Generated Bids and Outage Reporting for Non-Resource Specific Resource Adequacy Resources

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October 27, 2011
Agenda

- Background
- Project Overview
- What Stays the Same
- Generated Bids
- Outage Reporting
- Subset of Hours
- Application of Standard Capacity Product to Non-Resource Specific Resource Adequacy Resources
- Settlement Impacts
Course Objectives

By the end of this session, you will be able to:

• Describe how the ISO will create generated bids for Non-Resource Specific Resource Adequacy (NRS-RA) resources
• Describe how the NRS-RA resources will report outage information
• Describe how the “subset of hours” will be applied under the Standard Capacity Product for NRS-RA resources
Background
Background

- California Public Utilities Commission administers the Resource Adequacy (RA) Program
  - Requires Load Serving Entities under its jurisdiction to procure sufficient capacity (RA Capacity)
  - Must be available to the ISO to provide energy and reserves to serve load and maintain reliable operation of the grid
  - Required by ISO Tariff Section 40.6 to offer RA capacity to the ISO
Background

• Mechanisms currently in place for the submission of a generated bid by the ISO for internal generation Resource Adequacy resources
• Internal generating resources under Resource Adequacy contracts may submit outages to denote availability
• ISO is currently not submitting generated bids for Non-Resource Specific Resource Adequacy (NRS-RA) resources
• No mechanism in place for NRS-RA resources to report outages due to sourcing generator or transmission constraints
PROJECT OVERVIEW
Project Overview

- Provides a mechanism for the ISO to create generated bids for Non-Resource Specific Resource Adequacy (NRS-RA) resources
- Creates a process for NRS-RA resources to submit outage notices through the Scheduling and Logging for the ISO of California (SLIC) software
- Addresses issues related to “subset-of-hours” contracts and application of the Standard Capacity Product (SCP) terms to NRS-RA resources
- Project scheduled for implementation January 1, 2012
What Stays the Same
What Stays the Same?
Unit Substitution Requests and Rules

- Non-Resource Specific Resource Adequacy (NRS-RA) resources **may** request unit substitution in the Day-Ahead timeframe, prior to the close of the Day-Ahead Market
- NRS-RA resources may not request unit substitution in Real-Time
Generated Bids
Generated Bids

• ISO may submit generated bids up to the contracted MW capacity on behalf of a Non-Resource Specific Resource Adequacy resource that fail to bid into the Day-Ahead and Real-Time Markets

• Scheduling Coordinators may choose from three options:
  – Price-taker
  – LMP-based calculation
  – Negotiated bid
Generated Bids
Price Taker Option

• Equal to $0/MWh plus the ISO’s estimate of the applicable Grid Management Charge (GMC) per MWh

• GMC based on gross amount of MWh scheduled in the Day-Ahead and Real-Time Market

• Becomes default election if no other options are selected
Generated Bids
LMP Option

- Weighted average LMP based on lowest quartile of validated and/or corrected LMPs
- Uses the LMPs at the Intertie point designated for the Non-Resource Specific System Resource
- To qualify for this option 50% of the MWh dispatches must have been dispatched competitively.
Generated Bids
LMP Option

• Resources must pass a competitive screen to qualify for LMP option
  – 50% of their MWh dispatches over the prior 90-days must have been dispatched competitively

• If LMP option is selected, a secondary option (either price-taker method or negotiated rate option) must be selected in the event of a failed feasibility test
Generated Bids
LMP Option – Feasibility Test

• LMP option is not available for first 90 days after a resource becomes Non-Resource Specific Resource Adequacy resource
• After first 90 days the feasibility test applies to each bid segment
Generated Bids
Negotiated Rate Option

• An amount negotiated with an Independent Entity (currently Potomac Economics)
• Calculation of the negotiated rate option shall follow the same procedure outlined for the negotiated rate option for Default Energy Bids.
Generated Bids
Partial Bids

- If a SC submits a MW quantity bid less than NRS-RA capacity, CAISO will insert a bid for the remaining capacity extending the last bid segment of the resource’s bid to the full quantity (MWh) of the obligation.
Outage Reporting
Subset of Hours

- **Definition:**
  A contract between a Load Serving Entity and a non-Resource-Specific system resource that requires the resource to make Resource Adequacy Capacity available to the CAISO on designated days and/or during a specified number of hours, less than seven (7) days a week, twenty-four (24) hours a day.
Subset of Hours

Current

RA Capacity, Same Value for all hours in the month

Mo (N-1) | Mo (N) | Mo (N+1)

Beginning
01-01-12

Under Subset of Hours, only available for specific hours.

Mo (N-1) | Mo (N) | Mo (N+1)
Availability Calculation for Non-Resource Specific Resource Adequacy Resources

- Subset-of-hours NRS-RA resources will not be considered unavailable in SCP for hours they are not contractually obligated to provide RA capacity.
- If the SC does not submit bids, the CAISO will submit bid for the hours the resource has an RA capacity obligation.
Outage Reporting

- NRS-RA resources will report through SLIC any forced outage of generating unit or forced outage or constraint of transmission facilities that directly results in the inability to deliver all or a portion of the RA capacity identified in the resource’s supply plan.
- NRS-RA are required to report outage to the CAISO within sixty (60) minutes.
- Explanation must follow within two (2) business days after providing notice of outage.
• There are two requirements to reporting outages for NRS-RA resources and transmission outages at an inter-tie:

- **M** has a $P_{max}$ of 2,000 MW, and an RA obligation of 250 MW

- **N** has a $P_{max}$ of 1,000 MW, and an RA obligation of 500 MW

Tie ID **A** refers to a single Intertie
Requirement 1. Reporting NRS-RA resource and transmission outages at an intertie that is in effect until January 1, 2012 is as follows:

<table>
<thead>
<tr>
<th>Case</th>
<th>Inter-tie Status</th>
<th>Resource Status</th>
<th>Bid Value</th>
<th>Outage</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Avail.</td>
<td>Avail.</td>
<td>250 MW (M) 500 MW (N)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Out</td>
<td>Avail.</td>
<td>No bid submitted</td>
<td>Intertie (SLIC ticket submitted)</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Avail.</td>
<td>Out (assume resource N is out)</td>
<td>250 MW (M)</td>
<td>None</td>
<td>*</td>
</tr>
</tbody>
</table>

*If approved internal unit substitution occurs, no SCP impact. If forced outage, SCP charge will apply. If maintenance outage, no SCP charge.
Outage Reporting – Out of Service Transmission Path

• Requirement 2. Reporting NRS-RA resource and transmission outages at an intertie after January 1, 2012 is as follows:

<table>
<thead>
<tr>
<th>Case</th>
<th>Inter-tie Status</th>
<th>Resource Status</th>
<th>Bid Value</th>
<th>Outage</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Avail.</td>
<td>Avail.</td>
<td>250 MW (M) 500 MW (N)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>2a</td>
<td>Derated</td>
<td>Avail.</td>
<td>250 MW (M) 500 MW (N)</td>
<td>None (ISO knows Intertie is out)</td>
<td>None</td>
</tr>
<tr>
<td>2b</td>
<td>Fully Derated (Open Tie)</td>
<td>Avail.</td>
<td>ISO does not require a bid to be submitted</td>
<td>None (ISO knows Intertie is out)</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Avail.</td>
<td>Out (assume resource N is out)</td>
<td>250 MW (M)</td>
<td>Resource tie ID outage (A) – submitted within SLIC</td>
<td>*</td>
</tr>
</tbody>
</table>

*If approved internal unit substitution occurs, no SCP impact. If forced outage, SCP charge will apply. If maintenance outage, no SCP charge.
Settlement Impacts
Standard Capacity Product (SCP) Overview

• Became effective on January 1, 2010

• Incorporates resource availability standards and incentives into the ISO Tariff.

• Enhances grid reliability and market efficiency.
SCP Overview Cont…

• LSE’s meet their Resource Adequacy Obligation with capacity provided by System Resources

• RA Resources are obligated to bid the full contracted capacity in DA Market

• Non-Availability charges and Availability Incentive payments apply to non-exempt RA capacity
NRS-RA Initiative

- Non Resource Specific Resource Adequacy
- Effective 1/1/2012
- New requirements:
  - Outage reporting requirement in SLIC
  - Generated bid condition applies
  - The subset of hours provisions applies to all RA contracts
Example Of Tie Resource
Settlements Change Summary

- NRS-RA Resources will submit outages in SLIC
- Out-Of-Service Path Flag will be terminated in the calculation
- No configuration changes to charges or payments
# Business Rules - Before and After

<table>
<thead>
<tr>
<th>Designation</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability Mapping</td>
<td>Based on Bid</td>
<td>Based on Outage</td>
</tr>
<tr>
<td>Bidding</td>
<td>Not required</td>
<td>Generated Bid</td>
</tr>
<tr>
<td>Outage</td>
<td>No reporting allowed</td>
<td>Report in SLIC</td>
</tr>
<tr>
<td>Line Derated</td>
<td>Does not apply</td>
<td>Report outage in SLIC</td>
</tr>
<tr>
<td>Line Out</td>
<td>Use out-of-service path flag</td>
<td>Report Outage in SLIC</td>
</tr>
</tbody>
</table>
## Charge Codes - Before and After

<table>
<thead>
<tr>
<th>Charge Codes</th>
<th>Description</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP PRECALC</td>
<td>SCP Pre-calculation</td>
<td>Changed to remove the BA_HRLY_OUT_OF_SVC_TRANS_PATH_FLAG</td>
</tr>
<tr>
<td>CC8824</td>
<td>Non-Availability charge to Generators</td>
<td>No change</td>
</tr>
<tr>
<td>CC8825</td>
<td>Non-Availability charge to Interties</td>
<td>No change</td>
</tr>
<tr>
<td>CC8820</td>
<td>Availability Payment to Generators</td>
<td>No change</td>
</tr>
<tr>
<td>CC8821</td>
<td>Availability Payment to Interties</td>
<td>No change</td>
</tr>
<tr>
<td>CC8826</td>
<td>Neutrality Allocation to Metered Demand</td>
<td>No change</td>
</tr>
<tr>
<td>CC8827</td>
<td>Neutrality Allocation to Metered Demand</td>
<td>No change</td>
</tr>
</tbody>
</table>
Additional Reference Materials

• Configuration Guide:
  – SCP Precalc updated to remove the out-of Service Path Flag
  – BPM attached PRR # 0484 at the following address: https://bpm.caiso.com/bpm/prr/show/PRR000000000484
• Initiative website: https://fprojp02.oa.caiso.com/sites/projectserver_521/default.aspx
Thank You for Attending!!

Please send additional questions to:

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