California ISO

Market Simulation Structured Scenarios

Generator Contingency and Remedial Action Schemes Modeling

Version: 1.4

September 27, 2018

Location of Document

Link

Revision History

Date	Version	Description	Author
7/5/18	1.0	Initial	Trang Deluca, Adam Wohlsen
7/30/18	1.1	ISO Actions and Expected Outcome updated for Scenario #1 Submit Bid (Day Ahead). ISO Actions and Expected Outcome updated for Scenario #2 Submit Bid (Real Time).	Adam Wohlsen
8/20/18	1.2	Added more details to both scenarios.	Alex Kandybenko
9/17/18	1.3	Descriptions for Structured Scenarios #1 and #2 modified. Trade dates added.	Adam Wohlsen
9/27/18	1.4	Instructions to obtain Congestion Component Locational Marginal Price data added to Description section of Structured Scenario #1 and #2.	Adam Wohlsen

Table of Contents

1. Introduction

The objective of this document is to provide the information needed for Market Participants to participate in the market simulation structured scenarios.

2. Structured Scenario Approach

2.1 High Level Overview

These identified scenarios will be executed during the structured scenario portion of the Generator Contingency and Remedial Action Schemes Modeling market simulation.

2.2 Structured Scenarios Conditions and Setup

TBD

2.3 Structured Scenarios

Scenario Number	Generator Contingency and Remedial Action Scheme Modeling – TD 9/26/2018	
1	Description	Day Ahead (DA) market will be ran for agreed on Trade Date (TD). CAISO staff will set up the scenario such that there are no other transmission constraints except the one caused by a Generator Contingency and Remedial Action Scheme Modeling (GCARM). The switch positions used in the GCARM contingency will be shared with the market participants. The congestion component of the generator disconnected by GCARM contingency will be equal to product of GFF and shadow cost of the transmission constraint. Please see Appendix 2 of the BRS, formula for LMP. Active within hours 00:00 - 12:00. Instructions to obtain Congestion Component (CC) Locational Marginal Price (LMP) data: 1. First, use the contingency definitions to identify which generator is removed from service and note the contingency name. 2. Next, map the financial locations associated with the generator. 3. Then find the pricing node in the SF CSV associated with binding constraint caused by noted contingency, and get the GFF for the node. 4. The GFF multiplied by the shadow cost of the binding constraint is the CC LMP for the node.
	ISO Actions	Define and enforce constraints changes. Share modeled contingency name and switch positions with market participants prior to market participant bidding. If necessary, adjust bids or constraints to ensure binding scenario; post changes. GCARM contingency will be active for agreed upon hours of the day and the GCARM contingency will not be active for agreed upon hours.
	EIM Market Participant Actions	Submit bids. Locate the transmission constraint shadow cost on Oasis. Download shift factor CSV from CMRI.
	ISO Market Participant Actions	Submit bids. Locate the transmission constraint shadow cost on Oasis. Download shift factor CSV from CMRI.
	Expected Outcome	Obtain price separation between electrically equivalent nodes (where one of the nodes is associated with GCARM generator disconnected by the contingency, and other is regular node) when a transmission constraint caused by redistribution of generation lost from GCARM unit is binding.

		Binding constraint and LMP data viewable in OASIS. Results for hours where GCARM contingency constraints are binding vs hours where GCARM contingency constraints are not binding.
	Anticipated Settlement Outcome	Appropriate settlement pricing of each node impacted by binding constraint.

Scenario Number	Generator Contingency and Remedial Action Scheme Modeling – TD 9/26/2018	
2	Description	Real Time (RT) market will be ran for agreed on Trade Date (TD) according to production schedule. CAISO staff will set up the scenario such that there are no other transmission constraints except the one caused by a Generator Contingency and Remedial Action Scheme Modeling (GCARM) during agreed on time period. The switch positions used in the GCARM contingency will be shared with the market participants. The congestion component of the generator disconnected by GCARM contingency will be equal to product of GFF and shadow cost of the transmission constraint. Please see Appendix 2 of the BRS, formula for LMP. Active within hours 9:00 – 24:00. Instructions to obtain Congestion Component (CC) Locational Marginal Price (LMP) data: 5. First, use the contingency definitions to identify which generator is removed from service and note the contingency name. 6. Next, map the financial locations associated with the generator. 7. Then find the pricing node in the SF CSV associated with binding constraint caused by noted contingency, and get the GFF for the node. 8. The GFF multiplied by the shadow cost of the binding constraint is the CC LMP for the node.
	ISO Actions	Define and enforce constraints in ISO area. Share modeled contingency name with market participants prior to market participant bidding. If necessary, adjust ISO area bids or constraints to ensure binding scenario; post changes. GCARM contingency will be active for agreed upon hours of the day and the GCARM contingency will not be active for agreed upon hours.
	EIM Market Participant Actions	Submit bids. Locate the transmission constraint shadow cost on Oasis. Download shift factor CSV from CMRI.
	ISO Market Participant Actions	Submit bids. Locate the transmission constraint shadow cost on Oasis. Download shift factor CSV from CMRI.
	Expected Outcome	Obtain price separation between electrically equivalent nodes (where one of the nodes is associated with GCARM generator disconnected by the contingency, and other is regular node) when a transmission constraint caused by redistribution of generation lost from GCARM unit is binding. Binding constraint and LMP data viewable in OASIS. Results for hours where GCARM contingency constraints are binding vs hours where GCARM contingency constraints are not binding.

	Anticipated Settlement Outcome	Appropriate settlement pricing of each node impacted by binding constraint.

ISO Market Simulation Contact

Please contact MarketSim@caiso.com if you have any questions or concerns regarding these structured scenarios.