



**RECOMMENDATION 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(a)
**Request Title: 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

| 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 |

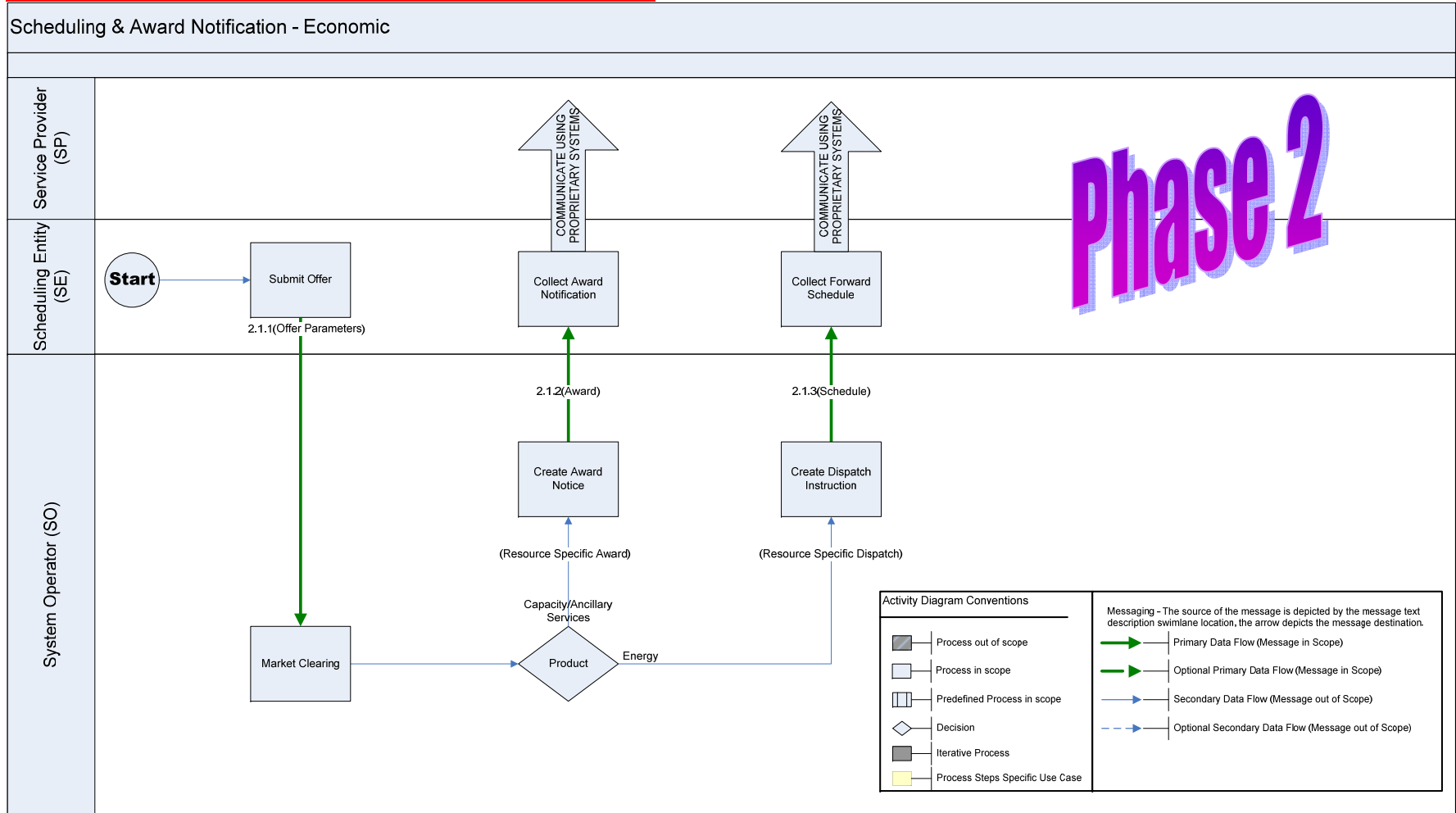
- The process begins when the SE submits a supply offer to the SO.
- The SO evaluates the offer through its market clearing process.
- The resulting resource-specific dispatch information is transformed into dispatch instructions by the SO.
- The SO makes the schedule available.
- The SE collects the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



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Activity Diagram and Data Flow:

Figure 3 - Scheduling and Award Notification - Economic





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| | | | Process | 2.0 Scheduling and Award Notification | | | |
|---------|----|-------------------------------------|---|--|-------|----------|----|
| | | | | 2.1 Economic | | | |
| | | | From | SE | SO | | |
| | | | To | SO | SE | SE | |
| | | | Flow | 2.1.1 | 2.1.2 | 2.1.3 | |
| | | | | Offer Parameters | Award | Schedule | |
| Element | | | Short Description | Complete Description | DR | DR | DR |
| 0 | 10 | Submittal Date | Timestamp for the sender's use | | O | O | O |
| 0 | 20 | NERC CIP Security - Availability | CIP Security Classification for Availability | | M | M | M |
| 0 | 21 | NERC CIP Security - Confidentiality | CIP Security Classification for Confidentiality | | M | M | M |
| 0 | 22 | NERC CIP Security - Integrity | CIP Security Classification for Integrity | | M | M | M |
| 1 | 10 | Facility ID | Identifier assigned to the Facility | A Facility is the location at which connection to the transmission or distribution system is made. This is most closely related to a CIM SDPLocation. | O | O | O |
| 1 | 11 | Facility Name | Name of the Facility | | O | O | O |
| 1 | 20 | Resource ID | Identifier assigned to the Resource | A Resource is a group of Response Method Aggregations that represents a dispatchable entity. A Demand Resource is a Load or aggregation of Loads capable of measurably and verifiably providing Demand Response. The corresponding CIM term is | M | M | M |
| 1 | 21 | Resource Name | Name of the Resource | | O | O | O |

Phase 2
Option A



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Phase 2
Option A

| | | | Process | 2.0 Scheduling and Award Notification | | |
|---------|----|----------------------|---|---|-------|----------|
| | | | | 2.1 Economic | | |
| | | | From | SE | SO | |
| | | | To | SO | SE | SE |
| | | | Flow | 2.1.1 | 2.1.2 | 2.1.3 |
| | | | | Offer Parameters | Award | Schedule |
| Element | | | Short Description | Complete Description | | |
| | | | | DR | DR | DR |
| 2 | 30 | Zone ID | Identifier assigned to the Zone in which the Facility is located | M | M | M |
| 2 | 31 | Zone (from CIM) | Name of the Zone in which the Facility is located | A Zone is a physical or electrical region. This definition is from the CIM. | | |
| 2 | 40 | Electrical Node ID | Identifier assigned to the Electrical Node at which the Facility is connected | M | M | M |
| 2 | 41 | Electrical Node Name | Name of the Electrical Node at which the Facility is connected | O | O | O |
| 2 | 42 | Electrical Node Type | Type of Electrical Node at which the Facility is attached | O | O | O |
| 2 | 43 | PNode | Name of the Price Node associated with the Facility | The P-Node is the price location of the Facility in the transmission and/or distribution network. | | |
| 2 | 44 | PNode ID | Identifier assigned to the Price Node associated with the Facility | M | M | M |
| 5 | 70 | Scheduling Entity ID | Identifier assigned to the Scheduling Entity | A Scheduling Entity submits bids and/or offers and receives Schedules and Awards. | | |



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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

| 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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- 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 system of the SE.

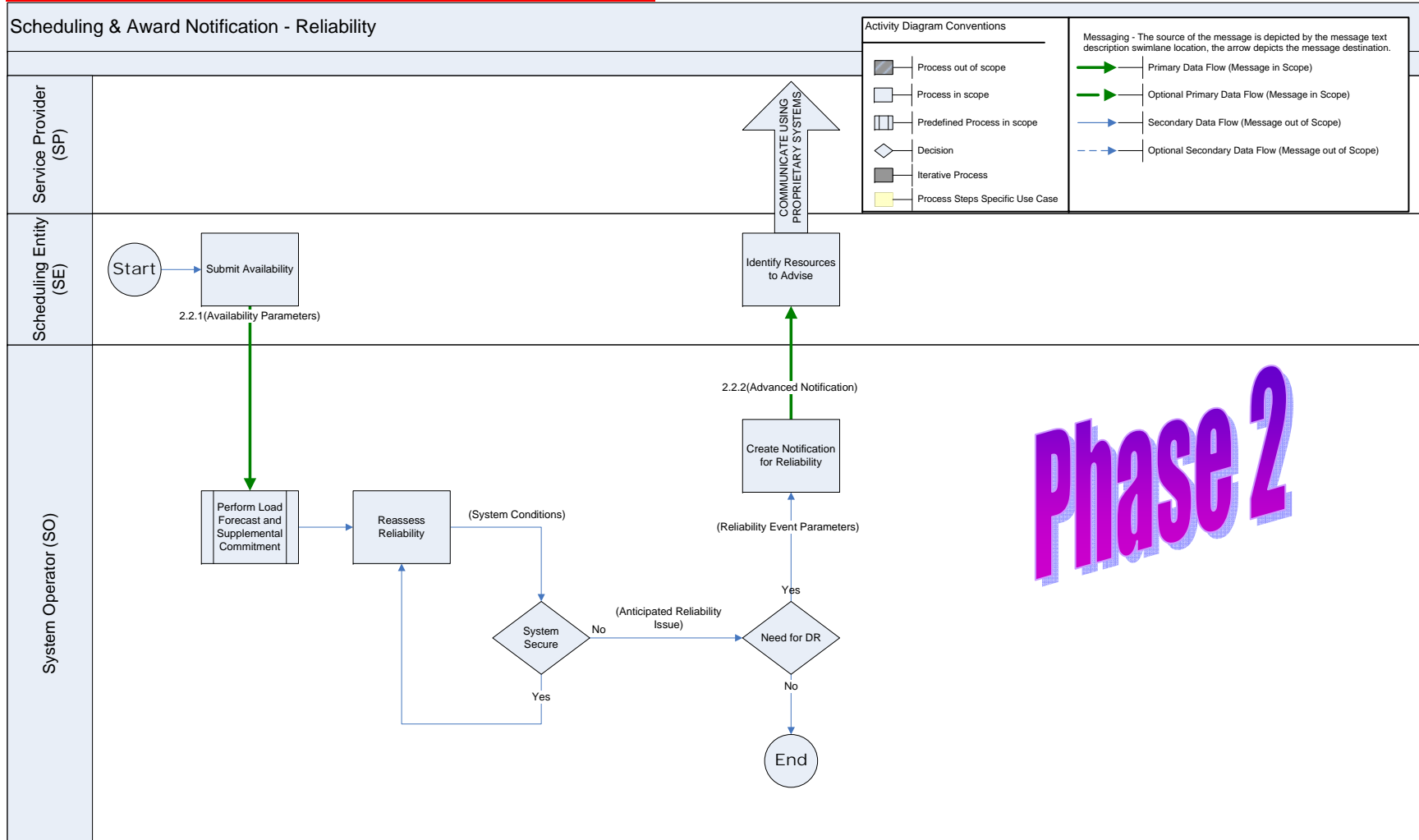


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Activity Diagram and Data Flow:

Figure 4 - Scheduling and Award Notification - Reliability





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| Phase 2 Option B | | | | Process | | 2.0 Scheduling and Award Notification | | | | |
|---------------------|----|-------------------------------------|---|-------------------|-------|---------------------------------------|-------|-------|-----------------|----|
| | | | | | | 2.1 Economic | | | 2.2 Reliability | |
| | | | | From | SE | SO | | SE | SO | |
| | | | | To | SO | SE | SE | SO | SE | |
| | | | | Flow | 2.1.1 | 2.1.2 | 2.1.3 | 2.2.1 | 2.2.2 | |
| Element | | | | Short Description | | DR | DR | DR | DR | DR |
| 0 | 10 | Submittal Date | Timestamp for the sender's use | O | O | O | O | O | O | O |
| 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 | 10 | Facility ID | Identifier assigned to the Facility | O | O | O | O | O | O | O |
| 1 | 11 | Facility Name | Name of the Facility | O | O | O | O | O | O | O |
| 1 | 20 | Resource ID | Identifier assigned to the Resource | M | M | M | M | M | M | O |



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| | | Phase 2 Option B | | Process | 2.0 Scheduling and Award Notification | | | | | |
|---|----|-----------------------------|---|----------------|--|-------------------------|-----------------------|------------------------|-------|-------|
| | | | | | 2.1 Economic | | | 2.2 Reliability | | |
| | | | | | From | SE | SO | | SE | SO |
| | | | | | To | SO | SE | SE | SO | SE |
| | | | | | Flow | 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 | | DR | DR | DR | DR | DR | |
| 1 | 21 | Resource Name | Name of the Resource | | O | O | O | O | O | |
| 2 | 30 | Zone ID | Identifier assigned to the Zone in which the Facility is located | | M | M | M | M | M | |
| 2 | 31 | Zone (from CIM) | Name of the Zone in which the Facility is located | | O | O | O | O | O | |
| 2 | 40 | Electrical Node ID | Identifier assigned to the Electrical Node at which the Facility is connected | | M | M | M | O | | |
| 2 | 41 | Electrical Node Name | Name of the Electrical Node at which the Facility is connected | | O | O | O | O | | |
| 2 | 42 | Electrical Node Type | Type of Electrical Node at which the Facility is attached | | O | O | O | O | | |
| 2 | 43 | PNode | Name of the Price Node associated with the Facility | | O | O | O | O | | |