for resource adequacy through forward-capacity markets.)
- **Reserve**
  Demand Resources are obligated to be available to provide Demand reduction upon deployment by the System Operator, based on reserve capacity requirements that are established to meet applicable reliability standards.
- **Regulation**
  Demand Resource increases and decreases Load in response to real-time signals from the System Operator. Demand Resources providing Regulation Service are subject to dispatch continuously during a commitment period. Demand Resources providing Regulation Service automatically respond to changes in grid frequency (similar to the governor action on a generator), and also are subject to continuous dispatch based on instructions from the System Operator (similar to Automatic Generation Control). Provision of Regulation Service does not correlate to Demand Response Event timelines, deadlines and durations.

[15] For more details on treatment of confidential data, refer to section *Confidential Data Reporting*.

Figure 2 illustrates the relationship of a variety of Demand Response to Demand-Side Management services, how load reductions are implemented, the dispatchability of a given resource, and the type of product or service. While four products are identified with dispatchable Demand Response Programs, there are multiple services (dark purple) for any product in DADS.

Figure 2: Demand Side Management Categories



Reliability Event Data

Reliability Event Data will be reported for Demand Response services in which resources are obligated over a defined period of time to provide Demand Response upon deployment by the appropriate Balancing Authority, Load Serving Entity, Distribution Provider, etc. Reliability Event Data refers to emergency or contingency events, not economic Demand Response deployments.

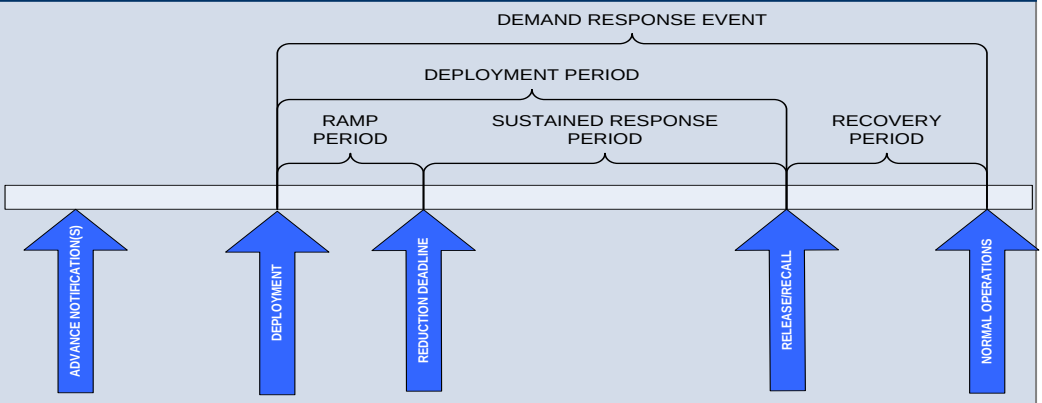
Demand Response Event information includes information that will be used within DADS to track the performance of a Demand Response Program after an event has occurred. Data to be collected on this form include:

- Event Type and Reason
- Product/Service Type (Capacity or Reserves)
- Zone
- Advance Notification, Deployment, Reduction Deadline, Release/Recall, and Normal Operations Date/Time
- Committed Load Reduction (MW)
- Number of Committed Resources

- Dispatched (MW) and Load Reduction (MW) and/or Hourly Estimated Realized Energy (MWh) through the Demand Response Event.

Figure 3 provides a framework for a Responsible Entity to report Demand Response Event Timeline Data on a consistent basis. The figure represents the terms for timing events and time durations applicable to the characteristics of a Demand Response Event. The definitions of the ten elements in the illustration are the basis for describing the Timing of a Demand Response Event. A Responsible Entity shall specify whether any or all of the elements, illustrated in Figure 2, are applicable to the Demand Response product reported in DADS.

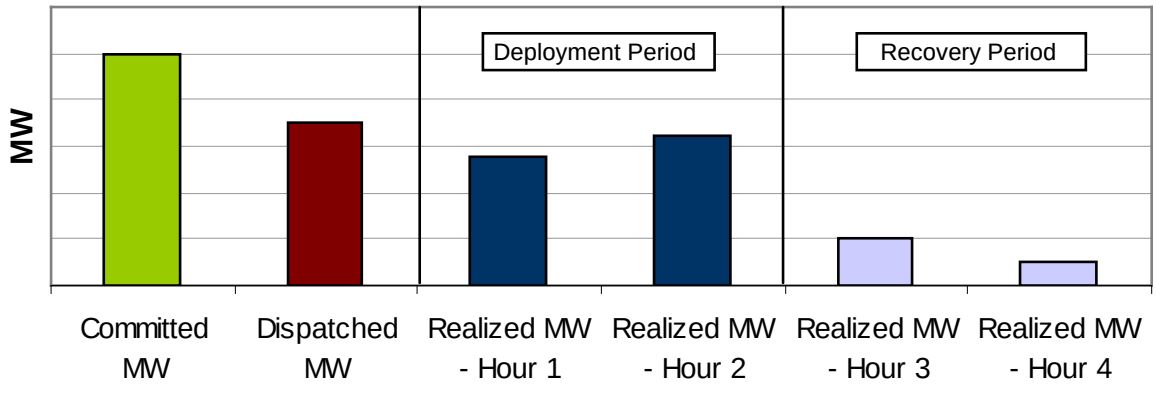
Figure 3: Demand Response Event Timeline



Source: NAESB

The quantitative data DADS will collect on a Reliability Event is the amount of Committed Load Reductions (MW), Number of Committed Resources, and the Dispatched (MW) and Hourly Estimated Realized Energy (MWh) and Load Reduction (MW) through the Demand Response Event. In Figure 4, an example shows that Realized Load Reductions are counted within the deployment period *and* during the recovery period.

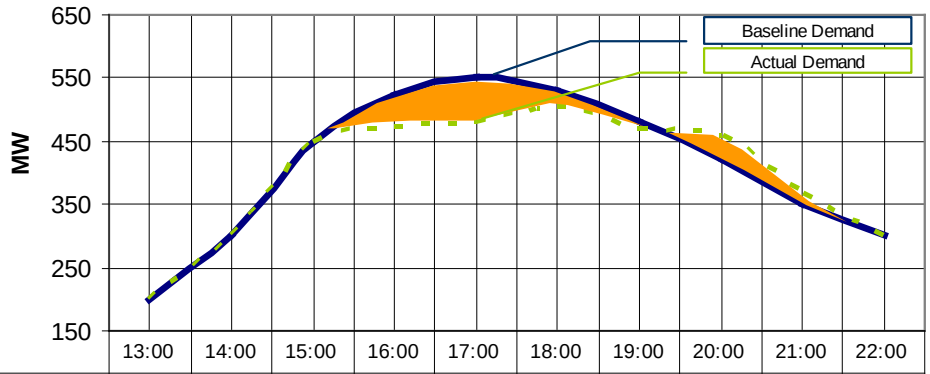
Figure 4: Example Demand Response Event Data with a 2-Hour Deployment Period



Additionally, Hourly Estimated Realized Energy is required. With an hourly set of data, hourly load data can be reconstructed to adjust for a Demand Response Event against a baseline load curve. This is of particular interest once a Demand Response Event is Released/Recalled. Energy

"payback" refers to the increase in demand and energy after a Demand Response Event is Released/Recalled to compensate for the "lost" energy during an event. Figure 5 illustrates the hypothetical adjustments to a baseline demand in order to form a reconstructed demand curve. For DADS, Estimated Realized Energy impacts (orange-shaded area in graph) will be requested on an hourly basis through the event.

Figure 5: Example Baseline Demand Curve Adjusted for a Demand Response Event



	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00
Baseline Demand	200	300	450	525	550	530	480	420	350	300
Actual Demand	200	300	450	475	480	505	470	460	370	300
Realized Load Reduction				-50	-70	-25	-10	40	20	

Market Participation Data

Market Participation Data refers to energy Demand Response Programs categorized in which the demand resource offers its load reduction based on economics, not reliability. The objective of Market Participation Data is to understand the frequency and magnitude of economic Demand Response participation. Monthly summary data only; details regarding individual schedules or individual performance are not provided.

Demand Response Market Participation information includes information that will be used within DADS to track the performance of a Demand Response Program for a one month timeframe. Data to be collected on this form include:

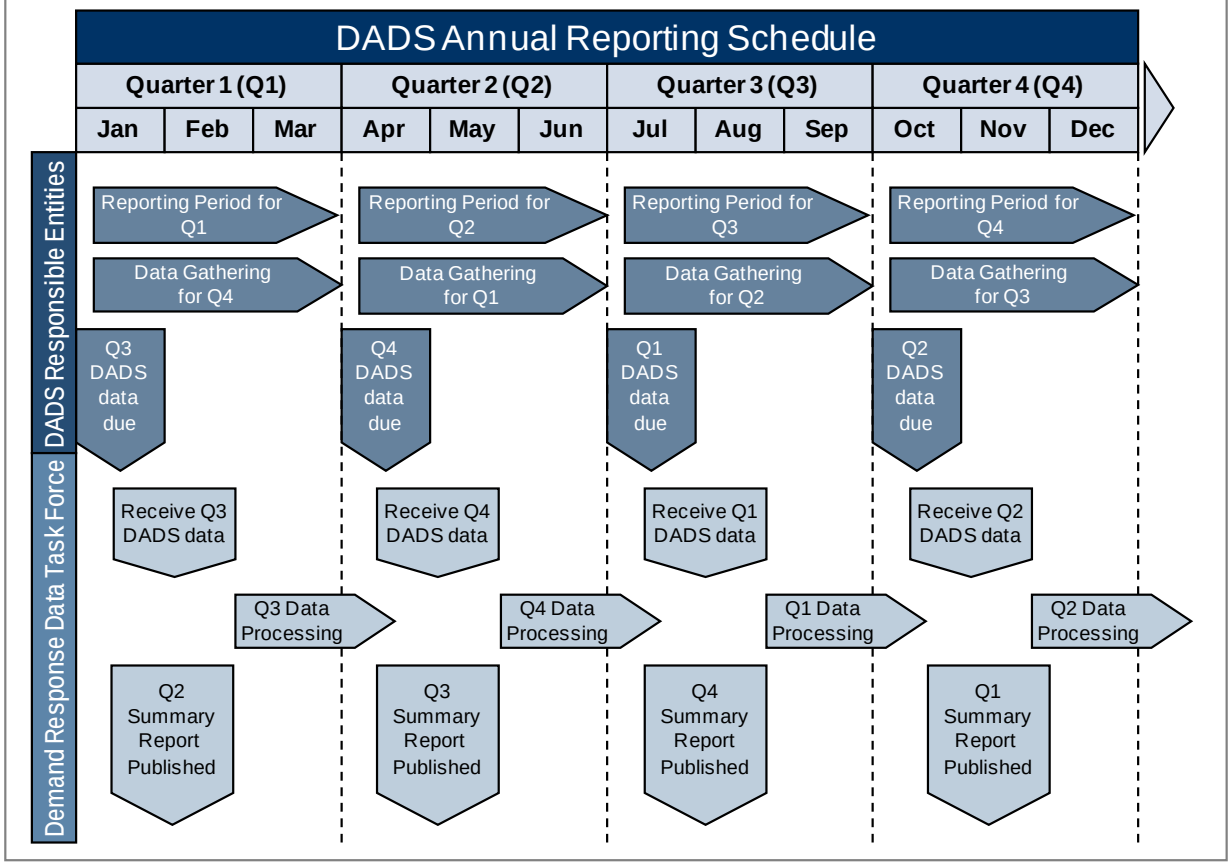
- Product/Service Type (Energy)
- Zone
- Number of Qualified Resources
- Total Offer and Self-Scheduled Hours and Load Reduction (MW)
- Total Scheduled and Total Estimated Realized Energy Reduction (MWh)

Reporting Process

The DRDTF recommends the process shown on the diagram in Figure 6A and 6B for reporting and access to the data stored within DADS. The reporting process will be dependent on a Web-based reporting mechanism using the data collection forms. Responsible Entities will be required to submit Demand Response Program and Reliability Event data on a semi-annual basis.

Figure 6A shows an annual schedule for data DADS data submittals and reporting.

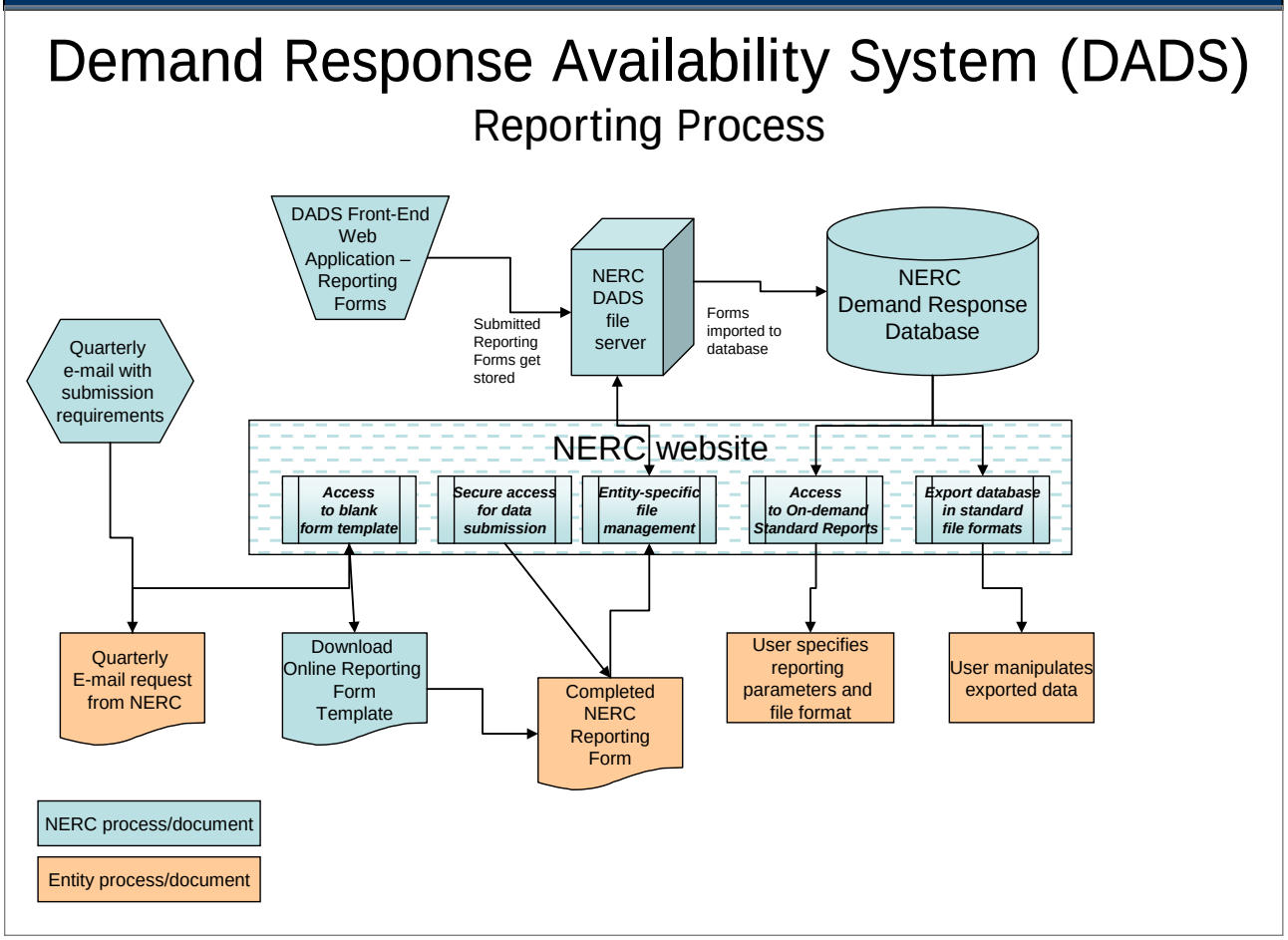
Figure 6A: DADS Annual Reporting Schedule



During the DADS Phase I pilot program, the DRDTF will assess if bi-annual reporting should be implemented, versus semi-annual reporting. April through September and October through March reporting periods will most likely be implemented for DADS Phase II.

Figure 6B is a detailed view on how DADS data will be collected and processed.

Figure 6B: DADS Reporting Process Flow Diagram



The process decribed above relates to the Final Phase (Phase IV) of DADS. However, as DADS evolves, the data collection process may be changed to reflect enhancements. For earlier Phases, a similar process will be followed for data collection.

For Phase I, data collection is performed using a standard template in MS Excel. Forms will be submitted to NERC and further processed and validated by NERC Staff.

Data Validation

There are two primary data quality attributes that must be adhered to in order to provide high-quality data: 1) consistency in definitions and 2) eliminating double-counting.

Data validation occurs both when data is entered and when it is processed. Submitted data will be subject to following specific rules embedded within the reporting form. For Phase I, this will be completed using Excel spreadsheets and validation rules. Once submitted, the data will be processed by NERC Staff to eliminate the possibility of double-counting.

Consistency in Definitions

Because DADS data is so highly dependent on results of various entities' measurement and verification efforts, Responsible Entities should become familiar with and adhere to the NAESB[16] group product definitions to assure consistency across the industry. The NAESB M&V standards are intended to facilitate Demand Response by providing a common framework for:

- Transparency - Accessible and understandable M&V requirements for Demand Response Programs, products, and services
- Accountability - Criteria that will enable the System Operator or Program Administrator to accurately measure performance of Demand Response resources
- Consistency - a process or protocol that will allow all entities involved to agree on the required steps to take to measure and verify demand reductions resulting from Demand Response Programs in either wholesale or retail energy markets.
- Comprehensive - covers all forms of Demand Response

The standards[17] reflect business practices applicable to measurement and verification of wholesale market Demand Response services including the four products identified earlier in this report.[18]

The proposed metrics for DADS data analysis are highly dependent on the definition of their timing. Consistent time-stamping definitions, as described in the NAESB standards, will be used to complete DADS data forms accurately and consistently.

[16] The North American Energy Standards Board (NAESB) has developed Demand Response Measurement & Verification Business Practice Standards for the Wholesale and Retail Electric Sectors. The first phase of the Wholesale Measurement and Verification (M&V) identified several key characteristics of DR products and services that were approved by the wholesale electric participants of the DSM-EE subcommittee on December 2, 2008, approved by the Wholesale Electric Quadrant (WEQ) Executive Committee on February 10, 2009, and ratified by NAESB WEQ members on March 16, 2009. NAESB filed the Measurement and Verification Standards for Wholesale Demand Response with FERC on April 17, 2009. Additional technical standards are under development by a working group of the DSM-EE Subcommittee.

[17] These standards establish Demand Response M&V criteria. They do not establish requirements related to the compensation, design, operation, or use of Demand Response services. In these regards, System Operators are not required to offer these Services and may not currently offer each of these Services. Terms that are capitalized in these standards have the meanings ascribed to them in the Definitions of Terms section.

[18] The terms Product(s) or Service(s) may be used interchangeably in these standards.

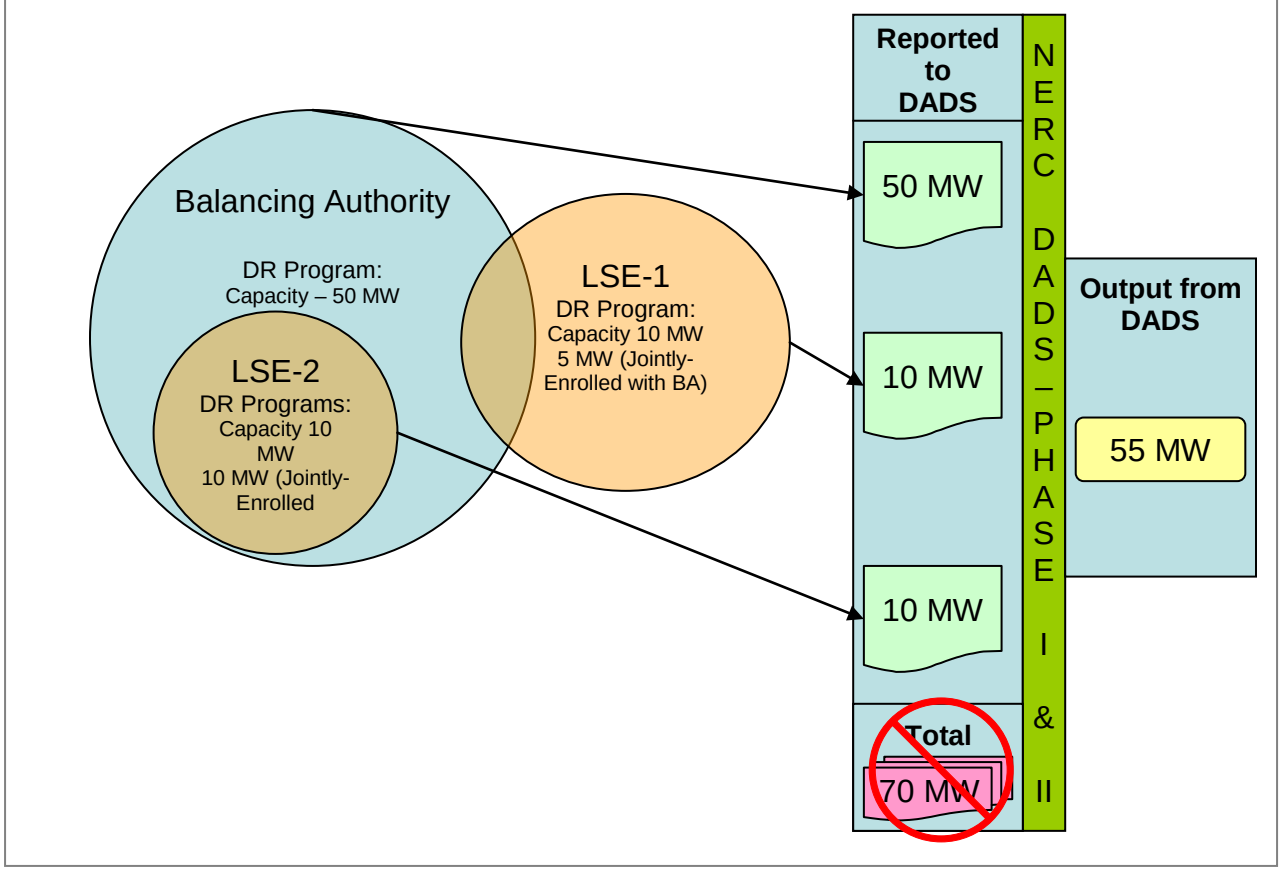
Eliminating Double-Counting

A key challenge faced by NERC in establishing the DADS and assessing the amount of Demand Response available to the bulk power system is avoiding any double-counting of resources. The structure of the market or regulatory environment in which Responsible Entities operate and the mandatory reporting requirement could result in double—reporting and the possibility of unintentional double-counting of Demand Response resources when NERC generates aggregate metrics. There are two situations in which double-counting of Demand Response resources could occur:

1) when aggregation occurs up to a Balancing Authority, multiple enrollments for a given product category (Capacity, Reserves, Regulation or Energy) could occur, and/or
2) when resources are jointly enrolled in multiple product categories within a single entity.

Responsible entities required to report the data and the instructions for reporting the Demand Response resources must be carefully considered. Comprehensive data handling algorithms are needed to count resources once and only once while placing resources in correct categories. DADS will be able to mitigate potential double-counting issues by configuring "counting rules," or algorithms,[19] that are predefined by the DRDTF and selected by the Responsible Entity during data entry.

Figure 7: Example of a Double-Counting Scenario



[19] For more detailed information on how DADS will mitigate double counting, refer to Appendix I

Figure 7 illustrates a scenario where double-counting Demand Response data in DADS is likely to occur. In this example, the Balancing Authority has a 50 MW Demand Response Program with a Capacity product. Two Load-Serving Entities within the Balancing Area also have Demand Response Programs. Both LSEs have a total of 10 MW registered in their individual Demand Response Program. However, LSE-1 has 5 MW that are jointly-enrolled in the BA program. LSE-2's program is entirely jointly-enrolled in the BA program. Therefore, those MWs reported by the LSEs that are jointly-enrolled, will be double-counted when aggregating data in DADS. Aggregated, the amount of Registered MWs equals 70 MW, which is overstated. Unique Registered MWs total 55 MW.

To mitigate this issue, DADS requires a Responsible Entity to determine the relationship of their program with other Responsible Entities. To validate this relationship, both data submissions should identify program relationships.

During Phase I, the DRDTF will pilot some proposed data validation algorithms in an effort to test for the best method for full implementation of DADS. Many of these are described in Appendix I.

Baseline Concept and M&V Methods

NAESB has outlined a framework for baselines in the Wholesale and Retail sector in the Phase I M&V Standards.[20] The NAESB Phase I Demand Response Measurement and Verification (M&V) Standards outline a framework for acceptable baseline methods. These M&V standards establish criteria for the use of equipment, technology, and procedures to quantify a reduction value for the response achieved.

Baselines are developed by each Responsible Entity. NERC does not have standards or guidelines to support the development of baselines. Baseline development and approaches are based on business practices. The baseline method that is used to gather the appropriate data to support DADS, is at the discretion of the Responsible Entity. The DRDTF realizes that methods will be inconsistent across different Responsible Entities. However, these potential discrepancies will be noted when aggregating data. Additionally, NERC will focus its analysis on assessing and comparing performance of Demand Response to itself, over time (i.e., compare the performance of Program X, Entity X, or Area X in Year 1 versus Year 2).

Confidentiality of Data

Any data submitted that is classified as confidential shall be managed in accordance with NERC's treatment of confidential information as described in Section 1500 of the *Rules of Procedure.*[21] Confidential data will not be accessible by others except the Responsible Entity that submitted that data and NERC staff, who will be responsible for its analysis; however, aggregated data may be used for metrics and presented to third parties as necessary or appropriate. Data reported in aggregated form may be considered non-confidential even if the same data is confidential in disaggregated form.

DADS data may be classified as:

[20] Please see http://www.naesb.org/dsm-ee.asp for more information on NAESB M&V Standards.

[21] http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20081219.pdf

- Confidential Business and Market Information[22]
- Critical Energy Infrastructure Information[23]
- Non-Confidential

The following disaggregated data may be classified as confidential if so deemed by a Responsible Entity.

- Enrollment Data (Number of Registered Resources and Registered MWs)
- All Reliability Event/Market Participation Data

DADS is intended to serve as a valuable tool, not only for reliability and resource adequacy analysis, but for research outside of NERC. Appropriate access will be granted upon approval from NERC staff, accommodating any confidentiality commitments.

Information and data is not required for each individual Demand Resource. All data is provided at an aggregate level that will protect individual entities' identity. In the event that a Responsible Entity has only one Demand Resource and the enrolled capacity is greater than 10 MW[24], data will only be included in an aggregated value for an specific area (Reliability Coordinator, subregion, Region, etc…) and not be accessible to users of the DADS.

NERC's Authority to Require DADS Data

NERC's authority to issue a mandatory data request in the U.S. is contained in FERC's rules. Volume 18 C.F.R. Section 39.2(d) states: "Each user, owner or operator of the Bulk-Power System within the United States (other than Alaska and Hawaii) shall provide the Commission, the Electric Reliability Organization and the applicable Regional Entity such information as is necessary to implement section 215 of the Federal Power Act as determined by the Commission and set out in the *Rules of Procedure* of the Electric Reliability Organization and each applicable Regional Entity." A data request of U.S. entities can be made based upon NERC's authority in this FERC rule. NERC will file a *Section 1600: Request for Information or Data* to be approved by FERC included in its *Rules of Procedure.* This rule allows for a 45-day open comment period for data requests such as DADS, which then must be approved by the Board of Trustees. An appendix will be added to this report which will contain a summary of the comments received as well as our responses. Since DADS is a data request pursuant to Section 39.2(d) and not a reliability standard, NERC will not be issuing any fines for non-compliance. However, a non-compliant U.S. Responsible Entity may be sanctioned by FERC, since failure to provide required data is a violation of FERC's rules.

A *Section 1600: Request for Information or Data* does not carry the same penalties to non-U.S. entities as it does with U.S. entities. However, all NERC Registered Entities, regardless of their country of origin, must comply with the NERC *Rules of Procedure*, and as such, are required to comply with *Section 1600: Request for Information or Data.*

[22] Rules of Procedure: Section 1501: any information that pertains to the interests of any entity, that was developed or acquired by that entity, and that is proprietary or competitively sensitive.

[23] Rules of Procedure: Section 1501: any specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure that (i) relates details about the production, generation, transportation, transmission, or distribution of energy; (ii) could be useful to a person in planning an attack on critical infrastructure; and (iii) does not simply give the location of the critical infrastructure.

[24] The threshold for reporting Demand Response Programs for DADS is 10 MW.

Chapter 3—DADS Statistics, Metrics and Analysis

Intended Uses and Limitations of Data and Metrics

DADS will be a centralized repository for enrollment, event and performance data in North America. To maintain accuracy and relevancy of the data, NERC will need to ensure that the data collected are complete and reported in a timely fashion. Users should be able to export specified public data for their own off-line analysis. NERC metrics should be available in viewable, printable and exportable formats.

Enrollment data can provide information on the influence Demand Response has on reliability. Event performance data may be analyzed to identify whether Demand Response resources are able to achieve the committed potential when activated (deployed) and can serve as a basis for planning how Demand Response resources are incorporated in meeting operational and resource adequacy requirements. Market participation data, for products where Demand Response resources are scheduled to supplement generation, usually based on economics, rather than activated (deployed) to respond to a reliability condition, can be analyzed to identify demand resources' capability and willingness to be deployed based on market conditions instead of reliability conditions as well as the frequency with which this occurs.

The scope of the DADS project is limited to quantitative information: enrollment/registration (which usually also equates to commitment or obligation) data and event participation and performance data. Resource qualification requirements, payments and other types of qualitative data about a Demand Response product or service (e.g., segmentation, how Demand Response is achieved, how it is notified, etc.) are outside the scope of DADS. The data collection effort for obtaining such qualitative data would be very labor intensive and potentially very subjective, and would not provide meaningful additional value to ascertaining the impact of the product on the reliability of the bulk power system. There is also a risk that combining incomplete qualitative data with quantitative data can result in incorrect conclusions.

Future efforts will be coordinated with the Reliability Metrics Working Group (RMWG) to support metric development. The DRDTF will submit the metrics listed in this chapter to the RMWG for consideration as industry-vetted historical Demand Response performance metrics.

DADS Phase I will not entail a complete population as it is voluntary. Any analysis results or conclusions will be footnoted to explain this issue. A comprehensive view of the penetration and multifaceted use of Demand Response will not be available until the completion of Phase IV.

The final DADS will support the collection and appropriate dissemination of data submitted to the system and ensures accurate calculations of metrics. The following statistics and metrics will enable NERC and authorized users to assess capability and performance of Demand Response resources.

Statistics

The statistical information below will allow NERC to better understand how Demand Response is being used in the present timeframe. Further analysis of statistically significant findings, may lead NERC to develop additional metrics and collect more data. One area of specific concern is in growth and penetration. DADS will enable NERC to monitor Demand Response increases and higher levels of penetration in resource portfolios.

- Types of programs being implemented, by area
- Frequency of use, by product and area
- Registration information provided by the reporting entity
- Number of registered resources, by area
- Number of registered MWs, by area
- Initial activation/deployment of program
- Trend of performance, by product and area
- Trend of capability, by product and area
- How much Demand Response capacity is committed over how many hours per year, by product and area
- Duration of events, by product type and area
- Frequency of activation/deployment
  - Location of activation/deployment
  - Expected load reduction
  - Actual load reduction

Metrics

All metrics provided below, will be coordinated with the Reliability Metrics Working Group. A specification sheet will be completed for each. The following metrics are critical to understanding and identifying trends in Demand Response performance and availability.

- Realization rate
  - (Actual Load Reduction)/(Expected Load Reduction)
  - (Actual Load Reduction)/(Load Reduction Requested)
- Activation/deployment rate
  - Number of times activated (deployed)
- Mean load reductions
- Mean length of event
- Mean time of event
- Percentage activated/realized to Internal Demand

How the Data Will be Used by NERC

Data for the current reporting quarter that has passed through the appropriate data checks will be used to develop NERC semi-annual reports, as well as, data that are archived in a database. Reports are required on several levels:

- Individual Load-Serving Entities
- Balancing Authority
- NERC Region
- NERC subregion
- NERC as a whole
- Country as a whole

Semi-annual reports will include the statistics and metrics listed in the previous section. Aggregation will be performed, where applicable, to provide a snapshot of how much Demand Response was available during the reporting timeframe. Additionally, Reliability Event data will be analyzed and an overall assessment of performance will be included. The DRDTF will be engaged in the development of these reports. Initial reports should be approved by the PC and the OC, until standard format and content is agreed upon. A semi-annual report format may not be finalized until Phase IV of DADS. In addition to the DADS semi-annual reports, NERC Reliability Assessments (Long-Term, Seasonal, or Special) may include references to aggregated DADS data for an assessment of Demand Response.

DADS, as designed, will not be used to meet any NERC Reliability Standard or Compliance Requirements. Data reporting and analysis is intended for technical studies and an overall assessment of Demand Response.

Chapter 4—Next Steps & Resource Requirements

Resource Requirements

The DADS will require funding and staff to develop and implement. Phase I of DADS, also referred to as a "pilot run" will test reporting procedures and double-count mitigation algorithms. During the voluntary data submittal in Phase I, the DRDTF will work with Responsible Entities to enhance the requirements of the DADS system. Phase I will be developed in-house by NERC staff. Excel spreadsheets will be used to gather the data in Phase I. While every attempt will be made to ensure a consistent reporting form from Phase I to Phase II, enhancements may be made which result from any gaps identified by the DRDTF in the Phase I "pilot" program. It will serve as a model for the future development of DADS Phase II. Because of the potentially large amounts of data DADS Phase III & IV will be handling, development of suitable software may be required. Since the final DADS product is an integrated system, handling all phases, the software should be developed at the start of Phase II to limit compatibility issues. The DRDTF will closely monitor the progress and data reporting process during Phase I. The DRDTF members will assume the user roles for acceptance testing through all DADS phases.

The burden of data reporting was minimized by the DRDTF in its efforts balance usefulness, availability, and resource requirements. No data requested by the DADS is beyond the capabilities of each Responsible Entity, in terms of the feasibility to gather requested data. Many, if not all data, is already gathered and collected by the Responsible Entities. For Responsible Entities with extensive Demand Response Programs, automated systems can be developed to integrate existing systems with a DADS data submittal. For Responsible Entities with smaller Programs, manual or semi-manual processes can be implemented.

Schedule

Table 2 describes the remaining milestones to be accomplished through 2011 implementation:

Table 2: DRDTF and DADS Phase I & II Milestones for Implementation

Date	Action	Description
September 2009	PC approval of Final Report (Phase I & II) in September 2009	PC approval is requested for this report which includes a recommendation to submit a Section 1600 for DADS data.
September 2009	Submit preliminary request for mandatory data collection through a *Section 1600* (in Draft Report)*: Request for Information or Data*	Section 1600 request will be submitted to FERC for 21 days. It will then be posted for a 45-day public comment period.
November – December, 2009	Final DADS Phase I and II report will be posted	Comments received from all comment periods will be incorporated into the final version of this report.
November	Letter to Industry	Formal announcement of DADS Phase I.
November	DADS Phase I Data Reporting Instruction Manual	The version 1 manual which will be aimed at providing Responsible Entities with

		information and examples to assist them in implementation.
November 2009	Send data request letter to Responsible Entities for Phase I	A formal data request letter will be sent to Responsible Entities requesting voluntary participation in Phase I of DADS.
January 2010	DADS Technical Workshop for Phase I	The DRDTF will sponsor a Technical Workshop for participants in Phase I.
March 2010	PC for final approval (Contingent on any changes to the report received from comments)	The final version of this report will be brought to the PC, highlighting comments received from the comment periods.
May 2010	Submit Final DADS Report: Phase I & II for Board approval	Contingent on PC direction, the Final DADS Report will be brought to the NERC Board of Trustees.
May 2010	Issue RFP for DADS system	RFP will be developed for a software system to support Phase II of DADS
July 2010	Implement the DADS Phase I with voluntary data submittals	Registration of Responsible Entities and Demand Response Programs will commence.
August 1st, 2010	DADS Phase I Q1 2010 data due to NERC	Demand Response data from the first quarter of 2010 is due to NERC.
July - November 2010	Evaluate DADS proposals and contract with vendor	Vendor proposals will be evaluated by the DRDTF.
January 2011	DADS Technical Workshop for Phase II	The DRDTF will sponsor a Technical Workshop for participants in Phase II.
January 2011	Beta version of DADS for market trials	The beta version of DADS software will be tested by the DRDTF.
March 2011	Market trials review and updates	DADS software will be evaluated and updated as necessary.
June 2011	DADS system goes live (DADS Phase II begins)	Demand Response data from the first quarter of 2011 is due to NERC.
August 1st 2011	DADS Phase II Q1 2011 data due to NERC	Demand Response data from the second quarter of 2011 is due to NERC.

Chapter 5—Conclusions & Recommendations

The Demand Response Data Task Force submits this report for consideration to the NERC Planning Committee. The following conclusions and recommendations are presented below for consideration.

Conclusions

- Demand Response is an important component in the overall portfolio of resources required to reliably meet the increasing demands for electricity in North America. In order for NERC to carry out its responsibility to ensure the reliability of the North American bulk power system, NERC must be able to evaluate and understand the benefits of Demand Response and its impact on reliability.

- The NERC Demand Response Availability Data System (DADS) will enable NERC to receive, manage, assess and disseminate data on Demand Response Programs, products and services administered by retail and wholesale entities throughout North America.

- DADS will be a repository of historical Demand Response information for use in a wide-range of applications for both planning and operating on the Bulk Power System. Performance metrics and data will help improve Demand Response projections by providing load forecasters, resource planners, and analysts with a comprehensive database for North America.

Recommendations

- Initiate the *NERC Rules of Procedure - Section 1600: Request for Information or Data* process for mandatory reporting of DADS data.

- Deployment of the Demand Response Availability Data System (DADS) Phase I by the first quarter of 2010—Phase II by the first quarter of 2011.

- Submit the metrics listed in Chapter 5 of this report, to the Reliability Metrics Working Group (RMWG) for consideration as industry-vetted historical Demand Response performance metrics.

Appendix I: Counting Demand Response

A key challenge faced by NERC in establishing the DADS and assessing the amount of Demand Response available to the bulk power system is avoiding any double-counting of resources. The structure of the market or regulatory environment in which Responsible Entities operate and the mandatory reporting requirement could result in the possibility of unintentional double-counting of Demand Response resources when NERC generates aggregate metrics in DADS. There are two situations in which double-counting of Demand Response resources could occur:

1) When aggregation occurs up to a Balancing Authority level and multiple enrollments for a given product category (Capacity, Reserves, Regulation or Energy) are administered by different Responsible Entities, and

2) When resources are jointly enrolled in multiple product categories within a single entity.

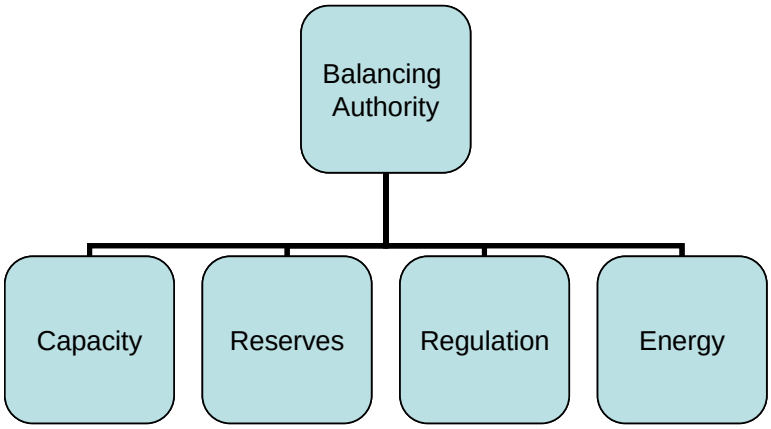
Responsible entities required to report the data and the instructions for reporting the Demand Response resources must be carefully considered. Comprehensive data handling algorithms are needed to count resources once and only once while placing resources in correct categories. DADS will be able to mitigate potential double-counting issues by configuring "counting rules", or algorithms, that are predefined by the DRDTF and selected by the Responsible Entity during data entry.

NERC has identified four Responsible Entity types that will be required to submit data to DADS: Balancing Authority, Distribution Provider, Load-Serving Entity and Purchasing-Selling Entity. To ensure that NERC does not double-count resources when preparing any assessments of the capabilities of Demand Response in the bulk power system, NERC will need to construct a set of reporting rules and counting algorithms that consider the various types of market structures and regulatory environments. Within any NERC Region, multiple market structures and regulatory environments are likely to exist. Diagrams, such as Venn Diagrams or hierarchical relationship diagrams, such as organizational charts, could be used to depict the different market structures and/or regulatory environments. NERC could use these market structure/regulatory definition diagrams to construct "counting rules" for calculating the available demand resource capabilities for each product type. In addition, when a resource is jointly enrolled within a single Responsible Entity, a hierarchical assignment of the demand resource's capability is recommended.

Responsible Entity Reporting: Market Structures and Regulatory Environments

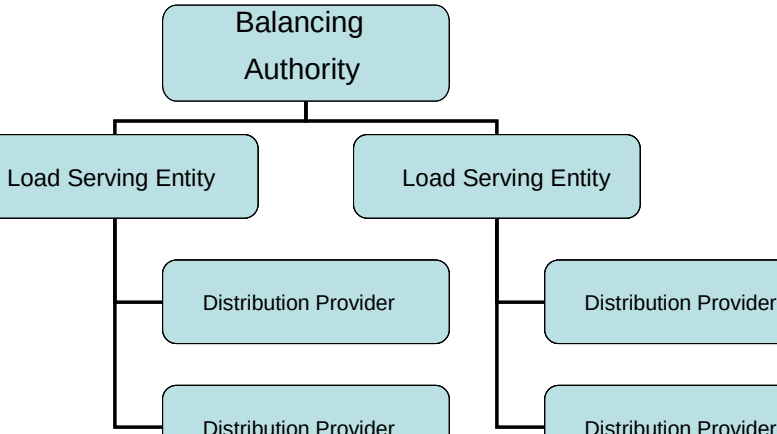
The following diagrams illustrate a few of the structural models that affect Demand Response data reporting, with notations as to those situations where double-counting could occur. In areas where a single Responsible Entity type enrolls Demand Response resources in mutually exclusive product categories, the definition is simple, as shown in Figure A1. Each product category represents unique resources and MW and can be reported by the Balancing Authority with confidence that there is no double-counting.

Figure A1: Balancing Authority administers mutually exclusive Demand Response product categories



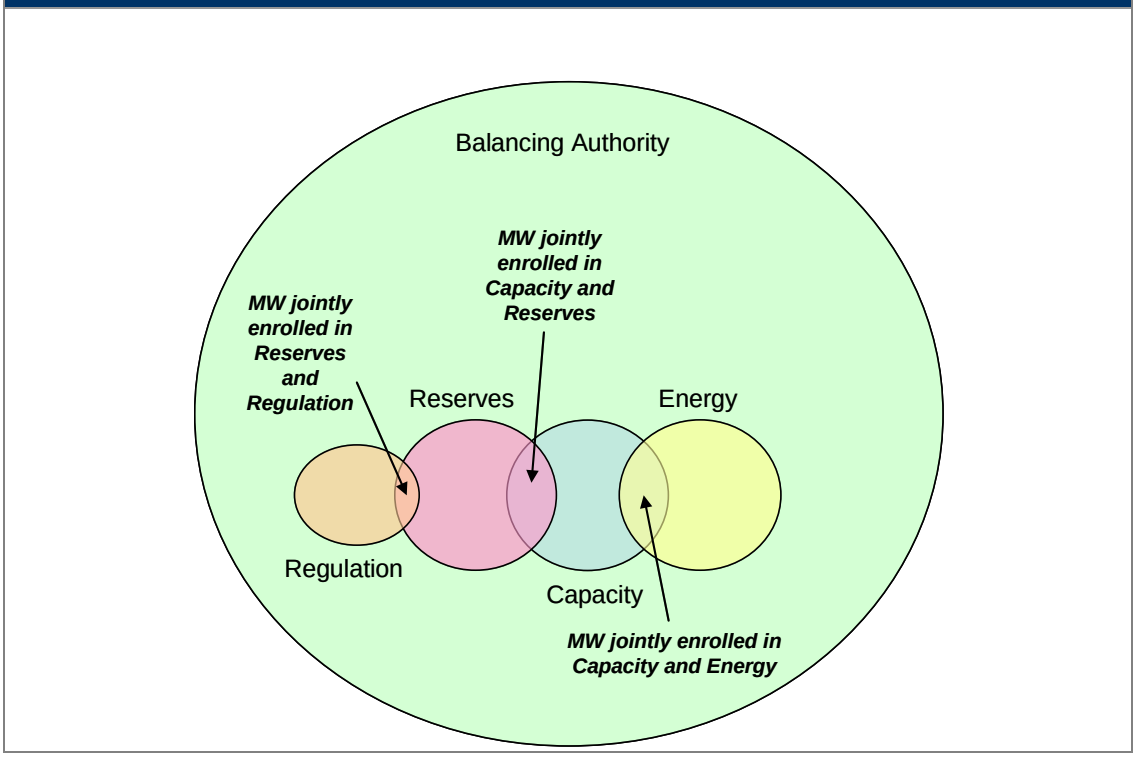
In the hierarchical market structure shown in Figure A2 double-counting is avoided because the highest level reporting authority incorporates and reports on Demand Response programs at each subordinate Responsible Entity.

Figure A2: Hierarchical Market Structure



Double-counting issues begin to arise when the joint enrollment of Demand Response resources in multiple programs is permitted, or when different entities (Balancing Authorities, Distribution Provider, Load Serving Entity) may share Demand Response resources. In these more complex market structures the need for counting rules becomes essential to ensure that the metrics computed by NERC based on reported data do not overestimate the available Demand Response. In Figure A3, within a single Balancing Authority, Demand Response products are administered where joint enrollment is permitted. Unique or "coincident" megawatts (MW) are identified separately from the jointly enrolled MW.

Figure A3: Balancing Authority administers Demand Response product categories where joint enrollment is permitted

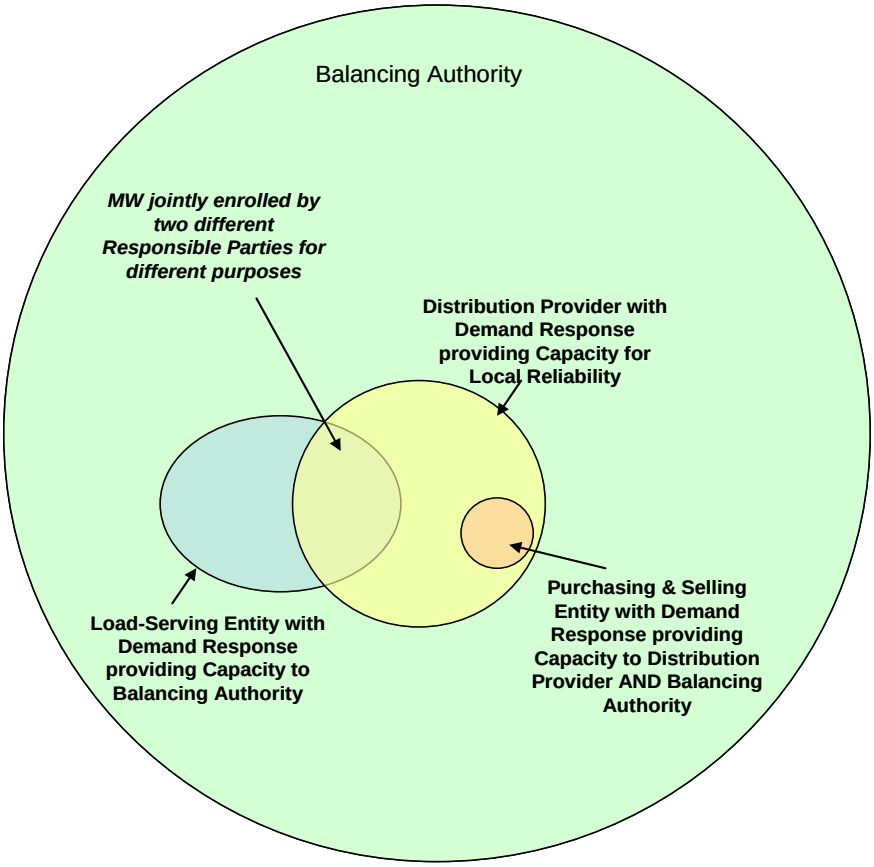


When multiple types of responsible entities and/or layers of responsible entities are required to submit data to DADS, the complexity of distinguishing unique resources increases. In many cases, each Responsible Entity is unaware of the demand resource's participation with the other Responsible Entity and there are no jurisdictional requirements that would cover the sharing of such information among Responsible Entities. In Figure A4, four different entities could report some portion of the same demand resource capability they have subscribed:

- Balancing Authority (green) reports for the capacity product category it administers (including MW reported by Load-Serving Entity – blue, and Purchasing & Selling entity – orange)
- Distribution Provider (yellow) reports capacity for local reliability which includes capacity also reported by Load-Serving Entity and Purchasing & Selling Entity

- Load Serving Entity reports capacity enrolled with Balancing Authority which includes some overlap of resources reported by Distribution Provider
- Purchasing & Selling Entity reports capacity that has also been reported by Distribution Provider and Balancing Authority

Figure A5: Multiple Responsible Entities reporting some of the same demand resource capacity



In Figure A5, a sample of a pre-defined market or regulatory model is shown. In the example, one can visualize how DADS will treat data based on relational structures. The example shows that without a double-counting mitigation scheme, 70 MW of Demand Response would be reported, and overstated.

Figure A6: Sample Configuration of a Responsible Entity – Treatment of DADS

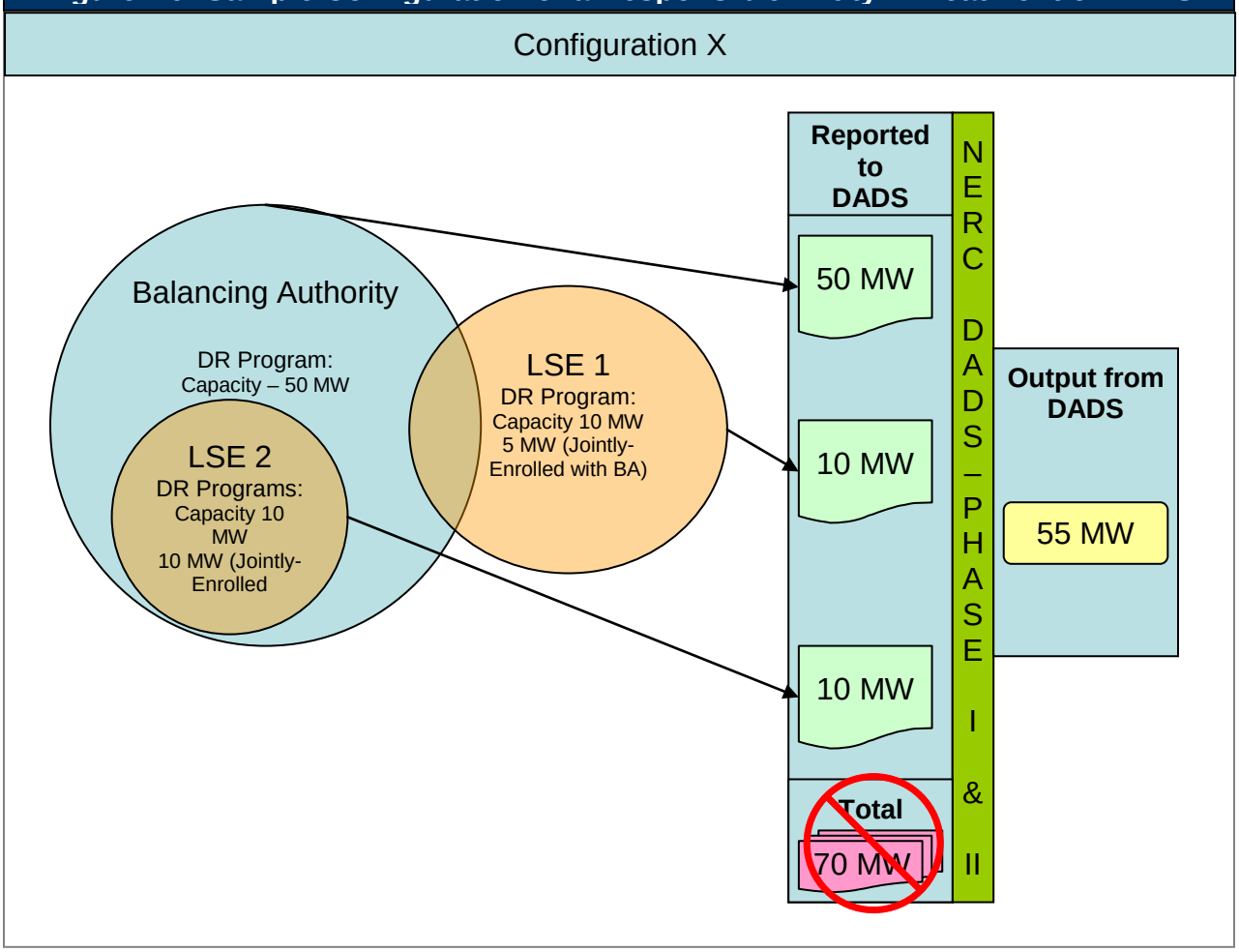


Figure A6 illustrates a scenario where double-counting Demand Response data is apparent. In this example, the Balancing Authority has a 50 MW Demand Response Program with a Capacity product. Two Load-Serving Entities within the Balancing Area also have Demand Response Programs. Both LSEs have a total of 10 MW registered in their individual Demand Response Programs. However, LSE-1 has 5 MW that are jointly-enrolled in the BA program. LSE-2 is entirely enrolled in the BA program. Therefore, those MWs reported by the LSEs that are jointly-enrolled, will be double-counted when aggregating data. Aggregated, the amount of Registered MWs equals 70 MW, which is overstated. Unique Registered MWs total 55 MW.

To mitigate this issue, DADS requires a Responsible Entity to determine the relationship of their program with other Responsible Entities. To validate this relationship, both “parent” and “child” program relationships must be reported and aligned.

Responsible Entity Reporting: Demand Resource Capability

When a Responsible Entity permits demand resources to provide more than one type of product, the Responsible Entity should identify how the resource is categorized for its deployment, based on the Demand Response product categories. Depending on market or tariff rules, a resource may be jointly enrolled in two or more product categories. By standardizing the hierarchy for reporting the product categories, NERC can isolate the unique and jointly enrolled MW to determine the appropriate values to report for each Demand Response product type.

Figure A7 offers Responsible Entities with a suggested method for distinguishing the jointly enrolled MW from the uniquely enrolled MW and assessing the maximum Demand Response capability available. Below, are some terms used in conjunction with this model:

- **Coincident** refers to the resources/MW that would be realized if all Demand Response products were called simultaneously and all responded by curtailing their enrolled quantity.
- **Jointly enrolled** refers to resources/MW that are enrolled in two or more product categories. This value conveys diversity, but is not very meaningful by itself.
- **Coincident Aggregate** refers to the total available resources where there is no double counting, and therefore provides an equivalent to how generation resource availability is measured. Coincident Aggregate is the sum of the diagonals shown in the matrix below.
- **Coincident Category** refers the total resources available to respond for a single category. Coincident Category is the sum of each product column.

Figure A7: Distinguish Jointly Enrolled vs. Coincident Aggregate Data

		Capacity C	Reserves V	Regulation G	Energy E
Capacity	C	1	2	3	4
Reserves	V	5	6	7	8
Regulation	G	9	10	11	12
Energy	E	13	14	15	16
Coincident Category		17	18	19	20
				Coincident Aggregate	21
				Jointly Enrolled	22

Cell Number	Matrix Intersection	Description
1	***CC***	Unique Capacity Resources/MW
2	***CV***	The Resources/MW who provide both Capacity and Operating Reserves products
3	***CG***	The Resources/MW who provide both Capacity and Regulation products
4	***CE***	The Resources/MW who provide both Capacity and Energy products
5	**-**	Unused - Resources who provide both Capacity and Operating Reserves are shown in cell # 2
6	***VV***	Unique Operating Reserves Resources/MW
7	***VG***	The Resources/MW who provide both Operating Reserves and Regulation products
8	***VE***	The Resources/MW who provide both Operating Reserves and Energy products
9	**-**	Unused - Resources who provide Regulation and Capacity are shown in cell # 3
10	**-**	Unused - Resources who provide Operating Reserves and Regulation are shown in cell # 7
11	***GG***	Unique Regulation Resources/MW
12	***GE***	The Resources/MW who provide both Regulation and Energy products
13	**-**	Unused - Resources who provide Capacity and Energy are shown in cell # 4
14	**-**	Unused - Resources who provide Energy and Operating Reserves are shown in cell # 8
15	**-**	Unused - Resources who provide Energy and Regulation are shown in cell # 112
16	***EE***	Unique Energy Resources/MW
17	**-**	Total enrolled Capacity
18	**-**	Total enrolled Reserves
19	**-**	Total enrolled Regulation
20	**-**	Total enrolled Energy
21	**-**	Total Unique Resources/MW for all product categories
22	**-**	Total Jointly Enrolled Resources/MW for all product categories

The hierarchy presented above shows Capacity as being the highest priority product category for Demand Response, followed by Operating Reserves, then Regulation and finally Energy. This hierarchy could be modified to rearrange the product categories, if needed, and should be set prior to development of DADS.

Figure A8: Example of a Completed Program Matrix

		Capacity C	Reserves V	Regulation G	Energy E
Capacity (MW)	C	1,223	20	6	37
Reserves (MW)	V		7		
Regulation (MW)	G			2	13
Energy (MW)	E				364
Coincident Category		1,223	27	8	414
				Coincident Aggregate	1,596
				Jointly Enrolled	76

The figure above shows an example of a completed reporting matrix. In this example, the Responsible Entity has a total of 1,596 Coincident Aggregate MW enrolled in its Demand Response Programs; the sum of the diagonal light colored boxes. If all resources were deployed at the same time, this is the maximum expected capability of the demand resources for this Responsible Entity.

Moving across the matrix in the Capacity row, there are 1,223 MW of resources enrolled in the Capacity program. Some of the resources that are considered primarily as Capacity resources are also enrolled to provide Reserves (20 MW), Regulation (6 MW), and Energy (37 MW). Typically, Demand Response Program rules specify the programs in which a resource may be jointly enrolled. The total number of Jointly Enrolled MW (76) is the sum of all the unshaded areas of the reporting matrix.

In the Reserves column, 20 MW of resources are jointly enrolled as Capacity Resources and 7 MW are considered primarily as Reserves providers. If all Reserves resources were activated at the same time, and only the Reserves resources, the maximum capability of the resources is a total of 27 MW, as shown in the Coincident Category total.

The presentation of the data structure as a collection tool (Figure A8) simplifies the amount of instruction necessary for a Responsible Entity to complete the matrix. This data structure captures the coincident enrollments within a Responsible Entity. Additional “keys” could indicate the type of Responsible Entity reporting the data. If a Responsible Entity is the collection agent for other Responsible Entities, NERC may require collection agents to report the information by Responsible Entity type. By associating the Responsible Entity to its market structure/regulatory environment definition, NERC should be able to reflect the true coincident aggregate and category totals for a Region.

Appendix II: Software/Functional Requirements

The DRDTF is proposing a Web-based data management system that will have the characteristics listed below:

1) Controlled access to the database
2) Capable of two modes of data entry; manual and file import/upload
3) Algorithms for data checking and validation based upon a set of pre-defined rules
4) Structure and procedures for eliminating double counting issues
5) Capable of generating reports and analysis based on a user defined query at the various levels (e.g., Regional Reliability Organization, Balancing Authority, and NERC level). Reports must be formatted in Excel for export.
6) Calculating predefined performance metrics

The management of users and administrators is vital when handling confidential data. Therefore, DADS will need controlled access for those submitting data (User/Responsible Entity) and those handling the data (System Administrator/NERC Staff). These requirements are listed below.

Manage Users:

The system must support management of different types of users. The following functionality is required.

Add Users

Adding new users to the system:

- **Responsible Entity Administrator**
- **Responsible Entity User**
- **Guest**
- **System Administrator**

Update/Edit Users

- Responsible Entity Administrator will be able to add, update and edit Responsible Entity Users.
- Responsible Entity Users and Administrators will be able to update and edit unrestricted data fields (i.e., contact information)
- Changes to restricted field will require System Administrator approval.

Deactivate Reporting Users

- Responsible Entity Administrator can deactivate a Responsible Entity Users from their organization.
- Only the System Administrator can terminate privileges of a Responsible Entity Administrator.

Manage User Roles and Access Levels

- Limit certain Users ability to view data Responsible Entity level data versus NERC aggregated metrics.

Program Data Collection Forms

DADS is designed to collect data on five forms, though not all will be required for each program registered by the Responsible Entity:

- **Form 1A**: Define/Register Program
- **Form 1B**: Manage Program Enrollment Data
- **Form 2A**: Reliability Event Data
- **Form 2B**: Market Participation Data
- **Form 2C**: Ancillary Service Product Data

Descriptions of each of these forms are provided below. Detailed data field lists for each type of data are provided in Appendix A.

Form 1A: Define/Register Program

Program definition data includes information that will be used within DADS to associate other types of reported data to a given Demand Response Program. Responsible Entities must first establish their Demand Response Programs in the system prior to providing any program data for a Demand Response Program. The system must allow the Responsible Entities to update and edit the demand program information, as well as deactivate the Demand Response Program at the end of its life.

Add Program

- Responsible Entities will be required to enroll their program(s) in the system prior to submitting Program Enrollment, Event and Market Participation reports.
- Program enrollment will include required and optional program characteristics (i.e., program type, location, etc.).
- Programs will have a status (i.e., active, retired). Registration, Event and Market Participation reports can be submitted for active programs.
- Upon submitting all the required data fields, the program status will be set to Active.

Validate Program Data

- The system will validate that the required fields are entered. The user will not be able to complete the addition of a new program without entering valid data for all required fields.
- Since program designs and provisions vary, DADS should provide a "not applicable" selection for every required field.
- The system will flag programs with relationships to other programs. The relationship will be maintained to support algorithms to eliminate double counting.

Program Reporting Relationships

- The system will maintain the some type of association between programs that can be among (i) a Responsible Entity's programs or (ii) another Responsible Entities program(s).
- The system will use the market/regulatory environment reporting structure to exclude program enrollment and performance data from any summary reports so that program enrollment and performance data is not double counted.

Edit/Update Program:

- Establish rules on when the data can be updated (i.e. semi-annual)
- Responsible Entities will be able to edit/update program characteristics pursuant to the following rules:

Table A1 – Edit/ Update Business/Program Rules

Name	Update/Edit
Responsible Entity	No
Program Name	Yes
NERC Region	Yes
Market Type	No
Product Type	No
Service Type	No
Contact Name	Yes
Contact Phone Number	Yes
Contact E-Mail Address	Yes
Program Relationship 1	Yes
Program Relationship 2	Yes
Program Relationship 3	Yes
Program Status	Yes
Program Start Date	Yes
Program End Date	Yes
Program Data Confidentiality	Yes
Program ID	No

Retire Program:

- The Responsible Entity can change the status of the program from Active to Retired and specify an effective date of the retirement.
- The Responsible Entity cannot provide additional Program Enrollment, Event or Market Participation data for programs in a Retired status.
- The system will maintain historical data on Retired programs.

Register Zones by Responsible Entity

- The system will maintain pre-defined Zones by Responsible Entity.
- Each Zone must be associated with a single Time Zone.

Form 1B: Manage Program Enrollment Data

Program Enrollment data includes aggregate information at zonal level about the number of resources and enrolled Demand Response capability on a monthly basis, updated according to the reporting schedule. DADS will not require reporting of enrollment data at the individual resource or aggregator level within a Responsible Entity's program. The system must allow Responsible Entities to add and update Program Enrollment data.

Add Program Enrollment Data

- A Responsible Entity can add program enrollment data for any of their programs that are in an Active status.
- The system will maintain the date, time and user that added the program enrollment data.

Validate Program Enrollment Data

- The system will check that all required fields are entered and warn the user of any missing required data fields.
- Since program designs and provisions vary, DADS should provide a "not applicable" selection for every required field.

Update Program Enrollment Data

- A Responsible Entity can update program enrollment for any of their programs that are in an Active status. A time limit for updates may be imposed so that changes do not impact NERC annual reports.
- Data submitted after the initial addition will be identified as updated data.
- The Responsible Entity can update a single entry or all the data for a reporting period.
- The system will maintain the date, time and user that added or changed the program enrollment data.
- The system will maintain the initial submission. No data will be deleted.

Form 2A: Reliability Event Data

Reliability Event Data will be reported for Demand Response services in which resources are obligated over a defined period of time to provide Demand Response upon deployment by the appropriate Balancing Authority, Load Serving Entity, Distribution Provider, etc. Reliability Event Data refers to emergency or contingency events, not economic Demand Response deployments. Hourly data associated with each Reliability Event is required.

- A Responsible Entity can add event data for any of their programs that are in an Active status.
- Event Data will be reported in a manner consistent with the NERC/NAESB definitions of Demand Response Event Terms. The timeline terms in Table 8: Form 2 should be reported in accordance with Figure 8. These terms are defined in the *Definitions of Terms* section of this report.
- The system will maintain the date, time and user that added the event data.

Validate Event Data

- The system will check that all required fields are entered and warn the user of any missing data fields.
- Since program designs and provisions vary, DADS should provide a "not applicable" selection for every required field.

Update Event Data

- A Responsible Entity can update event data for any of their programs that are in an Active status.
- Data submitted after the initial addition will be identified as updated data.
- The Responsible Entity can update a single entry or all the data for a reporting period.
- The system will maintain the date, time and user that added the event data.
- The system will maintain the initial submission. No data will be deleted.

Form 2B: Market Participation Data

Market Participation Data refers to energy Demand Response Programs categorized in which the demand resource offers its load reduction based on economics, not reliability, and are compensated only if deployed. The objective of Market Participation Data is to understand the frequency and magnitude of economic Demand Response participation. Monthly summary data only; details regarding individual schedules or individual performance are not provided.

- Market Participation data is reported at a monthly level, providing a monthly summation of all activity related to economic-based Demand Response.
- A Responsible Entity can add market participation data for any of their energy bidding programs that are in an Active status.
- The system will maintain the date, time and user that added the market participation data.

Validate Market Participation Data

- The system will check that all required fields are entered and warn the user of any missing data fields.
- Since program designs and provisions vary, DADS should provide a "not applicable" selection for every required field.

Update Market Participation Data

- A Responsible Entity can update market participation data for any of their programs that are in an Active status.
- Data submitted after the initial addition will be identified as updated data.
- The Responsible Entity can update a single entry or all the data for a reporting period.
- The system will maintain the date, time and user that added the market participation data.

Form 2C: Ancillary Service Product Data

Ancillary Services Product Data refers to data collected for Demand Response resources providing Ancillary Services, defined in FERC Order 888-A as those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Service Provider's transmission system in accordance with good utility practice. Ancillary Services typically fall into two primary categories: reserves and regulation. Monthly summary data only; details regarding individual schedules or individual performance are not provided.

- Ancillary Service Product data is reported at a monthly level, providing a monthly summation of all activity related to ancillary services provided by Demand Response.
- A Responsible Entity that administers Ancillary Services can add any Load participation in those Services that are in an Active status.
- The system will maintain the date, time and user that added the Ancillary Service Product data.

Validate Ancillary Services Product Data

- The system will check that all required fields are entered and warn the user of any missing data fields.
- Since program designs and provisions vary, DADS should provide a "not applicable" selection for every required field.

Update Ancillary Services Product Data

- A Responsible Entity can update product data for any of their Ancillary Services that are open to Load participation and are in Active status.
- Data submitted after the initial addition will be identified as updated data.
- The Responsible Entity can update a single entry or all the data for a reporting period.
- The system will maintain the date, time and user that added the Ancillary Services product data.

Search and Extract Program Data:

The system will allow all users to search and extract program data stored in DADS based on user defined criteria.

View Program Data

- Users shall have the ability to search for Program data using any combination of the following attributes.
    - Responsible Entity
    - Responsible Entity Type
    - Program Name
    - NERC Region
    - Market Type
    - Product Type
    - Service Type
    - Program Relationship 1
    - Program Relationship 2
    - Program Relationship 3
    - Program Relationship 4
    - Program Status
    - Program Start Date
    - Program End Date

View Event Data

- Users shall have the ability to search for Event data using any combination of the following attributes.
    - Registration Month
    - Event Type
    - Event Reason
    - Program ID
    - Responsible Entity
    - Responsible Entity Type
    - Program Name
    - NERC Region
    - Market Type
    - Product Type
    - Service Type
    - Zone
    - Advance Notification Date
    - Advance Notification Time
    - Deployment Date
    - Deployment Time
    - Reduction Deadline
    - Release/Recall Date
    - Release/Recall Time
    - Normal Operations Date
    - Normal Operations Time

View Registration Data

- Users shall have the ability to search for Registration data using any combination of the following attributes.
    - Registration Month
    - Program ID
    - Responsible Entity
    - Responsible Entity Type
    - Program Name
    - NERC Region
    - Market Type
    - Product Type
    - Service Type
    - Zone
    - Number of Registered Resources Assets
    - Registered MW

View Market Participation Data

- Users shall have the ability to search for Market Participation data using any combination of the following attributes.

  - Registration Month
  - Responsible Entity
  - Responsible Entity Type
  - Program Name
  - NERC Region
  - Market Type
  - Product Type
  - Service Type
  - Zone
  - Program ID
  - Number of Registered Resources
  - Total Offer and Self Scheduled Hours
  - Scheduled/Cleared Hours
  - Offered or Self Scheduled Energy Reduction
  - Scheduled Energy Reduction
  - Estimated Realized Energy Reduction
  - Offered or Self Scheduled Demand Reduction
  - Scheduled Demand Reduction
  - Estimated Realized Demand Reduction

View Ancillary Service Product Data

Users shall have the ability to search for Ancillary Service Product data using any combination of the following attributes.

  - Registration Month
  - Responsible Entity
  - Responsible Entity Type
  - Program Name
  - NERC Region
  - Market Type
  - Product Type
  - Service Type
  - Zone
  - Program ID
  - Number of Registered Resources
  - Total Offer and Self Scheduled Hours
  - Scheduled/Cleared Hours
  - Offered or Self Scheduled Energy Reduction
  - Scheduled Energy Reduction
  - Estimated Realized Energy Reduction
  - Offered or Self Scheduled Demand Reduction
  - Scheduled Demand Reduction
  - Estimated Realized Demand Reduction

Appendix III: Definitions of Terms Used in this Report

NOTE: the context of the definitions is demand-side management, rather than bulk power systems and, therefore, they are not meant to mirror those used in the system context. Descriptions of the specific data points identified in the DADS system are included in Appendix IV: Data Fields by Function.

Adjustment Window: *The period of time prior to a Demand Response Event used for calculating a Baseline adjustment.*

Advance Notification(s): *One or more communications to Demand Resources of an impending Demand Response Event in advance of the actual event.*

After-the-Fact Metering: *Interval meter data separate from Telemetry that is used to measure Demand Response. May not apply to Demand Resources under Baseline Type II (Non-Interval Meter)*

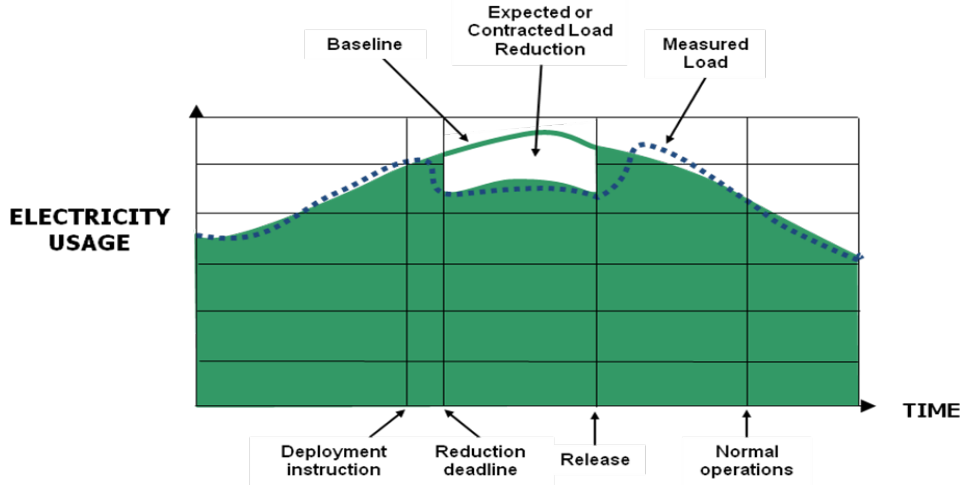
Aggregated Demand Resource: *A group of independent Load facilities that provide Demand Response services as a single Demand Resource.*

Ancillary: *Demand-side resource displaces generation deployed as operating reserves and/or regulation; penalties are assessed for nonperformance.*

Balancing Authority: *The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.*

Baseline: *A Baseline is a method of estimating the electricity that would have been consumed by a Demand Resource in the absence of a Demand Response Event. The Baseline is compared to the actual metered electricity consumption during the Demand Response Event to determine the Demand Reduction Value. Depending on the type of Demand Response product or service, Baseline calculations may be performed in real-time or after-the-fact. The System Operator may offer multiple Baseline models and may assign a Demand Resource to a model based on the characteristics of the Demand Resource's Load or allow the Demand Resource to choose a performance evaluation model consistent with its load characteristics from a predefined list. The figure below illustrates the concept of Baseline relative to a Demand Response Event.*

Illustration of Baseline Concept



Source: NAESB

Baseline Adjustment: *An adjustment that modifies the Baseline to reflect actual conditions immediately prior to or during a Demand Response Event to provide a better estimate of the energy the Demand Resource would have consumed but for the Demand Response Event. The adjustments may include but are not limited to weather conditions, near real time event facility Load, current Demand Resource operational information, or other parameters based on the System Operator's requirements.*

Baseline Type-I (Interval Metered): *A Baseline performance evaluation method based on a Demand Resource's historical interval meter data which may also include other variables such as weather and calendar data.*

Baseline Type-II (Non-Interval Metered): *A Baseline performance evaluation method that uses statistical sampling to estimate the electricity consumption of an Aggregated Demand Resource where interval metering is not available on the entire population.*

Baseline Window: *The window of time preceding and optionally following, a Demand Response Event over which the electricity consumption data is collected for the purpose of establishing a Baseline. The applicability of this term is limited to Meter Before/Meter After, and Baseline Type-I and Type-II.*

Capacity Service: *A type of Demand Response service in which Demand Resources are obligated over a defined period of time to be available to provide Demand Response upon deployment by the System Operator.*

Capacity: *demand-side resource displaces or augments generation for planning and/or operating resource adequacy; penalties may be assessed for nonperformance.*

Coincident (Unique) Resources: *refers to the amount Demand Response curtailments that would be realized if all Demand Response products were called simultaneously and all responded by curtailing their enrolled quantity.*

Critical Peak Pricing (CPP) with controls: *demand-side management that combines direct load control with a pre-specified high price for use during designated critical peak periods, triggered by system contingencies or high wholesale market prices.*

Critical Peak Pricing (CPP): *rate and/or price structure designed to encourage reduced consumption during periods of high wholesale market prices or system contingencies by imposing a pre-specified high rate for a limited number of days or hours.*

Demand: *The rate at which electric energy is delivered to or by a system or part of a system, generally expressed in kilowatts or megawatts, at a given instant or averaged over any designated interval of time; and the rate at which energy is being used by the customer.*

Demand Bidding & Buy-Back: *demand-side resource bids into a wholesale electricity market to offer load reductions at a price, or identifies how much load it is willing to curtail at a specific price.*

Demand Reduction Value: *Quantity of reduced electrical consumption by a Demand Resource, expressed as MW or MWh.*

Demand Response: *changes in electric use by demand-side resources from their normal consumption patterns in response to changes in the price of electricity, or to incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized.*

Demand Response Event: *The time periods, deadlines and transitions during which Demand Resources perform. The System Operator shall specify the duration and applicability of a Demand Response Event.*

Demand Response Program: a service of Demand Response Providers in which Demand Response Resources enroll and participate in Demand Response.

Demand Response Provider: *The entity that is responsible for delivering Demand reductions from Demand Resources and is compensated for providing such Demand Response products in accordance as specified by the System Operator.*

Demand Response Resource: *A Load or aggregation of Loads capable of measurably and verifiably providing Demand Response.*

Demand Side Management (DSM): *all activities or programs undertaken to influence the amount and timing of electricity use.*

Deployment: *The time at which a Demand Resource begins reducing Demand on the system in response to an instruction. Deployment is used synonymously for activate/activation.*

Deployment Period: *The time in a Demand Response Event beginning with the Deployment and ending with the Release/Recall.*

Direct Load Control (Direct Control Load Management): *demand-side management that is under direct remote control of a control center. It is the magnitude of customer demand that can be interrupted at the time of the system peak by direct control of the System Operator by interrupting power supply to individual appliances or equipment on customer premises.*

Dispatchable: *demand-side resource curtails according to instruction or signal from a System Operator.*

Distribution Provider: *Provides and operates the "wires" between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the Distribution function at any voltage.*

Dual-Purpose or Jointly-Enrolled Resources: *refers to resources that are enrolled in two or more product categories.*

Economic: d*ispatchable Demand Response, demand-side resources offered to provide load reductions to displace generation resources.*

Emergency: *demand-side resource curtails during system and/or local capacity constraints.*

Energy Efficiency: *permanent changes to electricity use through replacement with more efficient end-use devices or more effective operation of existing devices. Generally it results in reduced consumption across all hours rather than event-driven targeted load reductions.*

Energy-Price: *demand-side resource bids to curtail load for scheduling or dispatch and displaces generation resources; penalties may be assessed for nonperformance.*

Energy-Voluntary: *demand-side resource curtails voluntarily when offered the opportunity to do so for compensation, but nonperformance is not penalized.*

Energy Service: *A type of Demand Response service in which Demand Resources are compensated solely based on their performance during a Demand Response Event.*

Guest User: *Entities that can view and extract data from the system. Data users cannot add, update, edit or delete data.*

Internal Demand: *Is the sum of the metered (net) outputs of all generators within the system and the metered line flows into the system, less the metered line flows out of the system. The demands for station service or auxiliary needs (such as fan motors, pump motors, and other equipment essential to the operation of the generating units) are not included. Internal Demand includes adjustments for all non-dispatchable Demand Response Programs (such as Time-of-Use, Critical Peak Pricing, Real Time Pricing and System Peak Response Transmission Tariffs) and some dispatchable Demand Response (such as Demand Bidding and Buy-Back).*

Interruptible Load: *curtailment options integrated into retail tariffs that provide a rate discount or bill credit for agreeing to reduce load during system contingencies. It is the magnitude of customer demand that, in accordance with contractual arrangements, can be interrupted at the time of the seasonal peak. In some instances, the demand reduction may be effected by action of the System Operator (remote tripping) after notice to the customer in accordance with contractual provisions.*

Load: *An end-use device or customer that receives power from the electric system.*

Load as a Capacity Resource: *the magnitude of customer demand that, in accordance with contractual arrangements, is committed to pre-specified load reductions when called upon by a balancing authority. These resources are not limited to being dispatched during system contingencies and may be subject to economic dispatch from wholesale balancing authorities. Additionally, this capacity may be used to meet resource adequacy obligations when determining planning reserve margins.*

Load Serving Entity: *Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.*

Maximum Base Load: *A performance evaluation method based solely on a Demand Resource's ability to reduce to a specified level of electricity Demand, regardless of its electricity consumption or Demand at Deployment.*

Meter Before / Meter After: *A performance evaluation method where electricity Demand over a prescribed period of time prior to Deployment is compared to similar readings during the Sustained Response Period.*

Meter Data Recording Interval: *The time between electricity meter consumption recordings.*

Meter Data Reporting Deadline: *The maximum allowed time from the end of a Demand Response Event (Normal Operations) to the time when meter data is required to be submitted for performance evaluation and settlement. The Meter Data Reporting Deadline may be either relative (a number of hours/days after Normal Operations) or fixed (a fixed calendar time, such as end-of-month).*

Metering Generator Output: *A performance evaluation method, used when a generation asset is located behind the Demand Resource's revenue meter, in which the Demand Reduction Value is based on the output of the generation asset.*

Performance Window: *The period of time in a Demand Response Event analyzed by the System Operator to measure and verify the Demand Reduction Value for a Demand Resource.*

Purchasing and Selling Entity: *The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.*

Non-dispatchable: *demand-side resource curtails according to tariff structure, not instruction from the System Operator.*

Net Energy to Load: *Net Balancing Authority Area generation, plus energy received from other Balancing Authority Areas, less energy delivered to Balancing Authority Areas through interchange. It includes Balancing Authority Area losses but excludes energy required for storage at energy storage facilities.*

Normal Operations: *The time following Release/Recall at which a System Operator may require Demand Resource to have returned its Load consumption to normal levels, and to be available again for Deployment.*

Non-Spin Reserves: *demand-side resource not connected to the system but capable of serving demand within a specified time.*

Ramp Period: *The time between Deployment and Reduction Deadline, representing the period of time over which a Demand Resource is expected to achieve its change in Demand.*

Ramp Rate: *The rate, expressed in megawatts per minute, that a generator changes its output. Demand Resource ramp rate is the rate, expressed in megawatts per minute, that a Demand Resource changes its Load.*

Real Time Pricing (RTP): *rate and price structure in which the price for electricity typically fluctuates to reflect changes in the wholesale price of electricity on either a day-ahead or hour-ahead basis.*

Recovery Period: *The time between Release/Recall and Normal Operations, representing the window over which Demand Resources are required to return to their normal Load.*

Reduction Deadline: *The time at the end of the Ramp Period when a Demand Resource is required to have met its Demand Reduction Value obligation.*

Release/Recall: *The time when a System Operator or Demand Response Provider notifies a Demand Resource that the Deployment Period has ended or will end.*

Reliability: *dispatchable Demand Response used to supplement generation resources resolving system and/or local capacity constraints.*

Reliability Event: *the deployment of Demand Response for resource adequacy or operational reliability.*

Regulation Service: *A type of Demand Response service in which a Demand Resource increases and decreases Load in response to real-time signals from the System Operator. Demand Resources providing Regulation Service are subject to dispatch continuously during a commitment period. This service is usually responsive to Automatic Generation Control (AGC) to provide normal regulating margin. Provision of Regulation Service does not correlate to Demand Response Event timelines, deadlines and durations as depicted in the Demand Response event figure.*

Responsible Entity Administrator: *Responsible Entity User that is responsible for adding, updating, editing and deleting Responsible Entity Users within the same organization. Each Responsible Entity will have one Responsible Entity Administrator.*

Responsible Entity User: *Users created and maintained by a Responsible Entity Administrator that are responsible for adding, updating, editing and deleting Demand Response data in the system.*

Responsible Entity: *Responsible Entity is a term used by NERC which applies to an organization that carries out the Tasks within a Function. Responsible Entities are registered by the Electric Reliability Organization (ERO) in the U.S. and NERC in Canada/Mexico and maintained in its registry as described in the NERC Rules of Procedure and Regional Delegation Agreements. Such organizations are "responsible" to NERC for meeting the standards requirements assigned to the particular Responsible Entity.*

For DADS, Responsible Entities, defined by a set of criteria, are required to submit DADS data. A *Responsible Entity is required to maintain Demand Response data in the NERC system. A Responsible Entity is generally the entity responsible for dispatching the Demand Response Program, product or service.*

Reserve Service: *A type of Demand Response service in which Demand Resources are obligated to be available to provide Demand reduction upon deployment by the System Operator, based on reserve capacity requirements that are established to meet applicable reliability standards.*

Spinning/Responsive Reserves: *demand-side resources that is synchronized and ready to provide solutions for energy supply and demand imbalance within the first few minutes of an electric grid event.*

Standby Demand: *the demand specified by contractual arrangement with a customer to provide power and energy to that customer as a secondary source or backup for an outage of the customer's primary source. Standby Demand is intended to be used infrequently by any one customer.*

Sustained Response Period: *The time between Reduction Deadline and Release/Recall, representing the window over which a Demand Resource is required to maintain its reduced net consumption of electricity.*

System Administrator: *Entity responsible for maintaining the system, including managing users.*

System Peak Response Transmission Tariff: *rate and/or price structure in which interval metered customers reduce load during coincident peaks as a way of reducing transmission charges.*

System Operator: *A System Operator is a Balancing Authority, Transmission Operator, or Reliability Coordinator whose responsibility is to monitor and control an electric system in real time. The System Operator is responsible for initiating Advance Notifications, Deployment, and Release/Recall instructions.*

Telemetry: *Real-time continuous communication between a Demand Resource or Demand Response Provider and the System Operator.*

Telemetry Interval: *The time unit between communications between a Demand Resource or Demand Response Provider and a System Operator.*

Time-of-Use (TOU): *rate and/or price structures with different unit prices for use during different blocks of time.*

Time-Sensitive Pricing: *retail rates and/or price structures designed to reflect time-varying differences in wholesale electricity costs, and thus provide consumers with an incentive to modify consumption behavior during high-cost and/or peak periods.*

Total Internal Demand: *equals the sum of the Internal Demand and the Standby Demand.*

Validation, Editing and Estimation: *The process of taking raw meter data and performing validation and, as necessary, editing and estimation of corrupt or missing data, to create validated data. (VEE guidelines are published in the Edison Electric Institute's Uniform Business Practices for Unbundled Electricity Metering, Volume Two, Published 12/05/00, http://www.naesb.org/REQ/req_form.asp)*

Appendix IV:
Data Fields by Function

As of January 2011, the following section is being developed by the software developer. This section will be updated as the detailed software specifications are completed.

The tables in this appendix provide details into the data fields that DADS proposes to collect. Data field lists are presented by function and correspond to the forms described in *Data Collection and Reporting Process* chapter of this report. These tables provide a framework for the data to be collected by DADS. Not all data is required for every Responsible Entity. More detailed description of what is required can be found in the DADS Data Form Instructions. Additionally, the DRDTF may enhance these data points for clarification during the Phase I pilot program.

DADS Form 1A: Register Program		
Name	**Description**	**Field Type**
Responsible Entity	Name of the retail or wholesale organization responsible for the program	Required
Responsible Entity NCR ID#	NERC Compliance Registry Number	Required
Responsible Entity Function Type	Type of organization reporting data.	Required
Program Name	Name of the Program	Required
NERC Region	The NERC Region in which the load reductions will occur. NERC defined.	Required
Market Type	Retail, Wholesale	Required
Product Type	Energy, Capacity, Reserve, Regulation	Required
Service Type	Programs must be classified into one of the following categories: 1. Capacity – Critical Peak Pricing with Load Control 2. Capacity – Direct Control Load Management 3. Capacity – Interruptible Load	Required

DADS Form 1A: Register Program		
Name	**Description**	**Field Type**
	4. Capacity – Load as a Capacity Resource (planning resource) 5. Regulation (Ancillary Service) 6. Reserves – Non-Spin/Non-Synchronous (Ancillary Service) 7. Reserves – Spinning/Synchronous (Ancillary Service) 8. Energy – Price 9. Energy – Voluntary	
Contact Name	Name of the person to contact regarding the program	Required
Contact Phone Number	Phone number of contact regarding the program	Required
Contact E-Mail Address	E-mail address of contact regarding the program	Required
Program Data	Which type of data will you be reporting? (Event or Market Participation)	Required
Program Relationship 1	Is the Registration, Event or Market Participation data reported for this program reported for any other program (Yes, No)?	Required
Program Relationship 2	If Yes, Name of the program	Required
Program Relationship 3	If Yes, Name of the Responsible Entity	Required
Program Status	Active or Retired	Required
Program Start Date	The date in which the program participants are first able to participate in actual load reduction.	Required
Program End Date	Date the program ends or None	Required
Program Data Confidentiality	The confidentiality status of a specific program. • Confidential Business and Market Information • Confidential Critical Energy Infrastructure Information • Non-Confidential	Required
Program ID	Unique identifier provided by the System	Assigned by NERC

DADS Form 1B: Manage Program Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Record Date	N/A	DATE	DD/MM/YYYY		Date the record was prepared (this is not the period being reported)
Version	N/A	NUMBER		1(initial), 2,3,4,….	Indicates if the data is the initial submission or a subsequent update. Auto generated by system when the Program ID, Registration Month and Zone already exist in the database.
Registration Month	N/A	DATE	MM/YYYY		Month and Year for the registration month being reported.
Program ID	N/A	STRING			Unique program identifier (assigned by NERC)
Zone	N/A	STRING			Name of the location. User defined, maintained in a table with the Time Zone for the Zone
Number of Registered Resources Assets	N/A	NUMBER	######		The number of registered resources/assets in the zone for the program being reported.
Registered MW	MW	NUMBER	#######.###		The registered MW available for reduction in the zone for the program being reported. If the number of registered MW varies across different time periods within the registration month, use a weighted average.

DADS Form 2A: Reliability Event Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Record Date	N/A	DATE	DD/MM/YYYY		Date the record was prepared (this is not the period being reported)
Version	N/A	NUMBER		1(initial), 2,3,4,…	Indicates if the data is the initial submission or a subsequent update. Auto generated by system when the Program ID, Registration Month and Zone already exist in the database.
Registration Month	N/A	DATE	MM/YYYY		Month and Year for the registration month being reported.
Event Reason	N/A	PRE-DEFINED STRING			Description of the reason for the event: • System-wide capacity insufficiency • Frequency Control • Localized Events • Reactive Power Support
Program ID	N/A	STRING			Unique program identifier
Zone	N/A	STRING			Name of the location. User defined.
Advance Notification Date	N/A	DATE	DD/MM/YYYY		The date one or more communications to Demand Resources of an impending Demand Response Event in advance of the actual event was issued
Advance Notification	N/A	TIME	HH24:MI:SS		The time one or more communications to

DADS Form 2A: Reliability Event Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Time					Demand Resources of an impending Demand Response Event were issued in advance of the actual event.
Deployment Date	N/A	DATE	DD/MM/YYYY		The date a Demand Resource begins reducing Demand on the system in response to an instruction.
Deployment Time	N/A	TIME	HH24:MI:SS		The time a Demand Resource begins reducing Demand on the system in response to an instruction.
Reduction Deadline	N/A	TIME	HH24:MI:SS		The time at the end of the Ramp Period when a Demand Resource is required to have met its Demand Reduction Value obligation
Release/Recall Date	N/A	DATE	DD/MM/YYYY		The date when a System Operator, Utility or Demand Response Provider notifies a Demand Resource that the Deployment Period has ended or will end
Release/Recall Time	N/A	TIME	HH24:MI:SS		The time when a System Operator, Utility or Demand Response Provider notifies a Demand Resource that the Deployment Period has ended or will end.
Normal Operations Date	N/A	DATE	DD/MM/YYYY		The date following Release/Recall at which a System Operator may require Demand Resource to have returned its Load consumption to normal levels, and to be available again for Deployment.
Normal Operations Time	N/A	TIME	HH24:MI:SS		The time following Release/Recall at which a

DADS Form 2A: Reliability Event Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
					System Operator may require Demand Resource to have returned its Load consumption to normal levels, and to be available again for Deployment.
Committed (MW)	MW	NUMBER	#######.###		The Committed (or Contracted/Registered) MW in the Program on the Deployment Date for the Zone/Location activated/deployed.
Number of Committed Resources	N/A	NUMBER	######		The number of Committed (or Contracted/Registered) Resources (or Assets) on the Deployment Date for the Zone/Location activated/deployed
Capacity Dispatched (deployed)	MW	NUMBER	#######.###		The hourly MW dispatched (deployed) during the Event. If the all the Committed MW in the reported zone were dispatched, then the total Dispatched MW should equal the Committed MW value. If a subset of the Committed MW in the zone were dispatched, the total Dispatched should be less than the Committed MW value.
Estimated Realized Demand Reduction	MW	NUMBER	#######.###		The estimated hourly MW reduced by Demand Response resources/assets during the event.
Estimated Realized Energy Reduction	MWH	NUMBER	#######.###		The estimated hourly total energy reduction (MWh) achieved from all the dispatched resources in the Deployment Period.

DADS Form 2B: Market Participation Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Record Date	N/A	DATE	DD/MM/YYYY	Auto- Generated	Date the record was prepared (this is not the period being reported)
Version	N/A	NUMBER		1(initial), 2,3,4,…	Indicates if the data is the initial submission or a subsequent update. Auto generated.
Registration Month	N/A	DATE	MM/YYYY		Month and Year for the registration month being reported.
Program ID	N/A	STRING			Unique program identifier (assigned by NERC)
Number of Registered Resources	N/A	NUMBER	######		The number of registered resources/assets for the program being reported. Resources may be individual Loads or aggregations of Loads depending on product design.
Total Offer and Self Scheduled Hours	N/A	NUMBER	######		The total number of offer and self scheduled hours made by Demand Response resources/assets during the reported month.
Scheduled/Cleared Hours	N/A	NUMBER	######		The total number of hours where offers made by Demand Response resources/assets cleared or were scheduled during the reported month.

DADS Form 2B: Market Participation Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Offered or Self Scheduled Energy Reduction	MWH	NUMBER	#######.###		The total MWh offered by Demand Response resources/assets during the reported month.
Scheduled Energy Reduction	MWH	NUMBER	#######.###		The total MWh where offers made by Demand Response resources/assets cleared or were scheduled during the reported month.
Estimated Realized Energy Reduction	MWH	NUMBER	#######.###		The total MWh reduced by Demand Response resources/assets during the reported month.
Offered or Self Scheduled Demand Reduction	MW	NUMBER	#######.###		The total MW offered by Demand Response resources/assets during the reported month.
Scheduled Demand Reduction	MW	NUMBER	#######.###		The total MW where offers made by Demand Response resources/assets cleared or were scheduled during the reported month.
Estimated Realized Demand Reduction	MW	NUMBER	#######.###		The total MW reduced by Demand Response resources/assets during the reported month.

DADS Form 2C: Ancillary Service Product Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Record Date	N/A	DATE	DD/MM/YYYY		Date the record was prepared (this is not the period being reported)
Version	N/A	NUMBER		1(initial), 2,3,4,…	Indicates if the data is the initial submission or a subsequent update. Auto generated.
Registration Month	N/A	DATE	MM/YYYY		Month and Year for the registration month being reported.
Ancillary Service ID	N/A	PRE- DEFINED STRING	• Responsive/Synchronous/ Spinning Reserves • Non-Spinning Reserves • Regulation		Ancillary Service Type
Program ID	N/A	STRING			Unique program identifier (assigned by NERC)
Number of Registered and Qualified Resources	N/A	NUMBER	######		The number of registered and qualified resources/assets for the Ancillary Service being reported.
Registered and Qualified Resource Capacity	MW	NUMBER	####		The capacity in MW of capable Demand Response for the registered and qualified Resources
Total Offer and Self Scheduled Hours	N/A	NUMBER	######		The total number of hours for which Demand Response resources/assets were offered or self-scheduled in the reporting period for the Ancillary Service being reported.

DADS Form 2C: Ancillary Service Product Data					
Name	**Units**	**Data Type**	**Format**	**Validation**	**Description**
Committed Hours	N/A	NUMBER	######		The total number of hours for which Demand Response resources/assets were committed (due either to market clearing or self-scheduling) in the reporting period for the Ancillary Service being reported.
Offered or Self Scheduled Capacity	MW	NUMBER	#######.###		The total capacity offered or self-scheduled by Demand Response resources/assets during the reporting period for the Ancillary Service being reported.
Committed Capacity	MW	NUMBER	#######.###		The total capacity committed by Demand Response resources/assets due to clearing or self-scheduling during the reporting period for the Ancillary Service being reported.
Average Hourly Committed Capacity	MW	NUMBER	#####		The total committed MW divided by the total committed hours during the reporting period for the Ancillary Service being reported.
Deployment Hours (Regulation)	Hours	NUMBER	#######.###		The total number of hours that Demand Response resources/assets were deployed for Regulation Service in the reporting period.
Deployments (Reserves)	N/A	NUMBER	#######.###		The total number of deployments of Demand Response resources/assets in the reporting period for the Reserve being reported.
Estimated Demand Response (Reserves)	MW x Hours	NUMBER	#######.###	Automatic Calculation	The total estimated response for the reporting period for the Reserve Ancillary Service being reported, calculated by multiplying the committed MW times the duration of any event(s), in hours. Automatically calculated.

Appendix V:
Demand Response Data Task Force Scope

Purpose

The Demand Response Data Task Force (DRDTF) was formed following a recommendation from the Demand-Side Management Task Force (DSMTF), with the objective of developing a systematic approach for collecting and disseminating Demand Response data. In its final report, *Data Collection for Demand-Side Management for Quantifying its Influence on Reliability*[25], the DSMTF concluded that a data collection system should be developed in order to collect historic Demand Response data. This task force is charged with developing the functional and data submission requirements for this system, referred to as the Demand Response Availability Data System (DADS). Furthermore, the task force will establish metrics and useful statistics to quantify and support data analysis.

The goal of the DADS is to collect Demand Response Event information to measure the ongoing influence and performance of Demand Response on reliability and provide a basis for projecting both dispatchable and non-dispatchable (price-driven) Demand Response towards planning (demand reduction) and operational reliability. Additionally, DADS will provide a basis for counting and validating Demand Response resources toward meeting operational and resource adequacy requirements.

Scope of Activities

In carrying out its purpose, the Task Force will:

1. Identify how the Demand Response (DR) resource data will be used by NERC
2. Agree upon a set of Demand Response definitions
3. Agree upon the metrics
4. Identify the functional requirements of the data collection system
5. Agree upon the data to support the metrics
6. Establish data submission requirements
7. Begin Data Collection

Representation

The Task Force will consist of balanced representation from wholesale and retail electric organizations, focused in Demand Response and resource adequacy. Additional representatives from Regional Entities are not required, though preferred. The task force chair will be appointed by the chair of the NERC Planning Committee for a two year term, and the NERC staff coordinator will administer meetings and provide liaison support to the Data Coordination Subcommittee and the Planning Committee.

Reporting

The DRDTF reports to the Data Coordination Subcommittee.

[25] http://www.nerc.com/docs/pc/drdtf/NERC_DSMTF_Report_040308.pdf

Appendix VI: Demand Response Data Task Force Roster

Chairman	**Robert Laurita** **Supervisor, Demand Resources**	**ISO New England, Inc.** **1 Sullivan Road** **Holyoke, Massachusetts 01040**	**(413) 535-4398** **rlaurita@ iso-ne.com**
Leadership Team	Ann Eleanor George Senior Regulatory Analyst - Demand Response Department	Pacific Gas and Electric Company 245 Market Street Room 330A Mail Code N3E P.O. Box 770000 San Francisco, California 94177	(415) 973-5433 (415) 973-0919 Fx AEG3@pge.com
Leadership Team	Clifford Grimm Principal Load Research Analyst	DTE Energy One Energy Plaza 1090 ECB Detroit, Michigan 48226	(313) 235-6823 grimmc@ dteenergy.com
Leadership Team	Grayson Heffner Consultant	Lawrence Berkeley Laboratory 15525 Ambiance Drive, N. Potomac, Maryland 20878	(301) 330-0947 (301) 330-0141 Fx gcheffner@ lbl.gov
Leadership Team	Donna K. Pratt Demand Response Market Product Specialist	New York Independent System Operator 10 Krey Boulevard Rensselaer, New York 12144	(518) 356-8758 (518) 356-7581 Fx dpratt@nyiso.com
Leadership Team	Paul Wattles Supervisor, Demand Response	Electric Reliability Council of Texas, Inc. 2705 West Lake Drive Taylor, Texas 76574	(512) 248-6578 (512) 248-6560 Fx pwattles@ ercot.com
Member	Aaron L. Breidenbaugh Senior Manager Req. Affairs and Public Policy	EnerNOC 75 Federal Street Suite 300 Boston, Massachusetts 02110	(617) 224-9918 (857) 221-9418 Fx abreidenbaugh@ erernoc.com
Member	Daniel Brooks Manager, Power Delivery System Studies	Electric Power Research Institute 942 Corridor Park Blvd. Knoxville, Tennessee 37932	(865) 218-8040 (865) 218-8001 Fx dbrooks@epri.com
Member	Laurie Corcoran Demand Resources Strategy Analyst	ISO New England, Inc. One Sullivan Road Holyoke, Massachusetts 01040	(413) 540-5568 lcorcoran@ iso-ne.com
Member	Phil Davis Senior Program Manager, DR Solutions	Schneider Electric 3103 Medlock Bridge Road Suite 100 Norcross, Georgia 30071	(770) 972-0611 (678) 672-2433 Fx phil.davis@ us.schneider-electric.com

Member	Robert Entriken Senior Project Manager	Electric Power Research Institute 3420 Hillview Avenue Palo Alto, California 94303	(650) 855-2665 (650) 855-2065 Fx rentrike@ epri.com
Member	Joseph A. Franz Director Product Management	Constellation Energy 800 Boylston Street 28th Floor Boston, Massachusetts 02199	(617) 717-3009 (410) 804-1943 Fx joseph.franz@ constellation.com
Member	Armando Garcia Supervisor Applications Development	Florida Power & Light Co. 4200 W. Flagler Street Miami, Florida 33134	(305) 442-5142 armando_garcia@ fpl.com
Member	Charles Goldman Staff Scientist	Lawrence Berkeley Laboratory 1 Cyclotron Road MS 90-4000 Berkeley, California 94720	(510) 486-4637 (510) 486-6996 Fx cagoldman@ lbl.gov
Member	Erich W. Gunther Chairman and CTO	EnerNex Corp	865-691-5540 865-691-5046 Fx erich@ enernex.com
Member - RIS Chair, DCS Chair	Mary H. Johannis Resource Adequacy Policy Manager	Bonneville Power Administration P.O. Box 3621 Portland, Oregon 97208-3621	(503) 230-3047 (503) 230-3270 Fx mhjohannis@ bpa.gov
Member	Paul J. Lehman Pricing Consultant	Xcel Energy, Inc. 414 Nicollet Mall Minneapolis, Minnesota 55401	(612) 330-7529 (612) 573-9315 Fx paul.lehman@ xcelenergy.com
Member	Kavita Maini Consultant	Wisconsin Industrial Energy Group 961 North Lost Woods Road Oconomowoc, Wisconsin 53066	(262) 646-3981 kmaini@wi.rr.com
Member - NAESB Liaison	Rae McQuade President	North American Energy Standards Board 1301 Fannin Suite 2350 Houston, Texas 77002	(713) 356-0060 (713) 356-0067 Fx rmcquade@ naesb.org
Member	Ripley Newcomb Manager, CLM Evaluation	Dominion Virginia Power P.O. Box 26666 Richmond, Virginia 23261	(804) 771-4637 ripley.newcomb@ dom.com
Member	John R. Norden Manager, Renewable Resource Integration	ISO New England, Inc. One Sullivan Road Holyoke, Massachusetts 01040-2841	(413) 537-7699 (413) 535-4343 Fx jnorden@ iso-ne.com
Member	Mark Potter Senior Director of Operations	EnerNOC 75 Federal Suite 300 Boston, Massachusetts 02110	(617) 224-9924 (617- 224-9910 Fx mpotter@ enernoc.com

Observer **NAESB Liaison**	Veronica Thomason Executive Assistant	North American Energy Standards Board 1301 Fannin Street Suite 2350 Houston, Texas 77002	(713) 356-0060 (713) 356-0067 Fx vthomason@ naesb.org
Observer	Mohamed Tobala Engineer/Officer - Market Analysis	Independent Electricity System Operator Station A P.O. Box 4474 Toronto, Ontario M5W 4E5	(905) 855-4167 (905) 855-6319 Fx mohamed.tobala@ ieso.ca
Observer	Richard A. Voytas Manager, Energy Efficiency and Demand Response	Ameren Corp. 1901 Chouteau Avenue MC 1400 P.O. Box 66149 St. Louis, Missouri 63166-6149	(314) 554-3025 (314) 613-9123 Fx rvoytas@ ameren.com
Observer	Bob Willen Senior Engineer	Ameren Corp. P.O. Box 66149 MC 1400 St. Louis, Missouri 63166	(314) 554-2688 (314) 554-4679 Fx
Observer	Tom Nicholas Regional Director - Central US	Solar Electric Power Association 3806 Goodrich Road Valparais, Indiana 46385	(219) 508-2349 tnicholas@ solarelectricpower. org
NERC	Mark G. Lauby Director, Reliability Assessment and Performance Analysis	North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721	(609) 452-8060 (609) 452-9550 Fx mark.lauby@ nerc.net
NERC	Aaron Bennett Engineer, Reliability Assessments & Performance Analysis	North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721	(609) 452-8060 (609) 452-9550 Fx aaron.bennett@ nerc.net
NERC Coordinator	John Moura Technical Analyst, Reliability Assessments & Performance Analysis	North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721	(609) 452-8060 (609) 452-9550 Fx john.moura@ nerc.net

Appendix VII: DADS Phase II Section 1600: Request for Information or Data

December 10, 2009

TO: Balancing Authorities
Load-Serving Entities
Distribution Providers
Purchasing-Selling Entities
Industry Stakeholders

Announcement of the Demand Response Availability Data System (DADS)
Phase I & II Data Request

In accordance with Section 1600 of the North American Electric Reliability Corporation's (NERC) *Rules of Procedure*, NERC is announcing its plan to implement a mandatory data request following the recommendations proposed in the report entitled *Demand Response Availability Data System (DADS): Phase I & II* ("Report").

DADS is described in the Report. The Report was developed in 2009 by a Planning Committee task force and was approved by NERC's Planning Committee on September 16, 2009. The Report is posted on the NERC website and may be downloaded at http://www.nerc.com/docs/pc/drdtf/DADS_Phase_III_Final_090109.pdf.

DADS Data Request Summary Information

The italicized language is information that must accompany a *Section 1600: Request for Information or Data*. Capitalized terms are defined in the *Demand Response Availability Data System (DADS): Phase I & II* Report at the link provided above.

1. *A description of the data or information to be requested, how the data or information will be used, and how the availability of the data or information is necessary for NERC to meet it obligations under applicable laws and agreements.*

    i. *A description of the data or information requested.*

    Reporting entities (see numbered paragraph 3 below) will be required to submit information about their individual Demand Response Programs and each event where Demand Response was used, during a specified reporting period.

Demand Response Program information includes information that will be used within DADS to associate other types of reported data to a given Demand Response Program and assess the magnitude of existing Demand Response Programs. This data includes:

- Reporting entity Information
- Demand Response Program Information
- Contact Information
- Relationship with other Programs (*e.g.*, mutually exclusive, jointly enrolled)
- Program Enrollment Data

Reliability Event Data will be reported for Demand Response services in which resources are obligated over a defined period of time to provide Demand Response upon deployment by the appropriate reporting entity. Reliability Event Data refers to emergency or contingency events, not economic Demand Response deployments.

Demand Response Event information includes information that will be used within DADS to track the performance of a Demand Response Program after an event has occurred. This data includes:

- Event Type and Reason
- Product/Service Type
- Location (Region/subregion/Balancing Authority/local zone)
- Advance Notification, Deployment, Reduction Deadline, Release/Recall, and Normal Operations Date/Time
- Committed Load Reduction (MW)
- Number of Committed Resources
- Dispatched (MW) and Hourly Estimated Realized Energy (MWh) and Load Reduction (MW) through the Demand Response Event.

ii. How the data or information will be used.

Semi-annual reports will include the statistics and metrics based on data listed in the previous section. Aggregation will be performed, where applicable, to provide a snapshot of how much Demand Response was available during the reporting timeframe. Additionally, Reliability Event data will be analyzed, and an overall assessment of performance will be included. In addition to the DADS semi-annual reports, NERC Reliability Assessments (Long-Term, Seasonal, or Special) may include references to aggregated DADS data for an assessment of Demand Response.

DADS, as designed, will not be used to meet any NERC Reliability Standard or Compliance Requirements. Data reporting and analysis are intended for technical studies and an overall assessment of Demand Response.

iii. How the availability of the data or information is necessary for NERC to meet it obligations under applicable laws and agreements.

Pursuant to Section 215 of the Federal Power Act, NERC develops Reliability Standards. Whether a new standard is needed or whether an existing standard needs to be modified, sound data is needed.

Historical data on Demand Response availability and performance to supplement projected participation levels, which is currently collected as part of the annual NERC Long-Term Reliability Assessment data request, can provide accurate projections of Demand Response for use in planning and operating the bulk power system. Such projections of Demand Response

availability can be adjusted to reflect day-to-day variations in weather, customer load variability and other factors.

As participation in Demand Response Programs grow, it will be increasingly important to fully characterize and continuously update the data about these programs by including their load impact, predictability, and availability with frequent use. For all these reasons, NERC is proposing to collect Demand Response Event data in order to develop accurate performance metrics reflective of a range of system conditions.

2. *A description of how the data or information will be collected and validated.*

A detailed data collection process is described in Chapter 2 of the Report. The final reporting process will be dependent on a web-based reporting mechanism using the data collection forms. Data validation occurs both when data is entered and when it is processed. Submitted data will be subject to follow specific rules embedded within the reporting form. Data will be subject to a thorough review by the Demand Response Data Task Force. Additional validation will occur using a "parent/child" relationship system for the reporting parties. Prior to web-based reporting, spreadsheets will be used to collect and process the data that is submitted on a voluntary basis.

3. *A description of the entities (by functional class and jurisdiction) that will be required to provide the data or information ("reporting entities").*

Reporting entities that will be responsible for submitting DADS data are defined as an entity that either dispatches a Demand Response Resource and/or administers a Demand Response Program, product or service and that is on the NERC Compliance Registry as one of the following:

- Balancing Authorities
- Load-Serving Entities
- Distribution Providers
- Purchasing-Selling Entities

The submission of Phase II DADS data will be mandatory for all U.S. entities listed above who are on the NERC Compliance Registry beginning in calendar year 2011. Non-U.S. entities in the list who are also NERC members are required to comply with NERC's *Rules of Procedure,* and because Phase II DADS data are being requested in accordance with Section 1600, non-U.S. reporting entities must also provide Phase II DADS data.

4. *The schedule or due date for the data or information.*

Reporting entities will be required to submit Demand Response Program and Reliability Event data on a semi-annual basis. Beginning in 2011, semi-annual data will be due each year on June 1st for Quarter 1, September 1st for Quarter 2, December 1st for Quarter 3, and March 1st (of the following year) for Quarter 4. A detailed data collection timeline is presented in Chapter 2 of the Report. All reporting entities must submit Program Registration data by June 1, 2011. Registration of new programs and updates to existing programs, including registration and enrollment information, are required in each reporting cycle.

5. *A description of any restrictions on disseminating the data or information (e.g., "confidential," "critical energy infrastructure information," "aggregating" or "identity masking").*

Anyone seeking confidential treatment of data must comply with the requirements of Section 1500 of NERC's *Rules of Procedure*. Data submitted that is classified as Confidential Information shall be managed in accordance with NERC's treatment of Confidential Information as described in Section 1500 of the *Rules of Procedure*. Confidential data will not be accessible by others except the

Responsible Entity that submitted that data and NERC staff, who will be responsible for its analysis; however, aggregate data may be used for metrics and presented to third parties as necessary or appropriate.

DADS is intended to serve as a valuable tool, not only for reliability and resource adequacy analysis, but for research outside of NERC. Requests for access to non-confidential data will be granted upon approval from NERC staff.

6. *An estimate of the relative burden imposed on the reporting entities to accommodate the data or information request.*

   The burden of data reporting was minimized in an effort to balance usefulness, availability, and resource requirements. No data requested by DADS is beyond the capabilities of each Responsible Entity. DADS data is already gathered and collected by the Responsible Entities. Most of the burden of data collections and system management will fall on NERC and the Responsible Entities. The primary responsibility of the Responsible Entities will be to comply with reporting requirements and intervals, provide updated data as it becomes available, and maintain transparency, traceability, and audit trails. The primary responsibility of NERC is to manage the DADS system, prepare metrics relative to the programs and performance of demand response, and report the findings. All requested data should be readily available to Responsible Entities and little change to existing reporting systems is expected.

DADS Comments Requested

Comments on DADS as it is more fully described in the report are requested by Monday, January 25, 2010 to john.moura@nerc.net. For more information or questions about this request, please contact:

John Moura
North American Electric Reliability Corporation
116-390 Village Boulevard
Princeton, New Jersey 08540-5721
(609) 452-8060

Appendix VIII: Responses to the Submitted Comments of the Mandatory Data Request from Open Comment Period

The comments and response below are required according to *NERC Rules of Procedure*: Section 1600. All comments have been considered, and where applicable, changes have been made to this report.

Comment Periods	
September 17th - October 8th, 2009	File Section 1600 with FERC: 21 Day Comment Period
October 9th - November 23rd, 2009	Post data request for a 45-day public comment period

Organization	Central Hudson Gas & Electric
Entity Function	Distribution Provider, Load-Serving Entity
Comment	Response
Quarterly reporting seems to frequent. Is bi-quarterly a consideration?	The DRDTF will consider bi-annual reporting. During Phase I, the group will consider a variety of potential solutions for minimizing the burden on the industry. The DRDTF will specifically look at the amount of data and reported Demand Response Events during quarters 2 and 4—shoulder months of seasonal peaking systems. The DRDTF will specifically consider a May-October and a September-April reporting period.
This additional reporting requirement will be equivalent to approximately 0.25 FTE (Full Time Equivalent).	The DRDTF respectfully notes this in their assessment for the overall burden the DADS reporting requirements impose on Registered Entities.

Organization	Dominion Resources Inc.
Entity Function	Distribution Provider, Purchasing-Selling Entity, Load-Serving Entity
Comment	Response
Since it was stated that [the Mandatory Data Request for DADS] is not about compliance, we suggest that the information should be collected through Balancing Authorities, since those exist across North America.	All entities within a BA must also submit the data. The reason for this is because a BA may not necessarily have knowledge about all Demand Response (enrollment, participation, activation/deployment) within their control area. Individual LSE's may have their own programs which the BA has neither control over nor knowledge about.
Organization	We Energies

Entity Function	Distribution Provider, Load-Serving Entity, Balancing Authority, Purchasing-Selling Entity
Comment	Response
Please define "maintaining transparency, traceability and audit trails."	Responsible Entities should be reporting data which already exists in their information systems and therefore all data submitted to DADS should be mapped, referenced, and up-to-date.
Non-NERC Registered Entities will not be required to submit DADS data. This includes.....Demand Response providers, curtailment service providers, load aggregators, etc". Is that data going to be collected elsewhere? Shouldn't they be collecting this data from the ISO's if not from these providers? What if a NERC Registered LSE is also a Demand Response provider, CSP or load aggregator? Will they have to provide the data.	NERC has no authority to mandate data reporting to non-NERC Registered Entities. This data will not be collected elsewhere. However, each "third-party CSP/load aggregator" is ultimately tied to a NERC Registered Entity who is actually administering the Demand Response Program. Therefore, this data will be captured from the Registered Entity. If a NERC Registered LSE is also a CSP, they are required to submit data, as they are a NERC Registered Entity and administering a Demand Response Program.
On page 9 they state that "Registration of new programs and updates to existing programs....are required each reporting cycle". What is a reporting cycle? Is it the same as the DADS Annual Reporting Schedule shown on page 13?	Yes. A reporting cycle is one full quarter (e.g., January 1st- March 31st). There is, approximately, a one quarter lag between the end of the reporting cycle and the data submission due date
Page 7 states that ".....will not, at this time, collect data on non-dispatchable Demand Response such as pricing....". Page 10 states "The DADS system will collect data for dispatchable events (reliability driven) and market participation (price driven) Demand Response in Phases I and II". That seems to be contradictory. Are they saying that there is dispatchable and non-dispatchable price driven DR? Figure 3 on page 11 seems to clarify this. Please clarify what is meant by "demand bidding and buy-back". Are they really any more or less dispatchable than CPP, RTP or "system peak response transmission tariff". They later on define "dispatchable" and "non-dispatchable" on sheets 45 and 46.	Phase I and II of DADS will only collect data on Demand Response that is dispatchable. There are dispatchable and non-dispatchable "flavors" of DR, as shown in Figure 3. **Demand Bidding & Buy-Back**: *demand-side resource bids into a wholesale electricity market to offer load reductions at a price, or identifies how much load it is willing to curtail at a specific price.* The key identifier for dispatchable Demand Response Programs is a signal from the System Operator. Based on Figure 3, dispatchability cannot be more or less in one case versus another. Demand Response is either dispatchable or non-dispatchable.
Page 11 states that in order to count as Regulation the resource must "....automatically respond to changes in grid frequency...". I am not completely familiar with MISO requirements along these lines but do not recall	Demand Response providing Regulation must be able to respond to AGC control signals. For the MidwestISO, this requirement is listed as: *A Type 2 Demand Response Resource that is a*

that being a requirement. That may exclude some Demand Response that is registered for regulation in ISO's that do not have this requirement. Can someone clarify that?	*Regulation Qualified Resource must be able to respond to AGC control signals every four seconds and must provide telemetered output data every two seconds.* Regulation is the primary mechanism that the operator uses during normal operations to ensure compliance with the (NERC) Control Performance Standards (CPS) 1 and 2 From the perspective of regulation suppliers, the service requires generating units [or other qualified resources] that are online and producing energy, equipped with automatic generation control (AGC) equipment, and that can change output quickly.
Page 12 addresses Hourly Estimated Realized Energy. They discuss setting baseline load curves but do not define how those are to be developed. It has to be consistent or it will be meaningless. Are they relying on NAESB?	Baselines are developed by each Responsible Entity. NERC does not have standards or guidelines to support baseline development. Baseline development and approaches are based on business practices. NAESB has outlined a framework for baselines in the Wholesale and Retail sector in Phase I M&V Standards. Please see http://www.naesb.org/dsm-ee.asp for more information on NAESB M&V Standards. The baseline method that is used to gather the appropriate data to support DADS, is at the discretion of the Responsible Entity. The DRDTF realizes that methods will be inconsistent across different Responsible Entities. However, these potential discrepancies will be noted when aggregating data. Additionally, NERC will focus its analysis on assessing and comparing performance of Demand Response to itself, over time (i.e., compare the performance of Program X, Entity X, or Area X in Year 1 versus Year 2).
We assume that we will be reporting on an hourly aggregated basis. That is not clearly stated in the document	For Reliability Event data, hourly data will be required. However, for Market Participation and Ancillary Services Product data, data will be aggregated on a monthly basis.
Page 2 refers to a Phase I Excel spreadsheet standard template. Is this template currently universally available or would it be up to each voluntary submitter to create their own template?	Currently, a draft form for DADS Phase I is posted at http://www.nerc.com/filez/drdtf.html . Future drafts of this form can be found at this website. NERC is currently developing a homepage for the DADS system. The future location of this website is:

	http://www.nerc.com/filez/drdtf.html . Completing the provided data form and submitting it to NERC is required for participation for Phase I.
Capable of manual data entry or file import/upload. Will a "cut and paste" option be also available?	The DADS data form is designed in a way in which the data entry can either be manual or importable using a “copy and paste” method to import data from a different information system. The process of completing of this data form will vary among various Responsible Entities. Depending on the magnitude of the data, Responsible Entities can choose an appropriate method.
Do you envision an Administrator for each submitter?	For the current DADS system (Phase I & II), as well as the future DADS system (Phase III & IV), only one NERC Staff System Administrator is envisioned. A future system, most likely web-based system, will support multiple administrators (one from each Responsible Entity) who will be given access to import and update semi-annual data.
Do you envision multiple users for each submitter?	Users of the system are envisioned to be: o Power industry professionals (Demand Response providers, Load Forecasters, and Resource Planners) o NERC (the Electric Reliability Organization) o Government and Regulatory Organizations (e.g., FERC, EIA) Responsible Entities (data submitters) are administrators for their data. It is envisioned that the DADS system will be an open-access repository for Demand Response performance data.
Once data is submitted but you're not yet at the quarterly filing deadline, will you still be able to correct prior submission errors? Same question applies if you are past the quaterly filing deadline.	Updates to submitted data are permissible. Responsible Entities must specify an updated version number when submitting an updated data form. Instruction for this is provided in the DADS Phase I data form instructions.
Since various RTO's may also establish DADS data reporting functionality as part of their reporting systems (e.g., those for GADS data, planning reserve data, etc.), will there be any	For DADS Phase I, Excel spreadsheets will be used to complete and gather data. Information systems can be coded to import selected data from an existing information system, with

coordination with the RTO's for their systems or is that question better asked of the RTO's themselves?	varying difficulty depending on individual systems. The process of completing of this data form will vary among various Responsible Entities. Depending on the magnitude of the data, Responsible Entities can choose an appropriate method.

Organization	Farmers' Electric Cooperative, Inc. of New Mexico
Entity Function	Load-Serving Entity
Comment	Response
Process should not require substantial time and effort to complete, or be overly complicated.	The DRDTF agrees. For Responsible Entities with extensive Demand Response Programs, automated systems can be developed to integrate existing systems with a DADS data submittal. For Responsible Entities with smaller Programs, manual or semi-manual processes can be implemented. Data form instructions should describe all the data necessary for a complete DADS data submission.

Organization	Con Edison
Entity Function	Load-Serving Entity
Comment	Response
Great care should be taken to differentiate between peak load shaving programs and emergency based programs. Con Edison has both types of programs in its demand response portfolio. For reporting purposes data requested should be either Dipatched (MW) OR Hour Estimated Realized Energy (MWh), depending on whether the program is a capacity or an energy program.	The DRDTF agrees. For reporting purposes, Reliability Event data can be entered by providing either Hourly Estimated Realized Energy (MWh) or Realized Demand Reduction. The DADS data form and instructions will be updated.
Con Edison administers programs that are enrolled with the New York Independent System Operator, NYISO. Great care should be taken in defining relationships and data validation to avoid double counting.	The DRDTF agrees. It is for this reason DADS requires defining relationships in the data form. Entities will be required to identify Demand Response Programs for which a known relationship and joint-enrollment of resources is known. Additionally, the number of resources and jointly-enrolled capacity must be identified and reported.
For a summer peaking utility quarterly reporting is burdensome and will not yield the data needed for NERC?s analyses. Program administrators should be required to report data after the close of their program capability periods and should	The DRDTF will consider bi-annual reporting. During Phase I, the group will consider a variety of potential solutions for minimizing the burden on the industry. The DRDTF will specifically look at the amount of data and

not be required to report during capability periods with no active programs. For example, Con Edison has active programs May thru October and should report in December. This would ease the burden of reporting and still allow for adequate information.	reported Demand Response Events during quarters 2 and 4—shoulder months of seasonal peaking systems. The DRDTF will specifically consider a May-October and a September-April reporting period.

Organization	Duke Energy
Entity Function	Balancing Authority
Comment	Response
It is not clearly stated how information will be protected if it is submitted for a single entity. In other words, if there is a single entity participating in a particular demand response program, aggregation of the data may not protect the entity's identity. The report needs to clearly state that any data presented to third parties will be aggregated at a level that will protect individual entities' identity.	The DRDTF agrees. Information and data is not required for each individual Demand Resource. All data is provided at an aggregate level. In the event that a Responsible Entity has only one Demand Resource and the enrolled capacity is greater than 10 MW, data will only be included in an aggregated value for an area (Reliability Coordinator, subregion, Region, etc…).

Organization	Utility Services LLC
Entity Function	Load-Serving Entity
Comment	Response
Utility Services LLC, working in conjunction with over 40 registered entities who are identified as DPs, LSEs, and PSEs; would like to offer the following comments. This group has identified two primary concerns. First, applicable Registered Entities should not be required to provide null set or data when they do not meet the qualifications for the overall program. Presently, NERC has proposed a 10 MW qualification threshold. Entities with no programs or programs providing less than the recommended qualifying criteria should not be expected to submit information. Such an expectation should be considered an unreason administrative burden for all involved. Companies who are not qualified would have to utilize additional resources (time, personnel, and other) to formulate and submit a response and the amount of additional information would be inconsequential in the program. In many cases right now, these programs bring marginal value to the company. Additional administrative responsibilities might hasten the termination of the program. In addition, NERC resources	The DRDTF agrees and have outlined a process for dealing with non-applicability. During the first round of data collection a request will go out to all entities. If the entity does not have any qualified programs and does not expect them in the next year, then they would simply respond to the request with "non-applicable". The actual process has not been fully idealized (i.e., response with an email, click something on a website), but represents the general framework. Then, annually, all entities will be required to submit a response to "non-applicable" for 1 year out (i.e., "we do not expect a qualified program within the next year"). Further, this annual request will have an option for "non-applicable in Q1, Q2, etc…" so that entities do not have to report for quarters where Demand Response cannot be activated. However, in the future, the DRDTF may also

would be expended to review data responses of little or no value to the overall program.	consider an alternative approach where a non-applicable entity is not required to submit any notification.
Secondly, by the exclusion of third party vendors, NERC will not be obtaining all of the relevant data for use in the program. In the Northeast, there are numerous vendor programs which deal directly with the end user customer without the participation or knowledge of the host utility. Since the local DP, LSE, or PSE does not have the information and the vendor does, NERC would be excluding potentially significant valuable data for the DADS program.	NERC has no authority to mandate data reporting to non-NERC Registered Entities. This data will not be collected elsewhere. However, each "third-party CSP/load aggregator" is ultimately tied to a NERC Registered Entity who is actually administering the Demand Response Program. Therefore, this data will be captured from the Registered Entity. If a NERC Registered LSE is also a CSP, they are required to submit data, as they are a NERC Registered Entity and administering a Demand Response Program.
We are concerned that DPs, LSEs, and PSEs may be required to submit data to the system, even when they don't have a Demand Response program and as a result don't have any data to submit. If an entity does not have a Demand Response Program, it does not dispatch Demand Response and does not administer Demand Response. But other entities, such as third-party vendors have taken it upon themselves to approach electric users in an entities service territory and have entered into contractual relationships with some of these end use customers. This is a direct contractual relationship between the electric user and the vendor; and does not involve the Registered Entity in any way. a. For example, there are a few vendors have a direct contractual relationship with the BA to provide the Demand Response services including dispatch and administration. b. The Registered Entity would have no knowledge of how many end use customers have entered into arrangements with Demand Response service providers in its service territory. The vendor has no obligation to report any information to the Registered Entity. c. The DADS document goes on to say "Non-NERC Registered Entities" will not be required to submit DADS data. This includes, but is not limited to a third-party service organization " that may dispatch Demand Response when a signal is received from a Registered Entity."	NERC has no authority to mandate data reporting to non-NERC Registered Entities. This data will not be collected elsewhere. However, each "third-party CSP/load aggregator" is ultimately tied to a NERC Registered Entity who is actually administering the Demand Response Program. Therefore, this data will be captured from the Registered Entity. If a NERC Registered LSE is also a CSP, they are required to submit data, as they are a NERC Registered Entity and administering a Demand Response Program. In the cases where "third-party" Demand Response Providers (vendors) have direct contractual agreement with an end-use customer, NERC cannot mandate data submittals. Phase I and II of DADS will only collect data on Demand Response that is dispatchable by a system operator. There are dispatchable and non-dispatchable "flavors" of DR, as shown in Figure 3 of this report. Further, DADS Phase I and II are focused on collecting data on Demand Response deployed or activated for reliability reasons, and not economic. Therefore, if vendor-contracted resources are not being dispatched by a system operator and not administered by a Responsible Entity, these resources are not included in DADS Phase I and Phase II. The omission of these types of resources will

d. The group is concerned over this language. The DADS document states that the intent of the program is to measure the effect of Demand Response accurately and, as such, each Demand Response load should be counted, but only once. e. The group feels this wording comes from the assumption of the drafters of the document that these "third party vendors" are providing services to/for the DPs and LSEs directly. f. Vendors are not acting as a third party providing services to a registered entity (at least not a utility DP or LSE). They are directly contracting with BA going around the DPs and LSEs. g. The loads under the contractual control of the vendor, that bypass registered entities including DPs and LSEs, must be reported or there will be a significant omission and error.	be noted for Phase I and Phase II. The DRDTF will consider an appropriate course of action in a future phase of DADS.

Organization	American Municipal Power, Inc.
Entity Function	Load-Serving Entity, Purchasing-Selling Entity
Comment	Response
A low to medium burden is anticipated. The work estimated for one person was estimated between one and two weeks over the course of a year.	The DRDTF appreciates the comments regarding the imposed burden of DADS reporting.

Organization	Flathead Electric Cooperative, Inc
Entity Function	Load-Serving Entity, Distribution Provider
Comment	Response
This efforts seems duplicative of other existing reporting requirements.	The DRDTF has strived to minimize the burden of reporting DADS data to the industry. Much, if not all data being requested is already gathered and collected by Responsible Entities. The goal of DADS is to collect Demand Response enrollment and event information that measures the ongoing influence of Demand Response on bulk power system reliability. The DADS program is high priority in NERC's Reliability Assessment and Performance Analysis program. Further, NERC has coordinated with FERC to support FERC's National Action Plan on Demand Response and provide analytical tools to assess current and future penetration of

	Demand Response, as well as, historical performance. The end-product of this coordination will replace an existing FERC data collection request with the NERC DADS. Currently, no central data repository for historical Demand Response enrollment and performance data exists. DADS will be a repository of historical Demand Response information for use in a wide-range of applications for both planning and operating on the Bulk Power System. Performance metrics and data will help improve Demand Response projections by providing load forecasters, resource planners, system modelers, and analysts with a comprehensive database for North America.

Organization	PECO
Entity Function	Distribution Provider

Comment	Response
The required reporting information for Time of Use (TOU) and Critical Peak Pricing (CPP) only participants are vague. According to Appendix IV, programs must be classified into one of the following categories; 1. Capacity - Critical Peak Pricing with Load Control 2. Capacity - Direct Control Load Management 3. Capacity - Interruptible Load 4. Capacity - Load as a Capacity Resource 5. Regulation 6. Reserves - Non-Spin/Non-Synchronous 7. Reserves - Spinning/Synchronous 8. Energy Price 9. Energy Voluntary Based on the definitions provided in Appendix III, It appears that TOU and CPP only should be classified as “Non-Dispatchable”. Conversely “Non-Dispatchable” is not listed as a program classification option. Also, it is unclear if Real Time Pricing (RTP) is classified as a “Regulation” program.	The DRDTF proposes to implement DADS in two initial phases. • DADS Phase I and Phase II both support the collection of dispatchable Demand Response that are used to support bulk power system reliability. • DADS Phase III and IV propose to supplement Phase I and II DADS with non-dispatchable Demand Response Program data (not described in this Report or data request). The programs identified in PECO’s comments appear to represent non-dispatchable program types. Time of Use (TOU), Critical Peak Pricing (CPP), and Real-Time Pricing (RTP) are all classified as non-dispatchable. Therefore, reporting these programs is not required for DADS Phase I & II. A similar report will be released in the future outlining requirements of DADS Phase III and IV.
The "parent or child" program relationship is not defined (reference - DADS form 1A, "Program Relationship 4" field)	This Program Relationship attribute has been removed from the data request.
PECO usually enrolls customers annually in	The DRDTF will consider bi-annual reporting.

Demand Response (DR) programs from January 1 to May 31.Also, Demand Response curtailment events typically occur from June 1st thru September 30th.We recommend semi-annual reporting with NERC - DADS data due on January 15th and June 15th. This will enable us to complete Demand Response program registration by mid- year and report Demand Response curtailment events at the start of the New Year.	During Phase I, the group will consider a variety of potential solutions for minimizing the burden on the industry. The DRDTF will specifically look at the amount of data and reported Demand Response Events during quarters 2 and 4—shoulder months of seasonal peaking systems. The DRDTF will specifically consider a May-October and a September-April reporting period.
The required information for DADS requires data from various departments within PECO. The relative burden imposed by DADS will impact changes to existing reporting systems.	The DRDTF appreciates the comments regarding the imposed burden of DADS reporting.

Organization	Commonwealth Edison
Entity Function	Load-Serving Entity
Comment	Response
Precautions should be made to avoid "double counting" data submitted from entites who operate in an RTO enviornment. Entites who are not the BA should be able to "take creidt" for data submittals being made on their behalf by a Balancing Authority.	The DRDTF agrees. Responsible entities required to report the data and the instructions for reporting the Demand Response resources must be carefully considered. Comprehensive data handling algorithms are needed to count resources once and only once while placing resources in correct categories. DADS will be able to mitigate potential double-counting issues by configuring “counting rules,” or algorithms, that are predefined by the DRDTF and selected by the Responsible Entity during data entry.
"No data requested by DADS is beyond the capabilities of each Responsible Entity" may be true but what if certain data is not readily available or currently collected? If data is not currently collected / available, does an entity need to make provisions for collecting and reporting the data? How much effort (in hours) is expected to collect that data?	The DRDTF agrees. For Responsible Entities with extensive Demand Response Programs, automated systems can be developed to integrate existing systems with a DADS data submittal. For Responsible Entities with smaller Programs, manual or semi-manual processes can be implemented. Depending on the variety of individual information systems, the effort (in hours) imposed appears to be relatively low to medium. This assessment of burden does not represent an actual determination; however, an evaluation will be conducted during the DADS Phase I pilot program.

Organization	PJM

Entity Function	Balancing Authority
Comment	Response
We recommend that the reporting frequency be changed from quarterly to semiannual to align with peak seasons when Demand Response would typically be used. Additionally, Demand Response information should be reported with a minimum 3 months lag to allow time for the information to be collected by the ISO under the market rules outlined in the tariff and manuals. This would mean that information reported on 7/1/10 would include monthly information for the period of Oct 1st 2009 through March 31st 2009. The time lag is recommended to allow all normal settlement and compliance information to be submitted, reviewed and processed.	The DRDTF will consider bi-annual reporting. During Phase I, the group will consider a variety of potential solutions for minimizing the burden on the industry. The DRDTF will specifically look at the amount of data and reported Demand Response Events during quarters 2 and 4—shoulder months of seasonal peaking systems. The DRDTF will specifically consider a May-October and a September-April reporting period. For DADS Phase I and Phase II, a three month lag will be in place for submission of semi-annual data. Data submittal due dates have been updated for DADS Phase I.
Web forms are fine for small amounts of information. If large amounts of data are to be submitted, bulk file uploads are desireable.	The DRDTF agrees. For Responsible Entities with extensive Demand Response Programs, automated systems can be developed to integrate existing systems with a DADS data submittal. For Responsible Entities with smaller Programs, manual or semi-manual processes can be implemented. The process of completing of this data form will vary among various Responsible Entities. Depending on the magnitude of the data, Responsible Entities can choose an appropriate method. For DADS Phase I, Excel spreadsheets will be used to complete and gather data. Information systems can be coded to import selected data from an existing information system, with varying difficulty depending on individual systems.
PJM plans to supply all the required data for the Demand Response that is under PJM control. PJM members (LSE, DP or PSE) should not be required to supply duplicative data on the same Demand Response to reduce the risk of double counting.	All entities within a BA (LSE, DP, or PSE) must also submit the data. The reason for this is because a BA may not necessarily have knowledge about all Demand Response (enrollment, participation, and activation/deployment) within their control area. Individual LSE's may have their own programs which the BA has neither control over nor knowledge about.

	The risk for double-counting demand resources exists when collecting data from multiple entities. It is for this reason DADS requires defining relationships in the provided data form. Entities will be required to identify Demand Response Programs for which a known relationship and joint-enrollment of resources is known. Additionally, the number of resources and jointly-enrolled capacity must be identified and reported. By collecting jointly-enrolled data from two related programs for two Responsible Entities, DADS can both validate the data that is submitted and assess individual Responsible Entities.
Economic load reductions are voluntary based on market conditions and do not represent a reliability service. Therefore PJM does not believe it is appropriate to report market based Demand Response activity.	The DRDTF proposes to implement DADS in two initial phases. • DADS Phase I and Phase II both support the collection of dispatchable Demand Response that are used to support bulk power system reliability. • DADS Phase III and IV propose to supplement Phase I and II DADS with non-dispatchable Demand Response Program data (not described in this Report or data request). Data and information on Demand Response Programs which are classified as non-dispatchable not required for DADS Phase I & II. A similar report will be released in the future outlining requirements of DADS Phase III and IV.

Organization	Georgia System Operations Corporation
Entity Function	Load-Serving Entity
Comment	Response
Who does a LSE located inside another company's balancing area provide demand response data to?	All entities within a BA (LSE, DP, or PSE) must also submit DADS data to NERC. The reason for this is because a BA may not necessarily have knowledge about all Demand Response (enrollment, participation, and activation deployment) within their control area. Individual LSE's may have their own

	programs which the BA has neither control over nor knowledge about.
As an LSE, we have the ability to request load management (capacity only) from a group of 39 Electric Member Co-ops, but have NO direct load management control. Load management requests are made during strategic operational periods (June, July and August only). LM requests have never occurred during capacity emergency situations and it is expected that LM load reduction would be minimal, if any, during non-summer months. Some of the EMCs have their own market-based load management programs that are "behind the meter" and these activities are transparent to LSE operations.**Is the LSE responsible for reporting regarding these individual EMC?s load management activities? EMC's are NOT a registered LSE as one would expect. Or would we as the LSE report only what the LSE has requested, with respect to requesting load management? Please explain how reporting would occur given this LSE to EMC relationship.	LSE's are responsible for submitting data on Demand Response programs which are administered or controlled by the System Operator. In the provided example, it appears the LSE has a Dispatchable, Controllable, Capacity program, with a Load as a Capacity Resource service type. The LSE must provide performance data on dispatched demand response during the "load management request". Additionally, depending on the whether or not the EMC is a NERC Registered Entity or not, the EMC will also provide data on the associated Demand Response Program. Furthermore, a Program Relationship must be identified between the two entities which recognizes jointly-enrolled resources between the two entities. If the EMC is not a NERC Registered Entity, NERC has no authority to mandate a data request.
For the LSE above, LM has never been called (requested) during the 1st or 4th quarters of the year. LM response (capability), if any, is unknown during these periods. Would LM test runs and associated response data reporting be mandatory during the 1st and 4th quarter. Exactly what are the LSE?s data reporting requirements, if any, for these periods?	The DRDTF will consider bi-annual reporting. During Phase I, the group will consider a variety of potential solutions for minimizing the burden on the industry. The DRDTF will specifically look at the amount of data and reported Demand Response Events during quarters 2 and 4—shoulder months of seasonal peaking systems. The DRDTF will specifically consider a May-October and a September-April reporting period.

Organization	Alcoa Power Generating Inc. (APGI)
Entity Function	Purchasing-Selling Entity
Comment	Response
As a very active participant in a large variety of Demand Response Programs throughout the country, it seems that not including the economic demand response deployments in the database misses a very critical piece of information that is needed to accurately predict the effectiveness of Demand Response in the	The DRDTF proposes to implement DADS in two initial phases. • DADS Phase I and Phase II both support the collection of dispatchable Demand Response that are used to support bulk power system reliability. • DADS Phase III and IV propose to

country. Namely, without the economic elements, it is difficult to determine reliability and availability of Demand Resources. This data is something that should be collected on all resources that have committed the capacity for resource adequacy or into markets instead of those resources that simply curtail independent of Relaibility Coordinator, Transmission Operator or Market directives.	supplement Phase I and II DADS with non-dispatchable Demand Response Program data (not described in this Report or data request). Data and information on Demand Response Programs which are classified as non-dispatchable not required for DADS Phase I & II. Non-dispatchable market or price drive Demand Response will be proposed in DADS Phase III and IV. A similar report will be released in the future outlining requirements of DADS Phase III and IV.
Process should be easily integrated into the current GADS data submission process (i.e. as much similarity as possible should be used). The 10 MW minimum is fair and reasonable. The minimum reporting should not be lowered. Is spinning reserve deployment an emergency event?	NERC is in the process of outlining and developing approaches for an integrated data collection system which would consolidate multiple data systems (Generation Availability Data System (GADS), Transmission Availability Data System (TADS), DADS, etc…) Spinning reserve deployment is not considered a Reliability Event. The Ancillary Service Product data form should be used for reporting Demand Response used for ancillary services. Spinning reserves may be deployed as part of "normal" operating procedures, and may not necessarily constitute an emergency.
One issue is that many demand response facilities are not one of the identified NERC Compliance Entities; therefore, as demands are pushed down from BA's, LSE's, etc... the impact to the end user may be burdensome without direct feedback to NERC. For instance, a typical industrial load may be told by the LSE or BA within which they operate of the requirements and the burden pushed to the Demand Response Resource where resources are not familiar with NERC, GADS, or DADS. This creates a significant issue. It may make sense to create a Demand Response (or Responsive Load) entity within NERC to ensure representation.	NERC has no authority to mandate data reporting to non-NERC Registered Entities. This data will not be collected elsewhere. However, each "industrial load" is ultimately tied to a NERC Registered Entity who is actually administering the Demand Response Program. Therefore, this data will be captured from the Registered Entity. Conceptually, no burden is placed on Demand Response Resources (individual participants). The DRDTF has strived to minimize the burden of reporting DADS data to the industry. Much, if not all data being requested is already gathered and collected by Responsible Entities. The DRDTF is interested in further guidance on this issue.

	Entities responsible for reporting to DADS were identified using Version 4 of the NERC Functional Model[26] and the Compliance Registry.[27] Responsible Entity is a term used by NERC which applies to an organization that carries out the Tasks within a Function. Responsible Entities are registered by the Electric Reliability Organization (ERO) in the U.S. along with NERC in Canada/Mexico and maintained in its registry as described in the NERC Rules of Procedure[28] and Regional Delegation Agreements.[29] Such organizations are "responsible" to NERC for meeting Reliability Standards requirements assigned to the particular Responsible Entity. Neither "third-party" load aggregators/CSPs nor large end-users (with or without responsive load) have NERC Reliability Standard requirements and, therefore, no defined function in the Functional Model exists.
As long as timing aligns with GADS reporting then the process should be good. This allows the entity that has both resources to submit data on the same time frame.	The DRDTF will consider aligning DADS data reporting schedules with other NERC data system schedules.
All Demand Response data should be treated along the same lines at Generating Availability Data where only limited amounts of information are available and the statistics for a specific resource are not open to general review.	Users of the system are envisioned to be: o Power industry professionals (Demand Response providers, Load Forecasters, and Resource Planners) o NERC (the Electric Reliability Organization) o Government and Regulatory Organizations (e.g., FERC, EIA) Responsible Entities (data submitters) are administrators for their data. It is envisioned that the DADS system will be an open-access repository for Demand Response performance data. However, any data submitted that is classified as confidential shall be managed in accordance with NERC's treatment of confidential

[26] http://www.nerc.com/files/Functional_Model_V4_CLEAN_2008Dec01.pdf
[27] http://www.nerc.com/page.php?cid=3|25
[28] http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20081219.pdf
[29] http://www.nerc.com/page.php?cid=1|9|119|181

	information as described in Section 1500 of the *Rules of Procedure.*[30] Confidential data will not be accessible by others except the Responsible Entity that submitted that data and NERC staff, who will be responsible for its analysis; however, aggregate data may be used for metrics and presented to third parties as necessary or appropriate.
With the current proposal of only reporting emergency events, the burden is minimized; however, if contingency includes spinning reserve deployment, then the burden increases. Since the usefulness of limited data submissions (emergency and contingency only) is questionable, the question should be examined around economic response data (especially where the resource has recieved planning capacity or where the resource is placed into the market) and what that burden is. While not hugely significant, the concern remains that the BA is staffed but will simply transfer the burden to the entity that is trying to respond, even though that entity is only a wholesale load. This burden is seen as a cost of business by the BA; however, this extra burdne may minimize participation.	The DRDTF has strived to minimize the burden of reporting DADS data to the industry. The DRDTF appreciates the comments regarding the imposed burden of DADS reporting.

Organization	Midwest ISO
Entity Function	Balancing Authority
Comment	Response
Pg1 of the DADS Report (4th paragraph), indicates much of the information specified for collection is already being supplied to regulatory agencies. DSM is evolving through markets and much of the data is not being provided in existing reports to regulatory agencies.	The DRDTF agrees. The final DADS phase is envisioned to provide a complete picture of Demand Response across North America.
On page 9 and 11 and throughout the report, there is reference to Demand Response Programs. Midwest ISO DSM providers participate in Energy and Ancillary Services markets by offering demand response in these markets. Also, DSM providers receive capacity credit for resource adequacy requirements (LMRs). Midwest ISO does not have DSM Programs nor do we offer any DSM products.	DADS Phase I and Phase II both support the collection of dispatchable Demand Response that are used to support bulk power system reliability. This data is based at the Demand Response Program level where a NERC Registered Entity either administers or dispatches a Demand Response Program. Based on an ISO/RTO Council document,

[30] http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20081219.pdf

<table>
<tr><td></td><td>North American Wholesale Electricity Demand Response Program Comparison[31], the following Midwest ISO Demand Response Programs/Products appear to qualify for DADS Phase I and II reporting.

<table><tr><th>Program Name</th><th>Product Type</th></tr><tr><td>Emergency Demand Response</td><td>Energy</td></tr><tr><td>Demand Response Resource Type-I</td><td>Reserve</td></tr><tr><td>Demand Response Resource Type-II</td><td>Reserve</td></tr><tr><td>Demand Response Resource Type-II</td><td>Regulation</td></tr><tr><td>Load Modifying Resource</td><td>Capacity</td></tr></table>
These represent Demand Response which is deployed for reliability reasons and, therefore, are dispatchable by a System Operator.</td></tr>
<tr><td>"Page 9- Under Form 1, please explain what is meant by aggregate information at the zonal level.</td><td>Zones can be defined by the Responsible Entity where zones exist on the system. Defining Zones is only required if Demand Response can be activated or deployed on a zonal basis.</td></tr>
<tr><td>Page 10- It is not clear what is Reliability Driven (dispatchable- And used for emergency or contingency.) and what is Market Driven (price).</td><td>Reliability Event and Market Participation data requirements have been separated in this section of the report.

Reliability Event data would represent Capacity and Reserves Demand Response Product types. Market Participation data are associated with Energy products.</td></tr>
<tr><td>On pages 37-39, there is an explanation of Reliability, Market and Ancillary events. DSM that is based on economics is a market event and DSM classified for an ancillary event is not considered a reliability event even if used for operating reserves and regulation. Is this assessment on pages 37-39 correct? It is not clear how classification is to be accomplished for an event. There could be Reliability, Market and Ancillary events occurring simultaneously. Will the Responsible entity be reporting by total DSM in place for an event or by product type for an event? It appears DADS will not collect individual DSM provider information per event.</td><td>It is of the view of the DRDTF that deployment od Demand Response for Regulation or Reserves (Ancillary Services) is a reliability function.

Responsible Entities are required to report data by Demand Response Program. If multiple Programs are activated simultaneously, each Program must be reported. Further instruction for reporting Capacity (primarily event driven), Reserves/Regulation (ancillary services), and Energy (market-participation) Products is included in the DADS Phase I Data Form.</td></tr>
</table>

[31] http://www.isorto.org/atf/cf/%7B5B4E85C6-7EAC-40A0-8DC3-003829518EBD%7D/IRC%20DR%20M&V%20Standards%20Implementation%20Comparison%20(2009-04-28).xls

Is that correct?	Information and data is not required for each individual Demand Response Resource. All data is provided at an aggregate level.
Page 46- The glossary definition of dispatchable and non-dispatchable is more descriptive when characterized as under the control of the System Operator. In the body of the report, non-dispatchable is modified by parenthetical as being price based. In addition, price-sensitive bids can indeed be dispatchable. This is more confusing than just referencing non-dispatchable DSM is not under the control of the System Operator.	The DRDTF agrees with these comments and changes have been made to the document.
On double counting (appendix A): we need to think carefully about these double counting algorithms to ensure accuracy. If the RTO provides aggregated data, how can NERC decipher double counting? In addition, while LSEs may report and use DSM in our markets, they are not required to in many cases and can utilise the DSM themselves, for local reliability purposes or to manage price exposure. In this latter example, the ISO/RTO would not report an event where the Demand Response was used because the ISO/RTO would not "see" the DR, but the LSE would use the DR. Avoiding double counting yet accounting for the full implementation of Demand Response must be accomplished, to achieve the goals of the DADS system. "	The DRDTF agrees. It is for this reason DADS requires defining relationships in the data form. Entities will be required to identify Demand Response Programs for which a known relationship and joint-enrollment of resources is known. Additionally, the number of resources and jointly-enrolled capacity must be identified and reported. A majority of these "rules" for deciphering jointly-enrolled resources will be developed during the Phase I pilot program, once relationships between Responsible Entities are better understood.
Page 14-Reporting Process and Pages 3 and 23-Schedule. The Implementation schedule for the mandatory Phase II is aggressive and should be delayed or made contingent on the completion of Phase I. Further, the software will be custom and would benefit from lessons learned from Phase I.	The DRDTF agrees and will consider deferral of Phase II (mandatory requirements) until Phase I is completed.
Page 50- The DADS requests the DSM events by NERC Region. Midwest ISO operates in 3 NERC regions. This may present more complications for reporting.	The DRDTF agrees that Regional aggregation may not be possible due to system boundaries that cross NERC Regional boundaries. If zones are submitted for a Responsible Entity, the DRDTF may choose to incorporate these boundaries when determining how to aggregate values.

Organization	Salt River Project
Entity Function	Load-Serving Entity, Balancing Authority, Purchase-Selling Entity,

	Distribution Providers
Comment	Response
Would much rather see a program that would allow Registered Entities to send Demand Response data real time (ICCP or EIDE), confidentially, to an RRO (WECC), to NERC or to a qualified contractor that could aggregate the real time data into these reports. For reliability events that call on the use of these Demand Response resources, Registered Entities could submit a short and brief report of the event to the aggregating agency that could then be compiled with the available real time data to produce the required reports.	The DRDTF appreciates these comments. A real-time data exchange program with NERC Registered Entities is a significant initiative and will be considered by the DRDTF in future DADS phases. However, for DADS Phase I and II, an optimal data collection design structure was used to balance tradeoffs in the level of data detail, the level of effort required to collect the data, and the value of the data. The DRDTF has designed the DADS in such a way to minimize the burden to Responsible Entities. All requested data should be readily available to Responsible Entities and little change to reporting systems is expected.

Organization	MidAmerican Energy Company
Entity Function	Load-Serving Entity
Comment	Response
As the data being requested is actually a subset of a larger data set that MidAmerican must provide to various other parties, MidAmerican does not believe that providing this data will cause an undue burden.	The DRDTF appreciates these comments.
MidAmerican is not opposed to providing this information in a web-based or spreadsheet-based format.	The DRDTF appreciates these comments.
MidAmerican is not opposed to this timeline.	The DRDTF appreciates these comments.
MidAmerican agrees.	The DRDTF appreciates these comments.

Organization	ISO/RTO Council (IRC)
Entity Function	N/A
Comment	Response
The IRC supports the DADS effort and appreciates NERC's initiative to improve its data collection and documentation of demand response products and services in North America. IRC members are committed to continuing the growth of demand response in their regions and the integration of these resources into their system operations and system planning.	The DRDTF appreciates these comments.
Throughout the document, the IRC recommends changing references to "Ancillary Products" to "Ancillary Services Products." ISOs, RTOs, and balancing authorities typically use the term Ancillary Services rather than Ancillary	The DRDTF agrees.

Products. This change would remove ambiguity and reduce the potential for confusion.	
Some elements of the DADS implementation timetable have changed since the draft was published in September 2009. Specifically, the Technical Workshop for Phase I has been moved from November 2009 to February 2010. This change should be made in tables on page 2 (Executive Summary) and on page 23 (Chapter 6). There may be other updates to the timetable that should be made as well.	The DRDTF agrees.
The IRC believes that the third paragraph under the heading "NERC's Role in Assessing Demand Response Performance" (top of page 6) could more accurately describe the role that the DADS reporting mechanism will play in capturing data on all types of Demand Response (DR) products – not just peak-load reduction programs and Ancillary Services. In the same section, the IRC disagrees with the report's depiction of non-dispatchable Demand Response as an "intermittent resource." Intermittent resources are typically considered to be generation resources with a fuel source that is intermittently available, such as wind and solar. Price responsive load may resemble intermittent generation resources only insofar as both are not dispatchable by the system operator, but there are numerous differences – for example, if high prices correlate to scarcity conditions on the grid, then price-responsive load can be seen as contributing to grid reliability when such contributions are most valuable. The IRC recommends deleting this comparison as it does not enhance understanding of Demand Response and could cause confusion. The IRC's redline language addresses these concerns.	The DRDTF agrees with these comments and changes have been made to the document.
In the final paragraph of that section, the IRC urges clarifying the reference to capacity resources, in this instance, as "long-term" capacity resources. This distinguishes such products, which are procured through forward capacity markets specifically for long-term resource adequacy, from other short-term capacity products that may be designed to meet different needs.	The DRDTF agrees with these comments and changes have been made to the document.
In the section entitled "Overview of Demand Response Availability Data System," (beginning on page 6), the IRC is concerned that	The DRDTF agrees with these comments. However, for DADS Phase I and II, non-dispatchable Demand Response will not be

"mandatory" collection of non-dispatchable Demand Response data may be unlikely to meet the standard of "verifiable," as listed on the next page. The mere presence of an incentive to reduce load when prices are high does not guarantee that load reductions will actually occur, as customers may retain the option of riding through a price event if warranted by business conditions or other factors. Moreover, especially in restructured markets with retail choice, such price incentives are the result of a contractual relationship between the load-serving entity and the customer. As such their benefits are likely to occur in financial settlement via simple energy usage recorded on interval meters, and would not necessarily carry a separate measurement and verification requirement. As such, the standard of "verifiable" may be difficult to guarantee.	collected and should thus be verifiable. These comments will be considered in future DADS phases.
Similar to the comment above relating to long-term capacity products, the IRC urges an addition to the definition of "Capacity" product, on page 11. This edit is intended to clarify, not overwrite, the definition adopted in the NAESB Wholesale Demand Response Measurement & Verification Standards. The IRC's redline language addresses these concerns.	The DRDTF agrees with these comments and changes have been made to the document.
On page 12, in the sentence describing the baseline illustration, the IRC's suggested redline change is intended to avoid confusion over the reference to the baseline load in the diagram. According to the NAESB Wholesale Demand Response M&V standards, baselines comprise two of the five acceptable performance evaluation methodologies for demand response measurement & verification. The others are Meter Before-Meter After, Maximum Base Load, and Metering Generator Output. The illustration accurately depicts a hypothetical Demand Response contribution using a baseline methodology but is not applicable to any of the other acceptable performance evaluation methodologies.	The DRDTF agrees with these comments and changes have been made to the document.
Beginning in Chapter 3 and throughout the rest of the document, the IRC urges adding parenthetical references to "deployment" as a synonym for "activation," and "deployed" as a synonym for "activated," to help avoid confusion across regions where the terminology	The DRDTF agrees with these comments.

may differ.	
On page 37, in the description of the "Reliability Event Data" form, the form number should be changed to 2A to correlate it to that used in subsequent references. Additionally, the language should be modified to clarify that data submitted on this form is limited to actual deployments for reliability-related Demand Response events.	The DRDTF agrees with these comments.
On page 38, in the description of the "Market Participation Data" form, the form number should be changed to 2B to correlate it to that used in subsequent references.	The DRDTF agrees with these comments.
The redline edits to the "Ancillary Services Product Data" form on the subsequent page are intended to correlate the form number to that used in subsequent references and to conform the definition of Ancillary Services more closely with that used in other NERC documents. The definition in the current draft document appears to have been duplicated by mistake from the prior page.	The DRDTF agrees and updates have been made to reflect these comments.
On page 50, the "Register Program" form includes a data field for "Program Start Date." The IRC understands this to be a request for the date that an exclusively Demand Response program, product or service was launched or, alternatively, the date that a service in which Demand Response competes with generation was first opened up to load participation. The IRC foresees potential confusion in how to interpret this request. For example, if the program was initiated via a pilot, which should be reported — the pilot start date or the actual program start date? Additionally, confusion may arise because of the separate provision that no data needs to be reported for any program that is less than 12 months old (see page 9 of the report). The IRC urges that additional clarification and detail on this request be included in the report and/or the form instructions.	The DRDTF agrees. "Program Start Date" should reflect the data in which Demand Response Program Participants are first available for load reduction.
In the absence of explanation for the term "Unique program identifier," the IRC assumes that this identification code will be assigned to each program, product or service by NERC. Redline edits are made throughout the tables to clarify this point.	The DRDTF agrees with these comments.
On page 59, in the Ancillary Service Product	The DRDTF agrees with these comments.

Data form, the term "MWH" has been changed to "MW," reflecting a capacity value as opposed to an energy value.	

Organization	PSE&G
Entity Function	Load-Serving Entity

Comment	Response
The report describes an ambitious and well intentioned initiative to discipline an emerging sector of the electricity business that has developed an unsavory reputation like the used car and aluminum siding industries. As expert Dr. Joseph Bowring said of DR, "it's possible to do nothing literally, and get paid."	The DRDTF appreciates these comments.
I am concerned however that the NERC DADS is duplicative of work already being done by each of the organized markets, e.g. PJM.	The DRDTF has strived to minimize the burden of reporting DADS data to the industry. Much, if not all data being requested is already gathered and collected by Responsible Entities. The goal of DADS is to collect Demand Response enrollment and event information that measures the ongoing influence of Demand Response on bulk power system reliability. The DADS program is high priority in NERC's Reliability Assessment and Performance Analysis program. Further, NERC has coordinated with FERC to support FERC's National Action Plan on Demand Response and provide analytical tools to assess current and future penetration of Demand Response, as well as, historical performance. The end-product of this coordination will replace an existing FERC data collection request with the NERC DADS. Currently, no central data repository for historical Demand Response enrollment and performance data exists. DADS will be a repository of historical Demand Response information for use in a wide-range of applications for both planning and operating on the Bulk Power System. Performance metrics and data will help improve Demand Response projections by providing load forecasters, resource planners, system modelers, and analysts with a comprehensive database for North America.

I am also concerned about the cost of implementing DADS, which is not mentioned in the report, at least I could not find any estimates of the cost of developing the necessary DADS systems or the costs that will be borne by the utilities/RTOs/ISOs to support this massive data collection effort.	The cost of DADS has not been evaluated in this report. Phase I requires no custom software package. NERC is in the process of outlining and developing approaches for an integrated data collection system which would consolidate multiple data systems (Generation Availability Data System (GADS), Transmission Availability Data System (TADS), DADS, etc…) In later phases, NERC may pursue the development of a custom software package that will be designed in a way in which the data entry can either be manual or importable using a "copy and paste" or bulk file import method to import data from a different existing information systems. The process of completing of this data form will vary among various Responsible Entities. Depending on the magnitude of the data, Responsible Entities can choose an appropriate method. Members of the DRDTF have developed an optimal data collection design structure which o balance tradeoffs in the level of data detail, the level of effort required to collect the data, and the value of the data. The DRDTF has designed the DADS in such a way to minimize the burden to Responsible Entities. All requested data should be readily available to Responsible Entities and little change to reporting systems is expected.
I am also concerned that PJM, which already has elaborate and highly sophisticated Demand Response systems in operation was not on the NERC Task Force that developed the proposal.	The DRDTF appreciates these comments. Representation on the DRDTF includes expertise and leadership from ISO/RTOs, retail entities, curtailment service providers, Regional Reliability Organizations, and government organizations. Further, PJM has representation on (Chair) the Data Coordination Subcommittee (DCS), which the DRDTF is a subgroup of.
Bottom line: DADS looks like a very costly effort to duplicate on a national basis work already done by each of the organized markets.	The DRDTF appreciates these comments. The DRDTF has strived to minimize the burden of reporting DADS data to the industry. Much, if

It is not clear to me what the point is."	not all data being requested is already gathered and collected by Responsible Entities. The goal of DADS is to collect Demand Response enrollment and event information that measures the ongoing influence of Demand Response on bulk power system reliability. The DADS program is high priority in NERC's Reliability Assessment and Performance Analysis program. Further, NERC has coordinated with FERC to support FERC's National Action Plan on Demand Response and provide analytical tools to assess current and future penetration of Demand Response, as well as, historical performance. The end-product of this coordination will replace an existing FERC data collection request with the NERC DADS. Currently, no central data repository for historical Demand Response enrollment and performance data exists. DADS will be a repository of historical Demand Response information for use in a wide-range of applications for both planning and operating on the Bulk Power System. Performance metrics and data will help improve Demand Response projections by providing load forecasters, resource planners, system modelers, and analysts with a comprehensive database for North America.