



RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE

For Quadrant: Wholesale Electric Quadrant
Requesters: Smart Grid Interoperability Panel
Request No.: 2010 WEQ Annual Plan Item 6(c)(ii)
Request Title: Phase Two Requirements Specification for Wholesale Standard DR Signals – for NIST PAP09

1. RECOMMENDED ACTION:

- Accept as requested
- Accept as modified below
- Decline

EFFECT OF EC VOTE TO ACCEPT RECOMMENDED ACTION:

- Change to Existing Practice
- Status Quo

2. TYPE OF DEVELOPMENT/MAINTENANCE

Per Request:

- Initiation
- Modification
- Interpretation
- Withdrawal

- Principle
- Definition
- Business Practice Standard
- Document
- Data Element
- Code Value
- X12 Implementation Guide
- Business Process Documentation

Per Recommendation:

- Initiation
- Modification
- Interpretation
- Withdrawal

- Principle
- Definition
- Business Practice Standard
- Document
- Data Element
- Code Value
- X12 Implementation Guide
- Business Process Documentation

3. RECOMMENDATION

SUMMARY:

The ~~business process flow~~ business activity diagrams and use cases presented in these Business Practice Standards illustrate the standard interactions between a System Operator and various Market Participants for the administration and deployment of demand response resources in organized wholesale electric markets.

RECOMMENDED STANDARDS:

In response to NIST’s Priority Action Plan 9, this recommendation contains draft requirements specifications, in the form of ~~business process flow~~ business activity diagrams, ~~and~~ and data requirements for each interaction, to support the standardization of the information exchanged during interactions between the System Operator and various Market Participants for the administration and deployment of demand response resources in organized wholesale electric markets. Common terminology from the NAESB Measurement and Verification Standards for Demand Response has been incorporated into the development of the ~~business process flow~~ business activity diagrams and use cases. As a result of the development of these

~~Draft Recommendation as revised by the NAESB WEQ Executive Committee on July 7, 2010- October 7, 2010~~



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Business Practice Standards, a standard set of actors and additional terminology will expand the existing NAESB documentation of associated terms and definitions for demand response.

WEQ-018

RECOMMENDED STANDARDS:

Executive Summary

Specifications for Wholesale Standard Demand Response Signals

The following addresses the business objectives and context for standardizing ~~control and pricing~~ signals for DR and DER as part of the Smart Grid implementation, which is called for by NIST PAP 09. ~~The NAESB SGTF in cooperation with UCAIug, OpenSG Task Force, the ISO/RTO Council, and other organizations, have developed DR use cases that provide requirements for developing consistent DR control and pricing signal standards.~~ This Business Practice Standard and data elements included herein are not intended to replace applicable Governing Documents, and in the event of a conflict, the latter documents shall have precedence over this standard.

The ~~business process flow~~business activity diagrams and use cases contained in this ~~recommendation~~Business Practice Standard address the requirements for standardizing the information exchanged during interactions between the System Operator and various Market Participants for the administration and deployment of demand response resources in organized wholesale electric markets. ~~Additional Business Practice Standards under development through the NAESB SGTF will focus on other aspects of the PAP 09 objectives.~~ To maintain consistency ~~throughout materials developed by the NAESB SGTF,~~ a master list of data elements and a common set of actors, terms and definitions have been adopted.

The following describes the end-to-end ~~business process flow~~business activity diagrams relating to the wholesale market ~~communication~~interactions between the System Operator (SO) and ~~the~~SPvarious Market Participants common to all ISOs/RTOs that offer opportunities for demand resources to participate in organized wholesale electric markets.



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Introduction

Specifications for Wholesale Standard Demand Response Signals

~~**Purpose:** To accelerate the development of standards for Smart Grid Interoperability, NIST is working with all stakeholders of Smart Grid and has developed a set of PAPs⁴. A number of PAPs (03, 04, and 09) are related to the use of Smart Grid technologies to enable DR and the integration of DER for DR purposes.~~

~~Specifically for PAP 09, NAESB, with support from UCAIug OpenSG task forces and the ISO/RTO Council, have responsibility to collect, analyze, and consolidate use cases and develop UML based use case models for DR. Such responsibility now falls under the NAESB-SGTF.~~

~~NIST Smart Grid Interoperability² Roadmap leverages the GWAC interoperability framework. This framework calls for the establishment of business objectives, procedures and context before technical interoperability standards can be established. To apply this framework to the development of interoperability standards for DR Signals, it is clear that the industry needs an overarching business framework to guide the development of technical standards, given the complexity and range of DR programs.~~

The purpose of the following is to provide standards developers with a context for understanding the range of ~~scenarios~~ interactions between wholesale electricity market sSystem eOperators and Market Participants to which DR programs and DERs may be applied and implemented across the various electricity systems and jurisdictions in the United States of America with some overlaps to Canada. A major objective in producing these Business Practice Standards is to emphasize the importance of interoperability at all levels of the GWAC interoperability framework.

The use cases included in these Business Practice Standards are not to be required or exhaustive and are provided for clarification purposes.

¹ <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGridInterimRoadmap/PriorityActionPlans>

² ~~Interoperability is the capability of two or more networks, systems, devices, applications, or components to share and readily use information securely and effectively with little or no inconvenience to the user. The characteristics of interoperability as set forth in the GridWise[®] Interoperability Context Setting Framework are (1) exchange of meaningful, actionable information between two or more systems across organizational boundaries, (2) a shared understanding of the exchanged information, (3) an agreed expectation for the response to the information exchange, and (4) a requisite quality of service: reliability, fidelity, and security. The result of interoperability is that interfaces, systems, and devices are capable of being integrated, scalable, adaptable, and upgradable and utilize open standards to promote competitive technology and to avoid stranded investments. Interoperability can only be achieved if there is a seamless, end-to-end coordination and exchange of data between many organizations, interfaces, systems, and devices resulting in behavior changing information given to the consumer.~~



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Scope: There are certain principles and boundaries that have been established. These include:

1. Demand Response practices must be consistent with NERC and applicable regional reliability authority requirements.
2. All involved entities are registered through the applicable ISO/RTO market participant registration process, which may include credit checks. However, the specifics related to the business processes associated with Market Participant registration are not documented in these requirements.
3. Settlement input parameters are defined as an output to the measurement and performance business process. However, specific business processes associated with settlements are not documented in these requirements.
4. Intra-system operator information exchanges and specific ~~system operators~~ market rules, calculations, algorithms, and Performance Evaluation models are excluded.
5. Planning functions are not documented in these requirements. This includes, but is not limited to, long-term load forecasting and transmission planning.
6. Capacity auctions, awards processes, and resource certification are not documented in these requirements.
7. References in these Recommendations to “Dispatch”, “Markets”, and “Reliability”, are made relative to Demand Response and apply to Demand Response resources only, not to Generation resources.
8. Compliance standards for Demand Response resources are determined by the market rules or other Governing Documents of the respective ~~system~~ System operator Operator and are specific to the product or service and the reliability need being addressed.

Business Practice Standards

018-1 **Specifications for Wholesale Standard Demand Response Signals**

The following describes the wholesale market ~~business process flow~~ business activity diagram and provides the necessary business context and reference architecture for use cases ~~that connect to the retail level~~ between the System Operator and Market Participant. ~~The descriptions provide a common linkage to the retail use cases presented in the companion specification for the Retail Electricity Quadrant.~~

This Business Practice Standard contains the list of data elements used in Business Practice Standards WEQ-016 and WEQ-018. Specific application of the data elements to a given use case contained in WEQ-016 and WEQ-018 are identified within the appropriate Business Practice Standard. This Business Practice Standard and data elements included herein are not intended to replace applicable Governing Documents, and in the event of a conflict, the latter documents shall have precedence over this standard.



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018-1.1 Conventions

- Glossary terms are ~~to be~~ capitalized.
- Implementation does not require every ~~communication~~~~interaction-flow~~~~interaction~~ shown in the ~~process flow~~~~business activity diagrams~~~~business activity diagrams~~.



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018-2 ACTORS

The actors listed in the table below are specific to this recommendation and are a subset of the actors and related objects defined in WEQ-000. Details on the relationships between the actors and related objects are further defined in Appendix A.

Table 1 - Actor Roles

Term	Actor ID³
Designated Dispatch Entity	3.4
Load Serving Entity	3.2
Meter Authority	3.6
Scheduling Entity	3.3
Service Provider	3.1
System Operator	2.1
Transmission/Distribution Service Provider	3.5

³ The Actor ID shown in the table refers to the item number of the corresponding actor or related object in the Entity-Relationship Diagram provided in Appendix A. Definitions of the actors and related objects are included in WEQ-000.



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018-1.3

USE CASE OVERVIEW

The use cases presented in these Business Practice Standards represent a combination of three dimensions of demand response participation in wholesale markets: product, deployment, and performance evaluation method. As shown in the table below, product and deployment dimensions are identified by a single alphabetic character and performance evaluation methods are indicated by a numeric identifier; each character is separated by a dash (-). For example, use case E-R-1 refers to the use case for the energy (economic) product with a resource-specific deployment and performance evaluated using a Baseline.

The use cases included in this Business Practice Standard are not to be required or exhaustive and are provided for clarification purposes.

Table 2 - Use Case Dimensions

Product	
Energy (Economic)	E
Energy (Reliability)	R
Capacity	C
Reserve	V
Regulation	G
Deployment	
Bulk	B
Resource	R
Self	S
Performance Evaluation	
Baseline	1
MB/MA	2
MBL	3
MGO	4



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A sample of the use case list is shown in the table below. Appendix B contains the complete list of [valid](#) use case combinations.

Table 3 - Sample Use Case List

Use Case	Product	Deployment	Performance Evaluation
E-R-1	Energy (Economic)	Resource	Baseline
E-R-2	Energy (Economic)	Resource	MB/MA
E-R-3	Energy (Economic)	Resource	MBL
E-R-4	Energy (Economic)	Resource	MGO
E-S-1	Energy (Economic)	Self	Baseline
E-S-2	Energy (Economic)	Self	MB/MA
E-S-3	Energy (Economic)	Self	MBL
E-S-4	Energy (Economic)	Self	MGO

The Figure 1 illustrates the ~~process flow~~[business activity diagrams](#) for use cases combinations that are considered to be representative of the types of demand response in wholesale electricity markets today. Each ~~process flow~~[business activity diagram](#) description includes a table of the use cases to which the ~~process flow~~[business activity diagram](#) applies, ~~followed by the specific data elements that are exchanged in each numbered interaction shown in the business activity diagram.~~

The wholesale Demand Response end-to-end ~~business process flow~~[business activity diagram](#) for the ~~communication~~[interactions](#) between the SO and the Service Provider SP is comprised of four major functions:

- [1.0](#) Enrollment & Qualification,
- [2.0](#) Scheduling & Award Notification,
- [3.0](#) Deployment & Real-Time Communications,
- [4.0](#) Measurement & Performance.

Two additional ~~processes~~[activities](#) are shown in the high-level business process flow, but are considered outside the scope of what is required for the ~~communication~~[interactions](#) flow for demand response:

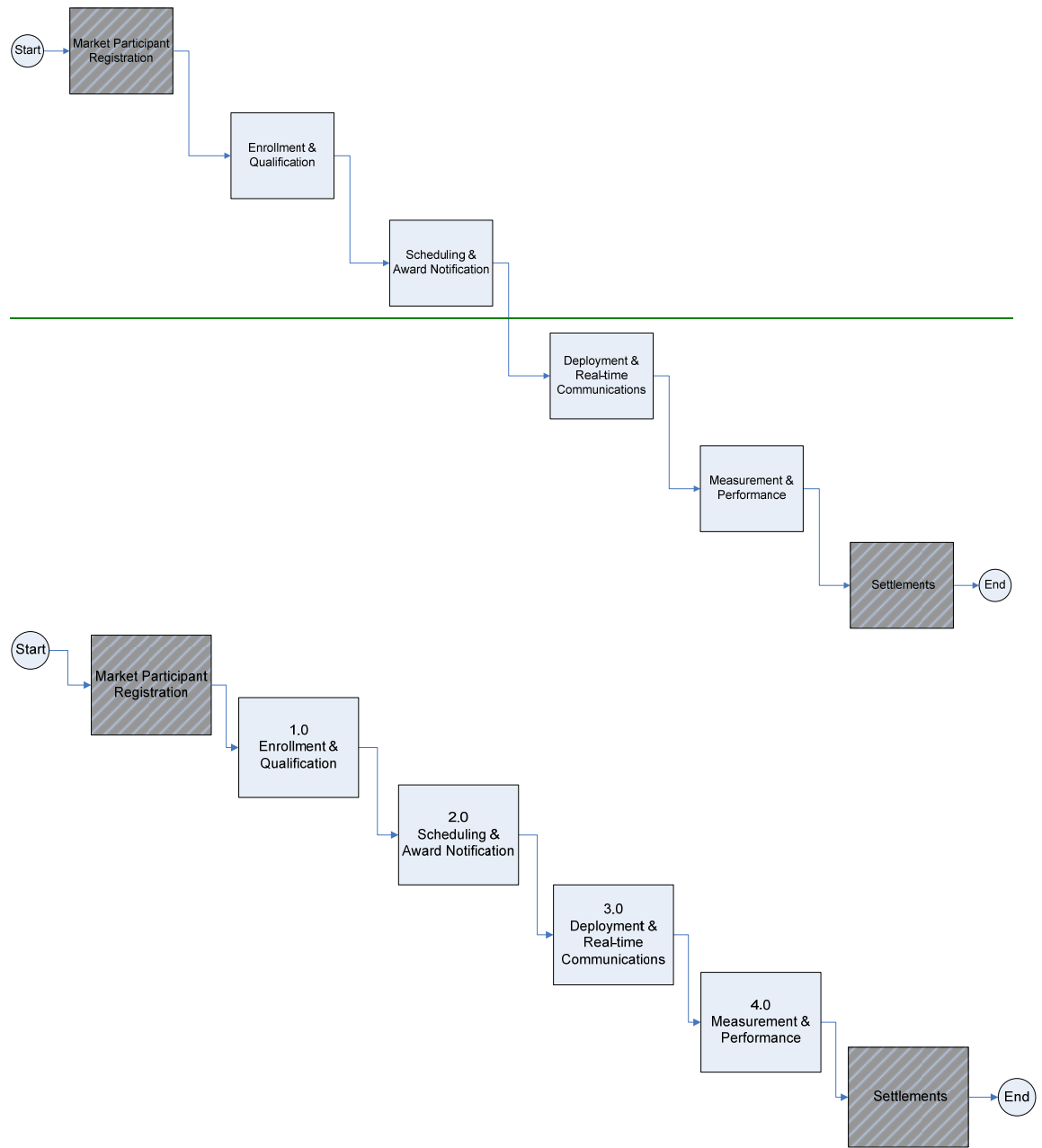
- Market Participant Registration
- Settlements



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Figure 1 - Demand Response





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Business activity diagrams are numbered using the sequence shown in Figure 1Figure-1. If a business process is further specified, the second position in the number sequence indicates this specification, as in 2.1 – Scheduling and Award Notification – Economic and 2.2 – Scheduling and Award Notification – Reliability.

Interactions between the System Operator and the Market Participant are numbered for each business activity diagram. To continue with the example above, 2.1.1 – Offer Parameters, is the first interaction between the System Operator and Market Participant in the business activity diagram 2.1 – Scheduling and Award Notification – Economic.

A table containing the data elements used in the interactions of the business activity diagram is shown. The numbers of the interactions in the table correspond to the numbered interactions in the business activity diagram. Cells showing an “M” (mandatory) are data elements that must contain some value when included in the interaction message. Cells showing an “O” (optional) are data elements that may be left blank if not used in a given interaction.



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018-1.4 SPECIFIC USE CASES

018-1.4.1 Enrollment and Qualification

Overview: The Enrollment and Qualification process documents the steps required to enroll a Resource in a wholesale demand response program.

Use Cases: All valid use cases defined in these Business Practice Standards (see [Figure 2](#)~~Figure 2~~[Figure 2](#))

- The process begins when the SP submits an enrollment request to the SO.
- The SO processes the enrollment request, which may include interactions with the TDSP, LSE, MA and/or SE.
- The SO evaluates the enrollment request, which may include verification information from the TDSP, LSE, MA and/or SE.
- The result of the evaluation is the approval or rejection of the enrollment request.
 - If the enrollment request has been rejected, the SO sends information to the SP, indicating the rejection details.
 - If the enrollment request has been approved, a determination is made by the SO as to whether qualification of the Resource's capability is required prior to final approval.
 - If no qualification is required, the SO sends information to the SP, indicating the approval of the enrollment.
 - If qualification is required, the SO coordinates the qualification procedure with the SP.
 - If the Resource has failed to qualify, the SO sends information to the SP, indicating the qualification rejection details.
 - If the Resource achieves qualification, the SO sends information to the SP and enrollment is finalized.
- At the end of the Enrollment and Qualification process, the SO finalizes enrollment, notifies the SP and may also notify the TDSP, LSE, MA and/or SE.



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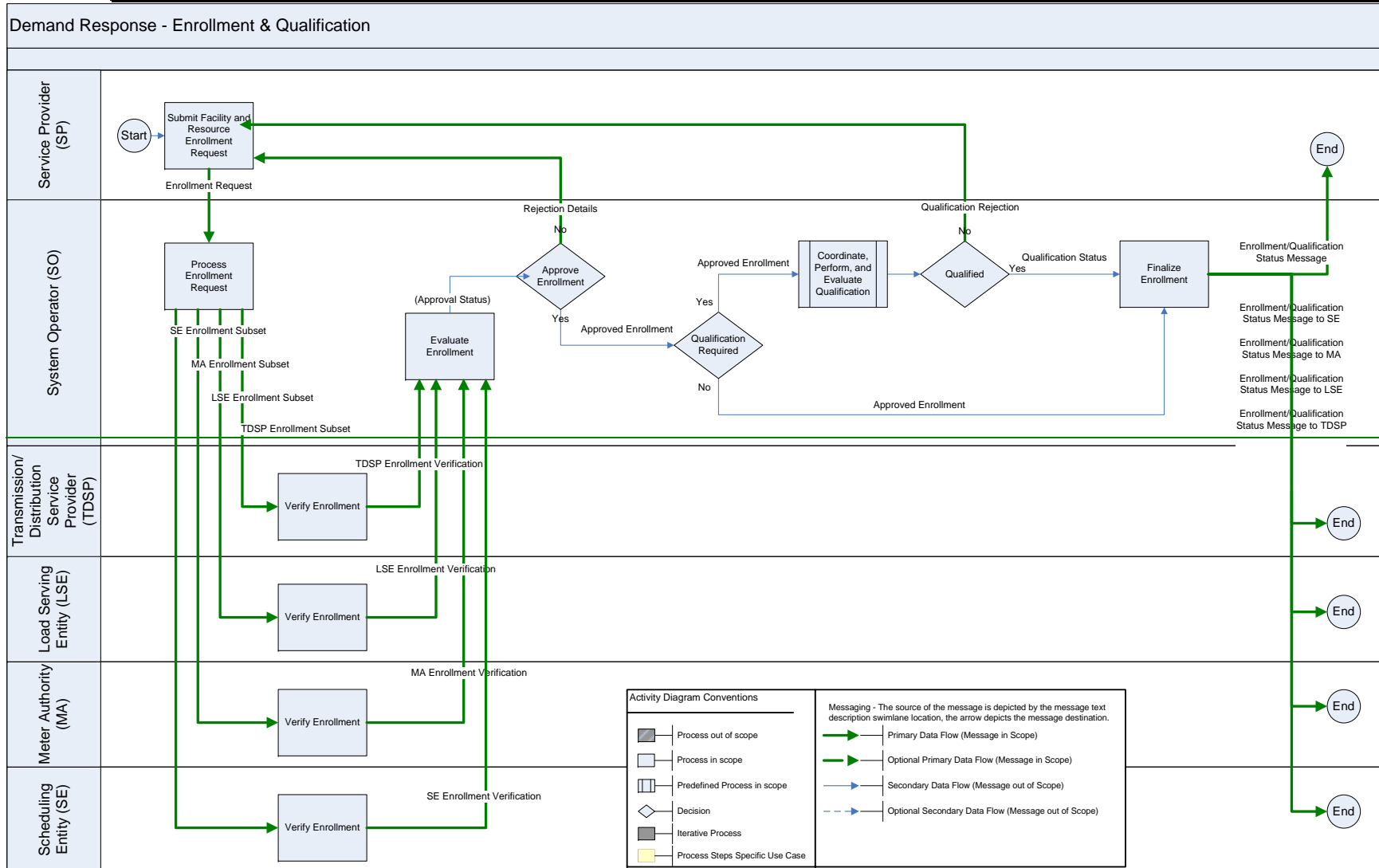
Activity Diagram and Data Flow:

Figure 2 - Enrollment and Qualification



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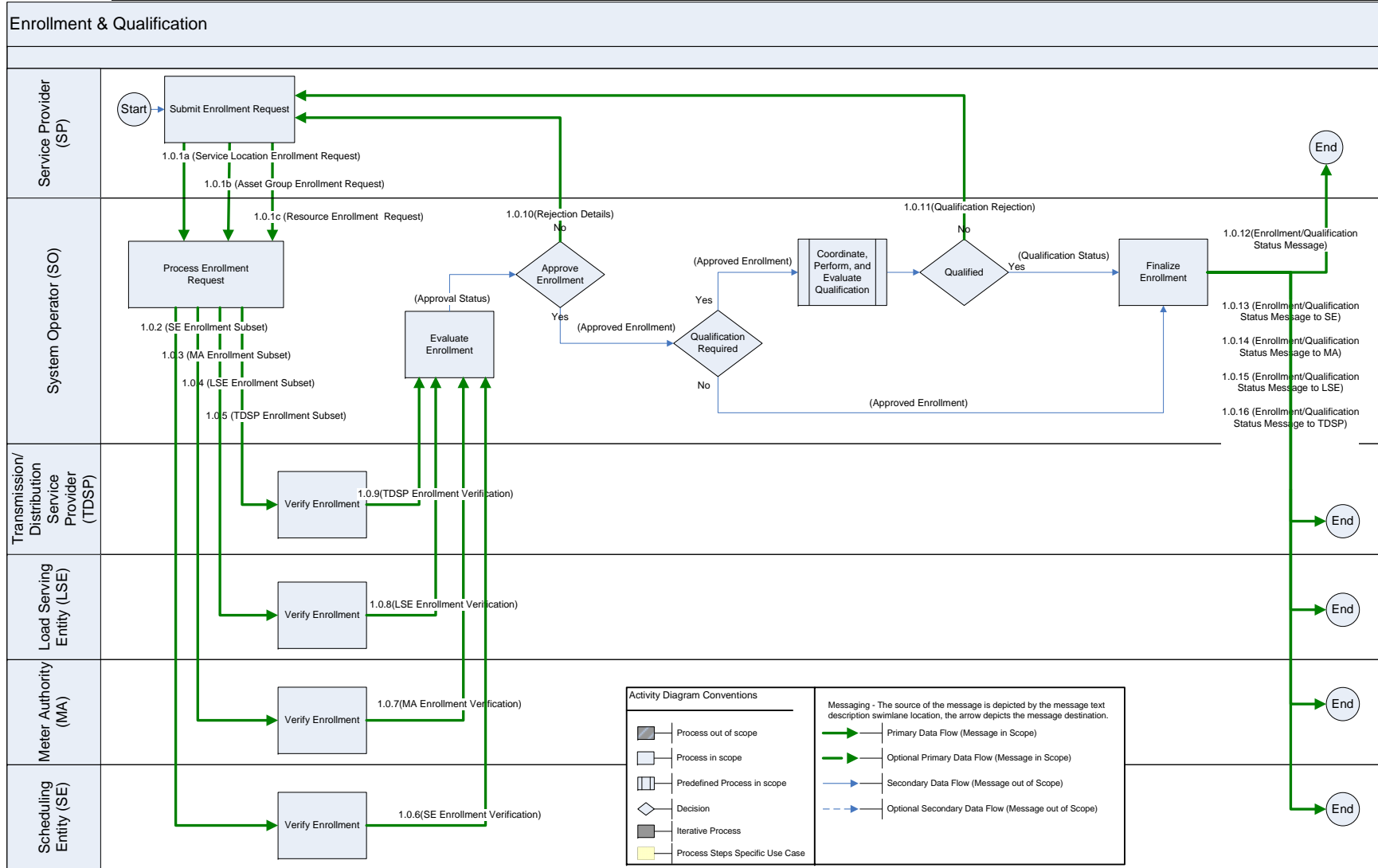


Table 4. Data Requirements by Interaction Number 1.0.1a through 1.0.9: Enrollment and Qualification



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		<u>Process</u>	<u>1.0 Enrollment & Qualification</u>										
		<u>From</u>	SP			SO				SE	MA	LSE	TDSP
		<u>To</u>	SO			SE	MA	LSE	TDSP	SO			
		<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
		<u>Interaction</u>	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>	<u>Short Description</u>												
<u>0</u>	<u>Common</u>												
<u>0</u>	<u>10</u>	<u>Submittal Date</u>	<u>Timestamp for the sender's use</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>			
<u>0</u>	<u>11</u>	<u>Submitted By</u>	<u>User ID of submitter</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>			
<u>0</u>	<u>12</u>	<u>Submitted Error</u>	<u>ID of submission error detected</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>			
<u>0</u>	<u>13</u>	<u>Rejection Code Type</u>	<u>Type of rejection message</u>										
<u>0</u>	<u>14</u>	<u>Rejection Code Value</u>	<u>Code referring to the reason for a rejection message</u>										
<u>0</u>	<u>20</u>	<u>NERC CIP Security - Availability</u>	<u>CIP Security Classification for Availability</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>0</u>	<u>21</u>	<u>NERC CIP Security - Confidentiality</u>	<u>CIP Security Classification for Confidentiality</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>



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			Process	1.0 Enrollment & Qualification											
			From	SP	SO				SE	MA	LSE	TDSP			
			To	SO	SE	MA	LSE	TDSP	SO						
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
<u>0</u>	<u>22</u>	NERC CIP Security - Integrity	CIP Security Classification for Integrity	M	M	M	M	M	M	M	M	M	M	M	
<u>1</u>		General Asset/Resource													
<u>1</u>	<u>10</u>	Service Location ID	Identifier assigned to the Service Location	M	M	M	M	M	M	M	M	M	M	M	
<u>1</u>	<u>11</u>	Service Location Name	Name of the Service Location	O	O	M	M	O	O	O	M	O	O	M	
<u>1</u>	<u>12</u>	Asset ID	The unique identifier of the asset	O	O	O	O	O	O	O	O	O	O	O	
<u>1</u>	<u>13</u>	Asset Name	The name of the asset	O	O	O	O	O	O	O	O	O	O	O	
<u>1</u>	<u>20</u>	Resource ID	Identifier assigned to the Resource	M	M	M	M	M	M	M	M	M	M	M	
<u>1</u>	<u>21</u>	Resource Name	Name of the Resource	O	O	M	M	O	O	O	M	O	O	O	
<u>1</u>	<u>30</u>	Asset Group ID	The identifier of a group of assets	M	M	M	M	M	M	M					



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			<u>To</u>	SO	SE	MA	LSE	TDSP	SO					
			<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>	<u>Short Description</u>													
<u>1</u>	<u>31</u>	<u>Asset Group Name</u>	Name of the aggregated group of assets	M	M	M	M	M	M	M				
<u>1</u>	<u>40</u>	<u>GenEMSID</u>	Alias or point Identifier assigned to the Resource			M								
<u>1</u>	<u>41</u>	<u>GenBillingID</u>	Billing Identifier assigned to the Resource			M								
<u>1</u>	<u>50</u>	<u>Business Segment</u>	NAICS code of the Service Location	O	O	O								
<u>1</u>	<u>51</u>	<u>Batch Load Flag</u>	Flag set if the Resource is a Batch Load	O	O	O								
<u>1</u>	<u>991</u>	<u>General Resource Comments</u>	General comments associated with the Resource	O	O	O	O	O	O	O				
<u>2</u>		<u>Location</u>												
<u>2</u>	<u>10</u>	<u>Address1</u>	Address line 1	M	M	M	M	M	M	M	M			M
<u>2</u>	<u>11</u>	<u>Address2</u>	Address line 2	O	O	O	O	O	O	O	O			O
<u>2</u>	<u>12</u>	<u>City</u>	City	M	M	M	M	M	M	M	M			M



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		<u>To</u>	SO			SE	MA	LSE	TDSP	SO			
		<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
		<u>Interaction</u>	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>		<u>Short Description</u>											
<u>2</u>	<u>13</u>	<u>Service Location State/Province</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>M</u>
<u>2</u>	<u>14</u>	<u>Service Location Zip/Postal Code</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>M</u>
<u>2</u>	<u>15</u>	<u>Service Location Country</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>M</u>
<u>2</u>	<u>20</u>	<u>GPS Coordinates</u>	<u>O</u>	<u>O</u>	<u>O</u>								
<u>2</u>	<u>21</u>	<u>Weather Station</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>						
<u>2</u>	<u>22</u>	<u>TimeZoneName</u>	<u>O</u>	<u>O</u>	<u>O</u>								
<u>2</u>	<u>30</u>	<u>Zone ID</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>				



**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEES REVISED BY
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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

			Process	1.0 Enrollment & Qualification										
			From	SP	SO						SE	MA	LSE	TDSP
			To	SO	SE	MA	LSE	TDSP	SO					
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element			Short Description											
<u>2</u>	<u>31</u>	<u>Zone</u>	Name of the Zone in which the Service Location is located	M	M	M	O	O	O	O				
<u>2</u>	<u>32</u>	<u>Zone Type</u>	Type of Zone	M	M	M	O	O	O	O				
<u>2</u>	<u>40</u>	<u>Electrical Node ID</u>	Identifier assigned to the Electrical Node at which the Service Location is connected	M	M	M	M	M	O	M				
<u>2</u>	<u>41</u>	<u>Electrical Node Name</u>	Name of the Electrical Node at which the Service Location is connected	M	M	M	O	O	O	O				M
<u>2</u>	<u>42</u>	<u>Electrical Node Type</u>	Type of Electrical Node at which the Service Location is attached	M	M	M	M	M	M	M				M
<u>2</u>	<u>43</u>	<u>PNode</u>	Name of the Price Node associated with the Service Location	O	O	O	O	O	O	O				



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			Process	1.0 Enrollment & Qualification										
			From	SP	SO						SE	MA	LSE	TDSP
			To	SO	SE	MA	LSE	TDSP	SO					
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element			Short Description											
<u>2</u>	<u>44</u>	<u>PNode ID</u>	Identifier assigned to the Price Node associated with the Service Location	M	M	M	M	M	M	M	M			M
<u>2</u>	<u>50</u>	<u>Competitive Choice Area</u>	Flag set if the Service Location is in an area with Competitive Choice	O	O	O	O	O	O	O	O			O
<u>2</u>	<u>51</u>	<u>Asset Multiplier</u>	Number of identical assets within the Service Location	O	O	O								
<u>2</u>	<u>60</u>	<u>NERC Control Area</u>	The NERC control area of the resource	O	O	O								
<u>2</u>	<u>71</u>	<u>Connection Type</u>	Additional type of connection associated with the Service Location/Resource	O	O	O								
<u>2</u>	<u>72</u>	<u>Connection Address</u>	Address associated with the Connection Type	O	O	O								



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>										
			From	SP			SO				SE	MA	LSE	TDSP
			To	SO			SE	MA	LSE	TDSP	SO			
			<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
<u>Element</u>			<u>Short Description</u>											
<u>2</u>	<u>991</u>	<u>Location Comments</u>	Comments associated with the Service Location	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>				
<u>3</u>		<u>Contact</u>												
<u>3</u>	<u>10</u>	<u>Contact Type</u>	Interest code associated with a Contact	<u>M</u>	<u>M</u>	<u>M</u>								
<u>3</u>	<u>11</u>	<u>Contact Priority</u>	Order in which this Contact should be selected	<u>M</u>	<u>M</u>	<u>M</u>								
<u>3</u>	<u>12</u>	<u>DUNS Number</u>	DUNS business number	<u>M</u>	<u>M</u>	<u>M</u>								
<u>3</u>	<u>13</u>	<u>Third Party</u>	Flag set if the Contact is a third-party entity	<u>O</u>	<u>O</u>	<u>O</u>								
<u>3</u>	<u>20</u>	<u>Title</u>	Title of the Contact	<u>O</u>	<u>O</u>	<u>O</u>								
<u>3</u>	<u>21</u>	<u>First Name</u>	First Name of the Contact	<u>M</u>	<u>M</u>	<u>M</u>								
<u>3</u>	<u>22</u>	<u>Last Name</u>	Last Name of the Contact	<u>M</u>	<u>M</u>	<u>M</u>								
<u>3</u>	<u>23</u>	<u>Contact Middle Name</u>	Middle Name of the Contact	<u>O</u>	<u>O</u>	<u>O</u>								



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

			Process	1.0 Enrollment & Qualification										
			From	SP			SO				SE	MA	LSE	TDSP
			To	SO			SE	MA	LSE	TDSP	SO			
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
Element			Short Description											
<u>3</u>	<u>30</u>	<u>Contact Method</u>	<u>Method of communication with the Contact</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-
<u>3</u>	<u>31</u>	<u>Contact Address Data</u>	<u>Method-dependent Address of the Contact</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-
<u>3</u>	<u>32</u>	<u>Contact Method Priority</u>	<u>Order in which a Communication Method should be selected for a Contact</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-
<u>3</u>	<u>991</u>	<u>Contact Comments</u>	<u>Comments associated with the Contact</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-
<u>4</u>		<u>Grid Connection</u>												
<u>4</u>	<u>10</u>	<u>Loss Factor Type</u>	<u>Type of Loss Factor</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	<u>O</u>
<u>4</u>	<u>11</u>	<u>Loss Factor Value</u>	<u>Loss Factor</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	<u>O</u>
<u>4</u>	<u>12</u>	<u>Connect Voltage</u>	<u>Voltage level</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>4</u>	<u>991</u>	<u>Grid Connection Comments</u>	<u>Comments associated with the Attributes of the</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-



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				1.0 Enrollment & Qualification											
				SP			SO				SE	MA	LSE	TDSP	
				SO			SE	MA	LSE	TDSP	SO				
				<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>	
Process															
From															
To															
Interaction															
Element				Short Description											
			<u>Resource</u>												
Business Entity Relationships															
<u>5</u>	<u>11</u>	<u>Service Provider ID</u>	<u>Identifier assigned to the Service Provider</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>M</u>				
<u>5</u>	<u>12</u>	<u>Service Provider Name</u>	<u>Name of the Service Provider</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>O</u>				
<u>5</u>	<u>20</u>	<u>Transmission/Distribution Service Provider ID</u>	<u>Identifier assigned to the Transmission/Distribution Service Provider</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>M</u>				
<u>5</u>	<u>21</u>	<u>Transmission/Distribution Service Provider Name</u>	<u>Name of the Transmission/Distribution Service Provider</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>O</u>			<u>M</u>	
<u>5</u>	<u>22</u>	<u>Transmission/Distribution Service Provider Account Number</u>	<u>Transmission/Distribution Service Provider's account number for the Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>				<u>O</u>	



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			Process	1.0 Enrollment & Qualification										
			From	SP	SO						SE	MA	LSE	TDSP
			To	SO	SE	MA	LSE	TDSP	SO					
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element	Short Description													
<u>5</u>	<u>30</u>	<u>Load-Serving Entity ID</u>	Identifier assigned to the Load-Serving Entity	M	M	M	M	M	O	O	-	-	-	-
<u>5</u>	<u>31</u>	<u>Load-Serving Entity Name</u>	Name of the Load-Serving Entity	M	M	M	M	M	O	O	-	-	-	-
<u>5</u>	<u>40</u>	<u>Retail Rate ID</u>	Identifier assigned to the Retail Rate	M	M	M	-	-	O	-	-	-	-	-
<u>5</u>	<u>41</u>	<u>Retail Rate Code</u>	Code representing the Retail Rate for the Service Location	O	O	O	-	-	O	-	-	-	O	-
<u>5</u>	<u>42</u>	<u>Retail Rate Name</u>	Name of the Retail Rate for the Service Location	M	M	M	-	-	O	-	-	-	M	-
<u>5</u>	<u>43</u>	<u>Retail Rate Description</u>	Description of the Retail Rate	O	O	O	-	-	O	-	-	-	O	-
<u>5</u>	<u>44</u>	<u>Retail Rate</u>	Retail Rate	M	M	M	-	-	O	-	-	-	M	-
<u>5</u>	<u>50</u>	<u>Meter Installation Provider ID</u>	Identifier assigned to the Meter Installation Provider	M	M	M	-	-	-	-	-	-	-	-



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			From	SP			SO				SE	MA	LSE	TDSP
			To	SO			SE	MA	LSE	TDSP	SO			
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element			Short Description											
<u>5</u>	<u>51</u>	<u>Meter Installation Provider Name</u>	<u>Name of the Meter Installation Provider</u>	M	M	M								
<u>5</u>	<u>60</u>	<u>Meter Authority ID</u>	<u>Identifier assigned to the Metering Authority</u>	M	M	M	M	M			M			M
<u>5</u>	<u>61</u>	<u>Meter Authority Name</u>	<u>Name of the Metering Authority</u>	M	M	M	M	M			O			O
<u>5</u>	<u>70</u>	<u>Scheduling Entity ID</u>	<u>Identifier assigned to the Scheduling Entity</u>	M	M	M	M				M			M
<u>5</u>	<u>71</u>	<u>Scheduling Entity Name</u>	<u>Name of the Scheduling Entity</u>	M	M	M	M				O			O
<u>5</u>	<u>80</u>	<u>Designated Dispatch Entity ID</u>	<u>Identifier assigned to the Designated Dispatch Entity</u>	M	M	M	M				M			M
<u>5</u>	<u>81</u>	<u>Designated Dispatch Entity Name</u>	<u>Name of the Designated Dispatch Entity</u>	M	M	M	M				O			O
<u>5</u>	<u>991</u>	<u>External Entity Comments</u>	<u>Comments associated with the External Entity</u>	O	O	O								



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		<u>Process</u>	<u>1.0 Enrollment & Qualification</u>										
		<u>From</u>	SP			SO				SE	MA	LSE	TDSP
		<u>To</u>	SO			SE	MA	LSE	TDSP	SO			
		<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
		<u>Interaction</u>	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>	<u>Short Description</u>												
<u>6</u>	<u>Device and Qualification</u>												
<u>6</u>	<u>10</u>	<u>Meter Configuration</u>	<u>Configuration of the Meter at the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>						
<u>6</u>	<u>11</u>	<u>Parent Meter id</u>	<u>ID of a Master or Parent Meter</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>					
<u>6</u>	<u>20</u>	<u>Meter ID</u>	<u>Identifier assigned to the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>			<u>M</u>
<u>6</u>	<u>21</u>	<u>Meter Type</u>	<u>Type of Meter installed at the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>						
<u>6</u>	<u>22</u>	<u>Meter Manufacturer</u>	<u>Manufacturer of the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>							
<u>6</u>	<u>221</u>	<u>Meter Installation Date</u>	<u>Date of Installation of the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>							
<u>6</u>	<u>222</u>	<u>PT Ratio</u>	<u>Ratio of the Potential Transformer</u>	<u>O</u>	<u>O</u>	<u>O</u>							



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			From	SP	SO				SE	MA	LSE	TDSP			
			To	SO	SE	MA	LSE	TDSP	SO						
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
<u>6</u>	<u>223</u>	<u>Meter Installer License</u>	<u>Professional License Number of the Installer of the Meter</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>224</u>	<u>Meter Correction Factors</u>	<u>Device-specific Factors used to adjust for atmospheric changes at the point of installation of the Meter</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>225</u>	<u>Meter Test Criteria</u>	<u>Test Criteria required to qualify the installation of the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>226</u>	<u>Meter Test Frequency</u>	<u>Frequency of Tests of the Meter</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>227</u>	<u>Device QA Plan</u>	<u>Quality Assurance plan for maintenance and testing of the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	



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			Process	1.0 Enrollment & Qualification											
			From	SP	SO				SE	MA	LSE	TDSP			
			To	SO	SE	MA	LSE	TDSP	SO						
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
6	<u>228</u>	<u>Date of Last Meter Test</u>	<u>Date of Last Test of the Meter</u>	O	O	O	-	-	-	-	-	-	-	-	-
6	<u>229</u>	<u>Meter Qualification Date</u>	<u>Date of Qualification of the Meter by the Metering Authority or System Operator</u>	M	M	M	O	M	-	-	-	-	-	-	-
6	<u>2291</u>	<u>Meter Test Results</u>	<u>Results of Tests of the Meter</u>	M	M	M	-	-	-	-	-	-	-	-	-
6	<u>2292</u>	<u>VEE Compliance</u>	<u>Compliance standard for Validation, Editing, and Estimation</u>	M	M	M	-	-	-	-	-	-	-	-	-
6	<u>2293</u>	<u>Measurement Interval</u>	<u>Interval of time between Measurement readings</u>	M	M	M	-	-	-	-	-	-	-	-	-
6	<u>2294</u>	<u>ANSI Compliance</u>	<u>ANSI standard with which the Meter complies</u>	O	O	O	-	-	-	-	-	-	-	-	-
6	<u>2295</u>	<u>Meter Owner</u>	<u>Owner of the Meter</u>	M	M	M	-	-	-	-	-	-	-	-	O



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			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
<u>6</u>	<u>2296</u>	<u>Meter Asset Comments</u>	<u>Comments associated with the Meter Asset</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>23</u>	<u>Meter Model</u>	<u>Model of the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>24</u>	<u>Meter Rating</u>	<u>Load Rating of the Meter</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>25</u>	<u>Meter Multiplier (kH)</u>	<u>Multiplier used to convert pulses into power units</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>26</u>	<u>Meter Accuracy Class</u>	<u>Accuracy Class of the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>27</u>	<u>Meter Loss Compensation</u>	<u>Line Losses included in the Meter</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>28</u>	<u>Maximum Error</u>	<u>Error of the Meter, including end-to-end Maximum Error</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	
<u>6</u>	<u>29</u>	<u>Meter Phase</u>	<u>Specific Phase information</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-	



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			From	SP	SO				SE	MA	LSE	TDSP		
			To	SO	SE	MA	LSE	TDSP	SO					
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element			Short Description											
6	<u>291</u>	<u>CT Ratio</u>	<u>Ratio of the Current Transformer</u>	M	M	M	-	-	-	-	-	-	-	-
6	<u>30</u>	<u>Distributed Generator Type</u>	<u>Type of Distributed Generator</u>	M	M	M	-	-	-	-	-	-	-	-
6	<u>31</u>	<u>Nameplate Rating</u>	<u>Manufacturer's output rating of the Distributed Generator</u>	M	M	M	-	-	-	-	-	-	-	-
6	<u>32</u>	<u>Distributed Generator Fuel Type</u>	<u>Type of Fuel consumed by the Distributed Generator</u>	M	M	M	-	-	-	-	-	-	-	-
6	<u>33</u>	<u>Distributed Generator Permit Type</u>	<u>Type of environmental authorization required to operate the Distributed Generator</u>	M	M	M	-	-	-	-	-	-	-	-
6	<u>34</u>	<u>Distributed Generator Manufacturer</u>	<u>Manufacturer of the Distributed Generator</u>	O	O	O	-	-	-	-	-	-	-	-



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		From	SP			SO				SE	MA	LSE	TDSP
		To	SO			SE	MA	LSE	TDSP	SO			
		Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
			Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
		Element	Short Description										
6	35	<u>Manufactured Date of the Distributed Generator</u>	<u>Date of Manufacture of the Distributed Generator</u>	O	O	O	-	-	-	-	-	-	-
6	36	<u>Installation Date of Distributed Generator</u>	<u>Date of Installation of the Distributed Generator</u>	O	O	O	-	-	-	-	-	-	-
6	37	<u>Generator In-Service Date</u>	<u>Date the Distributed Generator became operational</u>	M	M	M	-	-	-	-	-	-	-
6	38	<u>Normal Load Rating</u>	<u>Average load picked up by the Distributed Generator during the applicable performance hours</u>	M	M	M	-	-	-	-	-	-	-
6	39	<u>Distributed Generator Name</u>	<u>Name of the Distributed Generator</u>	M	M	M	-	-	-	-	-	-	-



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			From	SP	SO				SE	MA	LSE	TDSP		
			To	SO	SE	MA	LSE	TDSP	SO					
			<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>			<u>Short Description</u>											
6	41	<u>Interconnection Agreement Type</u>	Type of Interconnection Agreement between the Distributed Generator or Service Location and the TDSP	M	M	M	-	-	-	-	-	-	-	-
6	42	<u>Interconnection Limits</u>	Limits associated with the Interconnection of the Distributed Generator or Service Location	M	M	M	-	-	-	-	-	-	-	-
6	43	<u>Capable of Synchronizing to Grid</u>	Flag set if the Service Location is capable of Synchronizing to the Grid	M	M	M	-	-	-	-	-	-	-	-
6	44	<u>Normal Breaker Status</u>	Status of the Breaker for the Service Location under Normal operating conditions	M	M	M	-	-	-	-	-	-	-	-



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		From	SP	SO				SE	MA	LSE	TDSP		
		To	SO	SE	MA	LSE	TDSP	SO					
		Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
			Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element		Short Description											
6	45	<u>Breaker Status During Event</u>	O	O	O	-	-	-	-	-	-	-	-
6	46	<u>Wholesale Delivery Point Status</u>	M	M	M	-	-	-	-	-	-	-	-
6	47	<u>Private Use Network</u>	O	O	O	-	-	-	-	-	-	-	-
6	51	<u>UFR Settings</u>	O	O	O	-	-	-	-	-	-	-	-
6	52	<u>Load Resource Control Device</u>	M	M	M	-	-	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>										
			<u>From</u>	SP			SO				SE	MA	LSE	TDSP
			<u>To</u>	SO			SE	MA	LSE	TDSP	SO			
			<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>			<u>Short Description</u>											
<u>6</u>	<u>991</u>	<u>Distributed Generator Comments</u>	Comments associated with the Distributed Generator	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-
<u>7</u>	<u>Market/Program Enrollment</u>													
<u>7</u>	<u>10</u>	<u>Program ID</u>	<u>Program Identifier</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>7</u>	<u>11</u>	<u>Program Name</u>	<u>Name of the Program</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>7</u>	<u>12</u>	<u>Market</u>	<u>Type of wholesale market</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-
<u>7</u>	<u>13</u>	<u>Market Product</u>	<u>Market Product</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	<u>M</u>
<u>7</u>	<u>21</u>	<u>Effective Enrollment Date</u>	<u>Effective Start Date for the Enrollment</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	-	-	-
<u>7</u>	<u>22</u>	<u>Enrollment Status</u>	<u>Status of the Enrollment for the Service Location or Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	-	-	-
<u>7</u>	<u>23</u>	<u>Resource Type</u>	<u>Type of Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	<u>M</u>



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		<u>Process</u>	<u>1.0 Enrollment & Qualification</u>													
		<u>From</u>	SP			SO				SE	MA	LSE	TDSP			
		<u>To</u>	SO			SE	MA	LSE	TDSP	SO						
		<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>			
		<u>Interaction</u>	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>			
<u>Element</u>			<u>Short Description</u>													
<u>7</u>	<u>24</u>	<u>Resource Qualification Test Date</u>	Date the Resource demonstrated its ability to deliver a product or service	M	M	M	M				M			O		
<u>7</u>	<u>25</u>	<u>Enrollment End Date</u>	Date of Termination of Enrollment	M	M	M	M	M	M	M				O		
<u>7</u>	<u>26</u>	<u>Regualification Test Date</u>	Date the Resource will retest its ability to deliver a product or service	M	M	M	M				M			O		
<u>7</u>	<u>30</u>	<u>Lead Time</u>	Time between the advanced notification and deployment	O	O	O	O	O								
<u>7</u>	<u>31</u>	<u>Day Ahead Flag</u>	Flag set if the Resource will be participating in the Day-Ahead market	M	M	M	M	M								
<u>7</u>	<u>32</u>	<u>Real Time Flag</u>	Flag set if the Resource will be participating in the Real-Time market	M	M	M	M	M								



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			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element			Short Description											
Z	33	Self-Schedule Flag	Flag set if the Resource is Self-Deploying	O	O	O								
Z	40	Response Method Type	Type of Response Method	M	M	M	O	O	O	O	O			
Z	41	Response Method ID	Identifier assigned to the Response Method	M	M	M	M	M	M	M				
Z	42	Response Method Name	Name of the Response Method	O	O	O	O	O	O	O				
Z	43	Response Method Value	Value of the Response Method	M	M	M	M	O	O	O	M			
Z	44	Verified Capability	Audited Capability	O	O	O	M				M			
Z	45	Verified Capability Factor	Ratio of the Verified Capability to the qualified capability	O	O	O								
Z	50	Performance Evaluation Method Type Code	Code representing the Type of Measurement	M	M	M	M	O			M			



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			<u>To</u>	SO			SE	MA	LSE	TDSP	SO			
			<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
				<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>			<u>Short Description</u>											
<u>7</u>	<u>51</u>	<u>Performance Evaluation Method</u>	Method used to Evaluate the Performance of a Resource	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>						
<u>7</u>	<u>991</u>	<u>Market Enrollment Comments</u>	Comments associated with the Enrollment	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>			
<u>8</u>		<u>Offer Parameters</u>												
<u>8</u>	<u>10</u>	<u>Offer Limit Value</u>	Offer Limit Value	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>			<u>M</u>			
<u>8</u>	<u>11</u>	<u>Offer Limit Type</u>	Type of Offer Limit	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>			<u>M</u>			
<u>8</u>	<u>12</u>	<u>Offer Limit Interval</u>	Offer Limit Interval	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>			<u>M</u>			
<u>8</u>	<u>20</u>	<u>Physical Min Gen</u>	Minimum Operating Level of a Resource	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>				<u>O</u>			<u>O</u>
<u>8</u>	<u>21</u>	<u>Min Gen MW</u>	Minimum MW available for dispatch	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>			<u>O</u>			<u>O</u>
<u>8</u>	<u>22</u>	<u>MinGenCost</u>	The cost per hour for each Min Gen MW value.	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>			<u>O</u>			<u>O</u>



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

		Process	1.0 Enrollment & Qualification										
		From	SP			SO				SE	MA	LSE	TDSP
		To	SO			SE	MA	LSE	TDSP	SO			
		Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
			Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element		Short Description											
<u>8</u>	<u>23</u>	<u>Ramp Rate Type</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>					<u>M</u>		
<u>8</u>	<u>24</u>	<u>Ramp Rate Segment</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>					<u>M</u>		
<u>8</u>	<u>25</u>	<u>Ramp Rate Direction</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>					<u>M</u>		
<u>8</u>	<u>26</u>	<u>Ramp Rate Value</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>					<u>M</u>		
<u>8</u>	<u>30</u>	<u>Offer Dispatch Type</u>	<u>M</u>	<u>M</u>	<u>M</u>								
<u>8</u>	<u>31</u>	<u>Offer Segment MW</u>	<u>O</u>	<u>O</u>	<u>M</u>								
<u>8</u>	<u>32</u>	<u>Offer Segment Price</u>	<u>O</u>	<u>O</u>	<u>M</u>								



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			To	SO	SE	MA	LSE	TDSP	SO						
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
8	33	Offer Segment Hour	Short Description	O	O	M									
8	34	Startup Cost	Cost of starting a response activity	O	O	M									
8	35	Strike Price	Threshold Price	O	O	M									
8	36	Offer Expiration Date	Date of Expiration of the Offer	O	O	M									
8	37	Startup Cost Type	Type of startup cost	M	M	M									
8	38	Offer Commit Status	Commitment status of offer	M	M	M									
8	39	Offer Dispatch Status	Dispatch Status of Offer	M	M	M									
8	331	Offer Price Curve Slope	Flag to smooth offer segments from step function to slope	M	M	M									
8	332	StrikePriceType	Type of strike price	O	O	O									



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				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
8	40	Market Clearing Day	Market Clearing Day of the Offer	O	O	O	O	-	-	-	-	-	-	-	
8	41	Schedule Name	Name or tag of the Offer	O	O	O	O	-	-	-	-	-	-	-	
8	42	Schedule Description	Description of the Offer	O	O	O	O	-	-	-	-	-	-	-	
8	43	Schedule Status	Status of the Offer	M	M	M	O	-	-	-	-	-	-	-	
8	50	Portfolio Name	Name of an aggregation of Resources for market participation	O	O	O	O	-	-	-	-	-	-	-	
8	71	Operational Constraint Type	Type of operational, schedule or offer constraint	M	M	M	-	-	-	-	-	-	-	-	
8	72	Operational Constraint Interval	The timeframe over which the constraint type applies.	M	M	M	-	-	-	-	-	-	-	-	
8	73	Operational Constraint Value	Value of the Constraint Type and Interval	M	M	M	-	-	-	-	-	-	-	-	
9		Energy Market													



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			From	SP	SO				SE	MA	LSE	TDSP			
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			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
<u>9</u>	<u>0</u>	<u>Instruction ID</u>	-	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	
<u>9</u>	<u>10</u>	<u>Energy Schedule - Start Time</u>	Start Time of the Energy Schedule	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>11</u>	<u>Energy Schedule - End Time</u>	End Time of the Energy Schedule	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>12</u>	<u>Energy Schedule - Interval Start Time</u>	Start Time of the Energy Interval within the Energy Schedule	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>13</u>	<u>Energy Schedule - Cleared MW Interval Value</u>	The Energy Value of cleared MW for the Time Interval within the Energy Schedule	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>14</u>	<u>Energy Schedule - Cleared Price</u>	Awarded Price	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>15</u>	<u>Schedule ID</u>	-	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-	-	-	-	-	



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			From	SP	SO				SE	MA	LSE	TDSP			
			To	SO	SE	MA	LSE	TDSP	SO						
			Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>	
				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification	
Element			Short Description												
<u>9</u>	<u>20</u>	<u>Base Point</u>	<u>Per-interval dispatch instruction</u>	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>21</u>	<u>Breaker Status</u>	<u>Status of the Breaker for the Resource</u>	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>22</u>	<u>Output MW</u>	<u>Real Power Output of the Generation Device</u>	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>23</u>	<u>Output MVAR</u>	<u>Reactive Power Output of the Generation Device</u>	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>24</u>	<u>DR Bus Load MW</u>	<u>Instantaneous Bus Load of a Demand Resource providing Ancillary Services</u>	-	-	-	-	-	-	-	-	-	-	-	
<u>9</u>	<u>27</u>	<u>Set Point</u>	<u>Final dispatch target level</u>	-	-	-	-	-	-	-	-	-	-	-	
<u>10</u>	-	<u>Ancillary Service Market</u>	-	-	-	-	-	-	-	-	-	-	-	-	
<u>10</u>	<u>0</u>	<u>Ancillary Service Instruction ID</u>	-	-	-	-	-	-	-	-	-	-	-	-	



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		To	SO			SE	MA	LSE	TDSP	SO			
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			Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element		Short Description											
<u>10</u>	<u>10</u>	<u>Ancillary Service Product Type</u>	Type of Ancillary Service product(s) the Resource is enrolling to provide	M	M	M	-	-	-	-	-	-	-
<u>10</u>	<u>11</u>	<u>Have Engineering Diagram</u>	Flag set if One-Line Diagrams have been submitted	O	O	O	-	-	-	-	-	-	-
<u>10</u>	<u>12</u>	<u>Ancillary Service Award - Start Time</u>	Start Time of the ancillary service Award	-	-	-	-	-	-	-	-	-	-
<u>10</u>	<u>13</u>	<u>Ancillary Service Award - End Time</u>	End Time of the ancillary service Award	-	-	-	-	-	-	-	-	-	-
<u>10</u>	<u>14</u>	<u>Ancillary Service Award - Interval Start Time</u>	Start Time of the ancillary service Interval within the ancillary service Award and the ancillary service Value of the Time Interval	-	-	-	-	-	-	-	-	-	-



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		To	SO			SE	MA	LSE	TDSP	SO			
		Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
		Interaction	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
Element		Short Description											
<u>10</u>	<u>15</u>	<u>Ancillary Service Award - Interval Value</u>	The awarded Value for the Time Interval within the ancillary service Award	-	-	-	-	-	-	-	-	-	-
<u>10</u>	<u>16</u>	<u>Ancillary Service Award - Cleared Price</u>	Awarded Price	-	-	-	-	-	-	-	-	-	-
<u>10</u>	<u>17</u>	<u>Ancillary Service Schedule ID</u>	-	-	-	-	-	-	-	-	-	-	-
<u>10</u>	<u>20</u>	<u>Ancillary Service Product Qualification Type</u>	Type of Qualification	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	<u>M</u>	-	-
<u>10</u>	<u>21</u>	<u>Synchronization Test Date</u>	Target Date of Test of Synchronization to the grid	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-
<u>10</u>	<u>22</u>	<u>Ancillary Service Product Type Qualification Date</u>	Date of Qualification of the Resource	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	<u>M</u>	-	-



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		<u>To</u>	SO			SE	MA	LSE	TDSP	SO			
		<u>Interaction</u>	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
		<u>Interaction</u>	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
<u>Element</u>		<u>Short Description</u>											
<u>10</u>	<u>23</u>	<u>Ancillary Service Product Type Qualified</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>				<u>M</u>			
<u>10</u>	<u>24</u>	<u>Regualification Requirement</u>	<u>O</u>	<u>O</u>	<u>O</u>								
<u>10</u>	<u>31</u>	<u>Reserve Pickup Flag</u>											
<u>10</u>	<u>32</u>	<u>Regulation Base Point</u>											
<u>10</u>	<u>33</u>	<u>Base Load MW</u>											
<u>11</u>		<u>Capacity Market</u>											
<u>11</u>	<u>10</u>	<u>Capacity Type</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>						



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				Service Location Enrollment	Asset Group Enrollment	Resource Enrollment	SE Version	MA Version	LSE Version	TDSP Version	SE Enrollment Verification	MA Enrollment Verification	LSE Enrollment Verification	TDSP Enrollment Verification
Element			Short Description											
<u>11</u>	<u>11</u>	Capacity Type description	Description of the Type of Capacity	O	O	O	O	O						
<u>11</u>	<u>20</u>	Peak Value	Measurement of Peak	M	M	M	O	O						M
<u>11</u>	<u>21</u>	Peak Type	Type of measurement of Peak	M	M	M	O	O						M
<u>11</u>	<u>22</u>	Peak Date/Time	Date and Time of measurement of Peak	M	M	M	O	O						M
<u>11</u>	<u>23</u>	Nominal Capacity	Nominated load	M	M	M	O	O						
<u>11</u>	<u>24</u>	Qualified Capacity	Nominal ICAP derated for performance	O	O	O								
<u>11</u>	<u>30</u>	Capacity Obligation Period Type	Type of Capacity Obligation Time Period within which the Resource is obligated	M	M	M	O	O						



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		Interaction	<u>1.0.1</u> a	<u>1.0.1</u> b	<u>1.0.1</u> c	<u>1.0.2</u>	<u>1.0.3</u>	<u>1.0.4</u>	<u>1.0.5</u>	<u>1.0.6</u>	<u>1.0.7</u>	<u>1.0.8</u>	<u>1.0.9</u>
		Interaction	<u>Service Location Enrollment</u>	<u>Asset Group Enrollment</u>	<u>Resource Enrollment</u>	<u>SE Version</u>	<u>MA Version</u>	<u>LSE Version</u>	<u>TDSP Version</u>	<u>SE Enrollment Verification</u>	<u>MA Enrollment Verification</u>	<u>LSE Enrollment Verification</u>	<u>TDSP Enrollment Verification</u>
Element		Short Description											
<u>11</u>	<u>31</u>	<u>Capacity Obligation Period</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-
<u>11</u>	<u>40</u>	<u>Minimum Payment Nomination</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-	-	-
<u>11</u>	<u>41</u>	<u>Capacity Supply Obligation</u>	-	-	-	-	-	-	-	-	-	-	-
<u>11</u>	<u>50</u>	<u>Capacity Reference ID</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-
<u>11</u>	<u>991</u>	<u>Capacity Comments</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-	-	-



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Table 5. Data Requirements by Interaction Number 1.0.10 through 1.0.16: Enrollment and Qualification

		Process	1.0 Enrollment & Qualification							
		From	SO		SO					
		To	SP		SP	SE	MA	LSE	TDSP	
		Interaction	1.0.10	1.0.11	1.0.12	1.0.13	1.0.14	1.0.15	1.0.16	
		Interaction	Rejection Details	Qualification Rejection	Qualification Status to SP	Qualification Status to SE	Qualification Status to MA	Qualification Status to LSE	Qualification Status to TDSP	
Element	Short Description									
0	Common									
0	10	Submittal Date	Timestamp for the sender's use	O	O	O			O	O
0	11	Submitted By	User ID of submitter	O	O	O			O	O
0	12	Submitted Error	ID of submission error detected	O	O	O			O	O
0	13	Rejection Code Type	Type of rejection message	M	M					
0	14	Rejection Code Value	Code referring to the reason for a rejection message	M	M					
0	20	NERC CIP Security - Availability	CIP Security Classification for Availability	M	M	M	M	M	M	M
0	21	NERC CIP Security - Confidentiality	CIP Security Classification for Confidentiality	M	M	M	M	M	M	M
0	22	NERC CIP Security - Integrity	CIP Security Classification for Integrity	M	M	M	M	M	M	M
1	General Asset/Resource									



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		<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
		<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
		<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
		<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
			<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>		<u>Short Description</u>	-	-	-	-	-	-	-
<u>1</u>	<u>10</u>	<u>Service Location ID</u>	<u>Identifier assigned to the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>11</u>	<u>Service Location Name</u>	<u>Name of the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>12</u>	<u>Asset ID</u>	<u>The unique identifier of the asset</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>1</u>	<u>13</u>	<u>Asset Name</u>	<u>The name of the asset</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>1</u>	<u>20</u>	<u>Resource ID</u>	<u>Identifier assigned to the Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>21</u>	<u>Resource Name</u>	<u>Name of the Resource</u>	<u>O</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>
<u>1</u>	<u>30</u>	<u>Asset Group ID</u>	<u>The identifier of a group of assets</u>	-	-	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>1</u>	<u>31</u>	<u>Asset Group Name</u>	<u>Name of the aggregated group of assets</u>	-	-	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>1</u>	<u>40</u>	<u>GenEMSID</u>	<u>Alias or point Identifier assigned to the Resource</u>	-	-	<u>M</u>	-	-	-
<u>1</u>	<u>41</u>	<u>GenBillingID</u>	<u>Billing Identifier assigned to the Resource</u>	-	-	<u>M</u>	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>							
<u>1</u>	<u>50</u>	<u>Business Segment</u>	<u>NAICS code of the Service Location</u>	-	-	-	-	-	-	-
<u>1</u>	<u>51</u>	<u>Batch Load Flag</u>	<u>Flag set if the Resource is a Batch Load</u>	-	-	<u>0</u>	-	-	<u>0</u>	<u>0</u>
<u>1</u>	<u>991</u>	<u>General Resource Comments</u>	<u>General comments associated with the Resource</u>	<u>0</u>	<u>0</u>	<u>0</u>	-	-	<u>0</u>	<u>0</u>
<u>2</u>	-	<u>Location</u>		-	-	-	-	-	-	-
<u>2</u>	<u>10</u>	<u>Address1</u>	<u>Address line 1</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>11</u>	<u>Address2</u>	<u>Address line 2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>12</u>	<u>City</u>	<u>City</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>13</u>	<u>Service Location State/Province</u>	<u>State or Province two-letter code</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>14</u>	<u>Service Location Zip/Postal Code</u>	<u>Zip or Postal Code</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>15</u>	<u>Service Location Country</u>	<u>Country</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>20</u>	<u>GPS Coordinates</u>	<u>Latitude and longitude</u>	-	-	-	-	-	-	-
<u>2</u>	<u>21</u>	<u>Weather Station</u>	<u>Weather Station code associated with the Service Location</u>	-	-	<u>0</u>	-	-	<u>0</u>	<u>0</u>
<u>2</u>	<u>22</u>	<u>TimeZoneName</u>	<u>Name of the Time Zone in which the Service Location is located</u>	-	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>2</u>	<u>30</u>	<u>Zone ID</u>	<u>Identifier assigned to the Zone in which the Service Location is located</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	<u>M</u>	<u>M</u>
<u>2</u>	<u>31</u>	<u>Zone</u>	<u>Name of the Zone in which the Service Location is located</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>2</u>	<u>32</u>	<u>Zone Type</u>	<u>Type of Zone</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>2</u>	<u>40</u>	<u>Electrical Node ID</u>	<u>Identifier assigned to the Electrical Node at which the Service Location is connected</u>	<u>M</u>	-	<u>M</u>	<u>M</u>	-	<u>M</u>	<u>M</u>
<u>2</u>	<u>41</u>	<u>Electrical Node Name</u>	<u>Name of the Electrical Node at which the Service Location is connected</u>	<u>O</u>	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>2</u>	<u>42</u>	<u>Electrical Node Type</u>	<u>Type of Electrical Node at which the Service Location is attached</u>	<u>O</u>	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>2</u>	<u>43</u>	<u>PNode</u>	<u>Name of the Price Node associated with the Service Location</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	<u>O</u>	<u>O</u>



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>2</u>	<u>44</u>	<u>PNode ID</u>	<u>Identifier assigned to the Price Node associated with the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	<u>M</u>	<u>M</u>
<u>2</u>	<u>50</u>	<u>Competitive Choice Area</u>	<u>Flag set if the Service Location is in an area with Competitive Choice</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	<u>O</u>
<u>2</u>	<u>51</u>	<u>Asset Multiplier</u>	<u>Number of identical assets within the Service Location</u>	-	-	-	-	-	-	-
<u>2</u>	<u>60</u>	<u>NERC Control Area</u>	<u>The NERC control area of the resource</u>	-	-	-	-	-	-	-
<u>2</u>	<u>71</u>	<u>Connection Type</u>	<u>Additional type of connection associated with the Service Location/Resource</u>	-	-	-	-	-	-	-
<u>2</u>	<u>72</u>	<u>Connection Address</u>	<u>Address associated with the Connection Type</u>	-	-	-	-	-	-	-
<u>2</u>	<u>991</u>	<u>Location Comments</u>	<u>Comments associated with the Service Location</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>3</u>	-	<u>Contact</u>		-	-	-	-	-	-	-



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			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>3</u>	<u>10</u>	<u>Contact Type</u>	<u>Interest code associated with a Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>11</u>	<u>Contact Priority</u>	<u>Order in which this Contact should be selected</u>	-	-	-	-	-	-	-
<u>3</u>	<u>12</u>	<u>DUNS Number</u>	<u>DUNS business number</u>	-	-	-	-	-	-	-
<u>3</u>	<u>13</u>	<u>Third Party</u>	<u>Flag set if the Contact is a third-party entity</u>	-	-	-	-	-	-	-
<u>3</u>	<u>20</u>	<u>Title</u>	<u>Title of the Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>21</u>	<u>First Name</u>	<u>First Name of the Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>22</u>	<u>Last Name</u>	<u>Last Name of the Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>23</u>	<u>Contact Middle Name</u>	<u>Middle Name of the Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>30</u>	<u>Contact Method</u>	<u>Method of communication with the Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>31</u>	<u>Contact Address Data</u>	<u>Method-dependent Address of the Contact</u>	-	-	-	-	-	-	-
<u>3</u>	<u>32</u>	<u>Contact Method Priority</u>	<u>Order in which a Communication Method should be selected for a Contact</u>	-	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>3</u>	<u>991</u>	<u>Contact Comments</u>	<u>Comments associated with the Contact</u>	<u>O</u>	<u>O</u>	-	-	-	-	-
<u>4</u>	<u>Grid Connection</u>			-	-	-	-	-	-	-
<u>4</u>	<u>10</u>	<u>Loss Factor Type</u>	<u>Type of Loss Factor</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>4</u>	<u>11</u>	<u>Loss Factor Value</u>	<u>Loss Factor</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>4</u>	<u>12</u>	<u>Connect Voltage</u>	<u>Voltage level</u>	-	-	-	-	-	-	-
<u>4</u>	<u>991</u>	<u>Grid Connection Comments</u>	<u>Comments associated with the Attributes of the Resource</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>5</u>	<u>Business Entity Relationships</u>			-	-	-	-	-	-	-
<u>5</u>	<u>11</u>	<u>Service Provider ID</u>	<u>Identifier assigned to the Service Provider</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	<u>M</u>	<u>M</u>
<u>5</u>	<u>12</u>	<u>Service Provider Name</u>	<u>Name of the Service Provider</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>20</u>	<u>Transmission/Distribution Service Provider ID</u>	<u>Identifier assigned to the Transmission/Distribution Service Provider</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	<u>M</u>	<u>M</u>
<u>5</u>	<u>21</u>	<u>Transmission/Distribution Service Provider Name</u>	<u>Name of the Transmission/Distribution Service Provider</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	<u>O</u>	<u>O</u>



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		<u>From</u>	SO	-	SO	-	-	-	-
		<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
		<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
			<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>		<u>Short Description</u>	-	-	-	-	-	-	-
<u>5</u>	<u>22</u>	<u>Transmission/Distribution Service Provider Account Number</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>30</u>	<u>Load-Serving Entity ID</u>	<u>O</u>	<u>O</u>	<u>M</u>	-	-	<u>M</u>	<u>M</u>
<u>5</u>	<u>31</u>	<u>Load-Serving Entity Name</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>40</u>	<u>Retail Rate ID</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>41</u>	<u>Retail Rate Code</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>42</u>	<u>Retail Rate Name</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>43</u>	<u>Retail Rate Description</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>44</u>	<u>Retail Rate</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>50</u>	<u>Meter Installation Provider ID</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>51</u>	<u>Meter Installation Provider Name</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>5</u>	<u>60</u>	<u>Meter Authority ID</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>							
<u>5</u>	<u>61</u>	<u>Meter Authority Name</u>	Name of the Metering Authority	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>5</u>	<u>70</u>	<u>Scheduling Entity ID</u>	Identifier assigned to the Scheduling Entity	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-
<u>5</u>	<u>71</u>	<u>Scheduling Entity Name</u>	Name of the Scheduling Entity	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>5</u>	<u>80</u>	<u>Designated Dispatch Entity ID</u>	Identifier assigned to the Designated Dispatch Entity	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-	-
<u>5</u>	<u>81</u>	<u>Designated Dispatch Entity Name</u>	Name of the Designated Dispatch Entity	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>5</u>	<u>991</u>	<u>External Entity Comments</u>	Comments associated with the External Entity	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>6</u>	<u>Device and Qualification</u>			-	-	-	-	-	-	-
<u>6</u>	<u>10</u>	<u>Meter Configuration</u>	Configuration of the Meter at the Service Location	-	-	-	-	-	-	-
<u>6</u>	<u>11</u>	<u>Parent Meter id</u>	ID of a Master or Parent Meter	-	-	-	-	-	-	-
<u>6</u>	<u>20</u>	<u>Meter ID</u>	Identifier assigned to the Meter	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	-
<u>6</u>	<u>21</u>	<u>Meter Type</u>	Type of Meter installed at the Service Location	-	-	-	-	-	-	-
<u>6</u>	<u>22</u>	<u>Meter Manufacturer</u>	Manufacturer of the Meter	-	-	-	-	-	-	-



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			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
6	<u>221</u>	<u>Meter Installation Date</u>	<u>Date of Installation of the Meter</u>	-	-	-	-	-	-	-
6	<u>222</u>	<u>PT Ratio</u>	<u>Ratio of the Potential Transformer</u>	-	-	-	-	-	-	-
6	<u>223</u>	<u>Meter Installer License</u>	<u>Professional License Number of the Installer of the Meter</u>	-	-	-	-	-	-	-
6	<u>224</u>	<u>Meter Correction Factors</u>	<u>Device-specific Factors used to adjust for atmospheric changes at the point of installation of the Meter</u>	-	-	-	-	-	-	-
6	<u>225</u>	<u>Meter Test Criteria</u>	<u>Test Criteria required to qualify the installation of the Meter</u>	-	-	-	-	-	-	-
6	<u>226</u>	<u>Meter Test Frequency</u>	<u>Frequency of Tests of the Meter</u>	-	-	-	-	-	-	-
6	<u>227</u>	<u>Device QA Plan</u>	<u>Quality Assurance plan for maintenance and testing of the Meter</u>	-	-	-	-	-	-	-
6	<u>228</u>	<u>Date of Last Meter Test</u>	<u>Date of Last Test of the Meter</u>	-	-	-	-	-	-	-
6	<u>229</u>	<u>Meter Qualification Date</u>	<u>Date of Qualification of the Meter by the Metering Authority or System Operator</u>	-	-	0	-	-	0	0
6	<u>2291</u>	<u>Meter Test Results</u>	<u>Results of Tests of the Meter</u>	-	-	-	-	-	-	-



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			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>							
<u>6</u>	<u>2292</u>	<u>VEE Compliance</u>	<u>Compliance standard for Validation, Editing, and Estimation</u>	-	-	-	-	-	-	-
<u>6</u>	<u>2293</u>	<u>Measurement Interval</u>	<u>Interval of time between Measurement readings</u>	-	-	-	-	-	-	-
<u>6</u>	<u>2294</u>	<u>ANSI Compliance</u>	<u>ANSI standard with which the Meter complies</u>	-	-	-	-	-	-	-
<u>6</u>	<u>2295</u>	<u>Meter Owner</u>	<u>Owner of the Meter</u>	<u>0</u>	<u>0</u>	<u>0</u>	-	<u>0</u>	-	<u>0</u>
<u>6</u>	<u>2296</u>	<u>Meter Asset Comments</u>	<u>Comments associated with the Meter Asset</u>	<u>0</u>	-	-	-	-	-	-
<u>6</u>	<u>23</u>	<u>Meter Model</u>	<u>Model of the Meter</u>	-	-	-	-	-	-	-
<u>6</u>	<u>24</u>	<u>Meter Rating</u>	<u>Load Rating of the Meter</u>	-	-	-	-	-	-	-
<u>6</u>	<u>25</u>	<u>Meter Multiplier (kH)</u>	<u>Multiplier used to convert pulses into power units</u>	-	-	-	-	-	-	-
<u>6</u>	<u>26</u>	<u>Meter Accuracy Class</u>	<u>Accuracy Class of the Meter</u>	-	-	-	-	-	-	-
<u>6</u>	<u>27</u>	<u>Meter Loss Compensation</u>	<u>Line Losses included in the Meter</u>	-	-	-	-	-	-	-
<u>6</u>	<u>28</u>	<u>Maximum Error</u>	<u>Error of the Meter, including end-to-end Maximum Error</u>	-	-	-	-	-	-	-



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			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>6</u>	<u>29</u>	<u>Meter Phase</u>	<u>Specific Phase information</u>	-	-	-	-	-	-	-
<u>6</u>	<u>291</u>	<u>CT Ratio</u>	<u>Ratio of the Current Transformer</u>	-	-	-	-	-	-	-
<u>6</u>	<u>30</u>	<u>Distributed Generator Type</u>	<u>Type of Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>31</u>	<u>Nameplate Rating</u>	<u>Manufacturer's output rating of the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>32</u>	<u>Distributed Generator Fuel Type</u>	<u>Type of Fuel consumed by the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>33</u>	<u>Distributed Generator Permit Type</u>	<u>Type of environmental authorization required to operate the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>34</u>	<u>Distributed Generator Manufacturer</u>	<u>Manufacturer of the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>35</u>	<u>Manufactured Date of the Distributed Generator</u>	<u>Date of Manufacture of the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>36</u>	<u>Installation Date of Distributed Generator</u>	<u>Date of Installation of the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>37</u>	<u>Generator In-Service Date</u>	<u>Date the Distributed Generator became operational</u>	-	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>6</u>	<u>38</u>	<u>Normal Load Rating</u>	<u>Average load picked up by the Distributed Generator during the applicable performance hours</u>	-	-	-	-	-	-	-
<u>6</u>	<u>39</u>	<u>Distributed Generator Name</u>	<u>Name of the Distributed Generator</u>	-	-	-	-	-	-	-
<u>6</u>	<u>41</u>	<u>Interconnection Agreement Type</u>	<u>Type of Interconnection Agreement between the Distributed Generator or Service Location and the TDSP</u>	-	-	-	-	-	-	-
<u>6</u>	<u>42</u>	<u>Interconnection Limits</u>	<u>Limits associated with the Interconnection of the Distributed Generator or Service Location</u>	-	-	-	-	-	-	-
<u>6</u>	<u>43</u>	<u>Capable of Synchronizing to Grid</u>	<u>Flag set if the Service Location is capable of Synchronizing to the Grid</u>	-	-	-	-	-	-	-
<u>6</u>	<u>44</u>	<u>Normal Breaker Status</u>	<u>Status of the Breaker for the Service Location under Normal operating conditions</u>	-	-	-	-	-	-	-



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		<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	
		<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
		<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
			<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>		<u>Short Description</u>							
<u>6</u>	<u>45</u>	<u>Breaker Status During Event</u>	Status of the Breaker for the Service Location during an Emergency Event	-	-	-	-	-	-
<u>6</u>	<u>46</u>	<u>Wholesale Delivery Point Status</u>	Flag set if the Service Location is metered at the Wholesale level	-	-	-	-	-	-
<u>6</u>	<u>47</u>	<u>Private Use Network</u>	Flag set if the Resource is an Electric Network connected to the transmission grid	-	-	-	-	-	-
<u>6</u>	<u>51</u>	<u>UFR Settings</u>	Setting of the Under-Frequency Relay	-	-	-	-	-	-
<u>6</u>	<u>52</u>	<u>Load Resource Control Device</u>	Type of Control Device at a Service Location or deployed by a Response Method	-	-	-	-	-	-
<u>6</u>	<u>991</u>	<u>Distributed Generator Comments</u>	Comments associated with the Distributed Generator	<u>0</u>	<u>0</u>	<u>0</u>	-	<u>0</u>	<u>0</u>
<u>7</u>	-	<u>Market/Program Enrollment</u>		-	-	-	-	-	-
<u>7</u>	<u>10</u>	<u>Program ID</u>	Program Identifier	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>7</u>	<u>11</u>	<u>Program Name</u>	Name of the Program	<u>0</u>	<u>0</u>	<u>0</u>	<u>M</u>	<u>0</u>	<u>0</u>
<u>7</u>	<u>12</u>	<u>Market</u>	Type of wholesale market	<u>M</u>	<u>M</u>	<u>0</u>	-	<u>0</u>	<u>0</u>



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			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
7	<u>13</u>	<u>Market Product</u>	Market Product	M	M	M	M	-	O	O
7	<u>21</u>	<u>Effective Enrollment Date</u>	<u>Effective Start Date for the Enrollment</u>	-	-	M	M	-	M	M
7	<u>22</u>	<u>Enrollment Status</u>	<u>Status of the Enrollment for the Service Location or Resource</u>	M	M	M	-	-	M	M
7	<u>23</u>	<u>Resource Type</u>	Type of Resource	O	O	O	O	-	-	O
7	<u>24</u>	<u>Resource Qualification Test Date</u>	<u>Date the Resource demonstrated its ability to deliver a product or service</u>	O	O	O	O	-	-	O
7	<u>25</u>	<u>Enrollment End Date</u>	<u>Date of Termination of Enrollment</u>	O	O	O	O	-	O	O
7	<u>26</u>	<u>Regualification Test Date</u>	<u>Date the Resource will retest its ability to deliver a product or service</u>	O	O	O	O	-	-	O
7	<u>30</u>	<u>Lead Time</u>	<u>Time between the advanced notification and deployment</u>	-	-	O	-	-	O	O
7	<u>31</u>	<u>Day Ahead Flag</u>	<u>Flag set if the Resource will be participating in the Day-Ahead market</u>	O	O	O	-	-	O	O



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			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
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<u>Element</u>			<u>Short Description</u>							
Z	<u>32</u>	<u>Real Time Flag</u>	Flag set if the Resource will be participating in the Real-Time market	O	O	O	-	-	O	O
Z	<u>33</u>	<u>Self-Schedule Flag</u>	Flag set if the Resource is Self-Deploying	-	-	-	-	-	-	-
Z	<u>40</u>	<u>Response Method Type</u>	Type of Response Method	O	O	O	O	-	O	O
Z	<u>41</u>	<u>Response Method ID</u>	Identifier assigned to the Response Method	O	O	M	-	-	M	M
Z	<u>42</u>	<u>Response Method Name</u>	Name of the Response Method	O	O	O	-	-	O	O
Z	<u>43</u>	<u>Response Method Value</u>	Value of the Response Method	O	O	M	M	-	M	M
Z	<u>44</u>	<u>Verified Capability</u>	Audited Capability	O	O	M	M	-	-	-
Z	<u>45</u>	<u>Verified Capability Factor</u>	Ratio of the Verified Capability to the qualified capability	-	-	M	-	-	-	-
Z	<u>50</u>	<u>Performance Evaluation Method Type Code</u>	Code representing the Type of Measurement	M	M	M	M	-	-	-
Z	<u>51</u>	<u>Performance Evaluation Method</u>	Method used to Evaluate the Performance of a Resource	O	O	M	-	-	-	-



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				<u>Process</u>		<u>1.0 Enrollment & Qualification</u>						
				<u>From</u>		<u>SO</u>	-	<u>SO</u>	-	-	-	-
				<u>To</u>		<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
						<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Interaction</u>		<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>				<u>Short Description</u>				-	-	-	-	-
<u>7</u>	<u>991</u>	<u>Market Enrollment Comments</u>	<u>Comments associated with the Enrollment</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>
<u>8</u>	-	<u>Offer Parameters</u>		-	-	-	-	-	-	-	-	-
<u>8</u>	<u>10</u>	<u>Offer Limit Value</u>	<u>Offer Limit Value</u>	<u>M</u>	<u>Q</u>	<u>M</u>	<u>M</u>	-	-	<u>Q</u>	<u>Q</u>	-
<u>8</u>	<u>11</u>	<u>Offer Limit Type</u>	<u>Type of Offer Limit</u>	<u>M</u>	<u>Q</u>	<u>M</u>	<u>M</u>	-	-	<u>Q</u>	<u>Q</u>	-
<u>8</u>	<u>12</u>	<u>Offer Limit Interval</u>	<u>Offer Limit Interval</u>	<u>M</u>	<u>Q</u>	<u>M</u>	<u>M</u>	-	-	<u>Q</u>	<u>Q</u>	-
<u>8</u>	<u>20</u>	<u>Physical Min Gen</u>	<u>Minimum Operating Level of a Resource</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	-	-	<u>Q</u>	<u>Q</u>	-
<u>8</u>	<u>21</u>	<u>Min Gen MW</u>	<u>Minimum MW available for dispatch</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	-	-	<u>Q</u>	<u>Q</u>	-
<u>8</u>	<u>22</u>	<u>MinGenCost</u>	<u>The cost per hour for each Min Gen MW value.</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	-	-	-	-	-
<u>8</u>	<u>23</u>	<u>Ramp Rate Type</u>	<u>Type of Ramp Rate</u>	<u>M</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	-	-	-	-	-
<u>8</u>	<u>24</u>	<u>Ramp Rate Segment</u>	<u>Energy of Segment of the Ramp Rate</u>	<u>M</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	-	-	-	-	-
<u>8</u>	<u>25</u>	<u>Ramp Rate Direction</u>	<u>Direction of the selected Ramp Rate Type and Ramp Rate Segment</u>	<u>M</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	-	-	-	-	-



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

		<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
		<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
		<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
		<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
			<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>		<u>Short Description</u>	-	-	-	-	-	-	-
<u>8</u>	<u>26</u>	<u>Ramp Rate Value</u>	Ramp Rate associated with the selected Ramp Rate Type for the selected Ramp Rate Segment and Ramp Rate Direction	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-
<u>8</u>	<u>30</u>	<u>Offer Dispatch Type</u>	Type of Offer	-	<u>O</u>	-	-	-	-
<u>8</u>	<u>31</u>	<u>Offer Segment MW</u>	Energy of Segment of the Offer	-	-	-	-	-	-
<u>8</u>	<u>32</u>	<u>Offer Segment Price</u>	Price of Segment of the Offer	-	-	-	-	-	-
<u>8</u>	<u>33</u>	<u>Offer Segment Hour</u>	Hour of Segment of the Offer	-	-	-	-	-	-
<u>8</u>	<u>34</u>	<u>Startup Cost</u>	Cost of starting a response activity	-	-	-	-	-	-
<u>8</u>	<u>35</u>	<u>Strike Price</u>	Threshold Price	-	-	-	-	-	-
<u>8</u>	<u>36</u>	<u>Offer Expiration Date</u>	Date of Expiration of the Offer	-	-	-	-	-	-
<u>8</u>	<u>37</u>	<u>Startup Cost Type</u>	Type of startup cost	-	-	-	-	-	-
<u>8</u>	<u>38</u>	<u>Offer Commit Status</u>	Commitment status of offer	-	-	-	-	-	-
<u>8</u>	<u>39</u>	<u>Offer Dispatch Status</u>	Dispatch Status of Offer	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
8	<u>331</u>	<u>Offer Price Curve Slope</u>	<u>Flag to smoothe offer segments from step function to slope</u>	-	-	-	-	-	-	-
8	<u>332</u>	<u>StrikePriceType</u>	<u>Type of strike price</u>	-	-	-	-	-	-	-
8	<u>40</u>	<u>Market Clearing Day</u>	<u>Market Clearing Day of the Offer</u>	-	-	-	<u>0</u>	-	-	-
8	<u>41</u>	<u>Schedule Name</u>	<u>Name or tag of the Offer</u>	-	-	-	<u>0</u>	-	-	-
8	<u>42</u>	<u>Schedule Description</u>	<u>Description of the Offer</u>	-	-	-	<u>0</u>	-	-	-
8	<u>43</u>	<u>Schedule Status</u>	<u>Status of the Offer</u>	-	-	-	<u>0</u>	-	-	-
8	<u>50</u>	<u>Portfolio Name</u>	<u>Name of an aggregation of Resources for market participation</u>	-	-	-	<u>0</u>	-	-	-
8	<u>71</u>	<u>Operational Constraint Type</u>	<u>Type of operational, schedule or offer constraint</u>	-	-	-	-	-	-	-
8	<u>72</u>	<u>Operational Constraint Interval</u>	<u>The timeframe over which the constraint type applies.</u>	-	-	-	-	-	-	-
8	<u>73</u>	<u>Operational Constraint Value</u>	<u>Value of the Constraint Type and Interval</u>	-	-	-	-	-	-	-
9	-	<u>Energy Market</u>		-	-	-	-	-	-	-



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		<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
		<u>From</u>	SO	-	SO	-	-	-	-
		<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
		<u>Interaction</u>	1.0.10	1.0.11	1.0.12	1.0.13	1.0.14	1.0.15	1.0.16
			<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>		<u>Short Description</u>	-	-	-	-	-	-	-
<u>9</u>	<u>0</u>	<u>Instruction ID</u>	-	-	-	-	-	-	-
<u>9</u>	<u>10</u>	<u>Energy Schedule - Start Time</u>	<u>Start Time of the Energy Schedule</u>	-	-	-	-	-	-
<u>9</u>	<u>11</u>	<u>Energy Schedule - End Time</u>	<u>End Time of the Energy Schedule</u>	-	-	-	-	-	-
<u>9</u>	<u>12</u>	<u>Energy Schedule - Interval Start Time</u>	<u>Start Time of the Energy Interval within the Energy Schedule</u>	-	-	-	-	-	-
<u>9</u>	<u>13</u>	<u>Energy Schedule - Cleared MW Interval Value</u>	<u>The Energy Value of cleared MW for the Time Interval within the Energy Schedule</u>	-	-	-	-	-	-
<u>9</u>	<u>14</u>	<u>Energy Schedule - Cleared Price</u>	<u>Awarded Price</u>	-	-	-	-	-	-
<u>9</u>	<u>15</u>	<u>Schedule ID</u>	-	-	-	-	-	-	-
<u>9</u>	<u>20</u>	<u>Base Point</u>	<u>Per-interval dispatch instruction</u>	-	-	-	-	-	-
<u>9</u>	<u>21</u>	<u>Breaker Status</u>	<u>Status of the Breaker for the Resource</u>	-	-	-	-	-	-
<u>9</u>	<u>22</u>	<u>Output MW</u>	<u>Real Power Output of the Generation Device</u>	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>9</u>	<u>23</u>	<u>Output MVAR</u>	<u>Reactive Power Output of the Generation Device</u>	-	-	-	-	-	-	-
<u>9</u>	<u>24</u>	<u>DR Bus Load MW</u>	<u>Instantaneous Bus Load of a Demand Resource providing Ancillary Services</u>	-	-	-	-	-	-	-
<u>9</u>	<u>27</u>	<u>Set Point</u>	<u>Final dispatch target level</u>	-	-	-	-	-	-	-
<u>10</u>	-	<u>Ancillary Service Market</u>	-	-	-	-	-	-	-	-
<u>10</u>	<u>0</u>	<u>Ancillary Service Instruction ID</u>	-	-	-	-	-	-	-	-
<u>10</u>	<u>10</u>	<u>Ancillary Service Product Type</u>	<u>Type of Ancillary Service product(s) the Resource is enrolling to provide</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>M</u>	-	<u>0</u>	<u>0</u>
<u>10</u>	<u>11</u>	<u>Have Engineering Diagram</u>	<u>Flag set if One-Line Diagrams have been submitted</u>	-	<u>0</u>	-	-	-	-	-
<u>10</u>	<u>12</u>	<u>Ancillary Service Award - Start Time</u>	<u>Start Time of the ancillary service Award</u>	-	-	-	-	-	-	-
<u>10</u>	<u>13</u>	<u>Ancillary Service Award - End Time</u>	<u>End Time of the ancillary service Award</u>	-	-	-	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	SO	-	SO	-	-	-	-
			<u>To</u>	SP	-	SP	SE	MA	LSE	TDSP
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>							
<u>10</u>	<u>14</u>	<u>Ancillary Service Award - Interval Start Time</u>	<u>Start Time of the ancillary service Interval within the ancillary service Award and the ancillary service Value of the Time Interval</u>	-	-	-	-	-	-	-
<u>10</u>	<u>15</u>	<u>Ancillary Service Award - Interval Value</u>	<u>The awarded Value for the Time Interval within the ancillary service Award</u>	-	-	-	-	-	-	-
<u>10</u>	<u>16</u>	<u>Ancillary Service Award - Cleared Price</u>	<u>Awarded Price</u>	-	-	-	-	-	-	-
<u>10</u>	<u>17</u>	<u>Ancillary Service Schedule ID</u>	-	-	-	-	-	-	-	-
<u>10</u>	<u>20</u>	<u>Ancillary Service Product Qualification Type</u>	<u>Type of Qualification</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>	-	-	-
<u>10</u>	<u>21</u>	<u>Synchronization Test Date</u>	<u>Target Date of Test of Synchronization to the grid</u>	-	-	-	-	-	-	-
<u>10</u>	<u>22</u>	<u>Ancillary Service Product Type Qualification Date</u>	<u>Date of Qualification of the Resource</u>	-	-	<u>M</u>	<u>M</u>	-	-	-



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			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>							
<u>10</u>	<u>23</u>	<u>Ancillary Service Product Type Qualified</u>	<u>Type of Ancillary Service Product(s) for which the Resource has Qualified</u>	-	-	<u>M</u>	<u>M</u>	-	-	-
<u>10</u>	<u>24</u>	<u>Regualification Requirement</u>	<u>Flag set if Regualification is Required</u>	<u>O</u>	<u>O</u>	-	-	-	-	-
<u>10</u>	<u>31</u>	<u>Reserve Pickup Flag</u>	<u>Flag set if this is a Reserve Pickup schedule</u>	-	-	-	-	-	-	-
<u>10</u>	<u>32</u>	<u>Regulation Base Point</u>	<u>Per-interval Regulation dispatch instruction</u>	-	-	-	-	-	-	-
<u>10</u>	<u>33</u>	<u>Base Load MW</u>	<u>Level of Load at time of dispatch</u>	-	-	-	-	-	-	-
<u>11</u>	<u>Capacity Market</u>			-	-	-	-	-	-	-
<u>11</u>	<u>10</u>	<u>Capacity Type</u>	<u>Type of Capacity</u>	<u>O</u>	<u>O</u>	<u>M</u>	-	-	-	-
<u>11</u>	<u>11</u>	<u>Capacity Type description</u>	<u>Description of the Type of Capacity</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>11</u>	<u>20</u>	<u>Peak Value</u>	<u>Measurement of Peak</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>11</u>	<u>21</u>	<u>Peak Type</u>	<u>Type of measurement of Peak</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>



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			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>							
<u>11</u>	<u>22</u>	<u>Peak Date/Time</u>	<u>Date and Time of measurement of Peak</u>	-	-	<u>O</u>	-	-	<u>O</u>	<u>O</u>
<u>11</u>	<u>23</u>	<u>Nominal Capacity</u>	<u>Nominated load</u>	-	-	<u>O</u>	-	-	-	-
<u>11</u>	<u>24</u>	<u>Qualified Capacity</u>	<u>Nominal ICAP derated for performance</u>	-	-	<u>M</u>	-	-	-	-
<u>11</u>	<u>30</u>	<u>Capacity Obligation Period Type</u>	<u>Type of Capacity Obligation Time Period within which the Resource is obligated</u>	<u>O</u>	<u>O</u>	<u>M</u>	-	-	<u>M</u>	<u>M</u>
<u>11</u>	<u>31</u>	<u>Capacity Obligation Period</u>	<u>Period of time for which the Capacity Resource is obligated</u>	<u>O</u>	<u>O</u>	<u>M</u>	-	-	<u>M</u>	<u>M</u>
<u>11</u>	<u>40</u>	<u>Minimum Payment Nomination</u>	<u>Strike price for the economic dispatch of the energy component of the capacity program</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-	-	-
<u>11</u>	<u>41</u>	<u>Capacity Supply Obligation</u>	<u>Capacity Obligation</u>	-	-	-	-	-	-	-
<u>11</u>	<u>50</u>	<u>Capacity Reference ID</u>	<u>Identifier assigned to the External System award</u>	-	-	<u>O</u>	-	-	-	-



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			<u>Process</u>	<u>1.0 Enrollment & Qualification</u>						
			<u>From</u>	<u>SO</u>	-	<u>SO</u>	-	-	-	-
			<u>To</u>	<u>SP</u>	-	<u>SP</u>	<u>SE</u>	<u>MA</u>	<u>LSE</u>	<u>TDSP</u>
			<u>Interaction</u>	<u>1.0.10</u>	<u>1.0.11</u>	<u>1.0.12</u>	<u>1.0.13</u>	<u>1.0.14</u>	<u>1.0.15</u>	<u>1.0.16</u>
				<u>Rejection Details</u>	<u>Qualification Rejection</u>	<u>Qualification Status to SP</u>	<u>Qualification Status to SE</u>	<u>Qualification Status to MA</u>	<u>Qualification Status to LSE</u>	<u>Qualification Status to TDSP</u>
<u>Element</u>			<u>Short Description</u>	-	-	-	-	-	-	-
<u>11</u>	<u>991</u>	<u>Capacity Comments</u>	<u>Comments associated with the Capacity market</u>	<u>0</u>	<u>0</u>	<u>0</u>	-	-	-	-



**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEES REVISED BY
THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010**

For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(ca)(ii)
Request Title: Phase Two Requirements Specifications for
 Wholesale Standard DR Signals - for NIST PAP09

018-1.4.2 Scheduling and Award Notification – Economic

Overview: The Scheduling and Award Notification process describes the process from offer submission to award notification. This process also includes the supplemental commitment and reassessment of reliability to determine whether demand resources that are enrolled in reliability-based (emergency) demand response programs should be advised of a possible reliability deployment.

Table 4 – Use Cases for Figure 3
Table 6. Use Cases for Figure 3

Use Case	Product	Deployment	Performance Evaluation
C-R-1	Capacity	Resource	Baseline
C-R-2	Capacity	Resource	MB/MA
C-R-3	Capacity	Resource	MBL
C-R-4	Capacity	Resource	MGO
E-R-1	Energy (Economic)	Resource	Baseline
E-R-2	Energy (Economic)	Resource	MB/MA
E-R-3	Energy (Economic)	Resource	MBL
E-R-4	Energy (Economic)	Resource	MGO
G-R-1	Regulation	Resource	Baseline
G-R-2	Regulation	Resource	MB/MA
G-R-3	Regulation	Resource	MBL
G-R-4	Regulation	Resource	MGO
V-R-1	Reserve	Resource	Baseline
V-R-2	Reserve	Resource	MB/MA
V-R-3	Reserve	Resource	MBL
V-R-4	Reserve	Resource	MGO

- The process begins when the SE submits a supply offer to the SO.
- The SO evaluates the offer through its market clearing process.
- The resulting resource-specific dispatch information is transformed into dispatch instructions by the SO.
- The SO makes the schedule available.
- The SE collects the forward schedule.



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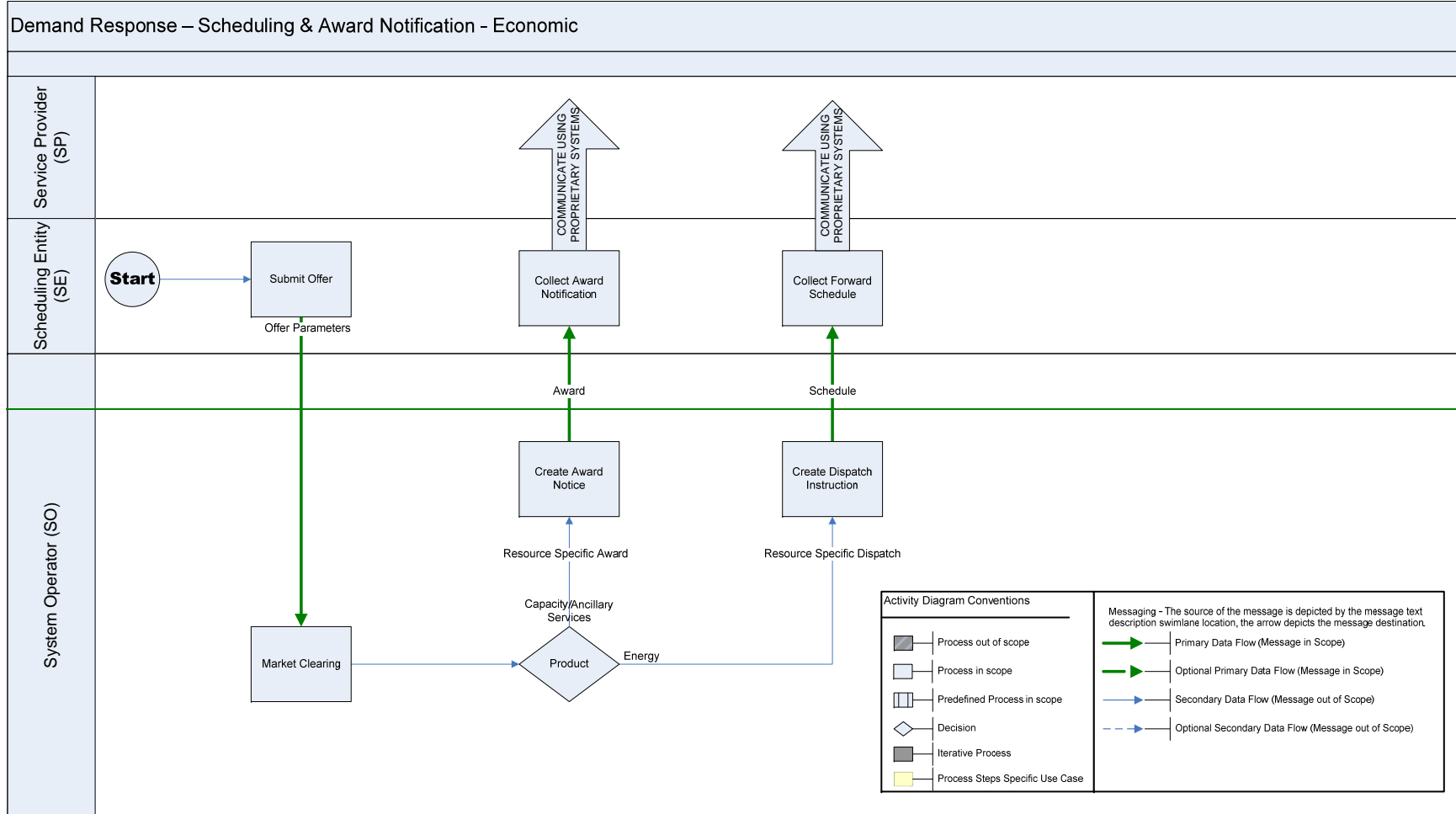
Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Activity Diagram and Data Flow:

Figure 3 - Scheduling and Award Notification - Economic



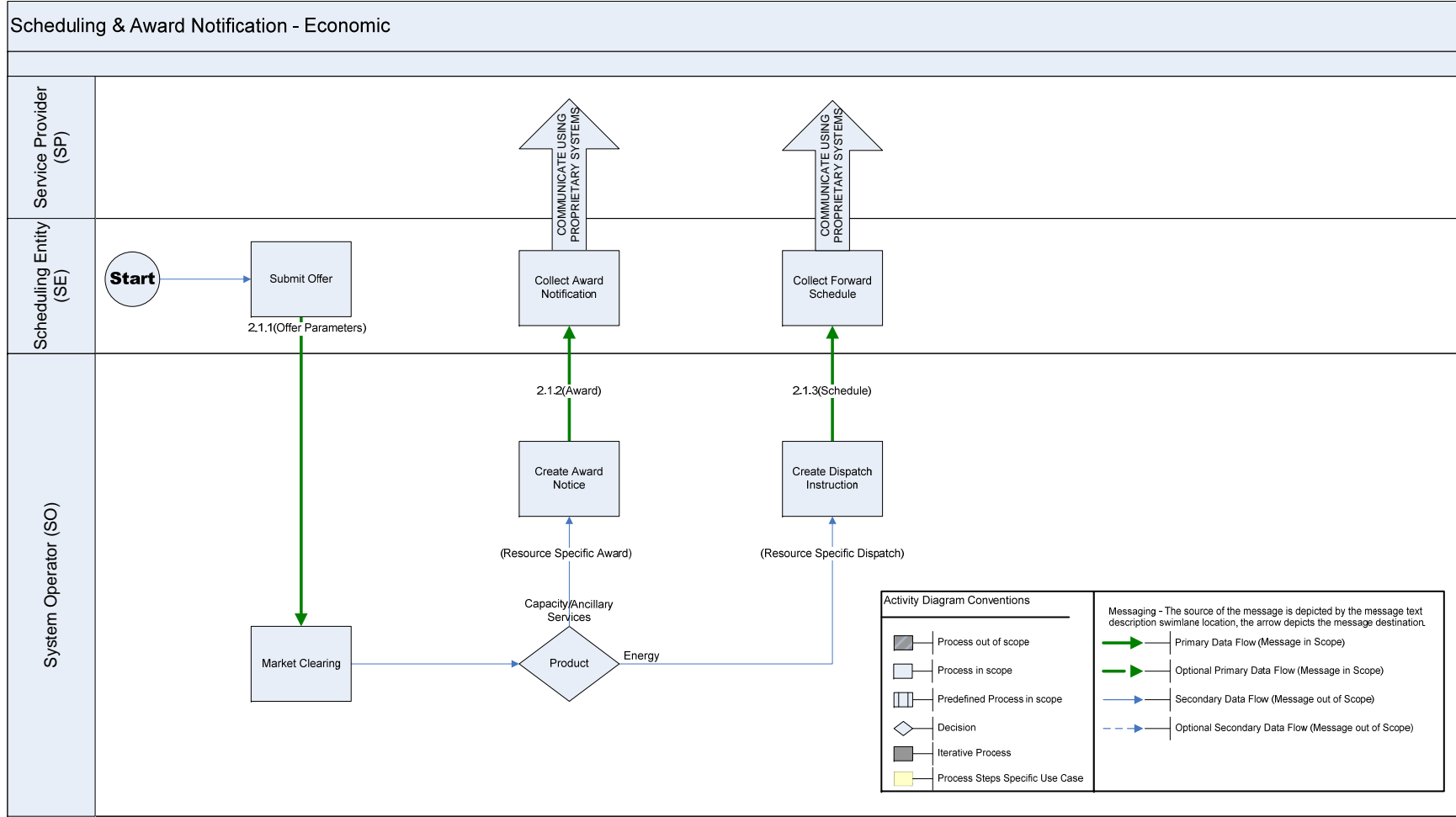
**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEES REVISED BY
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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09





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Note: Data elements for Scheduling and Award Notification-Economic are listed with Scheduling and Award Notification-Reliability in Table 8.



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For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(ac)(ii)
Request Title: Phase Two Requirements Specifications for
 Wholesale Standard DR Signals - for NIST PAP09

018-1.4.3 Scheduling and Award Notification – Reliability

Overview: The Scheduling and Award Notification process describes the process from offer submission to award notification. This process also includes the supplemental commitment and reassessment of reliability to determine whether demand resources that are enrolled in reliability-based (emergency) demand response programs should be advised of a possible reliability deployment.

Table 5 – Use Cases for Figure 4
Table 7. Use Cases for Figure 4

Use Case	Product	Deployment	Performance Evaluation
R-B-1	Energy (Reliability)	Bulk	Baseline
R-B-3	Energy (Reliability)	Bulk	MBL
R-B-2	Energy (Reliability)	Bulk	MB/MA
R-B-4	Energy (Reliability)	Bulk	MGO
C-B-1	Capacity	Bulk	Baseline
C-B-3	Capacity	Bulk	MBL
C-B-2	Capacity	Bulk	MB/MA
C-B-4	Capacity	Bulk	MGO
V-B-1	Reserve	Bulk	Baseline
V-B-3	Reserve	Bulk	MBL
V-B-2	Reserve	Bulk	MB/MA
V-B-4	Reserve	Bulk	MGO
V-R-1	Reserve	Resource	Baseline
V-R-3	Reserve	Resource	MBL
V-R-2	Reserve	Resource	MB/MA
V-R-4	Reserve	Resource	MGO

- The process begins when the SE submits availability to the SO.
- The SO performs the Load Forecast and Supplemental Commitment process after the market has been settled. Reliability is reassessed by the SO to determine whether the system is secure (sufficient supply to meet forecasted load conditions).
 - If SO determines that the system is secure, no demand response advance notification is required and reliability is assessed by the SO at the next interval.
 - If SO anticipates that a reliability issue is expected, the SO decides whether demand response is needed for reliability.
 - If demand response will not be needed, the process ends.



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Request No.: 2010 WEQ Annual Plan Item 6(ac)(ii)
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- If the SO determines that demand response will be provided with an advance notification, the reliability event parameters are prepared by the SO to create a reliability event notification.
 - The advance notification message is sent to the SE.
 - The SE identifies the demand resources to notify and relays the message to SPs through the proprietary communication interaction system of the SE.



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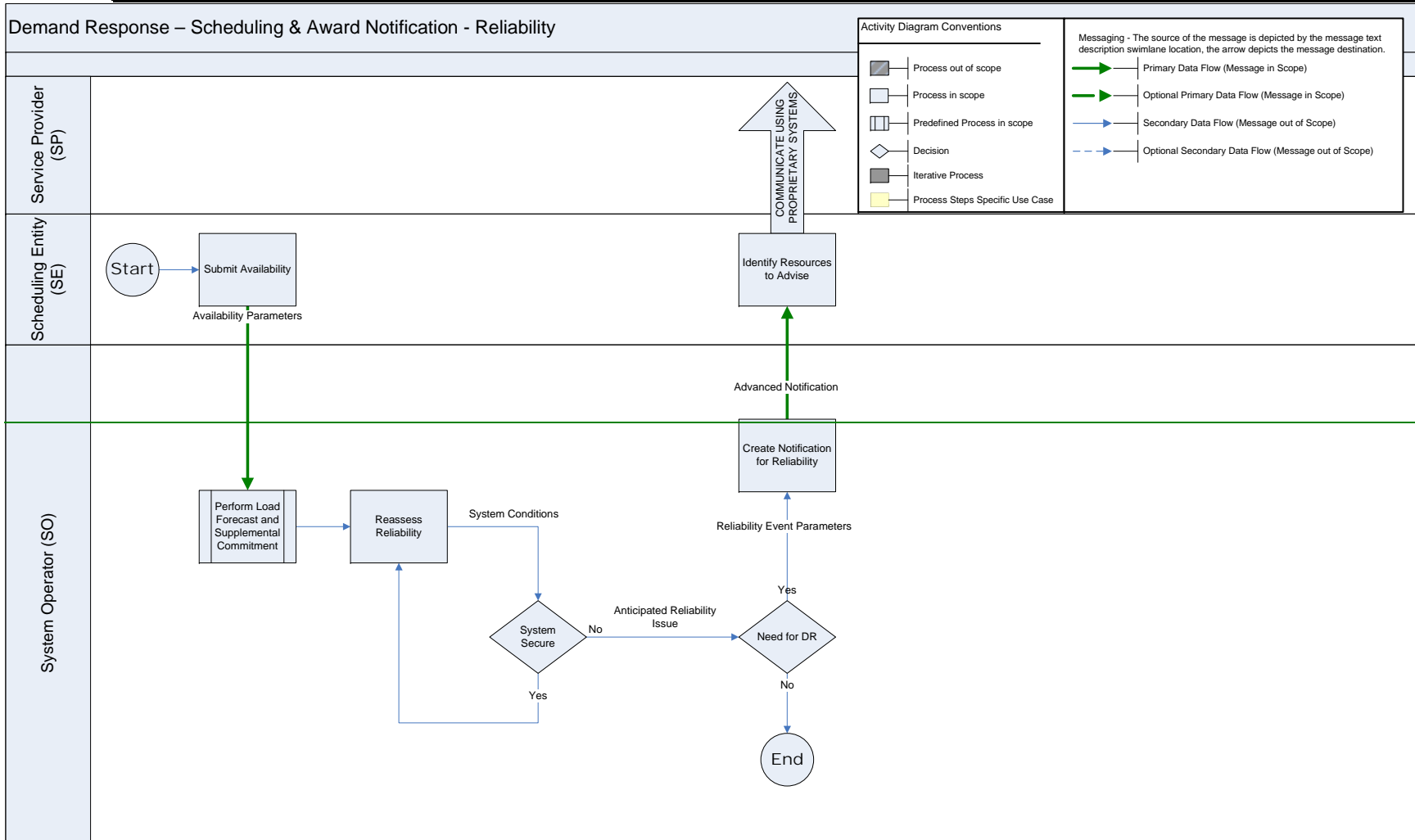
Activity Diagram and Data Flow:

Figure 4 - Scheduling and Award Notification - Reliability



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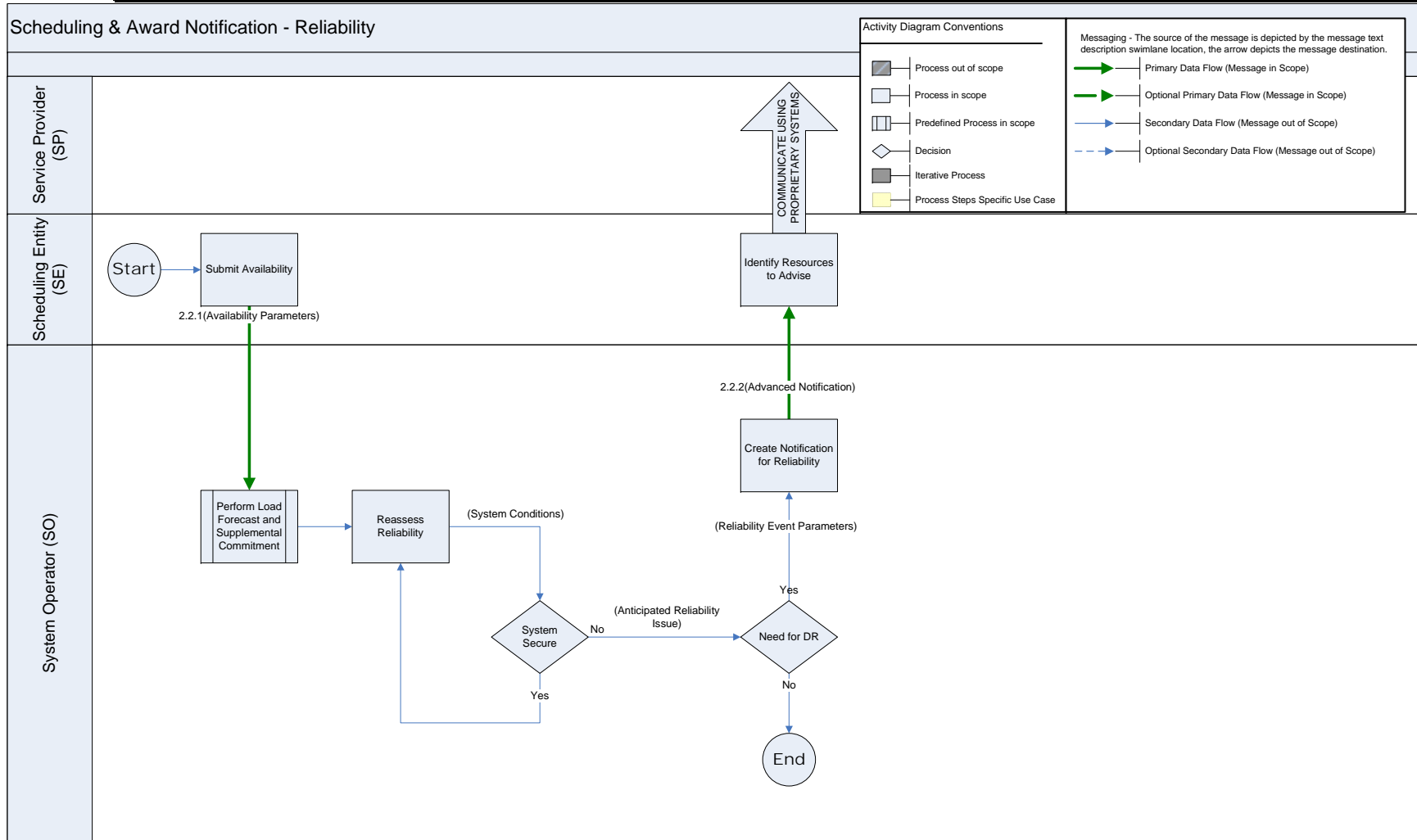
Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09





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Table 8. Data Requirements by Interaction Number: Scheduling and Award Notification

			Process	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	SE	SO		SE	SO
			To	SO	SE	SE	SO	SE
			Interaction	2.1.1	2.1.2	2.1.3	2.2.1	2.2.2
				Offer Parameters	Award	Schedule	Availability Parameters	Advanced Notification
Element			Short Description					
0	Common							
0	10	<u>Submittal Date</u>	<u>Timestamp for the sender's use</u>	O	O	O	O	O
0	11	<u>Submitted By</u>	<u>User ID of submitter</u>	O	O	O	O	O
0	12	<u>Submitted Error</u>	<u>ID of submission error detected</u>	O	O	O	O	O
0	20	<u>NERC CIP Security - Availability</u>	<u>CIP Security Classification for Availability</u>	M	M	M	M	M



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>0</u>	<u>21</u>	<u>NERC CIP Security - Confidentiality</u>	<u>CIP Security Classification for Confidentiality</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>0</u>	<u>22</u>	<u>NERC CIP Security - Integrity</u>	<u>CIP Security Classification for Integrity</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>		<u>General Asset/Resource</u>						
<u>1</u>	<u>10</u>	<u>Service Location ID</u>	<u>Identifier assigned to the Service Location</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>1</u>	<u>11</u>	<u>Service Location Name</u>	<u>Name of the Service Location</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>M</u>	<u>0</u>
<u>1</u>	<u>12</u>	<u>Asset ID</u>	<u>The unique identifier of the asset</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>



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Element			Short Description	2.0 Scheduling and Award Notification					
			Process				2.1 Economic		2.2 Reliability
			From	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>	
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>	
			Interaction	<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>	
				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>	
<u>1</u>	<u>13</u>	<u>Asset Name</u>	<u>The name of the asset</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>1</u>	<u>20</u>	<u>Resource ID</u>	<u>Identifier assigned to the Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	
<u>1</u>	<u>21</u>	<u>Resource Name</u>	<u>Name of the Resource</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	
<u>1</u>	<u>40</u>	<u>GenEMSID</u>	<u>Alias or point Identifier assigned to the Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	
<u>1</u>	<u>41</u>	<u>GenBillingID</u>	<u>Billing Identifier assigned to the Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-	
<u>2</u>	-	<u>Location</u>	-	-	-	-	-	-	



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	Process				
				2.1 Economic			2.2 Reliability	
				SE	SO		SE	SO
				SO	SE	SE	SO	SE
				2.1.1	2.1.2	2.1.3	2.2.1	2.2.2
				Offer Parameters	Award	Schedule	Availability Parameters	Advanced Notification
<u>2</u>	<u>30</u>	<u>Zone ID</u>	<u>Identifier assigned to the Zone in which the Service Location is located</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>2</u>	<u>31</u>	<u>Zone</u>	<u>Name of the Zone in which the Service Location is located</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>2</u>	<u>32</u>	<u>Zone Type</u>	<u>Type of Zone</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>2</u>	<u>40</u>	<u>Electrical Node ID</u>	<u>Identifier assigned to the Electrical Node at which the Service Location is connected</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>2</u>	<u>41</u>	<u>Electrical Node Name</u>	<u>Name of the Electrical Node at which the Service Location is connected</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>2</u>	<u>42</u>	<u>Electrical Node Type</u>	<u>Type of Electrical Node at which the Service Location is attached</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>2</u>	<u>43</u>	<u>PNode</u>	<u>Name of the Price Node associated with the Service Location</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>2</u>	<u>44</u>	<u>PNode ID</u>	<u>Identifier assigned to the Price Node associated with the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element		Short Description		2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
				SE	SO		SE	SO
				SO	SE	SE	SO	SE
				2.1.1	2.1.2	2.1.3	2.2.1	2.2.2
				Offer Parameters	Award	Schedule	Availability Parameters	Advanced Notification
5		Business Entity Relationships						
5	11	Service Provider ID	Identifier assigned to the Service Provider			O	M	M
5	12	Service Provider Name	Name of the Service Provider			O	M	M
5	20	Transmission/Distribution Service Provider ID	Identifier assigned to the Transmission/Distribution Service Provider			O	O	
5	21	Transmission/Distribution Service Provider Name	Name of the Transmission/Distribution Service Provider			O	O	



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

<u>Element</u>			<u>Short Description</u>					
				2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			<u>From</u>	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
			<u>To</u>	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			<u>Interaction</u>	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>5</u>	<u>22</u>	<u>Transmission/Distribution Service Provider Account Number</u>	<u>Transmission/Distribution Service Provider's account number for the Resource</u>	-	-	<u>O</u>	<u>O</u>	-
<u>5</u>	<u>30</u>	<u>Load-Serving Entity ID</u>	<u>Identifier assigned to the Load-Serving Entity</u>	-	-	<u>O</u>	<u>O</u>	-
<u>5</u>	<u>31</u>	<u>Load-Serving Entity Name</u>	<u>Name of the Load-Serving Entity</u>	-	-	<u>O</u>	<u>O</u>	-
<u>5</u>	<u>70</u>	<u>Scheduling Entity ID</u>	<u>Identifier assigned to the Scheduling Entity</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>5</u>	<u>71</u>	<u>Scheduling Entity Name</u>	<u>Name of the Scheduling Entity</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>5</u>	<u>80</u>	<u>Designated Dispatch Entity ID</u>	<u>Identifier assigned to the Designated Dispatch Entity</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>5</u>	<u>81</u>	<u>Designated Dispatch Entity Name</u>	<u>Name of the Designated Dispatch Entity</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>6</u>		<u>Device and Qualification</u>						
<u>6</u>	<u>20</u>	<u>Meter ID</u>	<u>Identifier assigned to the Meter</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>6</u>	<u>44</u>	<u>Normal Breaker Status</u>	<u>Status of the Breaker for the Service Location under Normal operating conditions</u>				<u>M</u>	



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>6</u>	<u>45</u>	<u>Breaker Status During Event</u>	<u>Status of the Breaker for the Service Location during an Emergency Event</u>	-	-	-	<u>M</u>	-
<u>6</u>	<u>46</u>	<u>Wholesale Delivery Point Status</u>	<u>Flag set if the Service Location is metered at the Wholesale level</u>	-	-	-	<u>M</u>	-
<u>6</u>	<u>47</u>	<u>Private Use Network</u>	<u>Flag set if the Resource is an Electric Network connected to the transmission grid</u>	-	-	-	<u>M</u>	-
<u>6</u>	<u>51</u>	<u>UFR Settings</u>	<u>Setting of the Under-Frequency Relay</u>	-	-	-	<u>M</u>	-



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<u>Element</u>			<u>Short Description</u>					
<u>6</u>	<u>52</u>	<u>Load Resource Control Device</u>	Type of Control Device at a Service Location or deployed by a Response Method				M	
<u>7</u>		<u>Market/Program Enrollment</u>						
<u>7</u>	<u>10</u>	<u>Program ID</u>	Program Identifier	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>7</u>	<u>11</u>	<u>Program Name</u>	Name of the Program	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>7</u>	<u>12</u>	<u>Market</u>	Type of wholesale market	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>7</u>	<u>13</u>	<u>Market Product</u>	Market Product	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>7</u>	<u>30</u>	<u>Lead Time</u>	Time between the advanced notification and deployment	<u>0</u>	<u>0</u>		<u>0</u>	<u>0</u>



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>7</u>	<u>31</u>	<u>Day Ahead Flag</u>	<u>Flag set if the Resource will be participating in the Day-Ahead market</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>7</u>	<u>32</u>	<u>Real Time Flag</u>	<u>Flag set if the Resource will be participating in the Real-Time market</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>7</u>	<u>33</u>	<u>Self-Schedule Flag</u>	<u>Flag set if the Resource is Self-Deploying</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	-
<u>7</u>	<u>40</u>	<u>Response Method Type</u>	<u>Type of Response Method</u>	-	<u>O</u>	<u>O</u>	-	-
<u>7</u>	<u>41</u>	<u>Response Method ID</u>	<u>Identifier assigned to the Response Method</u>	-	<u>O</u>	<u>O</u>	-	-
<u>7</u>	<u>42</u>	<u>Response Method Name</u>	<u>Name of the Response Method</u>	-	<u>O</u>	<u>O</u>	-	-



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

<u>Element</u>			<u>Short Description</u>					
				2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
		<u>From</u>		<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
		<u>To</u>		<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			<u>Interaction</u>	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>7</u>	<u>43</u>	<u>Response Method Value</u>	<u>Value of the Response Method</u>	-	O	O	-	-
<u>7</u>	<u>44</u>	<u>Verified Capability</u>	<u>Audited Capability</u>	-	-	-	O	-
<u>7</u>	<u>45</u>	<u>Verified Capability Factor</u>	<u>Ratio of the Verified Capability to the qualified capability</u>	-	-	-	O	-
<u>8</u>	-	<u>Offer Parameters</u>	-	-	-	-	-	-
<u>8</u>	<u>10</u>	<u>Offer Limit Value</u>	<u>Offer Limit Value</u>	M	-	-	M	O
<u>8</u>	<u>11</u>	<u>Offer Limit Type</u>	<u>Type of Offer Limit</u>	M	-	-	M	O



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>8</u>	<u>12</u>	<u>Offer Limit Interval</u>	<u>Offer Limit Interval</u>	<u>O</u>			<u>M</u>	<u>O</u>
<u>8</u>	<u>20</u>	<u>Physical Min Gen</u>	<u>Minimum Operating Level of a Resource</u>	<u>O</u>			<u>M</u>	
<u>8</u>	<u>21</u>	<u>Min Gen MW</u>	<u>Minimum MW available for dispatch</u>	<u>M</u>			<u>M</u>	<u>O</u>
<u>8</u>	<u>22</u>	<u>MinGenCost</u>	<u>The cost per hour for each Min Gen MW value.</u>	<u>M</u>			<u>M</u>	<u>O</u>
<u>8</u>	<u>23</u>	<u>Ramp Rate Type</u>	<u>Type of Ramp Rate</u>	<u>O</u>			<u>M</u>	
<u>8</u>	<u>24</u>	<u>Ramp Rate Segment</u>	<u>Energy of Segment of the Ramp Rate</u>	<u>O</u>			<u>M</u>	



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>8</u>	<u>25</u>	<u>Ramp Rate Direction</u>	<u>Direction of the selected Ramp Rate Type and Ramp Rate Segment</u>	<u>0</u>	-	-	-	-
<u>8</u>	<u>26</u>	<u>Ramp Rate Value</u>	<u>Ramp Rate associated with the selected Ramp Rate Type for the selected Ramp Rate Segment and Ramp Rate Direction</u>	<u>0</u>	-	-	-	-
<u>8</u>	<u>30</u>	<u>Offer Dispatch Type</u>	<u>Type of Offer</u>	<u>M</u>	<u>M</u>	<u>M</u>	-	-
<u>8</u>	<u>31</u>	<u>Offer Segment MW</u>	<u>Energy of Segment of the Offer</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>0</u>
<u>8</u>	<u>32</u>	<u>Offer Segment Price</u>	<u>Price of Segment of the Offer</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>0</u>	<u>0</u>



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

			Process	2.0 Scheduling and Award Notification						
				2.1 Economic			2.2 Reliability			
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>		
				To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>	
			Interaction	<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>		
<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>		<u>Availability Parameters</u>	<u>Advanced Notification</u>					
Element			Short Description							
<u>8</u>	<u>33</u>	<u>Offer Segment Hour</u>	<u>Hour of Segment of the Offer</u>			<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>
<u>8</u>	<u>34</u>	<u>Startup Cost</u>	<u>Cost of starting a response activity</u>			<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>
<u>8</u>	<u>35</u>	<u>Strike Price</u>	<u>Threshold Price</u>			<u>O</u>	<u>O</u>	<u>O</u>	-	-
<u>8</u>	<u>36</u>	<u>Offer Expiration Date</u>	<u>Date of Expiration of the Offer</u>			<u>M</u>	-	-	-	-
<u>8</u>	<u>37</u>	<u>Startup Cost Type</u>	<u>Type of startup cost</u>			<u>M</u>	-	-	<u>M</u>	-
<u>8</u>	<u>38</u>	<u>Offer Commit Status</u>	<u>Commitment status of offer</u>			<u>M</u>	-	-	<u>M</u>	-
<u>8</u>	<u>39</u>	<u>Offer Dispatch Status</u>	<u>Dispatch Status of Offer</u>			<u>M</u>	-	-	<u>M</u>	-



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
				<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
				<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
8	331	<u>Offer Price Curve Slope</u>	<u>Flag to smoothe offer segments from step function to slope</u>	<u>M</u>			<u>M</u>	
8	332	<u>StrikePriceType</u>	<u>Type of strike price</u>	<u>O</u>			<u>O</u>	
8	40	<u>Market Clearing Day</u>	<u>Market Clearing Day of the Offer</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
8	41	<u>Schedule Name</u>	<u>Name or tag of the Offer</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
8	42	<u>Schedule Description</u>	<u>Description of the Offer</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
8	43	<u>Schedule Status</u>	<u>Status of the Offer</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>8</u>	<u>50</u>	<u>Portfolio Name</u>	<u>Name of an aggregation of Resources for market participation</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>8</u>	<u>71</u>	<u>Operational Constraint Type</u>	<u>Type of operational, schedule or offer constraint</u>	<u>M</u>	-	-	<u>M</u>	-
<u>8</u>	<u>72</u>	<u>Operational Constraint Interval</u>	<u>The timeframe over which the constraint type applies.</u>	<u>M</u>	-	-	<u>M</u>	-
<u>8</u>	<u>73</u>	<u>Operational Constraint Value</u>	<u>Value of the Constraint Type and Interval</u>	<u>M</u>	-	-	<u>M</u>	-
<u>9</u>	-	<u>Energy Market</u>	-	-	-	-	-	-



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			Process	2.0 Scheduling and Award Notification						
							2.1 Economic		2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>		
				<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>		
			To	<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>		
				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>		
			Interaction							
Element			Short Description							
<u>9</u>	<u>0</u>	<u>Instruction ID</u>		<u>O</u>	<u>O</u>	<u>O</u>				
<u>9</u>	<u>10</u>	<u>Energy Schedule - Start Time</u>	<u>Start Time of the Energy Schedule</u>	<u>M</u>	<u>M</u>	<u>M</u>				
<u>9</u>	<u>11</u>	<u>Energy Schedule - End Time</u>	<u>End Time of the Energy Schedule</u>	<u>M</u>	<u>M</u>	<u>M</u>				
<u>9</u>	<u>12</u>	<u>Energy Schedule - Interval Start Time</u>	<u>Start Time of the Energy Interval within the Energy Schedule</u>	<u>M</u>	<u>M</u>	<u>M</u>				
<u>9</u>	<u>13</u>	<u>Energy Schedule - Cleared MW Interval Value</u>	<u>The Energy Value of cleared MW for the Time Interval within the Energy Schedule</u>		<u>M</u>	<u>M</u>				



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<u>Element</u>			<u>Short Description</u>					
<u>9</u>	<u>14</u>	<u>Energy Schedule - Cleared Price</u>	<u>Awarded Price</u>	-	M	M	-	-
<u>9</u>	<u>15</u>	<u>Schedule ID</u>	-	O	-	O	-	-
<u>9</u>	<u>20</u>	<u>Base Point</u>	<u>Per-interval dispatch instruction</u>	-	-	-	-	-
<u>9</u>	<u>21</u>	<u>Breaker Status</u>	<u>Status of the Breaker for the Resource</u>	-	-	-	-	-
<u>9</u>	<u>22</u>	<u>Output MW</u>	<u>Real Power Output of the Generation Device</u>	-	-	-	-	-
<u>9</u>	<u>23</u>	<u>Output MVAR</u>	<u>Reactive Power Output of the Generation Device</u>	-	-	-	-	-



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<u>Element</u>			<u>Short Description</u>	<u>Interaction</u>					
<u>Element</u>			<u>Short Description</u>	<u>From</u>	<u>2.1 Economic</u>			<u>2.2 Reliability</u>	
<u>Element</u>			<u>Short Description</u>	<u>To</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>
<u>Element</u>			<u>Short Description</u>		<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
<u>Element</u>			<u>Short Description</u>		<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>9</u>	<u>24</u>	<u>DR Bus Load MW</u>	<u>Instantaneous Bus Load of a Demand Resource providing Ancillary Services</u>						
<u>9</u>	<u>27</u>	<u>Set Point</u>	<u>Final dispatch target level</u>						
<u>1</u>	<u>0</u>	<u>Ancillary Service Market</u>							
<u>1</u>	<u>0</u>	<u>Ancillary Service Instruction ID</u>				<u>0</u>	<u>0</u>		
<u>1</u>	<u>10</u>	<u>Ancillary Service Product Type</u>	<u>Type of Ancillary Service product(s) the Resource is enrolling to provide</u>		<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>1</u> <u>0</u>	<u>12</u>	<u>Ancillary Service Award - Start Time</u>	<u>Start Time of the ancillary service Award</u>	-	<u>M</u>	-	-	-
<u>1</u> <u>0</u>	<u>13</u>	<u>Ancillary Service Award - End Time</u>	<u>End Time of the ancillary service Award</u>	-	<u>M</u>	-	-	-
<u>1</u> <u>0</u>	<u>14</u>	<u>Ancillary Service Award - Interval Start Time</u>	<u>Start Time of the ancillary service Interval within the ancillary service Award and the ancillary service Value of the Time Interval</u>	-	<u>M</u>	-	-	-



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<u>Element</u>			<u>Short Description</u>	<u>Process</u>				
				<u>2.0 Scheduling and Award Notification</u>				
				<u>2.1 Economic</u>			<u>2.2 Reliability</u>	
				<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
				<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>10</u>	<u>15</u>	<u>Ancillary Service Award - Interval Value</u>	<u>The awarded Value for the Time Interval within the ancillary service Award</u>		<u>M</u>			
<u>10</u>	<u>16</u>	<u>Ancillary Service Award - Cleared Price</u>	<u>Awarded Price</u>		<u>M</u>			
<u>10</u>	<u>17</u>	<u>Ancillary Service Schedule ID</u>				<u>O</u>		
<u>10</u>	<u>31</u>	<u>Reserve Pickup Flag</u>	<u>Flag set if this is a Reserve Pickup schedule</u>		<u>O</u>	<u>O</u>		



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<u>Element</u>			<u>Short Description</u>	<u>Interaction</u>				
<u>From</u>			<u>To</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
<u>2.0 Scheduling and Award Notification</u>			<u>2.1 Economic</u>	<u>2.2 Reliability</u>				
			<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>	
			<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>	
<u>1</u> <u>0</u>	<u>32</u>	<u>Regulation Base Point</u>	<u>Per-interval Regulation dispatch instruction</u>	-	-	-	-	-
<u>1</u> <u>0</u>	<u>33</u>	<u>Base Load MW</u>	<u>Level of Load at time of dispatch</u>	-	-	-	-	-
<u>1</u> <u>1</u>	-	<u>Capacity Market</u>	-	-	-	-	-	-
<u>1</u> <u>1</u>	<u>10</u>	<u>Capacity Type</u>	<u>Type of Capacity</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	-
<u>1</u> <u>1</u>	<u>20</u>	<u>Peak Value</u>	<u>Measurement of Peak</u>	-	-	<u>O</u>	<u>O</u>	-
<u>1</u> <u>1</u>	<u>21</u>	<u>Peak Type</u>	<u>Type of measurement of Peak</u>	-	-	<u>O</u>	<u>O</u>	-



**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEES REVISED BY
THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010**

Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description					
				2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
			Interaction	<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
				-	-	-	-	-
<u>1</u> <u>1</u>	<u>22</u>	<u>Peak Date/Time</u>	<u>Date and Time of measurement of Peak</u>	-	-	<u>O</u>	<u>O</u>	-
<u>1</u> <u>1</u>	<u>23</u>	<u>Nominal Capacity</u>	<u>Nominated load</u>	<u>O</u>	<u>O</u>	<u>O</u>	-	-
<u>1</u> <u>1</u>	<u>24</u>	<u>Qualified Capacity</u>	<u>Nominal ICAP derated for performance</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	-
<u>1</u> <u>1</u>	<u>30</u>	<u>Capacity Obligation Period Type</u>	<u>Type of Capacity Obligation Time Period within which the Resource is obligated</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	-
<u>1</u> <u>1</u>	<u>31</u>	<u>Capacity Obligation Period</u>	<u>Period of time for which the Capacity Resource is obligated</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	-



**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEES REVISED BY
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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element		Short Description	2.0 Scheduling and Award Notification				
			2.1 Economic			2.2 Reliability	
			SE	SO		SE	SO
			SO	SE	SE	SO	SE
			2.1.1	2.1.2	2.1.3	2.2.1	2.2.2
			Offer Parameters	Award	Schedule	Availability Parameters	Advanced Notification
<u>1</u> <u>1</u>	<u>40</u>	<u>Minimum Payment Nomination</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>1</u> <u>1</u>	<u>41</u>	<u>Capacity Supply Obligation</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	
<u>1</u> <u>1</u>	<u>50</u>	<u>Capacity Reference ID</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>1</u> <u>1</u>	<u>991</u>	<u>Capacity Comments</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	
<u>1</u>		<u>Event and Performance</u>					



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

<u>Element</u>			<u>Short Description</u>					
Process				2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
From				<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
To				<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
				<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
Interaction				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>1</u>	<u>10</u>	<u>Event ID</u>	<u>Identifier assigned to the Event</u>					<u>O</u>
<u>1</u>	<u>11</u>	<u>Deployment Type</u>	<u>Type of Deployment</u>					<u>M</u>
<u>1</u>	<u>12</u>	<u>Event Day</u>	<u>Operating Date of Start of Event</u>					<u>M</u>
<u>1</u>	<u>13</u>	<u>Event Description</u>	<u>Description of the Event</u>					<u>M</u>



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Element			Short Description	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			<u>From</u>	<u>SE</u>	<u>SO</u>		<u>SE</u>	<u>SO</u>
			<u>To</u>	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
			<u>Interaction</u>	<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
<u>1</u> <u>2</u>	<u>19</u>	<u>Event Modification Number</u>	A modification number for the event.					<u>0</u>
<u>1</u> <u>2</u>	<u>111</u>	<u>Notification Acknowledgement</u>	<u>This is an acknowledgement of the receipt of a DR notification or dispatch. It should include any necessary provisions for non-repudiation.</u>					<u>0</u>
<u>1</u> <u>2</u>	<u>112</u>	<u>Event Modification Reason Code</u>	<u>The reason the event is being cancelled or modified.</u>					<u>0</u>



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			Process	2.0 Scheduling and Award Notification				
				2.1 Economic			2.2 Reliability	
			From	<u>SE</u>	<u>SO</u>	-	<u>SE</u>	<u>SO</u>
			To	<u>SO</u>	<u>SE</u>	<u>SE</u>	<u>SO</u>	<u>SE</u>
			Interaction	<u>2.1.1</u>	<u>2.1.2</u>	<u>2.1.3</u>	<u>2.2.1</u>	<u>2.2.2</u>
				<u>Offer Parameters</u>	<u>Award</u>	<u>Schedule</u>	<u>Availability Parameters</u>	<u>Advanced Notification</u>
			Element	Short Description				
<u>1</u>	<u>991</u>	<u>Event & Performance comments</u>	<u>Comments associated with Event and Performance data</u>					0
<u>2</u>								



RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE AS REVISED BY THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010

For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(ac)(ii)
Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

018-1.4.4 Deployment and Real-Time Communications - Economic

Overview: The Deployment and Real-Time Communication process describes the process for real-time communications to demand resources providing market-based services on a real-time basis and dispatch for reliability-based (emergency) demand response programs. The process flow/business activity diagrams and descriptions below reflect a sequential nature to the real-time process solely for the purposes of describing the process of the real-time data flow; the real-time communication process simultaneously scans and updates in the same step.

~~Table 6 – Use Cases for Figure 5~~
Table 9. Use Cases for Figure 5

Use Case	Product	Deployment	Performance Evaluation
E-R-1	Energy (Economic)	Resource	Baseline
R-B-1	Energy (Reliability)	Bulk	Baseline
R-B-4	Energy (Reliability)	Bulk	MGO
V-R-2	Reserve	Resource	MB/MA
G-R-2	Regulation	Resource	MB/MA

- The process begins when the SO evaluates real-time system conditions through its market clearing process.
- The resulting resource-specific real-time dispatch information is transformed into dispatch instructions by the SO.
 - If the dispatch instruction is for Regulation, the SO sends the Regulation signal to the DDE.
 - If the dispatch is not for Regulation, the SO sends the dispatch instruction to the DDE.
- The DDE communicates with the SP through the proprietary communication system of the DDE.
- The SO collects real-time response from the DDE for evaluating the next interval and uses the information to calculate the system state.
- System conditions are made available to the market clearing process for the next interval and to Deployment and Real-Time Communications – Reliability.



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

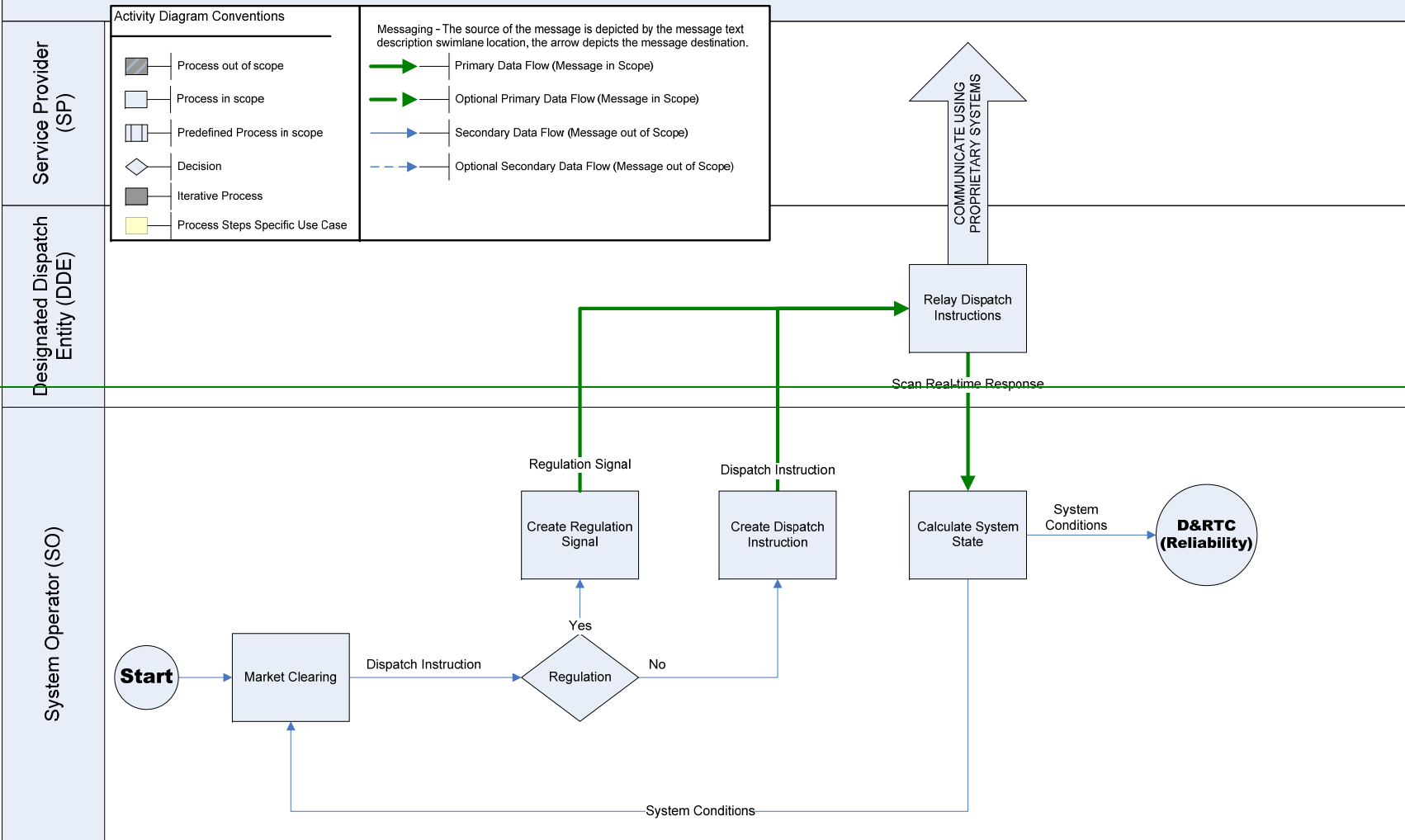
Activity Diagram and Data Flow:

Figure 5 - Deployment and Real-Time Communications - Economic



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Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

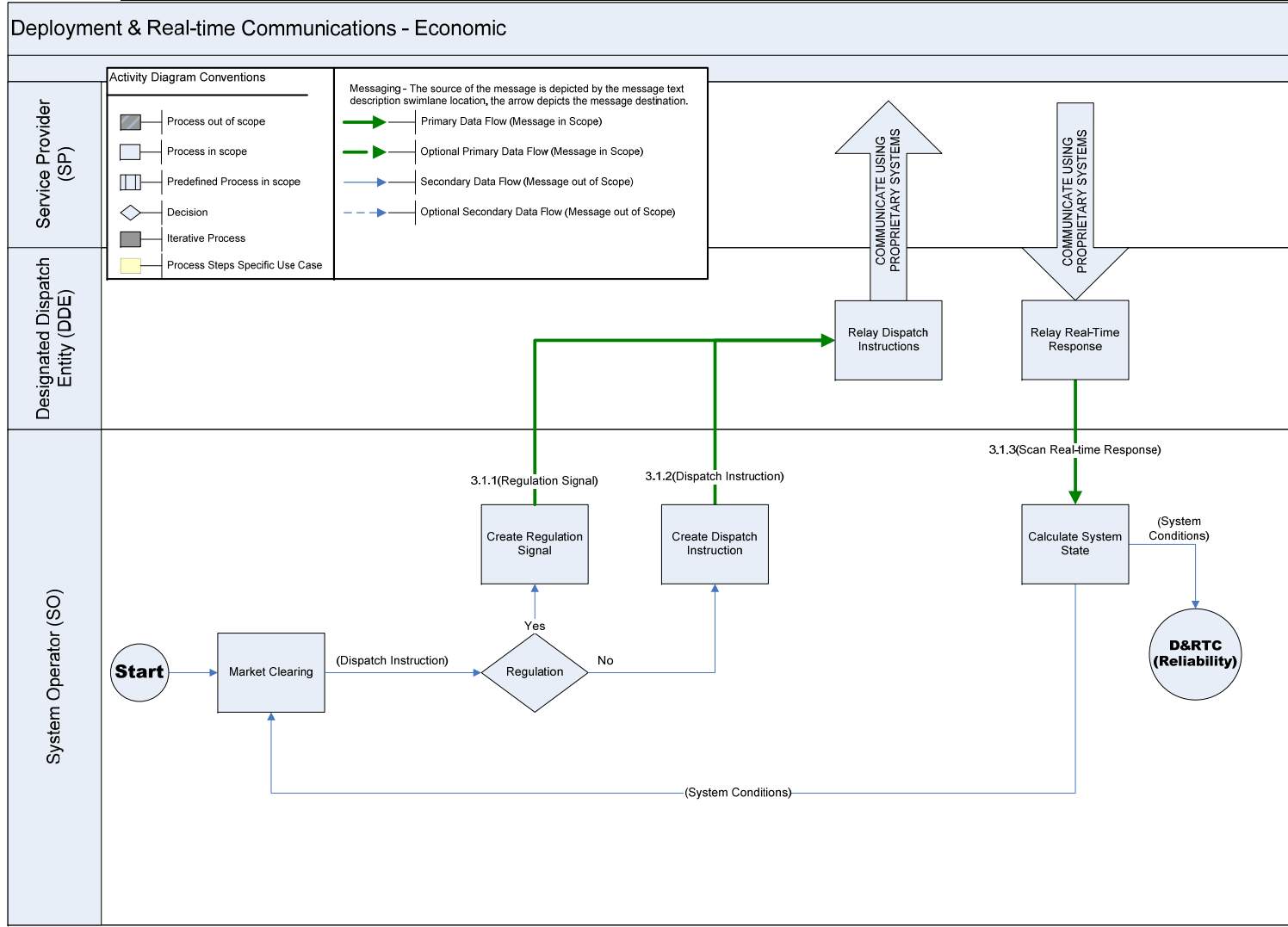
Demand Response – Deployment & Real-time Communications - Economic





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Note: Data elements for Deployment & Real-Time Communications-Economic are listed with Deployment & Real-Time Communications-Reliability in Table 11.



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For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(ca)(ii)
Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

018-1.4.5 Deployment and Real-Time Communications – Reliability

Overview: The Deployment and Real-Time Communication process describes the process for real-time communications to demand resources providing market-based services on a real-time basis and dispatch for reliability-based (emergency) demand response programs. The ~~process flow~~ business activity diagrams and descriptions below reflect a sequential nature to the real-time process solely for the purposes of describing the process of the real-time data flow; the real-time communication process simultaneously scans and updates in the same step.

~~Table 7 – Use Cases for Figure 6~~
Table 10. Use Cases for Figure 6

Use Case	Product	Deployment	Performance Evaluation
C-B-1	Capacity	Bulk	Baseline
C-B-3	Capacity	Bulk	MBL
E-B-1	Energy (Economic)	Bulk	Baseline
E-B-4	Energy (Economic)	Bulk	MGO
E-R-1	Energy (Economic)	Resource	Baseline
V-B-1	Reserve	Bulk	Baseline
V-B-2	Reserve	Bulk	MB/MA
V-B-3	Reserve	Bulk	MBL
V-B-4	Reserve	Bulk	MGO
V-R-1	Reserve	Resource	Baseline
V-R-2	Reserve	Resource	MB/MA
V-R-3	Reserve	Resource	MBL
V-R-4	Reserve	Resource	MGO
V-S-1	Reserve	Self	Baseline
V-S-2	Reserve	Self	MB/MA
V-S-3	Reserve	Self	MBL
V-S-4	Reserve	Self	MGO

- The SO performs the Load Forecast and Supplemental Commitment process after the interval has been dispatched. Reliability is reassessed by the SO to determine whether the system is secure (sufficient supply to meet forecasted load conditions).
 - If SO determines that the system is secure, no demand response deployment is required and reliability is assessed by the SO at the next interval.



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For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6~~(ca)~~(ii)
Request Title: Phase Two Requirements Specifications for
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- If SO anticipates that a reliability issue is expected, the SO decides whether demand response is needed for reliability.
 - If demand response will not be needed, the process ends.
 - If the SO determines that demand response will be deployed, the reliability event parameters are prepared by the SO to create a reliability event notification.
 - The deployment instruction is sent to the DDE.
 - The DDE identifies the demand resources to notify and relays the message to SPs through the proprietary communication system of the DDE.
 - Real-time or near real-time response data is collected by DDE using the proprietary communication system of the DDE.
 - The DDE sends the event response information to the SO.



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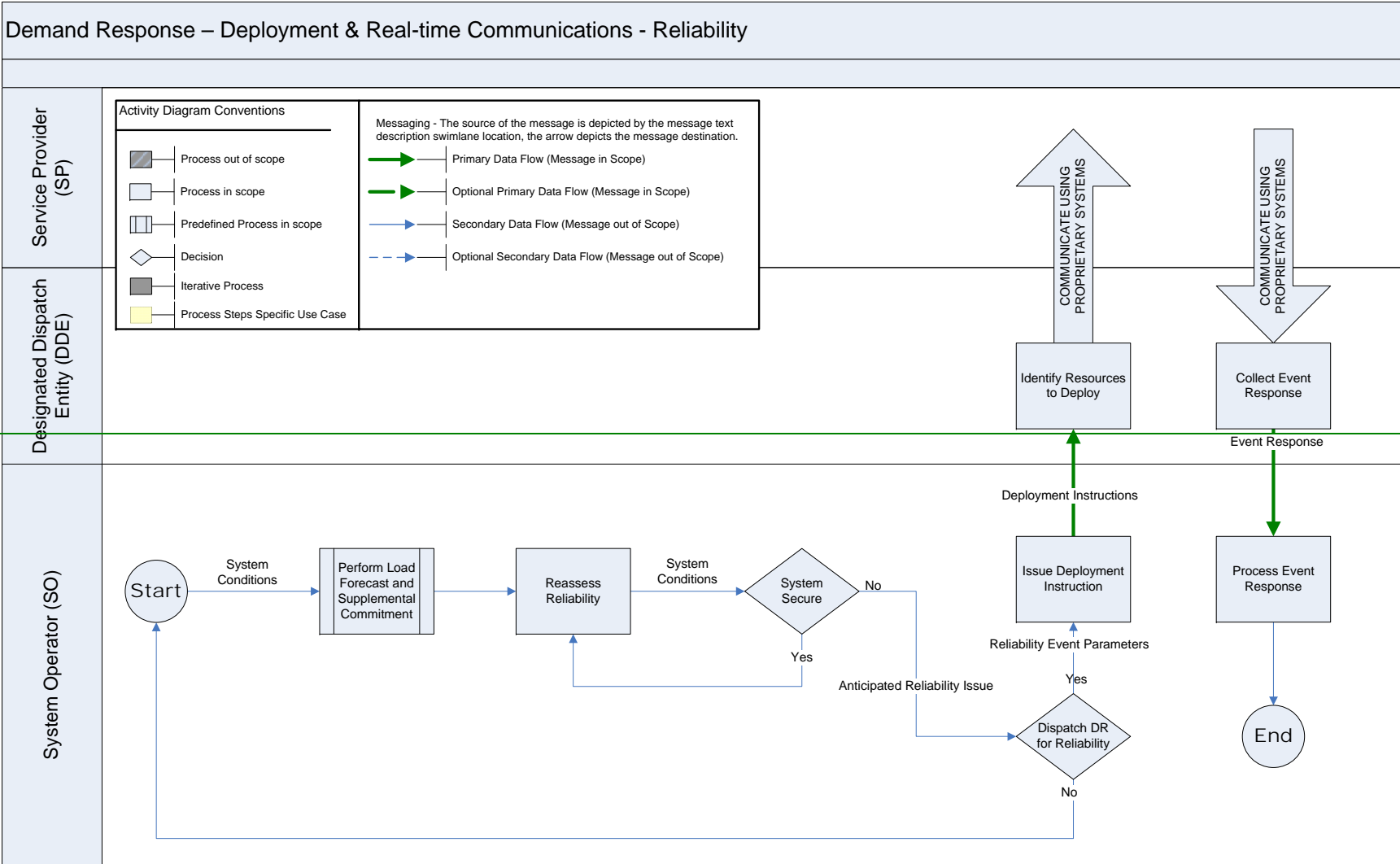
Activity Diagram and Data Flow:

Figure 6 - Deployment and Real-Time Communications - Reliability



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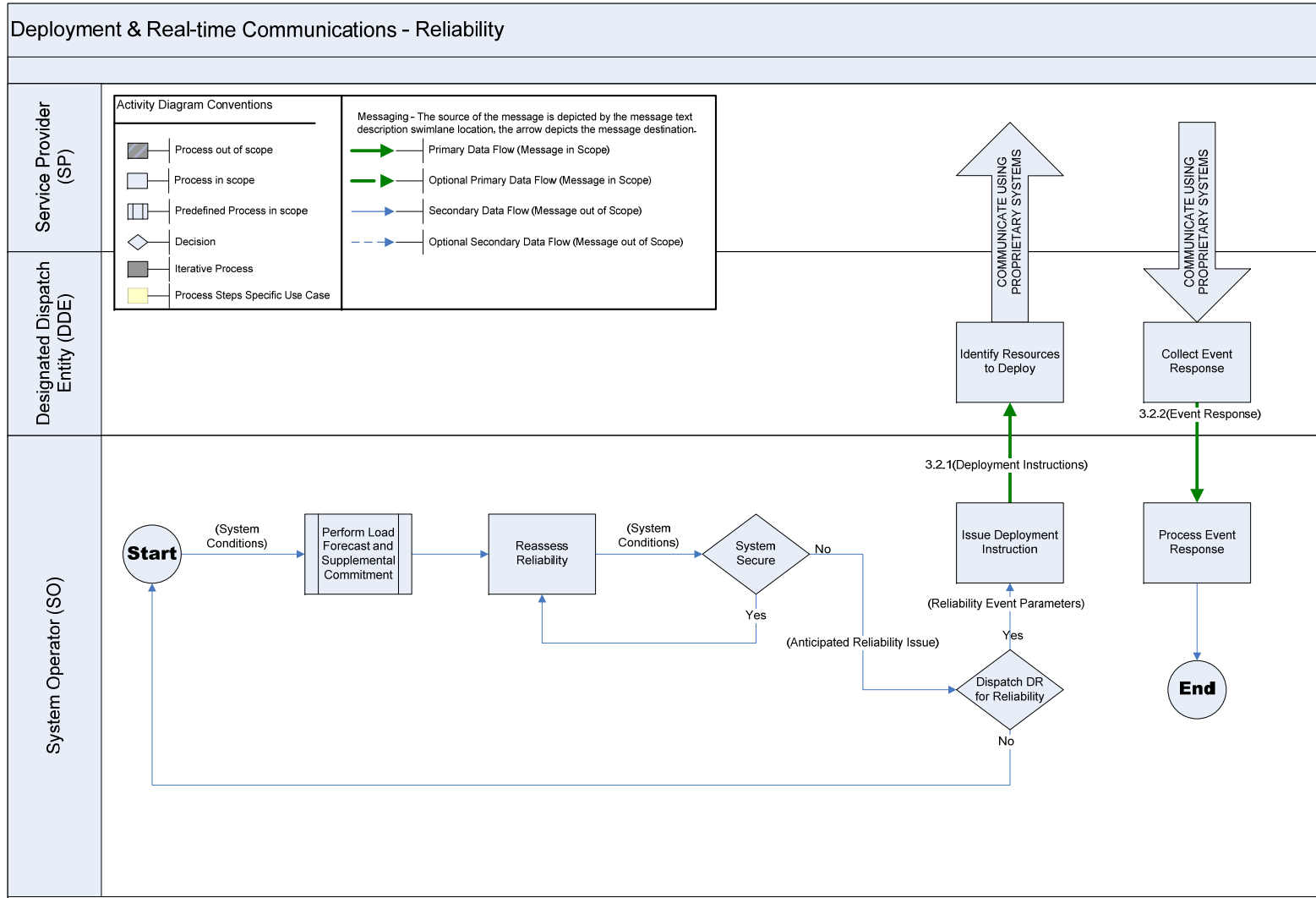


Table 11. Data Requirements by Interaction Number: Deployment & Real-Time Communications



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			Process	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>
<u>Element</u>	<u>Short Description</u>							
<u>0</u>	<u>Common</u>							
<u>0</u>	<u>10</u>	<u>Submittal Date</u>	<u>Timestamp for the sender's use</u>	<u>0</u>			<u>0</u>	<u>0</u>
<u>0</u>	<u>11</u>	<u>Submitted By</u>	<u>User ID of submitter</u>	<u>0</u>			<u>0</u>	<u>0</u>
<u>0</u>	<u>12</u>	<u>Submitted Error</u>	<u>ID of submission error detected</u>	<u>0</u>			<u>0</u>	<u>0</u>
<u>0</u>	<u>20</u>	<u>NERC CIP Security - Availability</u>	<u>CIP Security Classification for Availability</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>0</u>	<u>21</u>	<u>NERC CIP Security - Confidentiality</u>	<u>CIP Security Classification for Confidentiality</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>						
<u>0</u>	<u>22</u>	<u>NERC CIP Security - Integrity</u>	<u>CIP Security Classification for Integrity</u>		<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>		<u>General Asset/Resource</u>							
<u>1</u>	<u>10</u>	<u>Service Location ID</u>	<u>Identifier assigned to the Service Location</u>		<u>M</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>11</u>	<u>Service Location Name</u>	<u>Name of the Service Location</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>12</u>	<u>Asset ID</u>	<u>The unique identifier of the asset</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>1</u>	<u>13</u>	<u>Asset Name</u>	<u>The name of the asset</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>						
<u>1</u>	<u>20</u>	<u>Resource ID</u>	<u>Identifier assigned to the Resource</u>		<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>21</u>	<u>Resource Name</u>	<u>Name of the Resource</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>30</u>	<u>Asset Group ID</u>	<u>The identifier of a group of assets</u>		-	-	<u>O</u>	-	<u>O</u>
<u>1</u>	<u>31</u>	<u>Asset Group Name</u>	<u>Name of the aggregated group of assets</u>		-	-	<u>O</u>	-	<u>O</u>
<u>1</u>	<u>40</u>	<u>GenEMSID</u>	<u>Alias or point Identifier assigned to the Resource</u>		<u>M</u>	<u>M</u>	<u>M</u>	-	-



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<u>Element</u>			<u>Short Description</u>	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
<u>From</u>			<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
<u>To</u>			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
<u>Interaction</u>			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>1</u>	<u>41</u>	<u>GenBillingID</u>	<u>Billing Identifier assigned to the Resource</u>	<u>M</u>	<u>M</u>	<u>M</u>		
<u>2</u>		<u>Location</u>						
<u>2</u>	<u>30</u>	<u>Zone ID</u>	<u>Identifier assigned to the Zone in which the Service Location is located</u>				<u>M</u>	<u>M</u>
<u>2</u>	<u>31</u>	<u>Zone</u>	<u>Name of the Zone in which the Service Location is located</u>				<u>O</u>	<u>O</u>
<u>2</u>	<u>32</u>	<u>Zone Type</u>	<u>Type of Zone</u>				<u>O</u>	<u>O</u>



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>	-	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>		-	-	-	-	
<u>2</u>	<u>40</u>	<u>Electrical Node ID</u>	<u>Identifier assigned to the Electrical Node at which the Service Location is connected</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>2</u>	<u>41</u>	<u>Electrical Node Name</u>	<u>Name of the Electrical Node at which the Service Location is connected</u>		<u>O</u>	<u>O</u>	<u>O</u>	-	-
<u>2</u>	<u>43</u>	<u>PNode</u>	<u>Name of the Price Node associated with the Service Location</u>		-	<u>O</u>	-	-	-
<u>2</u>	<u>44</u>	<u>PNode ID</u>	<u>Identifier assigned to the Price Node associated with the Service Location</u>		-	<u>M</u>	-	-	-



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>						
<u>2</u>	<u>71</u>	<u>Connection Type</u>	<u>Additional type of connection associated with the Service Location/Resource</u>		<u>O</u>	<u>O</u>		<u>O</u>	
<u>2</u>	<u>72</u>	<u>Connection Address</u>	<u>Address associated with the Connection Type</u>		<u>O</u>	<u>O</u>		<u>O</u>	
<u>5</u>		<u>Business Entity Relationships</u>							
<u>5</u>	<u>11</u>	<u>Service Provider ID</u>	<u>Identifier assigned to the Service Provider</u>					<u>M</u>	<u>M</u>
<u>5</u>	<u>12</u>	<u>Service Provider Name</u>	<u>Name of the Service Provider</u>					<u>O</u>	<u>O</u>



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Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
Interaction			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>5</u>	<u>20</u>	<u>Transmission/Distribution Service Provider ID</u>	Identifier assigned to the Transmission/Distribution Service Provider	<u>O</u>	<u>O</u>	<u>O</u>		
<u>5</u>	<u>21</u>	<u>Transmission/Distribution Service Provider Name</u>	Name of the Transmission/Distribution Service Provider	<u>O</u>	<u>O</u>	<u>O</u>		
<u>5</u>	<u>70</u>	<u>Scheduling Entity ID</u>	Identifier assigned to the Scheduling Entity	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>5</u>	<u>71</u>	<u>Scheduling Entity Name</u>	Name of the Scheduling Entity	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>						
<u>5</u>	<u>80</u>	<u>Designated Dispatch Entity ID</u>	<u>Identifier assigned to the Designated Dispatch Entity</u>		<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>5</u>	<u>81</u>	<u>Designated Dispatch Entity Name</u>	<u>Name of the Designated Dispatch Entity</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>6</u>		<u>Device and Qualification</u>							
<u>6</u>	<u>20</u>	<u>Meter ID</u>	<u>Identifier assigned to the Meter</u>		<u>O</u>	<u>O</u>	<u>O</u>		
<u>6</u>	<u>44</u>	<u>Normal Breaker Status</u>	<u>Status of the Breaker for the Service Location under Normal operating conditions</u>					<u>M</u>	



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Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			<u>SO</u>	-	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>6</u>	<u>45</u>	<u>Breaker Status During Event</u>	<u>Status of the Breaker for the Service Location during an Emergency Event</u>	-	-	<u>M</u>	<u>M</u>	<u>M</u>
<u>6</u>	<u>46</u>	<u>Wholesale Delivery Point Status</u>	<u>Flag set if the Service Location is metered at the Wholesale level</u>	-	-	<u>M</u>	<u>M</u>	<u>M</u>
<u>6</u>	<u>47</u>	<u>Private Use Network</u>	<u>Flag set if the Resource is an Electric Network connected to the transmission grid</u>	-	-	<u>M</u>	<u>M</u>	<u>M</u>
<u>6</u>	<u>51</u>	<u>UFR Settings</u>	<u>Setting of the Under-Frequency Relay</u>	-	-	<u>M</u>	<u>M</u>	<u>M</u>



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>						
<u>6</u>	<u>52</u>	<u>Load Resource Control Device</u>	<u>Type of Control Device at a Service Location or deployed by a Response Method</u>				<u>M</u>	<u>M</u>	<u>M</u>
<u>7</u>		<u>Market/Program Enrollment</u>							
<u>7</u>	<u>10</u>	<u>Program ID</u>	<u>Program Identifier</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>7</u>	<u>11</u>	<u>Program Name</u>	<u>Name of the Program</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>7</u>	<u>12</u>	<u>Market</u>	<u>Type of wholesale market</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>7</u>	<u>13</u>	<u>Market Product</u>	<u>Market Product</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>7</u>	<u>30</u>	<u>Lead Time</u>	<u>Time between the advanced notification and deployment</u>		<u>O</u>	<u>O</u>	<u>O</u>		



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			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>Element</u>			<u>Short Description</u>						
<u>7</u>	<u>31</u>	<u>Day Ahead Flag</u>	<u>Flag set if the Resource will be participating in the Day-Ahead market</u>		<u>0</u>	<u>0</u>	<u>0</u>		
<u>7</u>	<u>32</u>	<u>Real Time Flag</u>	<u>Flag set if the Resource will be participating in the Real-Time market</u>		<u>0</u>	<u>0</u>	<u>0</u>		
<u>7</u>	<u>33</u>	<u>Self-Schedule Flag</u>	<u>Flag set if the Resource is Self-Deploying</u>			<u>0</u>	<u>0</u>		
<u>8</u>		<u>Offer Parameters</u>							
<u>8</u>	<u>10</u>	<u>Offer Limit Value</u>	<u>Offer Limit Value</u>		<u>0</u>	<u>0</u>			



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				3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
Process				<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>
From				<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>
To				<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>
Interaction				<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>
Element				Short Description				
<u>8</u>	<u>11</u>	<u>Offer Limit Type</u>	<u>Type of Offer Limit</u>	<u>O</u>	<u>O</u>			
<u>8</u>	<u>12</u>	<u>Offer Limit Interval</u>	<u>Offer Limit Interval</u>	<u>O</u>	<u>O</u>			
<u>8</u>	<u>21</u>	<u>Min Gen MW</u>	<u>Minimum MW available for dispatch</u>	<u>O</u>	<u>O</u>			
<u>8</u>	<u>22</u>	<u>MinGenCost</u>	<u>The cost per hour for each Min Gen MW value.</u>	<u>O</u>	<u>O</u>			
<u>8</u>	<u>40</u>	<u>Market Clearing Day</u>	<u>Market Clearing Day of the Offer</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>8</u>	<u>41</u>	<u>Schedule Name</u>	<u>Name or tag of the Offer</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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			Process	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
			<u>From</u>	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>
			<u>To</u>	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>
			<u>Interaction</u>	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>
<u>Element</u>			<u>Short Description</u>					
<u>8</u>	<u>42</u>	<u>Schedule Description</u>	<u>Description of the Offer</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>8</u>	<u>43</u>	<u>Schedule Status</u>	<u>Status of the Offer</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>8</u>	<u>50</u>	<u>Portfolio Name</u>	<u>Name of an aggregation of Resources for market participation</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>9</u>		<u>Energy Market</u>						
<u>9</u>	<u>9</u>	<u>Instruction ID</u>		<u>0</u>	<u>0</u>			
<u>9</u>	<u>10</u>	<u>Energy Schedule - Start Time</u>	<u>Start Time of the Energy Schedule</u>	<u>0</u>	<u>0</u>			
<u>9</u>	<u>11</u>	<u>Energy Schedule - End Time</u>	<u>End Time of the Energy Schedule</u>	<u>0</u>	<u>0</u>			



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Process			3.0 Deployment & Real-Time Communications				
			3.1 Economic			3.2 Reliability	
From			<u>SO</u>	-	<u>DDE</u>	<u>SO</u>	<u>DDE</u>
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>
Element			Short Description				
<u>9</u>	<u>12</u>	<u>Energy Schedule - Interval Start Time</u>	<u>Start Time of the Energy Interval within the Energy Schedule</u>				
<u>9</u>	<u>13</u>	<u>Energy Schedule - Cleared MW Interval Value</u>	<u>The Energy Value of cleared MW for the Time Interval within the Energy Schedule</u>				
<u>9</u>	<u>14</u>	<u>Energy Schedule - Cleared Price</u>	<u>Awarded Price</u>				
<u>9</u>	<u>15</u>	<u>Schedule ID</u>	-				



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Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>9</u>	<u>20</u>	<u>Base Point</u>	<u>Per-interval dispatch instruction</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	
<u>9</u>	<u>21</u>	<u>Breaker Status</u>	<u>Status of the Breaker for the Resource</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>O</u>
<u>9</u>	<u>22</u>	<u>Output MW</u>	<u>Real Power Output of the Generation Device</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>
<u>9</u>	<u>23</u>	<u>Output MVAR</u>	<u>Reactive Power Output of the Generation Device</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>O</u>
<u>9</u>	<u>24</u>	<u>DR Bus Load MW</u>	<u>Instantaneous Bus Load of a Demand Resource providing Ancillary Services</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			<u>SO</u>	-	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>9</u>	<u>27</u>	<u>Set Point</u>	<u>Final dispatch target level</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	
<u>1</u>	<u>0</u>	<u>Ancillary Service Market</u>						
<u>1</u>	<u>0</u>	<u>Ancillary Service Instruction ID</u>		<u>O</u>	<u>O</u>			
<u>1</u>	<u>10</u>	<u>Ancillary Service Product Type</u>	<u>Type of Ancillary Service product(s) the Resource is enrolling to provide</u>	<u>M</u>	<u>M</u>	<u>O</u>		
<u>1</u>	<u>12</u>	<u>Ancillary Service Award - Start Time</u>	<u>Start Time of the ancillary service Award</u>		<u>M</u>			



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THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010**

Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			SO		DDE	SO	DDE	
To			DDE	DDE	SO	DDE	SO	
Interaction			3.1.1	3.1.2	3.1.3	3.2.1	3.2.2	
			Regulation Signal	Dispatch Instruction	Real-Time Response	Deployment Instructions	Event Response	
<u>10</u>	<u>13</u>	<u>Ancillary Service Award - End Time</u>	<u>End Time of the ancillary service Award</u>		M			
<u>10</u>	<u>14</u>	<u>Ancillary Service Award - Interval Start Time</u>	<u>Start Time of the ancillary service Interval within the ancillary service Award and the ancillary service Value of the Time Interval</u>		M			
<u>10</u>	<u>15</u>	<u>Ancillary Service Award - Interval Value</u>	<u>The awarded Value for the Time Interval within the ancillary service Award</u>		M			
<u>10</u>	<u>17</u>	<u>Ancillary Service Schedule ID</u>	-	O	O			



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Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>1</u> <u>0</u>	<u>31</u>	<u>Reserve Pickup Flag</u>	<u>Flag set if this is a Reserve Pickup schedule</u>	<u>O</u>	<u>O</u>	<u>O</u>		
<u>1</u> <u>0</u>	<u>32</u>	<u>Regulation Base Point</u>	<u>Per-interval Regulation dispatch instruction</u>	<u>M</u>	<u>M</u>	<u>O</u>		
<u>1</u> <u>0</u>	<u>33</u>	<u>Base Load MW</u>	<u>Level of Load at time of dispatch</u>	<u>O</u>	<u>O</u>	<u>O</u>		<u>M</u>
<u>1</u> <u>2</u>		<u>Event and Performance</u>						
<u>1</u> <u>2</u>	<u>10</u>	<u>Event ID</u>	<u>Identifier assigned to the Event</u>				<u>O</u>	<u>M</u>



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

			Process	3.0 Deployment & Real-Time Communications					
				3.1 Economic			3.2 Reliability		
			From	<u>SO</u>	-	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
			To	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
			Interaction	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
Element			Short Description						
<u>1/2</u>	<u>11</u>	<u>Deployment Type</u>	<u>Type of Deployment</u>		-	-	-	<u>M</u>	-
<u>1/2</u>	<u>12</u>	<u>Event Day</u>	<u>Operating Date of Start of Event</u>		-	-	-	<u>M</u>	<u>M</u>
<u>1/2</u>	<u>13</u>	<u>Event Description</u>	<u>Description of the Event</u>		-	-	-	<u>M</u>	<u>O</u>
<u>1/2</u>	<u>14</u>	<u>Event Start Time</u>	<u>Time of Start of deployment period for Event</u>		-	-	-	<u>M</u>	<u>M</u>
<u>1/2</u>	<u>15</u>	<u>Operator Comment</u>	<u>Additional Event information provided by the Operator</u>		-	-	-	<u>O</u>	<u>O</u>



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

Element			Short Description	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
From			<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>	
To			<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>	
Interaction			<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>	
			<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>	
<u>1</u> <u>2</u>	<u>16</u>	<u>Deployment MW</u>	Absolute or relative Deployment quantity	-	-	-	<u>M</u>	-
<u>1</u> <u>2</u>	<u>17</u>	<u>Event Status</u>	Status of the Event	-	-	-	<u>O</u>	<u>O</u>
<u>1</u> <u>2</u>	<u>18</u>	<u>Event End Time</u>	Time of End of deployment period	-	-	-	<u>M</u>	<u>M</u>
<u>1</u> <u>2</u>	<u>19</u>	<u>Event Modification Number</u>	A modification number for the event.	-	-	-	<u>O</u>	<u>O</u>
<u>1</u> <u>2</u>	<u>111</u>	<u>Notification Acknowledgement</u>	This is an acknowledgement of the receipt of a DR notification or dispatch. It should include any necessary provisions for non-repudiation.	-	-	-	<u>O</u>	<u>O</u>



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Process	3.0 Deployment & Real-Time Communications				
	3.1 Economic			3.2 Reliability	
From	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>
To	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>
Interaction	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>
	<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>

Element		Short Description								
<u>1</u> <u>2</u>	<u>112</u>	<u>Event Modification Reason Code</u>	<u>The reason the event is being cancelled or modified.</u>							
<u>1</u> <u>2</u>	<u>21</u>	<u>Baseline Dates</u>	<u>Dates of days used to calculate the Energy Baseline</u>							
<u>1</u> <u>2</u>	<u>22</u>	<u>Baseline Exclusion Dates</u>	<u>Dates of days Excluded from the calculation of the Energy Baseline</u>							
<u>1</u> <u>2</u>	<u>23</u>	<u>Energy Baseline Value</u>	<u>Calculated Energy Baseline</u>							
<u>1</u> <u>2</u>	<u>24</u>	<u>Energy Baseline Timestamp</u>	<u>Timestamp of Energy Baseline</u>							



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			Process	3.0 Deployment & Real-Time Communications				
				3.1 Economic			3.2 Reliability	
			From	<u>SO</u>		<u>DDE</u>	<u>SO</u>	<u>DDE</u>
			To	<u>DDE</u>	<u>DDE</u>	<u>SO</u>	<u>DDE</u>	<u>SO</u>
			Interaction	<u>3.1.1</u>	<u>3.1.2</u>	<u>3.1.3</u>	<u>3.2.1</u>	<u>3.2.2</u>
				<u>Regulation Signal</u>	<u>Dispatch Instruction</u>	<u>Real-Time Response</u>	<u>Deployment Instructions</u>	<u>Event Response</u>
Element			Short Description					
<u>1</u> <u>2</u>	<u>30</u>	<u>Reporting Interval</u>	<u>Interval size required for Reporting</u>					<u>O</u>
<u>1</u> <u>2</u>	<u>31</u>	<u>Measurement Value Timestamp</u>	<u>The time when the value was last updated</u>		<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>1</u> <u>2</u>	<u>32</u>	<u>Measurement Value</u>	<u>Value of the interval reading</u>		<u>O</u>	<u>O</u>	<u>M</u>	<u>M</u>
<u>1</u> <u>2</u>	<u>33</u>	<u>Response Value</u>	<u>Response</u>		<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>1</u> <u>2</u>	<u>991</u>	<u>Event & Performance comments</u>	<u>Comments associated with Event and Performance data</u>					<u>O</u> <u>O</u>



RECOMMENDATION TO NAESB EXECUTIVE COMMITTEES REVISED BY THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010

For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6~~(ca)~~(ii)
Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

018-1.4.6 Measurement and Performance – Baseline

Overview: The Measurement and Performance process documents the steps to collect demand resource meter data and prepare the determinants for settlement.

Use Cases: All use cases where Baseline applies (see [Figure 7](#)~~Figure 7~~[Figure 7](#)).

- The process begins when the SP requests event meter data from the MA.
- The MA sends the event meter data to the SP.
- If the SP is required to calculate the baseline, the SP uses the event meter data to calculate the baseline.
 - The SP uses the baseline and event meter data to calculate the event reduction amount or event performance ratio.
 - The SP sends the calculated event performance and meter data to the SO.
 - The SO evaluates the calculated event performance and meter data.
 - If the calculated event performance data are complete, the SO uses the settlement determinants in the Settlements process.
 - If the calculated event performance data are incomplete, the SO sends an event data rejection to the SP.
- If the SO calculates the baseline, the SP sends the event meter data to the SO.
 - If the event meter data are complete, the SO uses the event meter data to calculate the baseline.
 - The SO uses the baseline and event meter data to calculate the event reduction amount or event performance ratio.
 - The SO uses the settlement determinants in the Settlements process.
 - If the event meter data are incomplete, the SO sends an event data rejection to the SP.



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

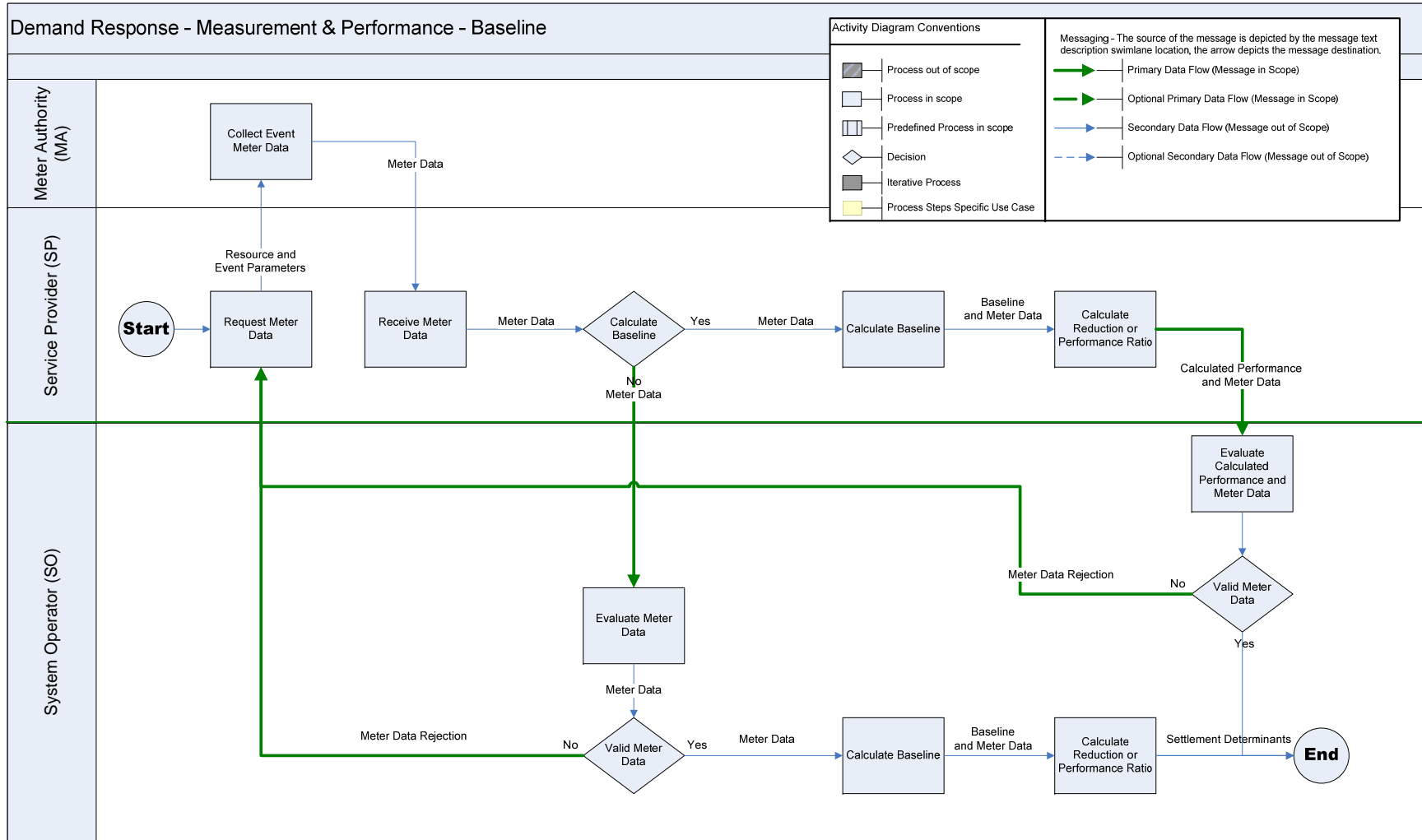
Activity Diagram and Data Flow:

Figure 7 - Measurement and Performance – Baseline



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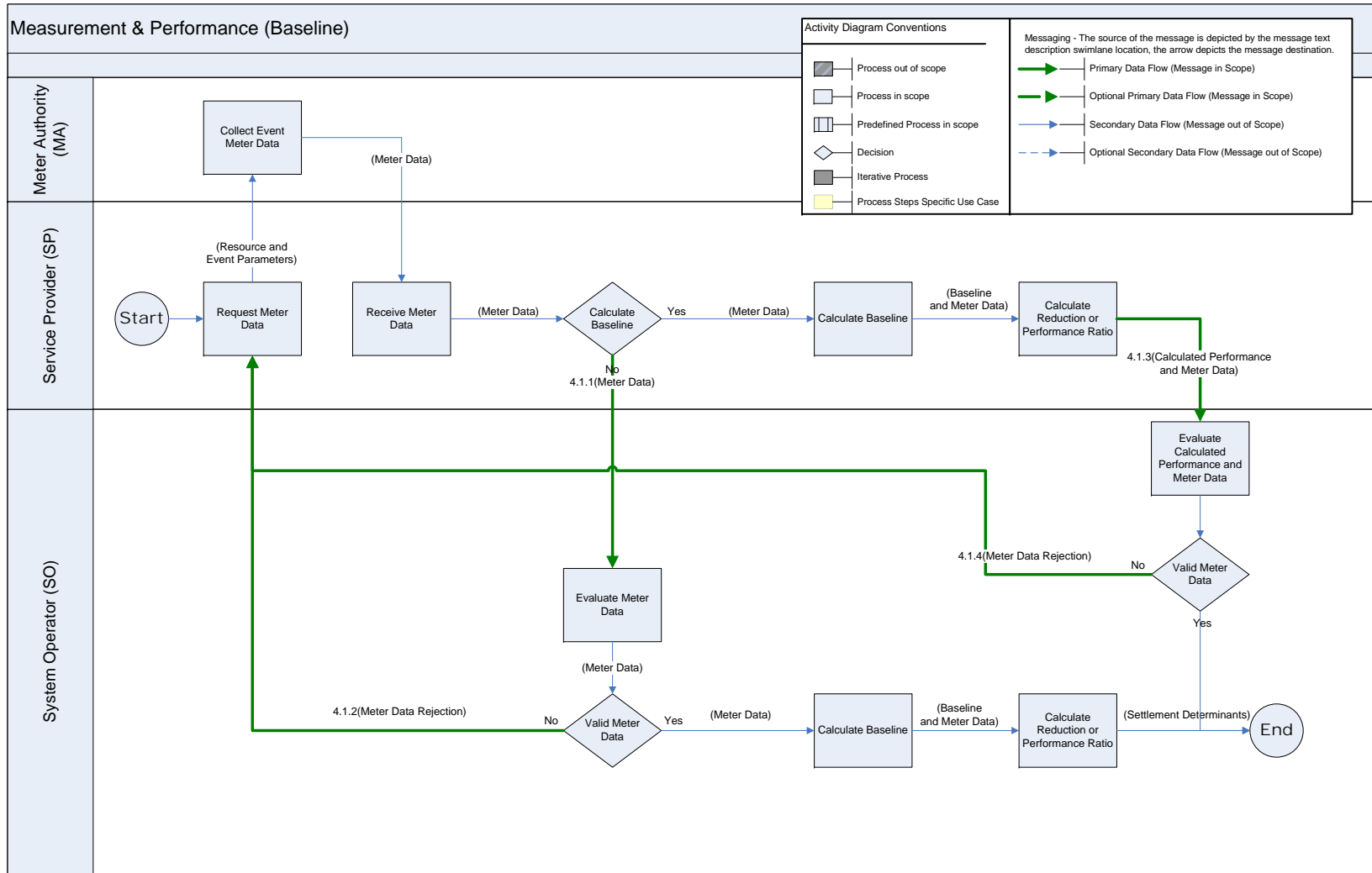
Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09





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Note: Data elements for Measurement and Performance-Baseline are listed with Measurement and Performance-All Others in Table 12.



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For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(~~ca~~)(ii)
Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

018-1.4.7 Measurement and Performance - All Others

Overview: The Measurement and Performance process documents the steps to collect demand resource meter data and prepare the determinants for settlement.

Use Cases: All use cases where Meter Before/Meter After, Maximum Base Load, or Meter Generator Output applies (see ~~Figure 8~~~~Figure 8~~~~Figure 8~~).

- The process begins when the SP collects event meter data from the MA for the specified performance evaluation method.
 - If the performance evaluation method is Meter Before/Meter After or Maximum Base Load, the MA sends the event meter data to the SP.
 - If the performance evaluation method is Meter Generator Output, the SP uses the data from the meter on the generator.
- If the SP is required to calculate performance, the SP uses the event meter data to calculate performance.
 - The SP uses the meter data to calculate the event reduction amount or event performance ratio.
 - The SP sends the calculated event performance and meter data to the SO.
 - The SO evaluates the calculated event performance and meter data.
 - If the calculated event performance data are complete, the SO uses the settlement determinants in the Settlements process.
 - If the calculated event performance data are incomplete, the SO sends an event data rejection to the SP.
- If the SO calculates performance, the SP sends the meter data to the SO.
 - If the event meter data are complete, the SO uses the event meter data to calculate performance.
 - The SO uses the event meter data to calculate the event reduction amount or event performance ratio.
 - The SO uses the settlement determinants in the Settlements process.
 - If the event meter data are incomplete, the SO sends an event data rejection to the SP.



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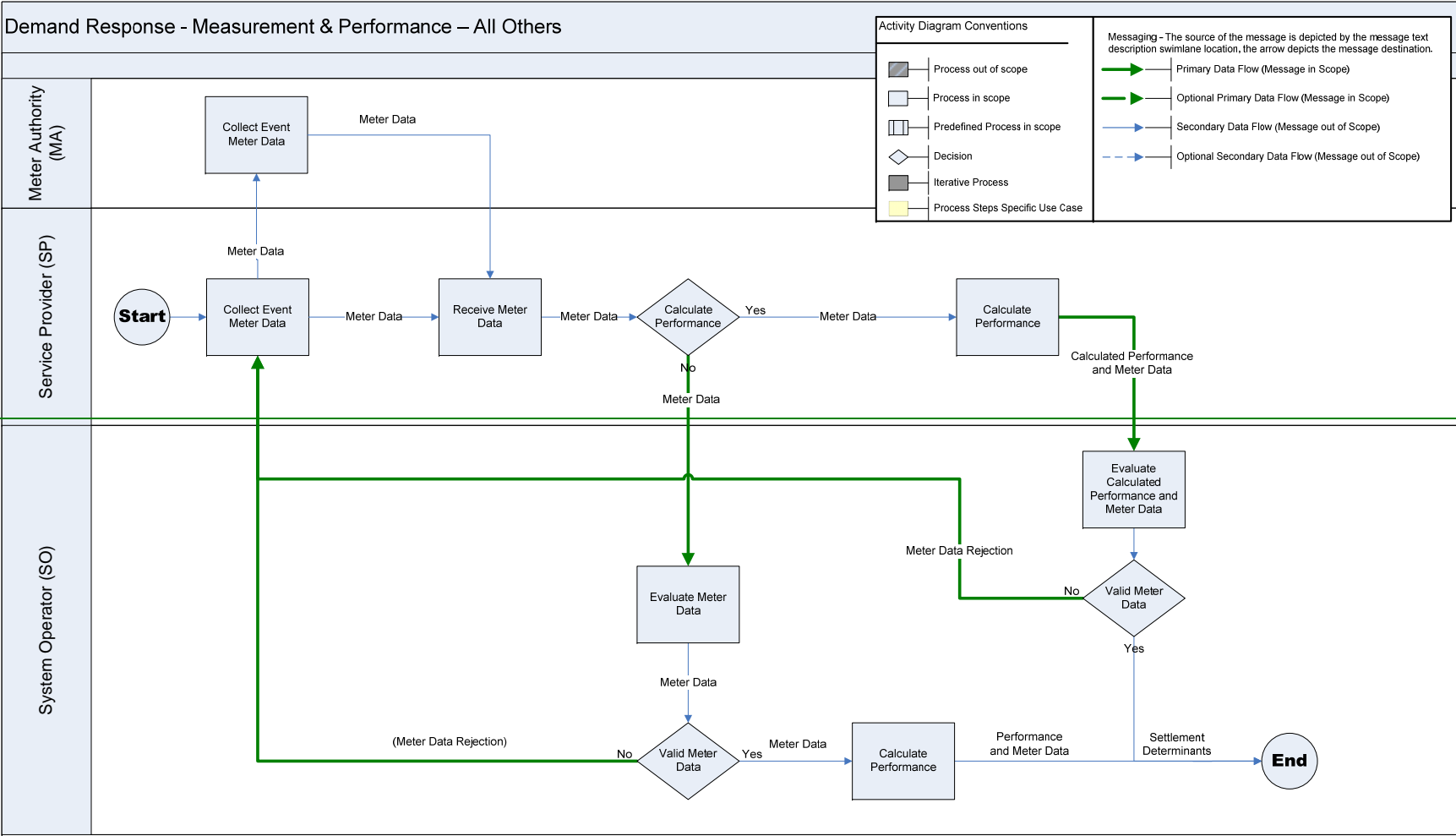
Activity Diagram and Data Flow:

Figure 8 - Measurement and Performance – All Others



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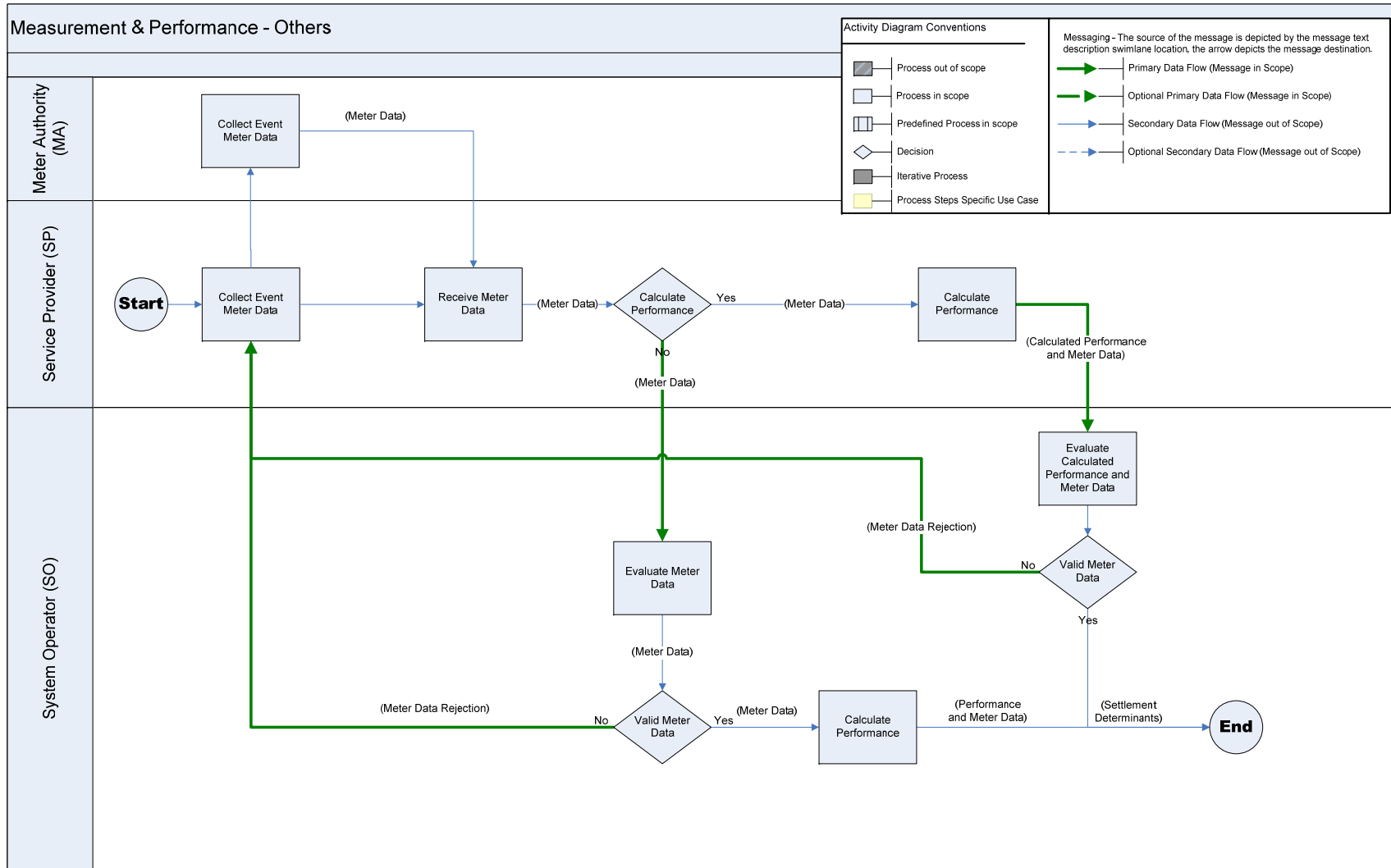
Request Title: **Phase Two** Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09





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Table 12. Data Requirements by Interaction Number: Measurement and Performance

				4.0 Measurement & Performance							
Process				4.1 Baseline				4.2 Other			
				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
From				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
Element		Short Description									
Common											
<u>0</u>	<u>10</u>	<u>Submittal Date</u>	<u>Timestamp for the sender's use</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>0</u>	<u>11</u>	<u>Submitted By</u>	<u>User ID of submitter</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	



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				4.0 Measurement & Performance								
				4.1 Baseline				4.2 Other				
Process				-	-	-	-	-	-	-	-	-
From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>	
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	
Element				Short Description								
<u>0</u>	<u>12</u>	<u>Submitted Error</u>	<u>ID of submission error detected</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>0</u>	<u>13</u>	<u>Rejection Code Type</u>	<u>Type of rejection message</u>	-	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>M</u>	<u>0</u>	<u>M</u>	
<u>0</u>	<u>14</u>	<u>Rejection Code Value</u>	<u>Code referring to the reason for a rejection message</u>	-	<u>M</u>	<u>0</u>	<u>M</u>	-	<u>M</u>	<u>0</u>	<u>M</u>	



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				4.0 Measurement & Performance							
Process				4.1 Baseline				4.2 Other			
				SP	SO	SP	SO	SP	SO	SP	SO
<u>From</u>				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
<u>To</u>				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>Element</u>				<u>Short Description</u>							
<u>0</u>	<u>20</u>	<u>NERC CIP Security - Availability</u>	<u>CIP Security Classification for Availability</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>0</u>	<u>21</u>	<u>NERC CIP Security - Confidentiality</u>	<u>CIP Security Classification for Confidentiality</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>0</u>	<u>22</u>	<u>NERC CIP Security - Integrity</u>	<u>CIP Security Classification for Integrity</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>		<u>General Asset/Resource</u>									



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Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

				4.0 Measurement & Performance									
				4.1 Baseline				4.2 Other					
Process				-	-	-	-	-	-	-	-	-	-
From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>		
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>		
Element				Short Description									
<u>1</u>	<u>10</u>	<u>Service Location ID</u>	<u>Identifier assigned to the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>11</u>	<u>Service Location Name</u>	<u>Name of the Service Location</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>12</u>	<u>Asset ID</u>	<u>The unique identifier of the asset</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010**

Request Title: Phase Two Requirements Specifications for Wholesale Standard DR Signals - for NIST PAP09

			Process	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
			From	SP	SO	SP	SO	SP	SO	SP	SO
			To	SO	SP	SO	SP	SO	SP	SO	SP
			Interaction	4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
				Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
Element			Short Description								
<u>1</u>	<u>13</u>	<u>Asset Name</u>	The name of the asset	O	O	O	O	O	O	O	O
<u>1</u>	<u>20</u>	<u>Resource ID</u>	Identifier assigned to the Resource	M	M	M	M	M	M	M	M
<u>1</u>	<u>21</u>	<u>Resource Name</u>	Name of the Resource	M	O	O	O	O	O	O	O



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			Process	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
			<u>From</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
			<u>To</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
			<u>Interaction</u>	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>Element</u>			<u>Short Description</u>								
<u>1</u>	<u>30</u>	<u>Asset Group ID</u>	The identifier of a group of assets	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>1</u>	<u>31</u>	<u>Asset Group Name</u>	Name of the aggregated group of assets	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>2</u>		<u>Location</u>									



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			Process	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
			From	SP	SO	SP	SO	SP	SO	SP	SO
			To	SO	SP	SO	SP	SO	SP	SO	SP
			Interaction	4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
				Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
Element			Short Description								
<u>2</u>	<u>30</u>	<u>Zone ID</u>	Identifier assigned to the Zone in which the Service Location is located	M	M	M	M	M	M	M	M
<u>2</u>	<u>31</u>	<u>Zone</u>	Name of the Zone in which the Service Location is located	O	O	O	O	O	O	O	O
<u>2</u>	<u>32</u>	<u>Zone Type</u>	Type of Zone	O	O	O	O	O	O	O	O



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Process	4.0 Measurement & Performance							
	4.1 Baseline				4.2 Other			
	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>

Element			Short Description								
<u>2</u>	<u>40</u>	<u>Electrical Node ID</u>	<u>Identifier assigned to the Electrical Node at which the Service Location is connected</u>	<u>O</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>M</u>	<u>M</u>
<u>2</u>	<u>41</u>	<u>Electrical Node Name</u>	<u>Name of the Electrical Node at which the Service Location is connected</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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Element				Short Description				4.0 Measurement & Performance							
				Process				4.1 Baseline				4.2 Other			
								<u>From</u>		<u>To</u>		<u>4.1.1</u>		<u>4.1.2</u>	
								<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
								<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
				Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
								<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>2</u>	<u>42</u>	<u>Electrical Node Type</u>	<u>Type of Electrical Node at which the Service Location is attached</u>	<u>0</u>				<u>0</u>			<u>0</u>				
<u>2</u>	<u>43</u>	<u>PNode</u>	<u>Name of the Price Node associated with the Service Location</u>	<u>0</u>				<u>0</u>			<u>0</u>				



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Element			Short Description	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
From				SP	SO	SP	SO	SP	SO	SP	SO
To				SO	SP	SO	SP	SO	SP	SO	SP
Interaction				4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
				Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
<u>2</u>	<u>44</u>	<u>PNode ID</u>	<u>Identifier assigned to the Price Node associated with the Service Location</u>	O				O			
<u>4</u>		<u>Grid Connection</u>									
<u>4</u>	<u>10</u>	<u>Loss Factor Type</u>	<u>Type of Loss Factor</u>			M				M	
<u>4</u>	<u>11</u>	<u>Loss Factor Value</u>	<u>Loss Factor</u>			M				M	



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		Process	4.0 Measurement & Performance							
			4.1 Baseline				4.2 Other			
		<u>From</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
		<u>To</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
		<u>Interaction</u>	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
			<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>Element</u>		<u>Short Description</u>								
<u>5</u>		<u>Business Entity Relationships</u>								
<u>5</u>	<u>11</u>	<u>Service Provider ID</u>	<u>Identifier assigned to the Service Provider</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>5</u>	<u>12</u>	<u>Service Provider Name</u>	<u>Name of the Service Provider</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>



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		Process	4.0 Measurement & Performance							
			4.1 Baseline				4.2 Other			
		<u>From</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
		<u>To</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
		Interaction	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
			<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>Element</u>		<u>Short Description</u>								
<u>5</u>	<u>20</u>	<u>Transmission/Distribution Service Provider ID</u>	<u>Identifier assigned to the Transmission/Distribution Service Provider</u>	<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
<u>5</u>	<u>21</u>	<u>Transmission/Distribution Service Provider Name</u>	<u>Name of the Transmission/Distribution Service Provider</u>	<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	



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			4.0 Measurement & Performance							
			4.1 Baseline				4.2 Other			
Process			SP	SO	SP	SO	SP	SO	SP	SO
			SO	SP	SO	SP	SO	SP	SO	SP
Interaction			4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
			Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
<u>Element</u>			<u>Short Description</u>							
<u>5</u>	<u>22</u>	<u>Transmission/Distribution Service Provider Account Number</u>	0	0	-	-	0	0	-	-
<u>5</u>	<u>44</u>	<u>Retail Rate</u>	-	-	0	-	-	-	0	-
<u>5</u>	<u>60</u>	<u>Meter Authority ID</u>	0	0	0	0	0	0	0	0



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Process	4.0 Measurement & Performance							
	4.1 Baseline				4.2 Other			
	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>

Element			Short Description	-	-	-	-	-	-	-
<u>5</u>	<u>61</u>	<u>Meter Authority Name</u>	<u>Name of the Metering Authority</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>5</u>	<u>70</u>	<u>Scheduling Entity ID</u>	<u>Identifier assigned to the Scheduling Entity</u>	<u>M</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>5</u>	<u>71</u>	<u>Scheduling Entity Name</u>	<u>Name of the Scheduling Entity</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>



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			4.0 Measurement & Performance								
			4.1 Baseline				4.2 Other				
Process			-	-	-	-	-	-	-	-	
From			<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	
To			<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	
Interaction			<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>	
			<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	
Element			Short Description								
<u>5</u>	<u>80</u>	<u>Designated Dispatch Entity ID</u>	Identifier assigned to the Designated Dispatch Entity	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>5</u>	<u>81</u>	<u>Designated Dispatch Entity Name</u>	Name of the Designated Dispatch Entity	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
<u>6</u>		<u>Device and Qualification</u>									
<u>6</u>	<u>20</u>	<u>Meter ID</u>	Identifier assigned to the Meter	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>



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Element			Short Description	4.0 Measurement & Performance							
Process			From	4.1 Baseline	4.2 Other						
Interaction			To	4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
Interaction			To	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>6</u>	<u>229</u> <u>3</u>	<u>Measurement Interval</u>	<u>Interval of time between Measurement readings</u>	0	-	-	-	0	-	-	-
<u>6</u>	<u>45</u>	<u>Breaker Status During Event</u>	<u>Status of the Breaker for the Service Location during an Emergency Event</u>	0	0	0	0	0	0	0	0



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Element			Short Description	4.0 Measurement & Performance							
Process			From	4.1 Baseline				4.2 Other			
				From				To			
				From				To			
				From				To			
Interaction			Short Description	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
Interaction			Short Description	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
6	46	<u>Wholesale Delivery Point Status</u>	<u>Flag set if the Service Location is metered at the Wholesale level</u>	0	0	0	0	0	0	0	0
6	47	<u>Private Use Network</u>	<u>Flag set if the Resource is an Electric Network connected to the transmission grid</u>	0	0	0	0	0	0	0	0



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				4.0 Measurement & Performance							
Process				4.1 Baseline				4.2 Other			
				SP	SO	SP	SO	SP	SO	SP	SO
From				SP	SO	SP	SO	SP	SO	SP	SO
To				SO	SP	SO	SP	SO	SP	SO	SP
Interaction				4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
				Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
Element				Short Description							
6	51	<u>UFR Settings</u>	<u>Setting of the Under-Frequency Relay</u>	0	0	0	0	0	0	0	0
6	52	<u>Load Resource Control Device</u>	<u>Type of Control Device at a Service Location or deployed by a Response Method</u>	0	0	0	0	0	0	0	0
7		<u>Market/Program Enrollment</u>		-	-	-	-	-	-	-	-
7	10	<u>Program ID</u>	<u>Program Identifier</u>	0	0	0	0	0	0	0	0



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THE NAESB WEQ EXECUTIVE COMMITTEE on July 7, 2010**

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Process	4.0 Measurement & Performance							
	4.1 Baseline				4.2 Other			
From	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
To	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>

Element			Short Description	-	-	-	-	-	-	-
7	11	<u>Program Name</u>	<u>Name of the Program</u>	0	0	0	0	0	0	0
7	12	<u>Market</u>	<u>Type of wholesale market</u>	0	0	0	0	0	0	0
7	13	<u>Market Product</u>	<u>Market Product</u>	0	0	0	0	0	0	0
7	40	<u>Response Method Type</u>	<u>Type of Response Method</u>	-	-	0	-	-	0	-



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			4.0 Measurement & Performance								
			4.1 Baseline				4.2 Other				
Process			-	-	-	-	-	-	-	-	-
<u>From</u>			<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	
<u>To</u>			<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	
Interaction			<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>	
			<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	
<u>Element</u>			<u>Short Description</u>								
<u>7</u>	<u>41</u>	<u>Response Method ID</u>	<u>Identifier assigned to the Response Method</u>								
<u>7</u>	<u>42</u>	<u>Response Method Name</u>	<u>Name of the Response Method</u>								
<u>7</u>	<u>51</u>	<u>Performance Evaluation Method</u>	<u>Method used to Evaluate the Performance of a Resource</u>								



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Element			Short Description	4.0 Measurement & Performance							
			Process	4.1 Baseline				4.2 Other			
				-	-	-	-	-	-	-	-
<u>From</u>				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
<u>To</u>				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
7	991	<u>Market Enrollment Comments</u>	<u>Comments associated with the Enrollment</u>	-	O	-	O	-	O	-	O
<u>11</u> Capacity Market				-	-	-	-	-	-	-	-
11	30	<u>Capacity Obligation Period Type</u>	<u>Type of Capacity Obligation Time Period within which the Resource is obligated</u>	O	O	O	O	O	O	O	O



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Element			Short Description	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
Interaction				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>11</u>	<u>31</u>	<u>Capacity Obligation Period</u>	<u>Period of time for which the Capacity Resource is obligated</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>11</u>	<u>40</u>	<u>Minimum Payment Nomination</u>	<u>Strike price for the economic dispatch of the energy component of the capacity program</u>	-	-	<u>0</u>	-	-	-	<u>0</u>	-



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			Process	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
			From	SP	SO	SP	SO	SP	SO	SP	SO
			To	SO	SP	SO	SP	SO	SP	SO	SP
			Interaction	4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
				Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
Element			Short Description								
<u>11</u>	<u>41</u>	<u>Capacity Supply Obligation</u>	<u>Capacity Obligation</u>	-	-	0	-	-	-	0	-
<u>11</u>	<u>50</u>	<u>Capacity Reference ID</u>	<u>Identifier assigned to the External System award</u>	-	-	0	-	-	-	0	-
<u>11</u>	<u>991</u>	<u>Capacity Comments</u>	<u>Comments associated with the Capacity market</u>	-	-	0	-	-	-	0	-
<u>12</u>		<u>Event and Performance</u>		-	-	-	-	-	-	-	-



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				4.0 Measurement & Performance											
				Process											
								4.1 Baseline				4.2 Other			
				From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
				To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>				
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>				
Element				Short Description											
<u>12</u>	<u>10</u>	<u>Event ID</u>	<u>Identifier assigned to the Event</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>				
<u>12</u>	<u>11</u>	<u>Deployment Type</u>	<u>Type of Deployment</u>	<u>-</u>	<u>-</u>	<u>O</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>O</u>	<u>-</u>				
<u>12</u>	<u>12</u>	<u>Event Day</u>	<u>Operating Date of Start of Event</u>	<u>-</u>	<u>-</u>	<u>M</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>M</u>	<u>-</u>				
<u>12</u>	<u>14</u>	<u>Event Start Time</u>	<u>Time of Start of deployment period for Event</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>				



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Element			Short Description	4.0 Measurement & Performance									
				Process									
				4.1 Baseline				4.2 Other					
From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>		
Interaction				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>		
<u>12</u>	<u>16</u>	<u>Deployment MW</u>	<u>Absolute or relative Deployment quantity</u>			<u>O</u>					<u>O</u>		
<u>12</u>	<u>17</u>	<u>Event Status</u>	<u>Status of the Event</u>			<u>O</u>					<u>O</u>		
<u>12</u>	<u>18</u>	<u>Event End Time</u>	<u>Time of End of deployment period</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>O</u>



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Element			Short Description	4.0 Measurement & Performance							
			Process								
From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
			Interaction	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>12</u>	<u>21</u>	<u>Baseline Dates</u>	<u>Dates of days used to calculate the Energy Baseline</u>	0	0	0	0	0	0	0	0
<u>12</u>	<u>22</u>	<u>Baseline Exclusion Dates</u>	<u>Dates of days Excluded from the calculation of the Energy Baseline</u>	0	0	0	0	0	0	0	0



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			Process	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
			From	SP	SO	SP	SO	SP	SO	SP	SO
			To	SO	SP	SO	SP	SO	SP	SO	SP
			Interaction	4.1.1	4.1.2	4.1.3	4.1.4	4.2.1	4.2.2	4.2.3	4.2.4
				Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection	Meter Data	Meter Data Rejection	Calc. Perf. and Meter Data	Meter Data Rejection
Element			Short Description								
<u>12</u>	<u>23</u>	<u>Energy Baseline Value</u>	<u>Calculated Energy Baseline</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>12</u>	<u>24</u>	<u>Energy Baseline Timestamp</u>	<u>Timestamp of Energy Baseline</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>12</u>	<u>30</u>	<u>Reporting Interval</u>	<u>Interval size required for Reporting</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>



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			Process	4.1 Baseline				4.2 Other			
				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
			From	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
			To	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
			Interaction	<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>12</u>	<u>31</u>	<u>Measurement Value Timestamp</u>	<u>The time when the value was last updated</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>O</u>
<u>12</u>	<u>32</u>	<u>Measurement Value</u>	<u>Value of the interval reading</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>O</u>	<u>M</u>	<u>O</u>
<u>12</u>	<u>33</u>	<u>Response Value</u>	<u>Response</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>



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Element			Short Description	4.0 Measurement & Performance							
				4.1 Baseline				4.2 Other			
From				<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>
To				<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>	<u>SO</u>	<u>SP</u>
Interaction				<u>4.1.1</u>	<u>4.1.2</u>	<u>4.1.3</u>	<u>4.1.4</u>	<u>4.2.1</u>	<u>4.2.2</u>	<u>4.2.3</u>	<u>4.2.4</u>
				<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>	<u>Meter Data</u>	<u>Meter Data Rejection</u>	<u>Calc. Perf. and Meter Data</u>	<u>Meter Data Rejection</u>
<u>12</u>	<u>991</u>	<u>Event & Performance comments</u>	<u>Comments associated with Event and Performance data</u>	-	0	0	0	-	0	0	0



**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE AS REVISED BY
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For Quadrant: Wholesale Electric Quadrant (WEQ)
Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(ca)(ii)
Request Title: Phase Two Requirements Specifications for
Wholesale Standard DR Signals - for NIST
PAP09

018-A Appendix A – Entity-Relationship Model

The following terms and definitions correspond to a set of actor and objects within the overall information model for demand response. Figure 1A contains a data model used to illustrate the entity-relationships within the model. Abbreviations/Acronyms correspond to the IDs shown in the figure.

Proper (and Improper) Usage of the Entity-Relationship Model. The entity-relationship model is used to show cardinality among objects in the model, for example every Resource belongs to one and only one Service Provider and a Premise-Service Location contains one or more End-DevicesService Delivery Points. The entity-relationship model does not provide use case information; actors are objects in the model and do not “act” in the model. The entity-relationship model does not imply process. For example, a Service Provider is associated with many Resources; however the enrollment of those Resources may be managed by a System Operators or a Utility Distribution Operator. Both use cases and process maps are separate components of the Business Practice Standards.

Reading Crow’s Foot Notation. Objects in the model which share a relationship are connected with a cardinality line. Each end of the cardinality line contains a Crow’s Foot notation, as documented in the legend of the figure. The four notations utilized are “exactly-one”, “one-or-more”, “zero-or-one”, and “zero-or-more”. The cardinality line is bi-directional; meaning it can be read in two directions. For example: a Premise-Service Location is related to one-or-more End-DevicesService Delivery Points (reading top to bottom) and every End-DeviceService Delivery Point is related to exactly-one Premise-Service Location (reading bottom to top).

Optional Objects. The entity-relationship model is designed to support multiple business models and not every business model will require all objects to function. Therefore, all objects in the model are considered optional. For example, a Utility Distribution Operator may design a Demand Response program which requires the definition of Resources and PremisesService Locations, but does not require Response-Method-AggregationsAsset Groups and Response-MethodsAssets. ~~In this example, the relationship between Resource and Premise is transitive: a Resource is comprised of one-or-more Premises and each Premise is associated with zero-or-more Resources.~~

Applicability to Retail and Wholesale. The entity-relationship model is applicable to both wholesale and retail. When using the model for wholesale, the applicable business entities are 2.1 (System Operator) and 2.3 (Market Participant), while in



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Requesters: NAESB Smart Grid Task Force (SGTF)
Request No.: 2010 WEQ Annual Plan Item 6(ca)(ii)
Request Title: Phase Two Requirements Specifications for
Wholesale Standard DR Signals - for NIST
PAP09

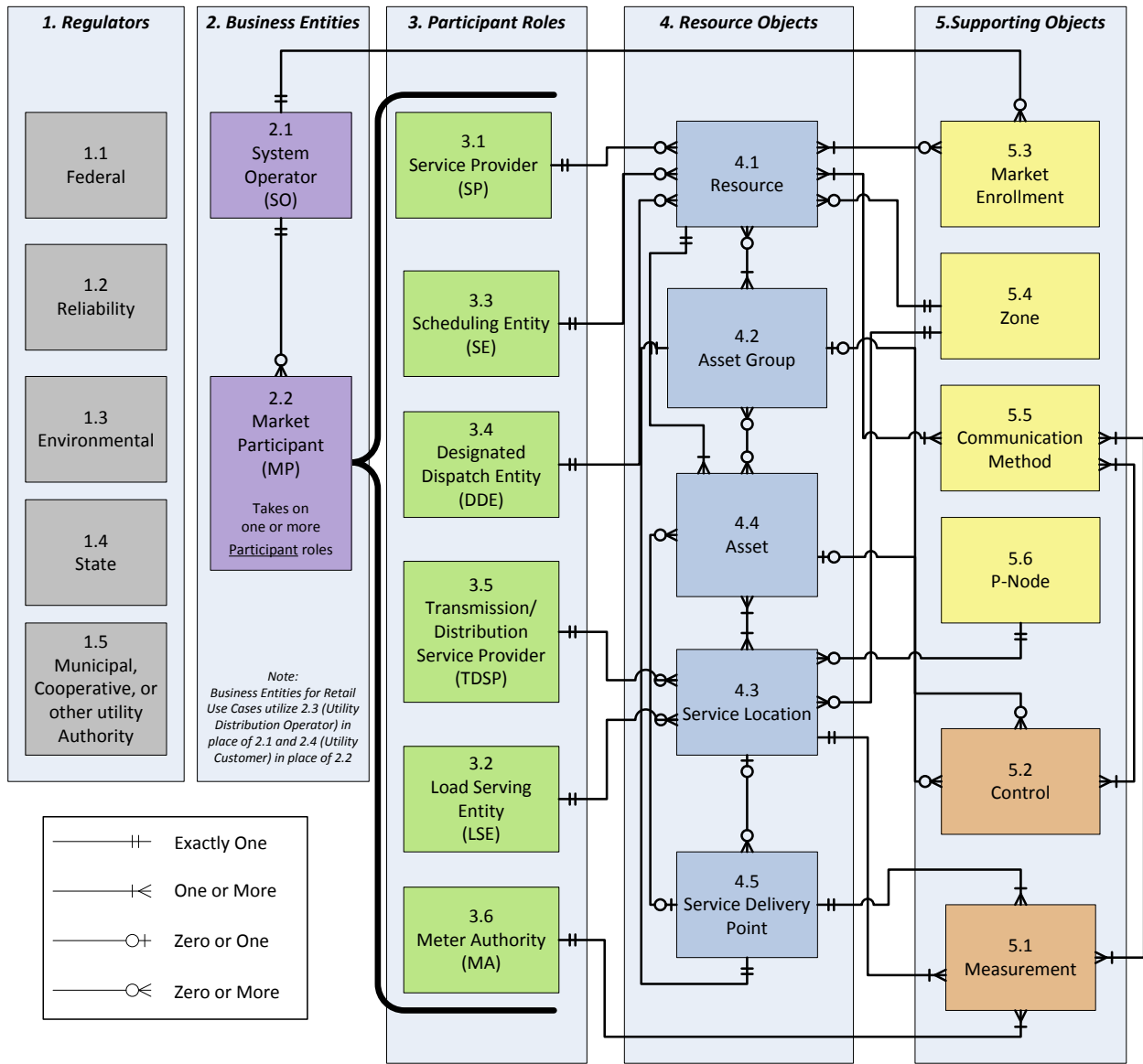
retail markets, the parallel business entities are 2.3 (Utility Distribution Operator) and 2.4 (Utility Customers). Other than the swapping of the two pairs of terms, the models are identical, including the names of and relationships among objects.



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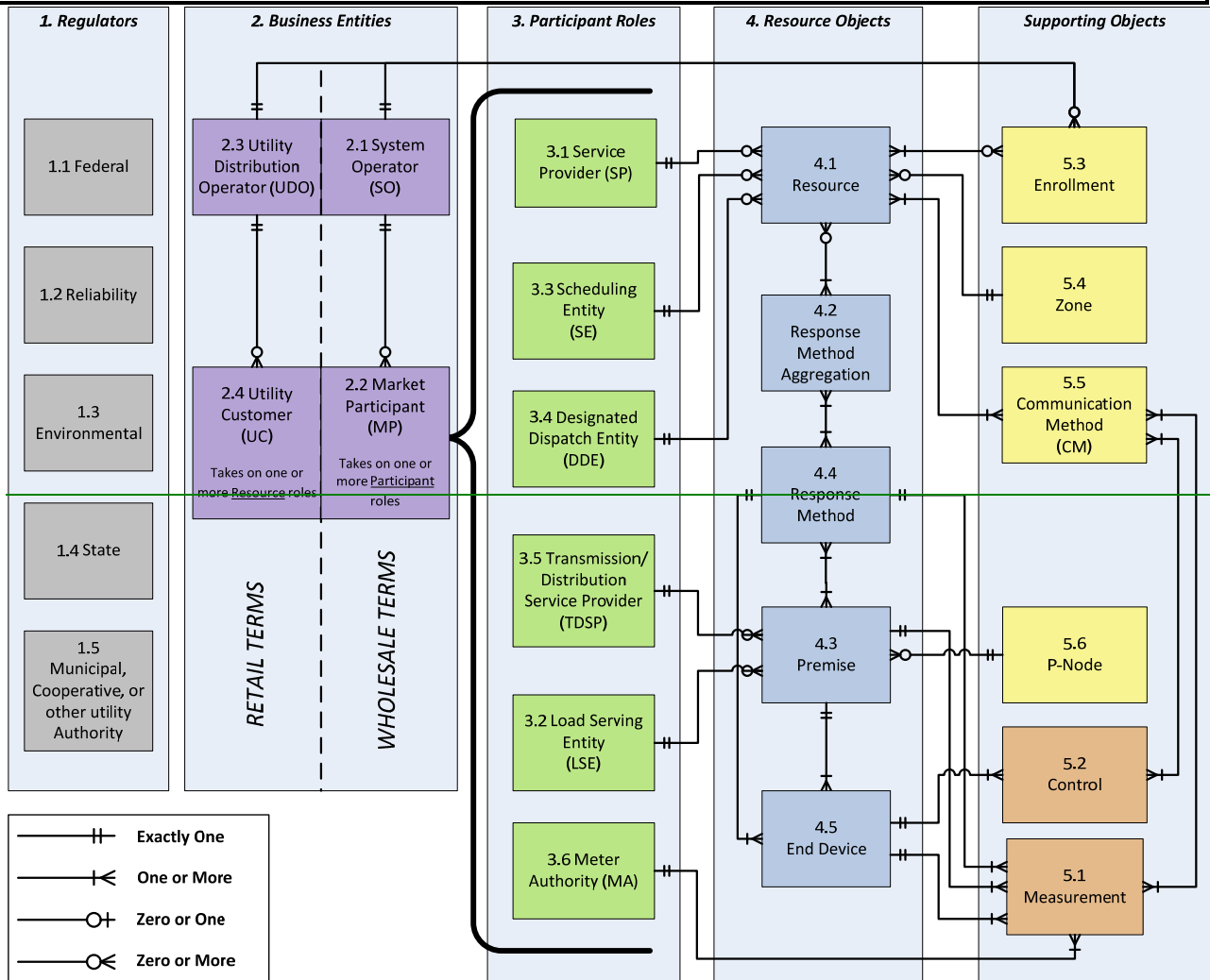
Figure 1A. Entity-Relationship Model for Smart Grid Use Cases





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018-B Appendix B – Use Case Combinations

The following table is a complete list of use case combinations included in these Business Practice Standards.

Use Case	Product	Deployment	Performance Evaluation
E-B-1	Energy (Economic)	Bulk	Baseline
E-B-2	Energy (Economic)	Bulk	MB/MA
E-B-3	Energy (Economic)	Bulk	MBL
E-B-4	Energy (Economic)	Bulk	MGO
E-R-1	Energy (Economic)	Resource	Baseline
E-R-2	Energy (Economic)	Resource	MB/MA
E-R-3	Energy (Economic)	Resource	MBL
E-R-4	Energy (Economic)	Resource	MGO
E-S-1	Energy (Economic)	Self	Baseline
E-S-2	Energy (Economic)	Self	MB/MA
E-S-3	Energy (Economic)	Self	MBL
E-S-4	Energy (Economic)	Self	MGO
R-B-1	Energy (Reliability)	Bulk	Baseline
R-B-2	Energy (Reliability)	Bulk	MB/MA
R-B-3	Energy (Reliability)	Bulk	MBL
R-B-4	Energy (Reliability)	Bulk	MGO
R-R-1	Energy (Reliability)	Resource	Baseline
R-R-2	Energy (Reliability)	Resource	MB/MA
R-R-3	Energy (Reliability)	Resource	MBL
R-R-4	Energy (Reliability)	Resource	MGO
R-S-1	Energy (Reliability)	Self	Baseline
R-S-2	Energy (Reliability)	Self	MB/MA
R-S-3	Energy (Reliability)	Self	MBL
R-S-4	Energy (Reliability)	Self	MGO



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Use Case	Product	Deployment	Performance Evaluation
C-B-1	Capacity	Bulk	Baseline
C-B-2	Capacity	Bulk	MB/MA
C-B-3	Capacity	Bulk	MBL
C-B-4	Capacity	Bulk	MGO
C-R-1	Capacity	Resource	Baseline
C-R-2	Capacity	Resource	MB/MA
C-R-3	Capacity	Resource	MBL
C-R-4	Capacity	Resource	MGO
C-S-1	Capacity	Self	Baseline
C-S-2	Capacity	Self	MB/MA
C-S-3	Capacity	Self	MBL
C-S-4	Capacity	Self	MGO
G-B-1	Regulation	Bulk	Baseline
G-B-2	Regulation	Bulk	MB/MA
G-B-3	Regulation	Bulk	MBL
G-B-4	Regulation	Bulk	MGO
G-R-1	Regulation	Resource	Baseline
G-R-2	Regulation	Resource	MB/MA
G-R-3	Regulation	Resource	MBL
G-R-4	Regulation	Resource	MGO
G-S-1	Regulation	Self	Baseline
G-S-2	Regulation	Self	MB/MA
G-S-3	Regulation	Self	MBL
G-S-4	Regulation	Self	MGO
V-B-1	Reserve	Bulk	Baseline
V-B-2	Reserve	Bulk	MB/MA
V-B-3	Reserve	Bulk	MBL
V-B-4	Reserve	Bulk	MGO
V-R-1	Reserve	Resource	Baseline
V-R-2	Reserve	Resource	MB/MA
V-R-3	Reserve	Resource	MBL
V-R-4	Reserve	Resource	MGO
V-S-1	Reserve	Self	Baseline
V-S-2	Reserve	Self	MB/MA
V-S-3	Reserve	Self	MBL
V-S-4	Reserve	Self	MGO



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4. Supporting Documentation

a. Description of Request:

WEQ Annual Plan Item 6(c) (ii) – “Develop Requirements and Use Cases for PAP 09 – Demand Response/Distributed Energy Resources” – Phase Two.

b. Description of Recommendation:

This recommendation provides associates the data requirements elements related to the use cases developed as part of the during the phase Phase one One effort.

c. Business Purpose:

This recommendation has been developed in response to a request from NIST to provide to include a Phase two effort for PAP-09 to associate data elements with the use cases and requirements germane to the development of developed in Phase 1 for standard DR and DER signals. Additionally, the recommendation addresses the directive from the WEQ Executive Committee for “the Smart Grid Standards Subcommittee to review the Executive Summary and Introduction to reconsider language that may not be appropriate for business practices long-term in their Phase 2 work.”

d. Commentary/Rationale of Subcommittee(s)/Task Force(s):

NAESB Smart Grid Standards Subcommittee Meeting Notes/Documents:

- ~~March 11, 2010 Meeting Notes – To be posted~~
- ~~March 18, 2010 Meeting Notes – To be posted~~
- ~~March 25, 2010 Meeting Notes – To be posted~~
- ~~April 1, 2010 Meeting Notes – To be posted~~
- ~~April 8, 2010 Meeting Notes – To be posted~~
- ~~April 29, 2010 Meeting Notes – To be posted~~
- ~~May 13, 2010 Meeting Notes – To be posted~~
- ~~May 20, 2010 Meeting Notes – To be posted~~
- June 10, 2010 Meeting Notes – To be posted
- June 17, 2010 Meeting Notes – http://www.naesb.org/pdf4/smart_grid_ssd061710notes.doc
- July 1, 2010 Meeting Notes – To be posted
- July 13-14, 2010 Meeting Notes – To be posted



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- July 22, 2010 Meeting Notes – To be posted
- August 5, 2010 Meeting Notes –
http://www.naesb.org/pdf4/smart_grid_ssd080510notes.doc
- August 12, 2010 Meeting Notes –
http://www.naesb.org/pdf4/smart_grid_ssd081210notes.doc
- August 26, 2010 Meeting Notes –
http://www.naesb.org/pdf4/smart_grid_ssd082610notes.doc
- September 9, 2010 Meeting Notes –
http://www.naesb.org/pdf4/smart_grid_ssd090910notes.doc
- September 16, 2010 Meeting Notes –
http://www.naesb.org/pdf4/smart_grid_ssd091610notes.doc
- September 23, 2010 Meeting Notes – To be posted
- [October 7, 2010 Meeting Notes – To be posted](#)