Standard Capacity Product (Phase 2) Market Simulation Plan Review

Standard Capacity Product (Phase 2) Market Simulation Web Conference
September 21, 2010

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Agenda

- Market Simulation Plan Overview
- Market Simulation Execution
- Structured Scenarios Overview
- ISO Support and Communications
- Standard Capacity Product Documents Links
- Next Steps
New Functionality
- Track and settle resource adequacy unit availability standards for Historical Qualifying Capacity (HQC) resources

Enhancements to existing functionality
- Detect “Forced” and “Planned” outage overlap. Only incremental MW beyond “Planned” will be subject to charges.
- Enable Systematic Requests for Outage Corrections.
Market Simulation Plan Overview
Standard Capacity Product (Phase 2) Market Simulation Plan

- The ISO posted a draft of the Standard Capacity Product (Phase 2) Market Simulation Plan on September 14, 2010

- The market simulation plan includes:
  - High-level market simulation overview and approach
  - Detailed calendar of planned activities and unstructured testing
  - Outline of required pre-simulation activities
  - Detailed descriptions of the planned structured scenarios
  - Contact information and links to the Standard Capacity Product (Phase 2) reference documents and project information
Market Simulation Plan Overview
Standard Capacity Product (Phase 2) Market Simulation Plan

- Standard Capacity Product (Phase 2) Market Simulation Plan in Release Planning section of ISO website:
  - http://www.caiso.com/23ad/23ade49d4790.html
# Market Simulation Plan Overview

## Calendar Review

### October 2010

<table>
<thead>
<tr>
<th>Week of 25-Oct</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
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**Connectivity Testing**

*ISO assists SCs in gaining access required for Market Simulation*

- SC tests connectivity
- ISO supports (as needed)

### November 2010

<table>
<thead>
<tr>
<th>Week of 1-Nov</th>
<th>Monday</th>
<th>Tuesday</th>
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**Simulation Month 1 - Structured (Advisory)**

*Run by ISO, observed by SCs; All activities in MAP Stage*

- **USUB 022**
- **USUB 023a**
- **USUB 023b**
- **USUB 023c**
- **USUB 017**
- **SCPO 002**
- **SCC 101**
- **SCC 102**
- **SCC 104**
- **SCC 105**
- **SCC 106**
- **SCC 107**

*Colors indicate different types of structured scenarios.*

- Structured Scenarios for Substitution
- Structured Scenarios for Outage Correction
- Structured Scenarios for Availability Calculation
- Structured Scenarios for Settlements
### Market Simulation Plan Overview

#### Calendar Review

<table>
<thead>
<tr>
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<tr>
<td>29-Nov</td>
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##### December 2010

Unstructured Environment Availability (as needed based on SC feedback)

Regression Testing conducted by SCs; Bid submission in Stage; RAAM, Settlements, and other systems in MAP Stage

<table>
<thead>
<tr>
<th>SCs provide feedback</th>
<th>SCs provide feedback</th>
<th>Unstructured Environment Availability</th>
<th>SCs provide feedback</th>
<th>SCs provide feedback</th>
<th>SCs provide feedback</th>
<th>SCs provide feedback</th>
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<tbody>
<tr>
<td>8-Nov</td>
<td></td>
<td>Simulation Month 2 - Unstructured</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
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</table>

- **Simulation Month 2 - Unstructured**
  - Testing conducted by SCs; Bid submission in Stage; RAAM, Settlements and other systems in MAP Stage
  - SCs provide feedback

| 15-Nov               | 15                  | Simulation Month 3 - Unstructured     | 15                   | 16                   | 17                   | 18                   | 19                   |

- **Simulation Month 3 - Unstructured**
  - Testing conducted by SCs; Bid submission in Stage; RAAM, Settlements, and other systems in MAP Stage
  - SCs provide feedback

| 22-Nov               | 22                  | Holiday Week - No Simulations         | 22                   | 23                   | 24                   | 25                   | 26                   |

- **Holiday Week - No Simulations**
  - SCs provide feedback
  - Day treated as Holiday

| 8-Nov                | 8                   | Simulation Month 2 - Unstructured     | 8                    | 9                    | 10                   | 11                   | 12                   |

- **Simulation Month 2 - Unstructured**
  - Testing conducted by SCs; Bid submission in Stage; RAAM, Settlements and other systems in MAP Stage
  - SCs provide feedback
Market Simulation Plan Overview
Pre-Simulation Activities and Deadlines

- **September 24 – Grandfathering Requests**
  - Market participants must submit any grandfathering requests by September 24th, 2010
  - Approved grandfathering requests will be configured in the Market Simulation environments
Market Simulation Plan Overview
Pre-Simulation Activities and Deadlines

- October 8 – Application Access Request Form (AARF) Submission / Environment Access
  - Digital certificates are required to access the Market Simulation environments.
  - Participants with existing digital certificates should review their access to ensure there is access to the following systems and environments.
  - AARF submissions must be complete by October 8, 2010
October 8 – Application Access Request Form (AARF) Submission / Environment Access

- The following system / environment configurations must be established:
  - SIBR – Bidding (MAP Stage Week 1, Stage Weeks 2 onwards)
  - SLIC – Outage Management (MAP Stage)
  - RAAM – Substitutions (MAP Stage)
  - OMAR – Metering (MAP Stage)
  - BAPI/ SFTP - Settlements (MAP Stage)
  - IMA/ CIDI - Issue Management
Market Simulation Plan Overview
Pre-Simulation Activities and Deadlines

- October 15 – Unit Prequalification Requests:
  - Certain HQC resources may be configured for pre-qualification of real-time unit substitution.
  - These prequalified resources must be created or renewed via production RAAM on an annual basis by October 29th.
  - Any resources currently configured as prequalified will be setup in the market simulation environments.
  - For any new production pre-qualified resources where Market Simulation testing is desired, requests must be submitted via production RAAM by October 15 to allow the ISO sufficient time to review, approve, and migrate configuration data into the market simulation environments.
Market Simulation Plan Overview
Pre-Simulation Activities and Deadlines

- October 18 – Market Simulation Kickoff Conference Call:
  - Conduct conference call to serve as the official start of market simulation
  - Review finalized market simulation approach based on any incorporated feedback from participants
  - Allows for an additional forum to answer any outstanding questions prior to the commencing activities
Market Simulation Execution
Approach

- Six weeks of activities
  - Week beginning 10/25 – Connectivity Testing
  - Week beginning 11/01 – Structured Testing (MAP Stage)
  - Week beginning 11/08 – Unstructured Testing (Cross-Environment)
  - Week beginning 11/15 – Unstructured Testing (Cross-Environment)
  - Week beginning 11/22 – No Testing (Thanksgiving)
  - Week beginning 11/29 – Unstructured Availability (No Settlements)
Market Simulation Execution
Approach

- Cross-Environment Unstructured Approach
  - Bids will be submitted to SIBR in the Stage environment
  - All other activities will be conducted in the MAP Stage environment
Market Simulation Execution
Overview

- During structured scenario execution, the ISO will be submitting all bids, outages, and substitutions to demonstrate the necessary functionality. Participants will be able to validate results.

- Markets will close and publish one hour later than the production timeline
  - Market close 11:00 AM on T-1
Unit substitution requests deadline during unstructured testing will be earlier than production

- Requests must be submitted by 3pm on T-2; ISO will approve by 5pm on T-2
- Unit substitution requests start on November 8 for November 10, substitutions for November 16 are due November 12 at 3pm.
Market Simulation Execution

Overview

- Settlements will be conducted in a “mini-monthly” approach
  - Each week will be settled as a separate month to demonstrate SCP calculations
  - A detailed settlements calendar is published and available at http://www.caiso.com/2811/281177db56b90.pdf
Market Simulation Execution
“Month 1” – November 1 thru 5, 2010

- Week beginning November 1st
- Structured testing
  - ISO will control inputs and test scenarios
  - Market Participants will observe and help identify issues
- All activities conducted in the “MAP STAGE” environment
- MSG project conducting Unstructured Testing concurrently in STAGE
Market Simulation Execution
“Month 1” – November 1 thru 5, 2010

- **PROD**: Market Participants → Raw Bid Set → SIBR
- **STAGE**: MSG Market Sim Participants
  - Raw Bids (unstructured) → SIBR → Clean Bid Set → IFM/RTM
  - Clean Bids / Schedules → Awards → SMC
  - IFM/RTM
  - Outages
  - SL/C
  - Outages → RAAM
- **MAP STAGE**: SCP2 Market Sim Participants
  - Raw Bids (structured) → SIBR → Clean Bid Set → IFM/RTM
  - Clean Bids / Schedules → Awards → SMC
  - IFM/RTM
  - Outages
  - SL/C
  - Outages → RAAM
  - Substitutions
Market Simulation Execution
“Month 2 & 3” – Weeks starting November 8 and 15, 2010

- Unstructured Testing
  - Scheduling Controllers will enter bids, outages, unit substitutions, etc
  - Market systems will process through to settlements

- Split Environment
  - Other projects conducting testing concurrently (CB and MSG)
  - Bids in “STAGE”
  - Outages, settlements etc in “MAP STAGE”
Market Simulation Execution
“Month 2 & 3” – Weeks starting November 8 and 15, 2010
Market Simulation Execution
“Month 2 & 3” – Weeks starting November 8 and 15, 2010

 Caveats
   Ensure environments are targeted correctly
   Stage will have DB 50 resources, MAP Stage will have DB 49
     ISO will determine overlaps and provide details to participants
     Any DB50 resources accidently migrated to MAP Stage will not settle
   Data seeds SIBR until 10am by adding and overwriting; participants have until 11am to modify
Market Simulation Execution
Structured Scenario Details

- There are 28 structured scenarios planned for market simulation broken down into four categories:
  - Unit Substitution (USUB)
  - Outage Correction (SCPO)
  - Availability Calculations (AC)
  - Settlement calculations (SCC)

- Scenarios will be discussed in more detail in the bi-weekly market simulation calls the week prior to execution.
Market Simulation Execution
Structured Scenario Details

- Scenarios are broken down into the following:
  - Description – brief explanation of scenario to be executed
  - SC Actions – steps for participants to follow
  - Expected Outcome – anticipated results

- Additional details are provided in the Market Simulation Plan.
AC 001  Test an overlap of forced and planned outages
AC 002  Test an overlap of a forced outage and two planned outages (removes both of the curtailments)
AC 003  Test the overlap of a forced outage and an ambient not due to temperature outage
AC 004  Test the overlap of forced, planned, and ambient not due to temperature outages (removes both of the curtailments)
AC 005  Test the overlap of an ambient due to temperature outage and a planned outage
AC 006  Test how a forced outage for full Pmax on a HQC resource impacts the availability calculation
Structured Scenarios Overview
Availability Calculations, Outage Corrections

AC 007  Test how a forced outage for 10% Pmax on a HQC resource impacts the availability calculation
AC 008  Test how a forced outage for 50% Pmax on a HQC resource impacts the availability calculation
AC 009  Test the impact on availability of a forced outage on a non-HQC resource
AC 010  Test the impact on availability of a planned outage on a non-HQC resource
AC 011  Test the ability to submit an outage correction and its impact on availability
SCPO 002 Test an overlap of Forced Outages
Structured Scenarios Overview
Settlement Calculations

SCC 101* Test the scenario where there are more Availability Charges than Credits for the qualifying RA Units to confirm that the charge code 8824 shall no longer enforce the existing DLAP-only distribution

SCC 102* Test scenario where Grandfathered units exist

SCC 104 Test to verify that HQC resources are included in the monthly availability calculation (ensure attribute is populated)

SCC 105 Test to confirm the use of Meter Quantity in the availability calculation for HQC resources

SCC 106 Test to confirm that HQC resources’ SCP charges and credits can be flagged as advisory-only

SCC 107 Test to confirm the existence of the Substitution Request ID attribute in the Settlement Record
Structured Scenarios Overview
Unit Substitutions

USUB 009* Test the ability to request Unit Substitution without a reported outage (this will occur for units less than 10MW who only submit outages at month’s end)

USUB 010* Test Real Time Unit Substitution for Prequalified Local Resource.

USUB 011* Test Day Ahead Unit Substitution for a local unit wanting to substitute two units to meet the obligation of one unit

USUB 017* Test scenario where 3rd party Day Ahead Unit Substitution exists

USUB 019* Test scenario where 3rd party rejects Day Ahead unit substitution
Structured Scenarios Overview
Unit Substitutions

USUB 022 Test scenario where RAAM shall process unit substitutions for existing SCP RA resources with no change resulting from the addition of HQC resources (non-HQC resource substituted for non-HQC resource)

USB 023a Test the application of existing unit substitution rules when substituting a non-grandfathered HQC unit for a non-HQC resource

USUB 023b Test the application of existing unit substitution rules when substituting a non-HQC resource for a non-grandfathered HQC resource

USUB 023c Test the application of existing unit substitution rules when substituting a non-grandfathered HQC resource for a non-grandfathered HQC resource

USUB 024 Test the ability to enter the total MW amount of RA capacity needed to cover a resource on outage
ISO Support and Communications
SCP Phase 2 Training Calendar

- SCP Phase 1 Refresher Training
  - September 17th – 10am to noon
  - September 27th – 10am to noon

- SCP Phase 2 Enhancements Training
  - October 22nd – 10am to noon
  - November 17th – 1pm to 3pm

- Contact Jenny Pedersen
  - e-mail: jpedersen@caiso.com
ISO Support and Communications
SCP Phase 2 Market Simulation Support

- Standard Capacity Product (Phase 2) Market Simulation Support
  - Hours: Monday to Friday, 8 AM to 6 PM (PST)
  - Phone: (916) 608-7348
  - ISO Help Desk: (916) 351-2309
  - SCP II Project Web Mailbox - SCPM@caiso.com

- Preferred interface for communicating issues or questions is CIDI
  - Please select the Market Simulation environment dropdown and include the words Market Simulation in the subject line
ISO Support and Communications
SCP Phase 2 Market Simulation Weekly Calls

- Twice weekly teleconference calls beginning on September 20
  - Monday 1 PM to 2 PM (PST)
  - Thursday 9 AM to 10 AM (PST)
  - Domestic (800) 553-0351
  - International (612) 332-0632
- Topics will be combined with other market simulation initiatives if multiple initiatives are simulating concurrently
ISO Support and Communications
SCP Phase 2 Documents Links

- Relevant Market Notices:
  - [http://www.caiso.com/2479/2479edbf564f0.html](http://www.caiso.com/2479/2479edbf564f0.html)

- Current Initiatives Documentation:
  - [http://www.caiso.com/2479/2479e7362d1e0.html](http://www.caiso.com/2479/2479e7362d1e0.html)
  - [http://www.caiso.com/2479/2479e7362d1e0.html](http://www.caiso.com/2479/2479e7362d1e0.html)

- SCP Phase 2 Technical Specifications
ISO Support and Communications
SCP Phase 2 Documents Links

- Application Access Request Forms (AARF) and Application Installation Instructions

- Systems Access Information For Market Participants Access document
  - [http://www.caiso.com/271f/271fcbd45ca60.html](http://www.caiso.com/271f/271fcbd45ca60.html)
Next Steps

- Grandfathering submission deadline – September 24, 2010
- Prequalification submission deadline – October 15, 2010
- Market Simulation Kickoff – October 18, 2010. Details TBD.
- The ISO will post a list of known SCP Phase 2 variances prior to the start of the market simulation on the ISO website.