
**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**NATIONAL ACTION PLAN ON)
DEMAND RESPONSE)**

Docket No. AD09-10-000

**COMMENTS OF THE NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION IN RESPONSE TO THE COMMISSION'S OCTOBER 28, 2009
DRAFT DOCUMENT ON THE POSSIBLE ELEMENTS OF A NATIONAL ACTION
PLAN ON DEMAND RESPONSE**

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I. INTRODUCTION

The North American Electric Reliability Corporation (“NERC”) is pleased to provide these comments in response to the Federal Energy Regulatory Commission’s (“FERC” or the “Commission”) October 28, 2009 document entitled *Possible Elements of a National Action Plan on Demand Response, Discussion Draft* (“Demand Response Discussion Draft”).¹ NERC appreciates FERC’s leadership in preparing the Demand Response Discussion Draft in order to achieve the Demand Response goals for the nation as required by Section 529 of the Energy Independence and Security Act of 2007 (“EISA”). Section 529 of the EISA requires FERC to conduct a state-by-state assessment of Demand Response; develop a National Action Plan for Demand Response based on the state-by-state assessment; and work with the Department of Energy (“DOE”) on a proposal to implement the National Action Plan on Demand Response to be submitted to Congress.

NERC’s mission, as the FERC-designated Electric Reliability Organization (“ERO”),² is to ensure the reliability of the bulk power system in North America by, in part, developing and enforcing mandatory Reliability Standards. Therefore, NERC is not providing comments on all sections of the Demand Response Discussion Draft. Rather, NERC herein provides for the Commission’s consideration a discussion of how implementation of Demand Response programs may impact bulk power system reliability. Specifically, NERC’s comments are focused on the third objective identified in the Demand Response Discussion Draft, pertaining to the “[d]evelopment or identification of analytical tools, information, model regulatory provisions, model contracts, and other support materials for use by customers, States, utilities, and demand

¹ *Possible Elements of a National Action Plan on Demand Response, A Discussion Draft*, issued October 28, 2009, Docket No. AD09-10-000.

² See *North American Electric Reliability Corporation*, “Order Certifying North American Electric Reliability Corporation as the Electric Reliability Organization and Ordering Compliance Filing,” 116 FERC ¶ 61,062 (July 20, 2006).

response providers.”³ NERC’s comments also focus on the fundamental concepts it believes are necessary to reliably integrate high levels of Demand Response into the bulk power system.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:

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III. DISCUSSION

A. Development of Tools and Materials to Support Demand Response Programs and their Impact on Bulk Power System Reliability

Section 2.3 of the Demand Response Discussion Draft states that the National Action Plan for Demand Response shall “meet the objective of developing or identifying analytical tools, information, model regulatory provisions, model contracts, and other support materials for use by customers, states, utilities and demand response providers.”⁴ NERC agrees this is an important objective and believes that Demand Response is one of many resources that can be used to satisfy the increasing demand for electricity in North America. In addition to providing

³ Demand Response Discussion Draft at p. 1.

⁴ Demand Response Discussion Draft at p. 40, Section 2.3.

capacity for resource adequacy and planning purposes, capacity and ancillary services provided by Demand Response programs will help to ensure resource adequacy while providing operators with additional flexibility in maintaining bulk power system reliability. However, because Demand Response is still a relatively new resource, NERC believes that the impact of Demand Response programs on bulk power system reliability must be measured in order to determine their potential benefits and risks. Better performance measures will also help develop industry confidence in Demand Response use.

One measure that is often considered in examining the overall portfolio of resources required to meet the increasing demands for electricity in North America is the use of demand-side management (“DSM”),⁵ which is often understood to include two components: energy efficiency and Demand Response. While energy efficiency is designed to reduce electricity consumption during all hours of the year, Demand Response is designed to change on-site demand for energy in intervals from minutes to hours. Energy efficiency concentrates on end-use energy solutions. Demand Response focuses on the associated timing of electricity demand/energy usage by encouraging a lowering of energy usage during peak periods, and thereby transmitting changes in prices, load control signals, or other incentives to end-users to reflect existing production and delivery costs. While NERC believes the use of DSM and specifically the implementation of Demand Response programs could be useful in the calculation of long-term planning reserves, thereby providing for a more reliable bulk power system, an analysis of the impact of Demand Response programs on bulk power system reliability is necessary given the relatively short history of data on Demand Response programs.

⁵ See ISO/RTO Council, “Harnessing the Power of Demand: How ISOs and RTOs Are Integrating Demand Response into Wholesale Electricity Markets,” available at <http://www.isorto.org/site/c.jhKQIZPBIImE/b.2604461/k.F287/Documents.htm>, October 2007.

For these reasons, NERC supports the integration of Demand Response programs into FERC's National Action Plan. However, NERC believes it will be important that planners and operators of the bulk power system implement Demand Response programs that are designed to achieve their objective of encouraging lower energy usage during peak periods while continually working to ensure bulk power system reliability.

B. The Impact of Demand Response Programs on Bulk Power System Planning

In Section 2.3.1 of the Demand Response Discussion Draft, FERC states that the enhancement or development of analytical tools and methods should help in the expansion of existing Demand Response programs and in the creation of new programs.⁶ NERC agrees that the expansion of existing Demand Response programs and the creation of new programs are important. However, NERC and system planners must be able to evaluate and understand the benefits of Demand Response programs and their impact on planning and reliability of the bulk power system in order to ensure bulk power system reliability.

While bulk power system planners have traditionally planned reserve margins and transmission systems with suitable dynamic response to ensure reliability, with the addition of Demand Response as a verifiable and acceptable resource, planning tools will be required to ensure that the placement and siting of Demand Response resources supports the reserve requirements and dynamic response required to support bulk power system reliability. For example, the performance of Demand Response resources should be measured by analyzing their response times, dynamic characteristics, and reactive contributions — all elements that are vital to maintain bulk power system reliability. Therefore, an historical assessment of Demand Response could be used as a measure of projected resource performance, and the data required to support Demand Response planning could be beneficial to support bulk power system reliability.

⁶ Demand Response Discussion Draft at p. 42.

In order to comprehensively assess the reliability impacts of Demand Response programs on the bulk power system, FERC should require more data and metrics be developed to analyze Demand Response programs. Historical data on Demand Response availability and performance plus projected participation levels could provide accurate projections of Demand Response for use in the planning and operations of the bulk power system. Additionally, such projections of Demand Response availability can be adjusted to reflect day-to-day variations in weather, customer load variability and other factors. With respect to Demand Response as a capacity resource, Demand Response 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.

As participation in Demand Response programs grows, it will be increasingly important to fully characterize and continuously update these programs by examining their load impact, predictability and availability on bulk power system reliability. NERC currently analyzes Demand Response performance data in order to develop performance metrics reflective of a range of system conditions. This data collection system is known as the Demand Response Availability Data System (“DADS”), and it enables 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 DADS is to collect Demand Response enrollment and event information that measures the ongoing influence of Demand Response on bulk power system reliability. DADS provides a basis for projecting the impacts of both dispatchable and non-dispatchable (price-driven) Demand Response programs on planning (*i.e.* demand reduction) and operational reliability. The DADS data collection system also provides a basis for counting and validating Demand Response resources necessary to meet

operational and resource adequacy requirements. NERC's DADS program is a high priority in NERC's Reliability Assessment and Performance Analysis program.

Unlike traditional generating resources with many decades of historic data for analysis, the long-term projections of Demand Response resources involve greater forecasting uncertainty. While some electricity markets are already integrating significant Demand Response programs, the long-term availability of these resources remains uncertain. Therefore, less understood attributes of Demand Response resources, such as response fatigue or economic-base participation rates, should be carefully monitored to assure they do not pose bulk power system reliability issues. For these reasons, NERC looks forward to working with FERC through the Demand Response Data Task Force ("DRDTF") in the continued development of the DADS program and in the historical and real-time assessment of Demand Response in FERC's development of a National Action Plan for Demand Response.

C. The Impact of Demand Response Programs on Bulk Power System Operations

Today, the bulk power system is designed and operated to meet customer demand in real time. That is, supply and demand must be constantly and precisely balanced. As customer demand changes throughout the day and over the seasons, power production is dispatched higher or lower to meet demand. Because electricity cannot presently be easily stored on a large scale, the variability in demand is often met by controlling conventional generation and storing fuels used to create electricity. Implementation of Demand Response programs could therefore be useful in helping balance the constantly fluctuating supply and demand of electricity resources.

As the electricity industry seeks to reliably integrate large amounts of Demand Response into the bulk power system, considerable effort is required to accommodate and effectively manage the operating characteristics of Demand Response programs. Operators will require new

tools to manage bulk power systems with wide-spread Demand Response. Some of these tools include development of the following:

- dispatch;
- balancing and frequency;
- Demand Response forecasts;
- cyber-security alarms and management;
- central versus de-centralized control; and
- agreed-upon baseline calculations with suitable measurements and verification.

For these reasons, NERC looks forward to working with FERC in developing appropriate tools for use in developing Demand Response programs to be included in FERC's National Action Plan that will help to ensure bulk power system reliability.

IV. CONCLUSION

NERC is pleased to provide these comments in anticipation of the Commission's issuance of a National Action Plan on Demand Response, and looks forward to working with the Commission in developing Demand Response programs that will ensure reliability of the bulk power system.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 4th day of December, 2009.

/s/ Holly A. Hawkins
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