

# Stakeholder Comments on Revised Straw Proposal – Contingency Modeling Enhancements

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California Department of Water Resources State Water Project	July 1, 2013	Deane Burk <a href="mailto:deane.burk@water.ca.gov">deane.burk@water.ca.gov</a> Cheryl Luu <a href="mailto:cheryl.luu@water.ca.gov">cheryl.luu@water.ca.gov</a>
<b>Opening Comments</b>		
On June 18, 2013, CAISO posted the Contingency Modeling Enhancements (CME) revised Straw Proposal and Stakeholder Comment Matrix. On June 25, 2013, CAISO hosted a stakeholder meeting to review the revised Straw Proposal. California Department of Water Resources State Water Project (SWP) appreciates the opportunity to provide comments.		
<b>ISO Response</b>		
We appreciate your comments. Please see ISO's responses below.		
<b>Summary</b>		
The WECC SOL Standard requires Transmission Operators to transition the system back to a normal secure state within 30 minutes of a system disturbance. Currently, CAISO accomplishes this through the use of MOC constraints, Exceptional Dispatches (ExDs), and 10 minute reserves. The CME proposal introduced a Preventative-Corrective Constraint (PCC) solution which positions units through re-dispatch to ensure the needed ramping capabilities exist within the 30 minute limit and provides compensation for corrective capacity through a Locational Marginal Capacity Price (LMCP).		
<b>ISO Response</b>		
Agreed.		
<b>1. SWP appreciates the CAISO's efforts in creating a prototype to provide a realistic example to demonstrate how the PCC will function; however, the revised straw proposal stated the study will take approximately two months, yet no changes were made to the CME milestone dates. SWP requests that the CAISO postpone the issue of the draft final proposal until the prototype is complete and the results are available for stakeholders to review and better understand the cost implications and reliability benefits of the CME proposal.</b>		
<b>ISO Response</b>		
Agreed.		
<b>2. In the revised straw proposal CAISO provided the 2012 costs for SOL related ExDs; however no costs were provided for SOL related MOC's. What are the costs associated with SOL related MOC Constraints?</b>		
<b>ISO Response</b>		
MOC constraint costs are difficult to isolate because the costs is not isolated to the units within the MOC constraint (including bid cost recovery) but rather the broad market impacts. The ISO would have to run an analyzing showing what the market would have been without the MOC constraint and potentially the cost of not meeting the WECC standard.		
<b>3. The 2013 Quarter-1 DMM Report noted that ISO operators increased the Residual Unit Commitment (RUC) and Flexible Ramping Capacity (FRC) requirements in the first quarter of 2013 which reduced the amount of ExD energy and commitments.</b>		
SWP has observed significant increases in the costs for RUC and FRC in the first quarter of 2013, will the implementation of the CME reduce the RUC and FRC requirements?		

If the CME is implemented, SWP requests that DMM include in its quarterly reports, (1) Cost and MWh reduction amounts of SOL related ExDs and MOC Constraints and (2) Average costs of corrective-capacity compared to average costs of Spinning and Non-spinning reserves. If costs for corrective-capacity becomes unreasonable and no significant decreases in ExDs and MOC Constraints is observed, ISO should suspend the use of the PCC and revisit the idea of modifying existing AS procurement rules.

**ISO Response**

It is unclear whether the preventive-corrective constraint can reduce the costs of RUC and FRC (based on the constraint) because they each address different issues. Please see Section 9.1.1 in the second revised straw proposal for a discussion on the intersection of the preventive-corrective constraint, flexible ramping constraint and flexible ramping product.

**4. Are there calculations based on the effectiveness factor that would limit the quantity of corrective capacity being paid?**

**ISO Response**

The ISO will use the same effectiveness factors currently in use.

**5. CAISO should allocate costs based on the ISO’s cost allocation principles**

Unless CAISO can verify that the benefits are system-wide through the results of the prototype analysis, SWP does not support a system-wide cost allocation.

**ISO Response**

The preventive-corrective constraint can replace most MOC constraints and exceptional dispatches used to meet the WEC TOP-007 requirement. Given that the requirement covers large WECC paths that broadly benefit the ISO system, the ISO believes that system-wide cost allocation is appropriate.

Company	Date	Submitted By
NRG Energy, Inc.	July 5, 2013	Brian Theaker
<b>Opening Comments</b>		
NRG offers these comments on the CAISO’s June 18, 2013 Contingency Modeling Enhancements (CME) Revised Straw Proposal and the CME discussion at the July 2, 2013 Market Surveillance Committee (MSC) meeting.		
<b>ISO Response</b>		
We appreciate your comments. Please see ISO’s responses below.		
<b>NRG continues to strongly support the CAISO’s efforts to enhance its market models to (1) reflect the CAISO’s need to hold unloaded capacity at certain locations in order to be able to restore transmission paths to below their ratings following a transmission or generation contingency, and (2) provide compensation for such capacity that appropriately signals the value of capacity at that location.</b>		
While NRG supports allowing bidding for all CAISO spot market products, NRG acknowledges that providing bidding for corrective capacity surfaces significant questions, both about the additional amount of complexity allowing bidding would introduce into the design and compensation of the corrective capacity product as well as how to apply local market power mitigation to that product. Rather than delaying the implementation of this product while the details of such bidding are worked		

out, NRG supports implementing the corrective capacity design using locational marginal price energy opportunity cost pricing as the initial basis for compensating such capacity.

**ISO Response**

We appreciate your comments.

**Southern California Edison (SCE) has called for a “summit” between the CAISO and “transmission operators” to “agree on requirements and allowable responses.”**

(See SCE Presentation to the MSC, Slide 2, available at [http://www.caiso.com/Documents/ISO\\_ContingencyModelingProposal-SCE\\_Presentation.pdf](http://www.caiso.com/Documents/ISO_ContingencyModelingProposal-SCE_Presentation.pdf).)

NRG does not object to yet another discussion on the requirements defined in NERC and WECC standards that the CAISO must adhere to. If the CAISO engages in such a summit, however, NRG strongly urges the CAISO to make that a fully public discussion in which all affected and interested stakeholders may participate.

**ISO Response**

We appreciate your comments. The ISO has considered SCE’s suggestion but does not plan to hold such a summit. The WECC TOP-007 standards are clear that there is a 30-minute flow-based requirement and we believe that the SCE transmission staff in discussion with ISO operations engineering staff are in agreement with the requirements of the standard and the ISO’s obligation to enforce it.

Company	Date	Submitted By
PG&E	July 2, 2013	Will Dong (415) 973-9267 Paul Gribik (415) 973-6274
<b>Opening Comments</b>		
<p>Pacific Gas &amp; Electric (PG&amp;E) offers these comments on the California Independent System Operator’s (CAISO) Contingency Modeling Enhancements (CME) Initiative Revised Straw Proposal (“Proposal”).</p> <p>The CAISO’s stated objective of the CME initiative is to develop an in-market mechanism to meet the Western Electricity Coordinating Council (WECC) standard for the CAISO to return flows on critical transmission paths to a reduced system operating limit (SOL) within 30 minutes after a real-time contingency leads to an insecure state. Today, the standard is met by deploying Exceptional Dispatches (EDs), or through Minimum Online Commitment constraints (MOCs). The CAISO proposes to replace current practices by enforcing new “preventative-corrective” constraints in the market’s optimization and to reflect the marginal cost of meeting these new constraints in a Locational Marginal Capacity Price (LMCP).</p> <p>PG&amp;E is not convinced that the corrective capacity approach is the right solution to satisfy the 30-minute SOL requirement. The CAISO and key stakeholders appear at loggerheads on this fundamental point. To help move the initiative forward, PG&amp;E recommends two key recommendations:</p> <ul style="list-style-type: none"> <li>• WECC Working Group or CAISO/PTO Dialogue – we recommend that the CAISO open a dialogue with the transmission engineering staff of the Participating Transmission Owners (PTO) to create a shared understanding of the 30-minute reliability requirements and</li> </ul>		

- alternatives to satisfy. This might be done in coordination with WECC staff or separately;
- Robust Simulations – the CAISO should expand its planned simulation to provide a robust testing of the corrective capacity design.

PG&E also provides specific comments on the corrective capacity design, but believe the steps recommended above need to be completed before committing to a specific approach and vetting the details of the design.

In summary PG&E offers four recommendations:

1. The CAISO should meet with Participating Transmission Owners to create a common understanding of the 30-minute reliability requirements and all alternatives;
2. Robust “sandbox” simulations are needed prior to Board approval;
3. The corrective capacity design should not include bidding; and
4. Cost for corrective capacity should be allocated on a constraint-by-constraint basis

#### ISO Response

[We appreciate your comments. Please see the ISO’s responses below.](#)

#### **1. The CAISO Should Meet with Participating Transmission Owners to Create a Common Understanding of the Reliability Requirements and Alternatives**

There is still a fundamental lack of knowledge about the contingencies that the corrective capacity is designed to protect against and how this mechanism will work with the other protection schemes employed by Participating Transmission Owner (PTO) to assure reliability. This is partly a result of the CAISO not wanting to release information on the specific contingencies, as it may contain sensitive or critical data<sup>1</sup>. It is also likely a result of a missing dialogue between the CAISO and the PTO transmission engineers on this issue, and, as a result, a lack of common understanding of the 30-minute reliability requirements and the best way to satisfy the requirements. Without a detailed technical discussion with the PTOs including a discussion of other alternatives, the efficacy of the proposed solution is in question.

PG&E recommends the CAISO arrange a dialogue among its grid operators, operational staff from the PTOs, and WECC representatives to seek a common understanding of the alternatives available to meet the 30-minute SOL. This approach should alleviate the CAISO’s concern regarding the disclosure of sensitive data, yet also allows for the identification of operational mechanisms that could assist in meeting the SOL requirement.

This dialogue should take place before moving forward on the initiative. Without it, PG&E cannot ascertain whether any proposed solution by itself is appropriate and effective. For instance, when responding to a specific contingency, a PTO may evoke system operation procedures such as remedial action schemes. Or, a PTO, in conjunction with CAISO, may employ transmission switching to position the system to handle the contingency or to reduce power flow on a critical transmission path. Without knowing the nature of the contingencies modeled for the SOL requirement, PG&E cannot evaluate whether such operational mechanisms may be useful and complementary to the proposed preventative-corrective constraints approach.

<sup>1</sup> <http://www.caiso.com/Documents/StakeholderCommentsMatrix-ContingencyModelingEnhancementsStrawProposal.pdf> (page 16)

## ISO Response

We appreciate your comments. The WECC TOP-007 standards are clear that there is a 30-minute flow-based requirement and we believe that the PGE transmission staff in discussion with ISO operations engineering staff are in agreement with the requirements of the standard and the ISO's obligation to enforce it.

## 2. Robust "Sandbox" Simulations are Needed Prior to Board Approval

PG&E appreciates the CAISO's plan to develop a prototype that would demonstrate the market effect of the proposed corrective constraints. However, we are concerned with the proposed scope and timing of this simulation. Based on our understanding, this prototype will only cover a single saved case<sup>2</sup>, and will take two months to accomplish, leaving little, if any, time before the proposed September Board meeting for stakeholders to fully understand the effect on market operations of the proposed approach as shown by the simulation results.

In general, PG&E will be seeking "sandbox" type simulations of major CAISO initiatives to understand their impact on the market. We believe having this capability is a hallmark of a best-in-class ISO or RTO and this type of analysis is often provided by other RTOs and ISOs as a part of their market design process. The simulations should be done as an organic part of the design process before completion of the stakeholder process and allowed stakeholders to better understand the impact of the proposals and to propose and evaluate possible modifications. The CAISO needs this type of capability which should enhance the outcomes of its design proposals and stakeholder processes.

For example, MISO in its stakeholder process covering the development of a flexible ramping product created a "sandbox" prototype and simulated market results over a range of days and using actual market data.<sup>3</sup> MISO has also developed software and performed similar simulations using actual market to demonstrate the effects on market outcomes of Extended Locational Marginal Pricing and Look-Ahead Commitment, among other design initiatives.

<sup>2</sup> It's unclear what exactly is meant by "a saved case", but PG&E assumes that the CAISO means a single hour or day.

<sup>3</sup> <https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/Workshops%20and%20Special%20Meetings/2013/20130610%20Ramp%20Enhancement%20Technical>

## ISO Response



We appreciate PGE’s suggestion of a ‘sandbox’ environment and will consider this.

The schedule for this initiative has been revised to accommodate the prototype analysis and allow for additional stakeholder review.

To clarify, our use of “save case” represents an entire 24 hour trade date production case.

**Regarding the proposed simulation for CME, PG&E makes two recommendations to make the simulations worthwhile. 1. Scope of Simulations:**

To really understand the impact a broader range of simulations should be conducted. Several days for which Exceptional Dispatches (ED) were deployed should be simulated. It would also be helpful to simulate several days when no EDs were needed to understand how much of the new capacity is procured under “normal” conditions and impacts on other parts of the market. Ideally, the simulations would also cover each of the eight critical transmission paths that are subject to the SOL requirement. Information that should be analyzed and reported from the simulations includes changes in procurement quantities and prices.

**ISO Response**

We appreciate PGE’s suggestion. Over the last several months, the ISO has encountered several technical and resources limitations. Given these challenges, we will endeavor to run as many save cases as possible and analyze multiple WECC paths.

**Regarding the proposed simulation for CME, PG&E makes two recommendations to make the simulations worthwhile 2. Timing of Simulations:**

Stakeholders and the CAISO need time to review the simulation results before finalizing the design. In fact, good simulations often result in design modifications. Therefore, the timing of this initiative should be adjusted for the CAISO to complete the simulations, report the simulation results to the stakeholders and give stakeholders an opportunity to provide comments before issuing the draft final proposal.

Although these recommendations may push back the date when the CAISO completes the stakeholder process, these recommendations are the type of reasonable due diligence any effective stakeholder process deserves and there is no artificial external deadline for completion that could argue for a rushed and potentially inferior design.

**ISO Response**

The schedule for this initiative has been revised to accommodate the prototype analysis and allow for additional stakeholder review.

**3. The Corrective Capacity Design Should Not Include Bidding**

PG&E agrees that the proposed LMCP fully captures and compensates for the corrective capacity to meet the post-contingency 30 minute WECC SOL requirement. As noted in the Department of Market Monitoring’s (DMM) comments, because there is no identifiable cost associated with providing the corrective capacity, under competitive conditions the market would expect to see price-taking offers if bidding were allowed, thus there is no need for bidding.<sup>4</sup> Moreover, by excluding a bidding feature, the CAISO simplifies its design and reduces the changes stakeholders need to implement in their systems. The inclusion of bids also necessitates bid and market power mitigation tools, aggravating the complexity issues.

It is important to understand how a resource providing LMCP capacity under the proposed design (with no LMCP bidding) already fully recovers its in-market opportunity costs for corrective capacity. The LMCP clearing price is a direct function of the energy and ancillary opportunity cost, even for the marginal unit. Such costs are completely represented through the energy and ancillary services bids. Energy bids reflect the marginal cost of providing energy. Regulation bids reflect the costs of holding and actively using capacity to provide regulation, inclusive of real-time price risks and of foregone energy sales. Spin and non-spin capacity bids reflect costs for holding capacity for the CAISO market and of maintaining readiness to dispatch energy. Cost recovery for a unit that bids its true costs are thus guaranteed by the market's price formation structure. Since costs for providing LMCP capacity is already accounted for through the suite of spot market products, no bidding is needed for LMCP.

In-market opportunity costs are clearly included in the LMCP. There are no out-of-market opportunity costs in Real Time since there is no time to arrange a trade outside CAISO after the Real Time market is run. In Day Ahead, other instruments such as export bids exist to cover opportunity costs that a resource may experience if its capacity is selected to provide reserve in CME rather than energy. Stakeholders who argue that bidding is appropriate for LMCP simply because bidding is available for existing ancillary services should justify this need in a clearing price market. Rigorous debate on substantive arguments for bidding must underwrite any decision, especially in light of complexity concerns. Absent logical arguments, requests for bidding capability for LMCP may amount to a request for an unjustifiable additional revenue stream.

For these reasons, PG&E believes the no bid proposal is the right approach and sees no need for an alternative to incorporate bidding, such as a two phase approach discussed in the proposal.<sup>5</sup>

<sup>4</sup> <http://www.caiso.com/Documents/DMM-Comments-ContingencyModelingEnhancementsStrawProposal.pdf>

<sup>5</sup> In the proposal, the CAISO presented an alternative two phase approach: in phase 1, following the initial implementation of the CME design, bids would be excluded; in phase 2, after the market gains experience, the CAISO would re-consider whether bidding should be allowed.

#### ISO Response

As discussed in greater detail in Section 9.10, bidding will not be supported for the preventive-corrective constraint.

#### 4. Cost for Corrective Capacity Should be Allocated On a Constraint-by-Constraint Basis

Cost allocation based on causation is a core principle for efficient markets. Accordingly, costs for managing post contingency flow limits on some of the paths should likely be targeted to the entities that drive the need and receive the benefit. Costs for constraints which clearly serve more narrow local issues should accrue to that local area, similar to cost-allocation approach used for Capacity Procurement Mechanism (CPM) related to Exceptional Dispatches.<sup>6</sup> Other constraints which equally and obviously serve system-wide reliability likely warrant system-wide cost allocation.

The CAISO should first provide an analysis to show whether applying the corrective mechanism for a specific transmission path (one of the eight) will yield predominantly system or local reliability benefits. Based on this analysis, PG&E recommends the CAISO adopt a cost-allocation methodology based on causation. For instance, LMCP costs to meet the Southern California Import Transmission (SCIT) nomogram, which specifically deals with Southern California reliability, should flow to that area.<sup>7</sup>

<sup>6</sup> Capacity Procurement Mechanism (CPM) designation associated with EDs are allocated to the specific Transmission Access Charge (TAC) areas in need of such capacity (see CAISO Tariff section 43.8.6 “Allocation Of Exceptional Dispatch CPMs”)

<sup>7</sup> Unlike other bi-directional transmission paths, SCIT is a nomogram that limits the amount of imports into the Southern California region. The main objective of SCIT is to ensure local reliability in this region.

**ISO Response**

The preventive-corrective constraint can replace most MOC constraints and exceptional dispatches used to meet the WEC TOP-007 requirement. Given that the requirement covers large WECC paths that broadly benefit the ISO system, the ISO believes that system-wide cost allocation is appropriate. This includes SCIT as well since this is listed as a Major WECC path as defined by WECC.

Though PGE cites the cost allocation for CPM, the ISO notes that the exceptional dispatch used to address WECC TOP-007 (moving units to dispatchable Pmin categorized as “Non-TModel”) is allocated system-wide.

Company	Date	Submitted By
Southern California Edison	July 1, 2013	Wei Zhou – (626) 302-3273 Aditya Chauhan – (626) 302-3764

**Opening Comments**

The following are Southern California Edison’s (SCE) comments on the California Independent System Operator’s (CAISO) Revised Straw Paper<sup>1</sup>. SCE supports the CAISO’s procurement of tools to research and analyze this problem to improve current processes.

However, SCE does not support the CAISO’s proposal for the following reasons:

\_\_\_\_\_

<sup>1</sup> <http://www.caiso.com/Documents/RevisedStrawProposal-ContingencyModelingEnhancements.pdf>

**ISO Response**

We appreciate your comments. Please see the ISO’s responses below.

**1. Common understanding of the NERC and the WECC standards must be reached among PTOs and the CAISO as a precondition to moving forward. Technical details of the NERC TOP-007 and TOP-007-WECC-1 standards must be properly understood by PTOs before initiating market design changes.**

As raised in its prior comments<sup>2</sup>, SCE is concerned that the proposal was drafted without first reaching a common understanding of transmission operations and standards as interpreted by the PTOs and the CAISO. Details such as the proper SOL limits and time of recovery allowed by the standards for these limits (4-hour, 1-hour, 30-minute, etc.) must be fully evaluated and communicated to the PTOs.

Otherwise, unnecessary costs may be imposed on the market while there is no guarantee that the proposal will address the reliability issue as intended. From the stakeholder call on 6/25/13, the CAISO agrees a technical conference is needed to further discuss details pertaining to the requirements. SCE further suggests that the technical conference should include PTOs and that common understanding of the requirements should serve as a prerequisite to any further determination of any new market design proposal.

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<sup>2</sup>SCE's comments on CAISO Straw Proposal - <http://www.caiso.com/Documents/SCE-Comments-ContingencyModelingEnhancementsStrawProposal.pdf>

## ISO Response

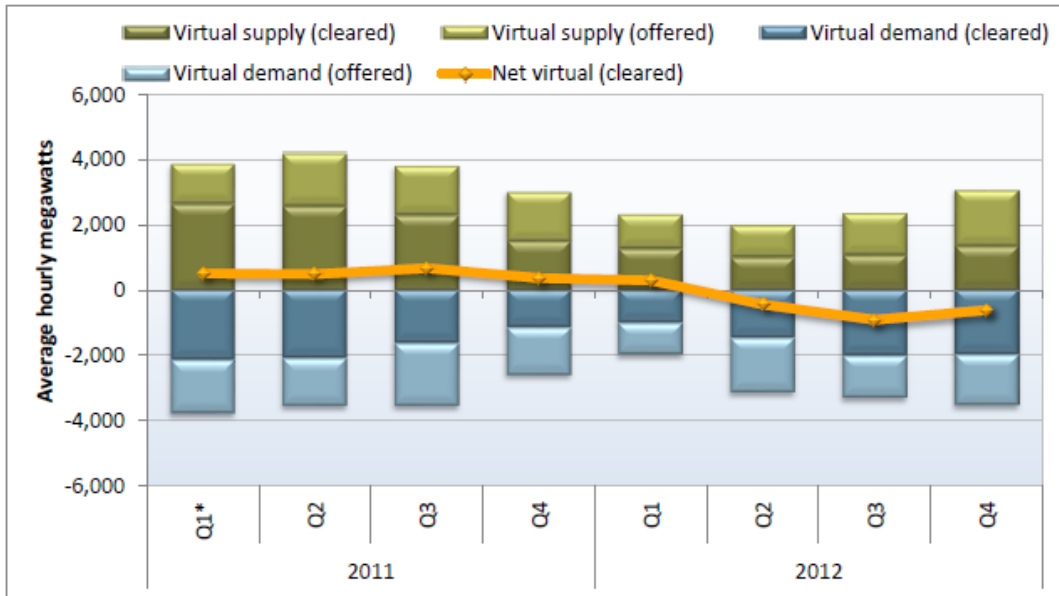
To clarify, the ISO agreed to consider the need for a technical conference to discuss WECC TOP-007. Since that time, we believe that SCE transmission staff, in discussion with ISO operations engineering staff, are in agreement with the requirements of the standard and the ISO's obligation to enforce it.

**2. The CAISO proposal, as well as the alternatives, need to be fully studied. SCE supports the use of market simulation to address market concerns. Without demonstration, there is no basis to conclude the proposal is just and reasonable.**

The CAISO proposes significant changes to the current market structure. For example, it proposes a new capacity price at each node which doesn't currently exist in the CAISO market (or any other market to our knowledge). And yet, the questions about why this price is needed and how it interacts with existing market prices have not been answered. With the significant changes proposed by the CAISO, the following basic questions must be addressed:

- How does the proposal work with virtual bids?  
The CAISO has emphasized that this proposal is to address the flow-based reliability requirement. We note these requirements only apply to real-time actual flows. However, SCE does not understand how incorporating post-contingency constraints in the DAM will achieve the reliability goal (i.e., the ISO's ability to meet SOL requirements) in real-time. For example, during 2012, the cleared virtual demand averaged 1,585 MW per hour, while virtual supply averaged 1,240 MW per hour (the offered virtual bids are even higher). We have observed virtual bids exceed 5,000MW under certain conditions<sup>3</sup>. In addition, about 64 percent of cleared virtual positions were held by pure financial trading entities that do not serve load or transact physical supply<sup>4</sup>, in other words, about 64% of cleared virtual positions are not intended to be hedged with equivalent physical positions. Clearly the flow created by material virtual bids are significantly different than the flows created by physical conditions in real-time. Since the CAISO's must deal with a physical problem, why does the proposal co-mingle (often material amounts) of financial flows?

**Figure 4.1 Quarterly average virtual bids offered and cleared<sup>75</sup>**



It is worth noting that there may be other NERC requirements specifically for the day-ahead timeframe, but the NERC/WECC requirements cited by the CAISO are for real-time and physical flows only.

<sup>3</sup> For example, the cleared virtual demand was 5,074MW HE20 on 3/22/2011. There are days in 2012 and 2013 when the virtual bid cleared close to or above 4,000MW in a single hour.

<sup>4</sup> 2012 DMM Annual Report, Pages 101-104 - <http://www.caiso.com/Documents/2012AnnualReport-MarketIssue-Performance.pdf>

### ISO Response

Please see Section 9.1.1 in the second revised proposal regarding the preventive-corrective constraint and virtual bidding. Including the constraint in the day-ahead market will ensure that the necessary long-start units are committed. Debating the merits of virtual bidding is out of the scope of this proposal.

### How does the proposal work with wind and other sources of deviations?

The CAISO has stated that post-contingency constraints dispatch more efficiently compared to A/S and EDs. However, given the nature of post-contingency constraints, i.e., the flow within 30 minute after an N-1 event occurs, it is questionable that the dispatch by post-contingency constraints will be as robust as A/S or EDs considering the output from wind and other sources may not be forecaste well in the day-ahead timeframe (or even in 30-minute real time in some cases).

<sup>5</sup> Table 18, Column 3, CAISO Revised Straw Proposal - <http://www.caiso.com/Documents/RevisedStrawProposal-ContingencyModelingEnhancements.pdf>

### ISO Response

We do not agree. Please see Section 8 in the second revised straw proposal for a discussion on the reliability and market benefits provided by the constraint as compared to only relying on operating reserves or exceptional dispatches. The flexible ramping constraint (and forthcoming product) is more appropriately used to address net load variability/uncertainty whereas the preventive-corrective constraint addresses contingencies.

**How does the proposal work with existing A/S products, Flexi-ramp constraint, and Resource Adequacy?**

In a real situation when an emergency occurs, it may be prudent for the CAISO to use all the tools and capacity that are available to recover, which includes the capacity brought online through flexi-ramp, A/S products, etc. There seems to be a disconnect between real life and the CAISO proposal if the capacity brought online through other products (for example, flexi-ramp) is not counted toward meeting the N-1 requirement.

**ISO Response**

Please see Section 9.1.1 in the second revised straw proposal.

**Why do RA units receive double payments for capacity?**

RA units have already been paid for capacity. But under the CAISO proposal, such units may also receive a second capacity payment for providing SOL relief even if the units incur no opportunity cost. For example, an off-line peaker that has already sold RA may receive a second payment for SOL relief even if the unit never runs and never incurs an opportunity cost.

**ISO Response**

The LMCP payment serves a very different purpose than RA capacity payments. This is described in detail in Section 7.4 in each of the examples and explains what opportunity costs the LMCP will cover. For example, if a unit is dispatched down to provide corrective capacity, the LMCP will reflect at least this energy opportunity costs. This is not the same as RA capacity.

**How does the proposal work with the LMPM?**

Since the CAISO proposal introduces a nodal capacity price that will interact with the nodal energy price, there is a market mitigation concern that is not captured by the existing LMPM. Even a new capacity-only market power mitigation may not work, as the proposal may lead to a gaming issue with entities using capacity to manipulate the energy market, or vice versa. The importance of market power mitigation cannot be stressed enough as CAISO is proposing a new dimension of constraints that are temporal (post-contingency). Combinations of spatial and temporal constraints can create numerous scenarios that cannot easily be predicted and thus mitigated.

**ISO Response**

Please see Section 9.9 in the second revised straw proposal.

**Some of the alternatives that need to be fully explored are the following (not an exhaustive list).**

The CAISO proposal adds significant complexity to the current market. The impacts of such complexity cannot be assessed solely based on theory or a 3-bus system example. If not properly addressed and mitigated, the added complexity has the potential to reduce market competitiveness.

SCE supports the CAISO's effort to simulate and fully demonstrate its proposal, but we strongly recommend developing alternatives for consideration. The simulation effort should include alternatives since the CAISO has not demonstrated that its current proposal is cost effective and whether or not a

more cost-effective alternative exists.
<b>ISO Response</b>
As noted in Sections 6.7 and 8, the ISO has considered alternatives and the constraint is in fact a more cost-effective alternative to the ISO’s current practices.
<b>RUC process improvement</b>
RUC processes have the benefit of enforcing physical resources commitment. Given that the need that the CAISO proposal is attempting to address is driven by the reliability flow requirements, RUC processes seem to be the perfect fit –at the very least this option needs to be fully explored. RUC ignores financial bids and ensures that RA units do not receive a “double payment”. Similarly, enhancements to MOC should also be considered.
<b>ISO Response</b>
Improving the RUC process is out of scope for this initiative. As noted in the paper in Sections 6.4 and 8, the preventive-corrective constraint can be used to address the WECC TOP-007 standard in place of MOC constraints.
<b>A/S improvement</b>
Instead of Contingency Modeling Enhancement, the CAISO should explore the option of A/S Market Enhancement. For example, to increase A/S procurement granularity by creating additional zones or subzones or increasing the procurement target of the existing A/S products.
<b>ISO Response</b>
As noted in the paper in Section 9.10, more granular ancillary services regions will engender greater and more complicated market power mitigation monitoring.
<b>Summary</b>
In summary, SCE feels it is imperative that the CAISO and PTOs have a common understanding of what the relevant NERC and WECC standards require and allow. The SOL-related ED problem represents a fraction of a percent of the total transactions in the CAISO’s electricity market. SCE believes the CAISO should refine existing practices through enhanced situational awareness and enhanced planning tools and should not introduce additional products without further research, testing, and justification. To date, the CAISO has not provided any due diligence in providing the evidence that new products, rather than refinements of existing products and procedures, produce superior benefits to customers and the grid. At this time, SCE is far from persuaded that the correct solution is to make major, unproven changes to the entire market as proposed by the CAISO and has no basis to conclude the CAISO’s proposal will result in just and reasonable outcomes.
<b>ISO Response</b>
No comment.

Company	Date	Submitted By
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SDG&E	7/2/2013	
<p><b>SDG&amp;E's main issue continues to be the one we raised from the outset—namely, the CAISO's apparent unwillingness to consider controlled load drop as a mitigation solution for an N-1-1 contingency condition.</b></p>		
<p>This would obviate the need to take other actions such as starting inefficient boiler generation and running this generation at its minimum output level (either through the CAISO's minimum on-line commitment (MOC) mechanism or via exceptional dispatch).</p> <p>Whether or not the CAISO decides to rely on controlled load drop, we continue to believe the CAISO's proposed contingency modeling enhancements represent an important step forward in capturing the economic impacts of reliability requirements in the CAISO's market mechanisms, rather than the less precise and less efficient judgment-based out-of-market actions.</p> <p>SDG&amp;E's view of controlled load drop is that it does not make sense to start a very costly unit in anticipation of a possible N-1-1 contingency condition when (1) there is more than enough gas turbine capacity in the area in question, and (2) NERC/WECC/CAISO reliability standards permit the use of controlled load drop to manage an N-1-1 contingency condition should it actually arise. SDG&amp;E suggests that following the first N-1 contingency, the CAISO should rely on local area gas turbine capacity to prepare for a possible second contingency. (The CAISO has 30 minutes to start-up gas turbine capacity to prepare for a possible second contingency.) Then, if there is not enough gas turbine capacity available to prepare for a possible second contingency, SDG&amp;E proposes that the CAISO direct the arming of controlled load drop schemes. If the second contingency actually happens, controlled load drop would be used to return the system to a secure state; i.e., in preparation of a possible third contingency. Relying on quick start gas turbine capacity, rather than preemptively starting and running inefficient boiler generation, will help to minimize the cost of preparing for N-1-1 contingency conditions. Under the CAISO's contingency modeling enhancement proposal this should happen automatically because the CAISO's market software will—subject to the specific price/quantity offer prices submitted by parties—select the most economic/locationally-effective mix of generation to prepare for the N-1-1 contingency condition. For this reason alone, SDG&amp;E continues to support the CAISO's contingency modeling enhancement proposal.</p> <p>Internalizing controlled load drop in the current contingency modeling enhancement proposal does raise important implementation and policy issues. For example, there is currently no price/quantity bid for controlled load drop. There is clearly a cost for dropping load, but establishing the relationship between cost and quantity is challenging. Also, this relationship is likely location- and time-specific. The cost to drop load in some locations and at certain times is likely quite low but at other locations and at other times, very high. Further, it is unclear whether a host utility has the authority to submit a price/quantity bid for controlled load drop that includes direct access or community choice aggregation customers. Note that depending on the circuits involved, controlled load drop may also force wholesale generation connected to a distribution circuit off-line. It is not clear that the host utility has the authority to submit market bids that have the effect of involuntarily forcing non-host utility owned generation off-line. These issues need to be explored in connection with implementing controlled load drop in the CAISO's proposed contingency modeling enhancement program.</p>		
<p><b>ISO Response</b></p>		
<p>The preventive-corrective constraint can award corrective capacity to participating demand response such as through the currently available proxy demand response or the forthcoming reliability demand response resource. Using these products would avoid disruptive manual processes such as controlled load drop.</p>		



Company	Date	Submitted By
<b>Six Cities: Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California</b>	7/2/2013	Bonnie S. Blair Thompson Coburn LLP 1909 K Street N.W., Suite 600 Washington, D.C. 20006-1167 bblair@thompsoncoburn.com 202-585-6905
<b>Opening Comments</b>		
<p>In response to the ISO’s request, the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, the “Six Cities”) submit the following comments on the ISO’s June 18, 2013 Revised Straw Proposal on Contingency Modeling Enhancements (the “Revised Proposal”).</p>		
<b>ISO Response</b>		
<p><a href="#">We appreciate your comments. Please see the ISO’s responses below.</a></p>		
<p><b>The Six Cities appreciate the ISO’s commitment at page 47 of the Revised Proposal to develop a prototype model for the Contingency Modeling Enhancements and apply it to a saved production level case so as to provide additional information on how the proposed preventive-corrective constraint will function and impact the market.</b></p>		
<p>The Cities note, however, that the anticipated date for completion of this analysis, approximately mid-August, falls several weeks after the date that the ISO plans to post a Draft Final Proposal and even after the due date for stakeholder comments on the Draft Final Proposal. For the prototype analysis to be meaningful, the ISO must be prepared to consider modifications to the Draft Final Proposal based on the outcome of the analysis, and it should commit to do so.</p>		
<p>If the prototype analysis supports the ISO’s expectations concerning the feasibility and utility of the preventive-corrective optimization process, the Six Cities support the ISO’s determinations at pages 44-45 of the Revised Proposal to not allow bidding for the supply of corrective capacity and to discontinue bid-based ramping rates. The Cities agree with the ISO’s concerns that allowing bids for corrective capacity and for varying ramp rates could provide opportunities for gaming or the exercise of market power.</p>		
<b>ISO Response</b>		
<p><a href="#">The schedule for this initiative has been revised to accommodate the prototype analysis and allow for additional stakeholder review.</a></p>		
<p><a href="#">As discussed in greater detail in Section 9.10, bidding will not be supported for the preventive-corrective constraint.</a></p>		
<p><b>The Revised Proposal does not respond adequately to the issue raised in the Cities’ May 28, 2013 comments on the Straw Proposal regarding the effects of convergence bidding on the ability of the contingency modeling changes to satisfy the objective of enhancing the probability that the ISO will be able to recover from an N-1-1 contingency within the required thirty minute period.</b></p>		
<p>As discussed in the Cities’ previous comments, the requirements for post-contingency recovery are flow-based, but convergence bidding results in virtual flows that may either add to or offset physical flows. If virtual bids are included in the optimization used to select resources for corrective capacity under the proposed contingency modeling approach, it is not clear how the ISO can be confident that the selected resources will be effective in recovering from an actual contingency leading to a post-contingency topology that may be very different from the combination of virtual and physical flows utilized in the</p>		

optimization process. The Department of Market Monitoring comments on the Straw Proposal “noted that virtual bids in the IFM may distort the commitment and positioning of resources to meet the corrective constraints.” The Revised Proposal asserts at page 48 that virtual bids in the IFM currently affect constraints and products in the IFM, “so there is no change.” The change, however, is that the ISO now proposes to rely on automated selection of resources to meet the corrective constraints and to make capacity payments to those resources. If, as the DMM recognizes, virtual bids distort the positioning of resources to meet the corrective constraint, load will be required to pay for capacity that will not meet the intended purpose. While the Revised Proposal emphasizes at page 48 that “only physical supply will be used to meet the constraint in RUC,” the DMM comments state that “[t]he RUC market may help with the commitment issues, but not the positioning issues created by virtual bidding.” The ISO’s evaluation of the prototype analysis should include careful consideration of the impact of virtual flows on the outcome of the preventive-corrective optimization process and the likely effectiveness of selected resources on the ISO’s ability to meet SOL requirements.

**ISO Response**

Please see Section 9.1.1 in the second revised proposal regarding the preventive-corrective constraint and virtual bidding. Including the constraint in the day-ahead market will ensure that the necessary long-start units are committed. Debating the merits of virtual bidding is out of the scope of this proposal.

**The Six Cities’ May 28 comments also recommended that the ISO develop enforceable performance requirements for the resources selected to provide corrective capacity.**

Although the ISO’s matrix of responses to stakeholder comments indicates at page 28 that it will consider implementation of a penalty for non-performance, the Revised Proposal does not address this point. Resources that receive a capacity payment premised on their availability to satisfy SOL requirements in the event of a contingency should be expected to perform. If they do not, they should be responsible for any penalty imposed on the ISO for failure to meet SOL requirements, should have the capacity payment rescinded for the period in which they failed to perform, and should be disqualified from receiving any payments for corrective capacity for a period of twelve months from the date of the failure to perform.

**ISO Response**

Please see Section 9.6 in the second revised proposal regarding no pay provisions.

Company	Date	Submitted By
Western Power Trading Forum	7/5/2013	Ellen Wolfe Resero Consulting 916 791-4533 ewolfe@resero.com
<b>Opening Comments</b>		
WPTF appreciates the opportunity to submit comments in response to the ISO’s revised straw proposal.		
<b>ISO Response</b>		
We appreciate your comments. Please see the ISO’s responses below.		

**Please refer to WPTF's prior comments, as our positions remain essentially the same.**

The CAISO's stakeholder matrix seemed to not respond to WPTF's prior points on transparency, and we ask you to consider again how transparency will be provided regarding the constraints enforced and their market impacts (e.g., clearing prices, etc.). We would also like more information at this time to confirm which constraints and contingencies will be modeled through this mechanism.

**ISO Response**

There are current process refinements taking place internal to the ISO to determine whether information on the constraints and contingencies can be provided in a more timely manner via CMRI. The ISO will update market participants on the progress of this discussion and outcome.

**We also wish to re-emphasize our support for a market-based product to address the contingency needs rather than continued reliance on minimum on-line constraints and exceptional dispatch.**

WPTF can see benefits to clarifying the reliability requirements as the IOUs have requested. Yet ultimately the needs require a solution that provides transparency and proper pricing. As a result we support the ISO continuing to work toward a new market solution for these needs.

**ISO Response**

We appreciate your comments.