California Independent System Operator Corporation

July 30, 2014

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: California Independent System Operator Corporation
Docket No. ER14-____- 000

Amendment to California ISO FERC Electric Tariff to Modify Allocation of Contingency Reserve Costs

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) submits this tariff amendment to modify the allocation of costs for contingency reserves (*i.e.*, spinning and non-spinning reserves) it will procure to meet Western Electric Coordinating Council (WECC) Reliability Standard BAL-002-WECC-2 — Contingency Reserve.[1] The Commission approved the reliability standard to take effect on October 1, 2014.[2] The CAISO proposes to change its settlement rules to align the allocation of contingency reserve costs with the new procurement requirements for contingency reserves under BAL-002-WECC-2.

I. Executive Summary

The CAISO proposes to align its cost allocation rules for contingency reserves it procures for the CAISO balancing authority area with new procurement rules approved

[1] The CAISO submits this filing pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Part 35 of the Federal Energy Regulatory Commission's regulations, 18 C.F.R. Part 35, and in compliance with Order No. 714 regarding electronic filing of tariff submittals, *Electronic Tariff Filings*, Order No. 714, FERC Stats. & Regs. ¶ 31,276 (2008). Capitalized terms not otherwise defined have the same meaning as set forth in CAISO tariff, appendix A, master definitions supplement.

[2] *Regional Reliability Standard BAL-002-WECC-2 – Contingency Reserve*, 145 FERC ¶ 61,141 (2013).

by the Commission. The CAISO currently procures contingency reserves[3] based on WECC Reliability Standard BAL-STD-002, which expires September 30, 2014. The CAISO allocates the costs of contingency reserves to scheduling coordinators representing load, imports and exports based on a formula that tracks the procurement requirements of WECC Reliability Standard BAL-STD-002. The ISO seeks to change this formula because it does not align with the procurement requirements under the new standard. This change will ensure that the CAISO allocates costs according to cost-causation principles.

The CAISO also proposes several other changes related to the new contingency reserves standard and the proposed cost allocation methodology.

1. The CAISO proposes to clarify that under its protocol for dynamic schedules, it will procure contingency reserves for dynamically scheduled imports of energy and that the sink balancing authority will procure contingency reserves for dynamically scheduled exports of energy. This proposal is consistent with the CAISO's current treatment of dynamically scheduled imports similar to internal resources. The CAISO does not have dynamically scheduled exports, but if and when it does, the CAISO proposes to treat those like external resources for purposes of procuring contingency reserves and associated cost allocation.

2. The CAISO proposes to treat Energy Imbalance Market (EIM) transfers similar to static imports or exports for purposes of contingency reserve cost allocation. The source balancing authority will procure contingency reserves associated with any EIM transfer. In turn, the CAISO will provide the scheduling coordinator for an EIM participating resource a contingency reserve cost credit for an EIM transfer into the CAISO balancing authority area and will impose a contingency reserves charge on EIM participating resource scheduling coordinators associated with its EIM transfer out of the CAISO balancing authority area.

3. The CAISO currently provides a credit to scheduling coordinators that self-provide more contingency reserves than are necessary to cover their pro-rata allocation of costs. The CAISO proposes to change that practice so

[3] "Contingency reserves" is the term used by WECC to refer to the combination of spinning reserves and non-spinning reserves, and is synonymous with the term "operating reserves" used by the CAISO in its tariff for the same purpose. To maintain consistency with the WECC standard, the CAISO used the term "contingency reserves" during the stakeholder process leading to this tariff amendment. To avoid confusion for parties familiar with both the WECC rule and the CAISO's stakeholder process, the CAISO uses the term contingency reserves in this transmittal letter. The proposed tariff language associated with this filing, however, maintains usage of the defined term Operating Reserves to maintain consistency of use of that term in numerous parts of the tariff.

that the credit does not exceed the scheduling coordinator's obligation. Scheduling coordinators may instead bid any excess contingency reserves into the ancillary services market.

4. The CAISO proposes to clarify that it will not support a new e-tag capacity type for recallable energy. WECC introduced this new capacity type to facilitate the new contingency reserves standard as it applies to reserve sharing groups. The CAISO does not participate in reserve sharing groups and configuring the CAISO systems to accept this new type of e-tag would impose costs and create unnecessary implementation complexity.

5. The CAISO proposes to clarify its current practice of allowing self-provided ancillary services to substitute for other ancillary services consistent with the substitution principles set forth in its current tariff.

The CAISO requests that the proposed tariff amendments take effect on October 1, 2014, to coincide with the effective date of BAL-002-WECC-2.

II. BACKGROUND

A. CAISO Market Procurement of Contingency Reserves

The CAISO administers both day-ahead and real-time wholesale electric energy markets. A primary objective of the CAISO markets is to ensure that there is sufficient supply of energy to satisfy demand in the region while maintaining the reliability of the transmission system operated by the CAISO. These markets simultaneously optimize the procurement of energy and ancillary services and allocate the use of transmission capacity on the CAISO grid based on locational marginal pricing at both internal nodes (*i.e.*, locations within the CAISO balancing authority area) and the interties (*i.e.*, locations for imports to and exports from the CAISO balancing authority area).

The CAISO procures four types of ancillary services through its markets: spinning reserve, non-spinning reserve, regulation up, and regulation down. Scheduling coordinators that serve load or exports incur an ancillary services obligation to meet a portion of the total ancillary services costs. Scheduling coordinators may offer ancillary services into the CAISO market either through economic bids or submissions to self-provide ancillary services (*i.e.*, self-schedule).

The CAISO tariff requires that the CAISO, at a minimum, procure sufficient ancillary services to meet reliability standards established by the North American

Electric Reliability Corporation (NERC) and WECC.[4] The CAISO currently procures contingency reserves – *i.e.*, the combination of spinning reserves and non-spinning reserves – based on BAL-STD-002, which requires balancing authorities and reserve sharing groups to procure total operating reserves to meet the greater of:

a. The loss of generating capacity from a forced outage of generation or transmission equipment that would result from the most severe single contingency;[5] or

b. The sum of five percent of the load responsibility served by hydropower generation and seven percent of the load responsibility served by thermal generation.

Under the current WECC standard at least half of the contingency reserves must be spinning reserve, although a balancing authority may choose to procure a higher proportion of spinning reserves as compared to non-spinning reserves.[6] The CAISO tariff contains an ancillary services substitution rule that allows a higher quality ancillary service to substitute for a lower quality ancillary service when it is economic to do so.[7] For example, if scheduling coordinators offer excess regulation up into the market and it is available at a lower price than either spinning reserves or non-spinning reserves, those offers can substitute for spinning reserves or non-spinning reserves. Excess spinning reserve may also substitute for non-spinning reserve. Application of the substitution rule may give rise to the CAISO procuring more spinning reserves than non-spinning reserves in a given hour.

The CAISO attempts to procure 100 percent of its ancillary services requirements in the day-ahead market based on the CAISO's day-ahead demand (internal load plus exports) forecast net of self-provided ancillary services. The CAISO settles ancillary service awards at the respective ancillary service marginal price calculated for each ancillary service based on bid-in costs.

B. Allocation of Contingency Reserves Procurement Costs

The CAISO calculates the total cost of each type of contingency reserve (*i.e.*, spinning or non-spinning reserves) for each hour and allocates them to scheduling

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[4] CAISO tariff, section 8.1 ("The CAISO shall be responsible for ensuring that there are sufficient Ancillary Services available to maintain the reliability of the CAISO Controlled Grid consistent with NERC and WECC reliability standards and any requirements of the NRC.").

[5] In this context the single most severe contingency could be a generation outage, a transmission outage, or implementation of a remedial action scheme.

[6] BAL-STD-002, Requirement B.a.ii.

[7] CAISO tariff, section 8.2.3.5.

coordinators pro-rata based on their reserves obligation, i.e., load and exports and accounting for the amount of hydroelectric and thermal generation resources used to serve their load.[8] The CAISO bases a scheduling coordinators obligation on the following formula:

7% of (metered load + firm exports – firm imports) + 100% of non-firm imports – 2% of (hydro generation + unit-contingent imports from hydro generation – unit contingent exports from hydro generation)

This Commission-approved formula takes into account a number of factors that drive the procurement of contingency reserves. The CAISO procures reserves to serve demand (internal metered load and exports). Scheduling coordinators that do not serve internal load or exports are not allocated contingency reserve costs. The CAISO's formula recognizes that a scheduling coordinator secures reserves for firm imports into the CAISO balancing authority area and so the CAISO subtracts these imports from the cost allocation calculation. The CAISO, however, adds any non-firm imports into the calculation. The CAISO will procure contingency reserves to support these schedules because it has no assurance the source balancing authority will dispatch its contingency reserves to support these schedules in the event of a contingency. The formula also reflects that the CAISO procures reserves for imports into the CAISO balancing authority area if energy from the import is unit-contingent, which makes the import available to the CAISO only if a designated resource is available.

Under the current formula, the CAISO reduces a scheduling coordinator's hourly obligation by providing a credit to scheduling coordinators for load served by hydro generation. This credit reflects the fact that the existing WECC standard requires fewer contingency reserves for load served by hydropower generation. The calculation of this credit includes the sum of hydro generation internal to the CAISO balancing authority area and unit contingent imports but excludes unit contingent exports of hydro generation that would serve demand in another balancing authority area. The calculation is consistent with the premise that scheduling coordinators that do not serve internal load or exports are not allocated contingency reserve costs. The CAISO nets the amount of the particular ancillary service the scheduling coordinator has self-provided from the scheduling coordinators hourly contingency reserve obligation.[9] Similarly, the CAISO permits inter-scheduling coordinator trades of ancillary services through which scheduling coordinators can transfer ancillary services obligations amongst themselves and considers such transfers in calculating a scheduling coordinator's obligation.

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[8] *See* CAISO tariff sections 11.10.3.2 and 11.10.4.2.

[9] *See* CAISO tariff section 11.10.6.

After accounting for all of these factors, the CAISO calculates the final allocation, which will result in a charge if the scheduling coordinator's obligation exceeds their self-provided ancillary services, inter-scheduling coordinator trades, and firm imports. The calculation results in a credit if a scheduling coordinator's firm imports, self-provided ancillary services, or inter-scheduling coordinator trades exceed its share of the obligation.

Under the existing cost allocation structure, the CAISO treats schedules from dynamic system resources similar to internal generation and different from static import schedules. The CAISO does not assume that the scheduling coordinators have paid the source balancing authority to dispatch contingency reserves to support the dynamic schedule and, therefore, does not provide the scheduling coordinator with a corresponding credit.

The CAISO maintains separate neutrality accounts for each ancillary service in its market as well as an additional neutrality account that combines the three upward ancillary services – regulation up, spinning reserve and non-spinning reserve. If the CAISO collects more in ancillary services charges than it pays out, it deposits the excess in the neutrality accounts. Similarly, if the CAISO incurs more ancillary service costs than it collects from scheduling coordinators, the CAISO funds the difference from the neutrality accounts. These costs are ultimately allocated to scheduling coordinators serving load and exports. The combined upward account is necessary to properly account for imbalances arising from substituted services.

III. DISCUSSION OF FILING

On November 13, 2013, the Commission approved BAL-002-WECC-2.[10] The new standard goes into effect on October 1, 2014. Under the new contingency reserve standard, balancing authorities and reserve sharing groups must procure contingency reserves to meet the greater of:

a. The loss of the most severe single contingency; or

b. The sum of three percent of hourly integrated load (generation minus station service minus net actual interchange) plus three percent of hourly integrated generation (generation minus station power service).

Under the new standard, the CAISO's procurement for contingency reserves will change when it is adhering to the second requirement. In these cases, the CAISO will procure to the sum of the following:

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[10] *Regional Reliability Standard BAL-002-WECC-2 – Contingency Reserve*, 145 FERC ¶ 61,141 (2013).

- 3 percent of its load forecast;
- 3 percent of internal generation;
- 3 percent of (pseudo-tie imports less pseudo-tie exports); and
- 3 percent of (dynamically scheduled imports less dynamically scheduled exports).

The CAISO's proposed changes to its contingency reserves cost allocation rules are necessary to align how it settles the costs of this procurement. The proposed changes are consistent with cost-causation principles and, given the changes in the procurement rules, the Commission should accept them.

The CAISO also proposes related changes to its market and settlement rules. Specifically, the CAISO proposes: (1) clarifications regarding the treatment of dynamic schedules and EIM transfers in the procurement of contingency reserves and associated cost allocation; (2) tariff revisions to disallow credits for excess self-provision of contingency reserves; (3) tariff revisions to reject capacity e-tags for recallable energy; and (4) clarifications regarding the ISO's existing practices for ancillary services substitution.

A. Revision to Cost Allocation Rules

1. The revised cost allocation formula provides a straightforward method of allocating contingency reserve procurement costs.

The CAISO proposes to amend tariff sections 11.10.3.2 and 11.10.4.2 relating to the hourly net obligation for spinning reserves and non-spinning reserves to allocate to scheduling coordinators the costs of procuring contingency reserves for each hour based on the following formula:

6% of metered load + 3% of exports – 3% of imports[11]

The pro-rata allocation derived from this formula establishes a scheduling coordinator's initial obligation based on the amount of contingency reserves procured under the new rule. Under BAL-002-WECC-2, the CAISO will continue to procure reserves to meet its load and exports. Just like today, the CAISO will account for the total procurement costs and then will allocate those costs to scheduling coordinators based on the principles in this basic formula. Because the new procurement

[11] The CAISO's proposed tariff revisions to sections 11.10.3.2. and 11.10.4.2 state:

The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of six (6) percent of its CAISO Demand and three (3) percent of its Energy for exports from the CAISO Balancing Authority Area (excluding export Dynamic Schedules); less three (3) percent of Energy from imports into the CAISO Balancing Authority Area (excluding import Dynamic Schedules).

requirements do not distinguish between firm and non-firm imports, hydro and thermal generation, the basic cost allocation will no longer distinguish a scheduling coordinator's obligation on these types of supply.

The CAISO proposes to continue to treat static imports as it does today under its cost allocation rules because under the new procurement requirement the host balancing authority must procure contingency services for those import schedules. Therefore, to the extent the three percent of scheduling coordinator's static imports into the CAISO balancing authority area exceed their six percent of their metered demand plus three percent of their exports, the scheduling coordinator will receive a credit.

Table 1 provides an example of how the CAISO's new cost allocation formula will operate.

Table 1: Hourly Contingency Reserves Procurement Cost Allocation

Hourly contingency reserve procurement costs = $1,000

	Metered Load	Static Export	Static Import	6% load + 3% exp. – 3% imp.	% of hourly costs	Pro rata allocation
SC1	500	0	0	30 (30+0+0)	40%	$400
SC2	500	250	0	37.5 (30+7.5+0)	50%	$500
SC3	500	0	250	22.5 (30+0-7.5)	30%	$300
SC4	0	0	500	-15 (0+0-15)	-20%	-$200
				75	100%	$1,000

In this example, the CAISO has four scheduling coordinators.[12] Three of the scheduling coordinators each serve load of 500 MW, while the fourth serves no load in the CAISO balancing authority area but is an importer into the CAISO. While the three load-serving scheduling coordinators all serve the same quantity of load, their respective allocation of the $1,000 of contingency reserves costs differs. This variation results from their differing use of imports and exports.

- SC1 meets its load solely from internal generation and schedules no imports and no exports. Under the proposed formula and based on what the other three scheduling coordinators scheduled, SC1 must pay 40% (or $400) of the $1,000 total hourly costs.

[12] This example assumes that there are no inter-scheduling coordinator trades of ancillary services, there is no self-provision, and there is no substitution of higher-quality ancillary services for lower-quality ancillary services.

- SC2 also meets its 500 MW of load from internal generation. Its hourly allocation, however, is higher than that of SC1 because in addition to serving its load, it also exported 250 MW outside the CAISO. Based on the CAISO's proposed formula, SC2's exports result in a higher allocation of the hourly costs than SC1.

- In contrast to SC1 and SC2, SC3 meets half of its 500 MW of load from static imports. Under the CAISO's proposed formula, scheduling coordinators get an ancillary services credit for static imports. As a result, the hourly allocation to SC3 is lower than that of either SC1 or SC2.

- SC4 presents an example of a scheduling coordinator whose initial obligation is negative. Instead of paying the CAISO for contingency reserves, SC4 receives a payment from the CAISO. Because its scheduling in the hour consists solely of imports, under the CAISO's proposed formula it receives a credit of $200 for the hour.

2. The revised cost allocation formula appropriately reflects cost-causation principles.

The fundamental rationale for the revised allocation formula is simple – the CAISO seeks to align the costs it incurs from procuring contingency reserves with how it allocates those costs. Some elements of the revisions track the new standard closely. For example, the new reliability standard does not consider the fuel source of generation serving load or the type of energy associated with imports or exports. Accordingly, the CAISO's revised cost allocation formula, unlike the current formula, does not distinguish between thermal generation and hydropower. Similarly, unlike the current formula, the revised formula does not distinguish between the energy type identified in e-tags corresponding to imports into the CAISO (*e.g.*, "firm," "non-firm," or "unit contingent"). For this reason, how a scheduling coordinator elects to e-tag its imports and exports will not impact the allocation of contingency reserve costs.

The CAISO proposes to maintain the current rate structure that allocates procurement costs based on quantity procured to serve the scheduling coordinator's load. The proposed cost allocation formula tracks the quantity of MWs of contingency reserves the CAISO will procure under the new standard. In mathematical terms:

3% of integrated load + 3% integrated generation
is equivalent to
6% of load + 3% of static exports – 3% of static imports

The example in Table 1 helps explain this equivalence. SC1 meets its 500 MW of load from internal generation. SC1's choice to serve its load in this manner means it is responsible for 500 MW of internal load and 500 MW of internal generation. SC1's

scheduling causes the CAISO under the new WECC standard to procure *30* MW of contingency reserves (3% of 500 MW of load + 3% of 500 MW of internal generation).

The logic supporting the statement that SC1 is responsible for 500 MW of load is that if it did not serve the load, then there would be a direct reduction of 500 MW in internal CAISO load attributable to SC1. If SC1 did not have this load to serve, then the CAISO would not have dispatched the 500 MW of generation. If the 500 MW of dispatched generation had not served internal load (either load of SC1 or another scheduling coordinator), then they would have served an export. Under the CAISO's proposed allocation, the scheduling coordinator representing an export is also allocated the cost of contingency reserves. Thus, if a resource in the CAISO's balancing authority area generates energy to serve external load, then that generator's scheduling coordinator is charged its proportionate share of contingency reserves procured by the CAISO.

As with SC1, SC2 chooses to serve its 500 MW of load from internal generation. However, it also schedules 250 MW of exports. This means that SC2 is responsible for 750 MW of total internal generation. This scheduling behavior causes the CAISO under the new WECC standard to procure *37.5* MW of contingency reserves (3% of 500 MW of load + 3% of 750 MW of internal generation).

SC3's scheduling presents the mirror image of SC2. Its choice to serve half of its load with static imports means that it is responsible for only 250 MW of total internal generation. This causes the CAISO under the new WECC standard to procure *22.5* MW of contingency reserves (3% of 500 MW of load + 3% of 250 MW of internal generation).

SC4's import of 500 MW displaces 500 MW of internal CAISO generation. This displacement of internal generation causes the CAISO under the new WECC standard to procure *15* MW fewer of contingency reserves (3% of 500 MW of internal generation) than it otherwise would have had to procure. The CAISO, in turn, provides a credit to this scheduling coordinator to compensate it for having lowered the CAISO's overall need to procure contingency reserves. This credit from the CAISO also offsets the charge that SC4 will likely incur from the host balancing authority to cover the costs the host balancing authority faced in procuring contingency reserves to cover the generation of the energy imported to the CAISO. Under the Reliability Standard BAL-002-WECC-2, the host balancing authority must secure contingency reserves for this generation.

Based on the combined scheduling activities of the four scheduling coordinators the CAISO contingency reserves procurement target for the hour would be 75 MW of

total contingency reserves in the hour.[13] SC1's market activities are responsible for 40% of that total (30 of the 75 MWs). SC2's market activities are responsible for 50% of that total (37.5 of the 75 MWs). SC3's market activities are responsible for 30% of that total (22.5 of the 75 MWs). SC4's market activities are responsible for -20% of that total (-15 of the 75 MWs). These percentages match the percent of hourly costs that each scheduling coordinator is allocated. These results are summarized below in Table 2.

Table 2: Percentages of Procurement Costs Allocation

	Internal Load responsibility	Internal Gen responsibility	3% internal load	3% internal gen.	Contingency Reserves Procurement	% of Total
SC1	500	500	15	15	30	40%
SC2	500	750	15	22.5	37.5	50%
SC3	500	250	15	7.5	22.5	30%
SC4	0	-500	0	-15	-15	-20%
					75 MW	100%

The equivalence between the two formulas is important because it demonstrates that the CAISO's proposal follows the Commission's most basic cost-causation principles. The Commission consistently has found that regulated utilities should recover costs from the customers that cause those costs to be incurred.[14] Under the CAISO proposal, the share of the total contingency reserves that each scheduling coordinator causes the CAISO to procure matches the share of the total contingency reserves costs for the hour allocated to each scheduling coordinator.

The CAISO cannot retain the existing cost allocation rules given the new procurement requirements because they do not align the costs with the cause of the ancillary service costs incurred. For example, under the current cost allocation formula a scheduling coordinator's allocation of contingency reserve costs is lower if it serves its load or its exports from hydropower resources. Continuing the example from Table 1, if SC1 served its entire load from thermal resources and SC2 served its load and exports from hydropower resources, then SC2's allocation of the hourly reserve costs could be lower than SC1's allocation. This outcome is problematic because under the new WECC standard SC2's market activity will impose higher costs on the CAISO market than the CAISO will be able to recover from SC2. Additionally, such a result would

[13] Based on self-provision and the relative cost of regulation up, as compared to spinning reserves and non-spinning reserves, the CAISO may procure above its procurement target for a given hour.

[14] *See e.g. Pa. Electric Co. v. FERC*, 11 F.3d 207, 211 (D.C. Cir. 1993) stating "Utility customers should normally be charged rates that fairly track the costs for which they are responsible" *citing Town of Norwood v. FERC*, 962 F.2d 20, 25 (D.C.Cir.1992) and *Union Elec. Co. v. FERC*, 890 F.2d 1193, 1198 (D.C. Cir. 1989).

improperly shift costs onto SC1 that are disproportionate to the costs it caused the CAISO market to incur.

3. The CAISO proposes clarifications to its treatment of dynamic schedules and energy imbalance market transfers under the revised cost allocation rules.

The new WECC standard creates a default rule that the source balancing authority is responsible for procuring contingency reserves associated with dynamic schedules.[15] This rule aligns with the default rule for static imports and exports, for which the source balancing authority also holds contingency reserve obligations. Balancing authorities can, however, transfer the reserve obligation for dynamic schedules contractually. Under its existing tariff, the CAISO accepts responsibility for procuring contingency reserves to support dynamically scheduled imports.[16] The CAISO is proposing changes to the language of its dynamic scheduling protocol in Appendix M of its tariff to clarify this practice under the WECC's new standard and for purposes of its contingency reserve cost allocation rules. The CAISO is also proposing language in tariff sections 11.10.3.2 and 11.10.4.2 as part of its cost allocation formula to acknowledge this practice.

The CAISO currently does not have any dynamically scheduled exports. To account for the possibility someday of having such exports, the CAISO is also proposing a change to its dynamic scheduling protocol under which the sink balancing authority is responsible for procuring contingency reserves associated with dynamic exports.[17] The CAISO is also proposing language in tariff sections 11.10.3.2 and 11.10.4.2 to acknowledge this rule. These provisions create parallel treatment between dynamic imports and exports, rather than have the CAISO procure contingency reserves for both dynamic imports and exports.

The purpose of these revisions is to recognize for cost allocation purposes that dynamically scheduled imports into the CAISO are similar to internal resources. Accordingly, the CAISO will include dynamically scheduled imports in its calculation of integrated generation for purposes of procuring contingency reserves under WECC Reliability Standard BAL-002-WECC-2. Like internal resources, the CAISO can dispatch dynamically scheduled imports every 5 minutes. In addition, under the CAISO's dynamic scheduling protocol, operating and communications requirements

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[15] See Attachment A to WECC Reliability Standard BAL-002-WECC-2. Dynamic transfers are imports or exports that can be dispatched every five minutes. Under the CAISO's new fifteen minute market, implemented May 1, 2014, static imports and exports can be scheduled on a fifteen-minute or hourly basis.

[16] CAISO tariff, Appendix M, Section 1.5.4.

[17] CAISO tariff, Appendix M, section 2.5.3 (proposed revisions).

align with those applicable to resources internal to the CAISO balancing authority area. Effectively, under these tariff rules, the CAISO treats dynamic schedules of imports into its balancing authority area in a manner comparable to internal generating units.[18] The converse is true for dynamically scheduled exports.[19] For contingency reserve procurement and cost allocation purposes, the CAISO also treats resources that use a pseudo-tie arrangement to import into the CAISO balancing authority area as if they were internal resources. Conversely, the CAISO treats resources within the CAISO balancing authority that use a pseudo-tie arrangement to export to another balancing authority area as external resources.

This practice does not conflict with WECC Reliability Standard BAL-002-WECC-2 because balancing authority areas may contractually agree which balancing authority will procure contingency reserves associated with dynamically scheduled imports. By including these provisions in the CAISO dynamic scheduling protocol in Appendix M of its tariff, the CAISO has provided a contractual basis for its proposal. Were the CAISO to deviate from such a practice for a specific service or resource, it would be required to file a non-conforming agreement with the Commission and at that time make the necessary adjustment to the allocation of costs for the affected scheduling coordinator.

Under the CAISO's Energy Imbalance Market (EIM), scheduled to start October 1, 2014, transfers of energy between balancing authorities will use dynamic e-Tags. But the EIM tariff provisions approved by the Commission do not define EIM transfers as dynamic imports or exports.[20] Under the EIM design, the source balancing authority remains responsible for procuring contingency reserves associated with energy subject to EIM transfers. For this reason, the CAISO is not proposing to extend the cost allocation rule for dynamic imports and exports to EIM transfers.

Instead, for purposes of contingency reserve cost allocation, the CAISO proposes to add a new subsection to section 29.11 to treat EIM transfers similarly to static imports and exports.[21] This will result in the EIM entity scheduling coordinator being charged or paid for contingency reserves procured as a result of the EIM transfer, depending on the direction of their EIM transfer. For example, an EIM transfer into the CAISO balancing authority area will result in the EIM entity scheduling coordinator receiving a payment equal to the 3 percent of the hourly MW transfer into the CAISO

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[18] *Cal. Indep. Sys. Operator Corp*. 136 FERC ¶ 61,239 (2006) at P 6.

[19] Id. at P 8.

[20] Upon implementation of EIM, the CAISO tariff will define the term EIM Transfers as follows: "The transfer of Energy in Real-Time between an EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area, or between EIM Entity Balancing Authority Areas, using transmission capacity made available to the Real-Time Market through the Energy Imbalance Market. The EIM Transfer is not a Real-Time Interchange Export Schedule or a Real-Time Interchange Import Schedule."

[21] CAISO tariff, section 29.11 (n) (proposed revision).

multiplied by the ancillary service product rate. On the other hand, an EIM transfer out of the CAISO balancing authority area will result in a charge to the EIM entity scheduling coordinator for 3 percent of the hourly MW transfer out of the CAISO multiplied by the ancillary service product rate.

Under the EIM design, the CAISO will not procure regulation up for EIM transfers. To account for this factor, the CAISO also proposes to amend the section 11.10.6 of the tariff to make clear that the CAISO will not include EIM transfers in the upward ancillary service neutrality accounts.[22] The CAISO will only include EIM transfers in the neutrality accounts for spinning and non-spinning reserves, respectively.

B. Eliminating Credits for Excess Self-Provision of Contingency Reserves is an Appropriate Measure to Enhance Market Flexibility

The CAISO proposes to remove the opportunity for scheduling coordinators to receive a payment for excess self-provision of contingency reserves.[23] Going forward, a scheduling coordinator's obligation can only go below zero or result in a credit for purposes of inter-scheduling coordinator trades or is associated with energy from imports. If a scheduling coordinator self-provides more than its reserve obligation, after considering inter-scheduling coordinator trades, the CAISO will credit the market value of the over-provided contingency reserves to the respective ancillary services neutrality accounts. As an example, if a scheduling coordinator's initial obligation were 30 MW and it self-provided 40 MW, its reserve obligation would be zero, not a credit of 10 MW. The scheduling coordinator would not receive a credit for the excess 10 MW of self-provided reserves. If that same scheduling coordinator had an inter-scheduling coordinator trade through which it also procured 45 MW of reserves, then it would receive a credit for 15 MW. Through the 45 MW inter-scheduling coordinator trade, the scheduling coordinator met its initial obligation and had 15 MW leftover, which generates a credit. The additional 40 MW of self-provided reserves would not further increase the scheduling coordinator's credit.

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[22] CAISO tariff, section 11.10.6 (proposed revision) ("The CAISO shall exclude EIM Transfers between the CAISO and an EIM Entity from the calculation of the upwards Ancillary Service Obligation for this neutrality adjustment.").

[23] CAISO tariff, sections 10.10.3.2 and 11.10.4.2 (proposed revisions) ("The Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour may only be less than zero (0) if that credit supports an Inter-SC Trade of Ancillary Services or the credit results from the portion of Operating Reserve Obligation associated with Energy from imports."). Because regulation up can be substituted for either form of contingency reserve, the CAISO also proposes to include the similar rule for tariff provision for settling regulation up. CAISO tariff, sections 10.10.2.2.2 (proposed revisions) ("The Scheduling Coordinator's total Regulation Up Reserve obligation for the applicable Trading Hour may only be less than zero if that credit supports an Inter-SC Trade of Ancillary Services.").

Self-provision of ancillary services provides an option for scheduling coordinators to reduce their exposure to ancillary service cost allocations. Providing a credit to scheduling coordinators that over self-supply ancillary services does not promote the most efficient optimization of resources because it creates incentives to over self-supply capacity that could otherwise bid in the ISO's markets. When the CAISO proposed the current ancillary services tariff provisions, the CAISO stated "self-provision . . . effectively reduces the AS requirements that need to be met by AS Bids [and self-provision] also reduce[s] the AS obligation for each SC in the AS cost allocation."[24] To the extent scheduling coordinators have ancillary services capacity in excess of their obligations, they can submit economic bids. This bidding behavior will promote greater operational flexibility in the CAISO's energy and ancillary service markets.

Related to self-provision, the CAISO also proposes to clarify section 8.2.3.5 of its tariff to explain that self-provided ancillary services may substitute for other ancillary services consistent with the requirements for ancillary services substitution.[25] This is the CAISO's existing practice and is consistent with the rational buyer protocol to allow a scheduling coordinator to self-provide a higher quality ancillary service in order to satisfy a lower quality ancillary service obligation. The CAISO proposes to clarify that prior to procuring a higher quality ancillary service to substitute for a lower quality ancillary service, the CAISO will allow for substitution of self-provided ancillary services. The ISO is also proposing to remove language that may create confusion that the ISO does not allow for substitution of self-provided ancillary services. Under the ISO's existing practices, the existing language reflects that substitution of self-provided ancillary services does not take place in the optimization of economic energy and ancillary service bids. The proposed change will clarify that prior to the optimization of economic energy and ancillary service bids, self-provided ancillary services may satisfy or reduce the system ancillary service needs of a lower quality service.

C. The CAISO Does Not Participate in Reserve Sharing Groups, making the Complex and Costly Implementation of E-tags for Recallable Energy Unjustifiable.

WECC recently created a new type of e-tag to facilitate implementation of the new contingency reserves standard by reserve sharing groups.[26] Under a capacity tag

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[24] *Cal. Indep. Sys. Operator Corp.*, Transmittal Letter, at 53, FERC Docket No. ER06-615-000 (Feb. 9, 2006).

[25] CAISO tariff, section 8.2.3.5 (proposed revision).

[26] WECC regional business practice, Ten Minute Recallable e-Tag Functionality for Reserves INT-011-WECC-RBP-2 http://www.wecc.biz/Standards/Development/WECC-0079/Shared%20Documents/Final%20to%20WSC/INT-011-WECC-CRT-2%20Board%20approved%203-13-2013.pdf

for recallable energy (denoted by the WECC product code "C-RE"), the associated energy is recallable within ten minutes of activation of reserves and is included in the source balancing authority's generation resources meeting its contingency reserve procurement requirement. Recallable energy e-tags facilitate the transfer of reserve requirements between balancing authorities. However, the CAISO does not participate in a reserve sharing groups and the CAISO has not identified any benefits to the market of accepting such e-tags. For this reason, the CAISO cannot justify the costs of implementing this new form of e-tag. Additionally, scheduling coordinators could submit such a tag associated with providing contingency reserve at the CAISO's interties. An import that can be recalled by its source balancing authority with ten-minute's notice likely would not provide CAISO with sufficient assurance that it could dispatch the contingency reserve capacity associated with the e-tag, if needed.

Accordingly, the CAISO proposes to add tariff language specifying that it "shall not accept E-Tags for ten-minute recallable reserve transactions."[27] The CAISO would consider a change in this policy through a future stakeholder initiative if prioritized by market participants through the annual market initiative catalog process.

IV. STAKEHOLDER PROCESS

The CAISO started the stakeholder process for this initiative in April 2014.[28] As part of this process, the CAISO published an issue paper and a draft final proposal. The CAISO also posted an illustrative spreadsheet modeling the new cost allocation methodology. The model provided stakeholders the opportunity to gain a more in-depth understanding of how the CAISO's proposal will allocate costs in specific circumstances. Additionally, the CAISO published two versions of draft tariff language for stakeholder consideration. The stakeholder process culminated with the CAISO Board of Governors authorizing the CAISO to file this tariff amendment at its July 16, 2014 meeting.[29]

The CAISO refined its final proposal based on stakeholder feedback. Most notably, the CAISO initially proposed a cost allocation formula of 6% of metered load + ***6%*** of exports - 3% of imports. A stakeholder commented that a 6% obligation for exports was a mathematical error and that the correct value would be 3%. The CAISO

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[27] CAISO tariff, section 4.5.3.2.2 (proposed revision).

[28] Materials related to the stakeholder process for this tariff amendment are available on the CAISO website at: http://www.caiso.com/informed/Pages/StakeholderProcesses/ContingencyReserveCostAllocation.aspx.

[29] Materials related to the Board's authorization to prepare and submit this filing are available on the CAISO website at: http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=65A4DF45-54F2-438D-900B-9F5F237532B4. These materials include a memorandum from Keith Casey, Vice President, Market and Infrastructure Development to the Board (July 8, 2014) ("Board memorandum"). For ease of reference, the Board memorandum is provided in attachment C to this filing.

altered the formula to address this concern. Another change to the policy made based on stakeholder feedback was to acknowledge that host balancing authorities procure reserves for static imports, and providing a credit to scheduling coordinators appropriately recognized this fact. The absence of a credit would mean that a scheduling coordinator with a net static import would reduce the CAISO's overall reserves procurement without any compensation.

As a result of the refinements the CAISO believes it has stakeholder support for this filing. There is broad consensus that the CAISO should align scheduling coordinators' contingency reserve obligations with the procurement requirement in the new WECC standard. There is further agreement that the CAISO proposal will provide such alignment.

The CAISO did not, however, adopt every suggestion made during the stakeholder process. The CAISO elected not to address additional issues such as the treatment of energy types for intertie transactions and potential market optimization enhancements to evaluate EIM transfers based upon the potential cost of contingency reserves. These matters are beyond the scope of determining how to allocate costs of procuring contingency reserves. The CAISO asked stakeholders to include these in the annual stakeholder initiatives catalog process to prioritize future market enhancements. The 2014 stakeholder initiatives catalog process will commence in the third quarter of 2014.

Additionally, during the tariff stakeholder process, some stakeholders requested that the CAISO add additional details to the proposed tariff language. A stakeholder requested that the CAISO add additional detail to sections 11.10.3.2 and 11.10.4.2 to reflect how self-provided ancillary services and ancillary services involved in inter-scheduling coordinator trades influence a scheduling coordinator's hourly net contingency reserve obligation. However, those sections both contain the statement that the CAISO "will not apply Self-Provided Ancillary Services to reduce a Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour below zero (0)." Additionally, the relevant business practice manual contains specific mathematical formulas regarding calculations for a scheduling coordinator's total operating reserve obligation for the applicable trading hour. Stakeholders will have the opportunity to review and comment upon these formula in the business practice manuals before the CAISO implements the new allocation methodology.

A stakeholder also questioned whether the CAISO should delete section 11.10.5 in its entirety. This section explains the settlement consequences when operating reserve obligations of scheduling coordinators after considering self-provisions is negative. The stakeholder expressed a concern that this tariff section may be obsolete because scheduling coordinators no longer can have a negative contingency reserve obligation after considering self-provisions. Under the CAISO's proposed tariff revisions, scheduling coordinators will not receive a credit for excess self-provided

reserves. They are not, however, barred from providing excess reserves. Because the circumstance covered by section 11.10.5 could still occur after the proposed changes go into effect, the CAISO elected to keep section 11.10.5 in the tariff.

V. EFFECTIVE DATE

The CAISO requests the Commission make the tariff revisions contained in this filing effective as of October 1, 2014. This date coincides with the effective date of the BAL-002-WECC-2 — Contingency Reserve.

VI. COMMUNICATIONS

Communications regarding this filing should be addressed to the following individuals. The individuals identified with an asterisk are whose names should be placed on the official service list established by the Secretary with respect to this submittal:

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VII. SERVICE

The CAISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission and the California Energy Commission, and all parties with effective Scheduling Coordinator Service Agreements under the CAISO Tariff. In addition, the CAISO is posting this transmittal letter and all attachments on the CAISO website.

VIII. ATTACHMENTS

The following documents, in addition to this transmittal letter, support the instant filing:

Attachment A Revised CAISO Tariff Sheets – Clean

Attachment B Revised CAISO Tariff Sheets – Blackline

Attachment C California Board of Governors Memo on Contingency Reserve Cost Allocation

IX. CONCLUSION

The CAISO's proposed tariff revisions align the allocation of contingency reserve procurement costs with the requirements of WECC Reliability Standard BAL-002-WECC-2. For the reasons set forth in this filing, the CAISO respectfully requests that the Commission accept the proposed tariff revisions effective October 1, 2014.

Respectfully submitted,

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Attorneys for the California Independent
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Attachment A – Clean Tariff Sheets

Contingency Reserve Cost Allocation Tariff Amendment

California Independent System Operator Corporation

4.5.3.2.2 Submitting Interchange Schedules prepared in accordance with all NERC, WECC and CAISO requirements, including providing E-Tags for all applicable transactions pursuant to WECC practices. The CAISO shall not accept E-Tags for ten-minute recallable reserve transactions (i.e., transactions with a WECC energy product code of "C-RE"). The CAISO is not, and shall not be listed as, the "Purchasing Selling Entity" for purposes of E-Tags. Title to Energy shall pass directly from the entity that holds title when the Energy enters the CAISO Controlled Grid to the entity that removes the Energy from the CAISO Controlled Grid, in each case in accordance with the terms of this CAISO Tariff.

* * *

8.2.3.5 Ancillary Service Substitution

The CAISO, whenever possible, will increase its purchases of an Ancillary Service that can substitute for another Ancillary Service, when doing so is expected to reduce its total cost of procuring Ancillary Services while meeting reliability requirements. Prior to making these purchases, the CAISO will first substitute Self-Provided Ancillary Services for another Ancillary Service consistent with the principles set forth in this Section. The CAISO will make such adjustments in accordance with the following principles:

(a) The Regulation requirement must be satisfied only by Regulation Bids for resources qualified to provide Regulation;

(b) Additional Regulation Up capacity can be used to satisfy requirements for Spinning Reserve, or Non-Spinning Reserve;

(c) Regulation Up and Spinning Reserve requirements must be collectively satisfied by the combination of Regulation Up and Spinning Reserve Bids. Spinning Reserve and Regulation may be provided as separate services from the same resource, provided that the sum of Spinning Reserve and Regulation Up provided is not greater than the maximum Ramp Rate of the resource (MW/minute) times ten (10);

(d) Additional Regulation Up and Spinning Reserve capacity can be used to satisfy requirements for Non-Spinning Reserve.

(e) Regulation Up, Spinning Reserve, and Non-Spinning Reserve requirements must be collectively satisfied by the combination of Regulation Up, Spinning Reserve and Non-Spinning Reserve Bids;

(f) Total MW purchased from the Regulation Up, Spinning Reserve, and Non-Spinning Reserve markets will not be changed by this Section 8.2.3.5; and

(g) Regulation Energy resulting from Regulation that substituted for another Ancillary Service continues to be treated as Regulation Energy regardless of what service it substituted.

* * *

11.10.2.2.2 Hourly Net Obligation for Regulation Up

Each Scheduling Coordinator's hourly net obligation for Regulation Up is determined as follows: (a) the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up, reduced by accepted Self-Provided Ancillary Services specified as Regulation Up, plus or minus any Regulation Up Reserve obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Regulation Up Reserve obligation for the applicable Trading Hour may only be less than zero if that credit supports an Inter-SC Trade of Ancillary Services. Each Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up in that hour is equal to the total requirement for Regulation Down in that hour divided by the hourly metered CAISO Demand for that hour.

* * *

11.10.3.2 Hourly Net Obligation for Spinning Reserves

Each Scheduling Coordinator's hourly net obligation for Spinning Reserves is determined as follows: the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Spinning Reserves in the hour to the CAISO's total Operating Reserve Obligations in the hour (and if negative, multiplied by NOROCAF), reduced by the accepted Self-Provided Ancillary Services for

Spinning Reserves, plus or minus any Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services.

The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of six (6) percent of its CAISO Demand and three (3) percent of its Energy for exports from the CAISO Balancing Authority Area (excluding export Dynamic Schedules); less three (3) percent of its Energy from imports into the CAISO Balancing Authority Area (excluding import Dynamic Schedules). The Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour may be less than zero (0) only if the resulting credit supports an Inter-SC Trade of Ancillary Services or the credit results from the portion of Operating Reserve Obligation associated with Energy from imports. The CAISO does not apply Self-Provided Ancillary Services to reduce a Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour below zero (0).

* * *

11.10.4.2 Hourly Net Obligation for Non-Spinning Reserves

Each Scheduling Coordinator's hourly net obligation for Non-Spinning Reserves is determined as follows: the product of the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour (and if negative, multiplied by NOROCAF) multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Non-Spinning Reserves in the hour to the CAISO's total Operating Reserve obligations in the hour, reduced by the accepted Self-Provided Ancillary Services for Non-Spinning Reserves, plus or minus any Non-Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of six (6) percent of its CAISO Demand and three (3) percent of its Energy for exports from the CAISO Balancing Authority Area (excluding export Dynamic Schedules); less three (3) percent of its Energy from imports into the CAISO Balancing Authority Area (excluding import Dynamic Schedules). The Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour may be less than zero (0) only if the resulting credit supports an Inter-SC Trade of Ancillary Services or the credit results from the portion of Operating Reserve Obligation

associated with Energy from imports. The CAISO does not apply Self-Provided Ancillary Services to reduce a Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour below zero (0).

* * *

11.10.6 Upward Ancillary Services Neutrality Adjustment

For each Settlement Period the difference between the upwards Ancillary Service cost and the product of the total Ancillary Service net requirements at the relevant Ancillary Service user rate will be allocated to all Scheduling Coordinators in proportion to their upward Ancillary Service Obligation (before taking into consideration the Inter-SC Trades of Ancillary Services). The CAISO shall exclude EIM Transfers between the CAISO and an EIM Entity from the calculation of the upwards Ancillary Service Obligation for this neutrality adjustment. The upwards Ancillary Service cost is the sum of the Regulation Up, Spinning Reserve and Non-Spinning Reserve cost described in Sections 11.10.2.2.1, 11.10.3.1 and 11.10.4.1. The Ancillary Service net requirement is the sum of the Real-Time Regulation Up net requirement in Section 11.10.2.2.3, Spinning Reserve net requirement in Section 11.10.3.3 and Non-Spinning Reserve net requirement in Section 11.10.4.3.

* * *

29.11 Settlements And Billing For EIM Market Participants.

(n) **EIM Transfers and Settlement for Contingency Reserve Obligations.** The CAISO shall allocate Operating Reserve Obligations to EIM Entity Scheduling Coordinators for EIM Transfers as follows –

(1) EIM Entity Scheduling Coordinators will receive a payment equal to three (3) percent of the hourly MW EIM Transfer into the CAISO Balancing Authority Area multiplied by the hourly user rate for Spinning Reserves and Non-Spinning Reserves, as calculated per Section 11.10.3.2 and 11.10.4.2, respectively; and

(2) EIM Entity Scheduling Coordinators will receive a charge equal to three (3) percent of the hourly MW EIM Transfer out of the CAISO Balancing

Authority Area multiplied by the hourly user rate for Spinning Reserves and Non-Spinning Reserves, as calculated per Section 11.10.3.2 and 11.10.4.2, respectively.

* * *

Appendix M
Dynamic Scheduling Protocol (DSP)

* * *

1.5.4 The CAISO will procure (or allow for self-provision of) Operating Reserves for Loads served by imports from Dynamic System Resources.

* * *

2.5.3 The Balancing Authority receiving the Dynamic Schedule of the export of Energy from the CAISO Balancing Authority Area is responsible for Operating Reserves for Loads served by such exports of Energy.

Attachment B – Marked Tariff Sheets

Contingency Reserve Cost Allocation Tariff Amendment

California Independent System Operator Corporation

4.5.3.2.2 Submitting Interchange Schedules prepared in accordance with all NERC, WECC and CAISO requirements, including providing E-Tags for all applicable transactions pursuant to WECC practices. The CAISO shall not accept E-Tags for ten-minute recallable reserve transactions (i.e., transactions with a WECC energy product code of "C-RE"). The CAISO is not, and shall not be listed as, the "Purchasing Selling Entity" for purposes of E-Tags. Title to Energy shall pass directly from the entity that holds title when the Energy enters the CAISO Controlled Grid to the entity that removes the Energy from the CAISO Controlled Grid, in each case in accordance with the terms of this CAISO Tariff.

* * *

8.2.3.5 Ancillary Service Substitution

The CAISO, whenever possible, will increase its purchases of an Ancillary Service that can substitute for another Ancillary Service, when doing so is expected to reduce its total cost of procuring Ancillary Services while meeting reliability requirements. Prior to making these purchases, the CAISO will first substitute Self-Provided Ancillary Services for another Ancillary Service consistent with the principles set forth in this Section. ~~The substitution described in this section can only occur with the purchase of bid-in Ancillary Services; substitution may not involve Self-Provided Ancillary Services.~~ The CAISO will make such adjustments in accordance with the following principles:

(a) The Regulation requirement must be satisfied only by Regulation Bids for resources qualified to provide Regulation;

(b) Additional Regulation Up capacity can be used to satisfy requirements for Spinning Reserve, or Non-Spinning Reserve;

(c) Regulation Up and Spinning Reserve requirements must be collectively satisfied by the combination of Regulation Up and Spinning Reserve Bids. Spinning Reserve and Regulation may be provided as separate services from the same resource, provided that the sum of Spinning Reserve and Regulation Up provided is not greater than the maximum Ramp Rate of the resource (MW/minute) times ten (10);

(d) Additional Regulation Up and Spinning Reserve capacity can be used to satisfy requirements for Non-Spinning Reserve.

(e) Regulation Up, Spinning Reserve, and Non-Spinning Reserve requirements must be collectively satisfied by the combination of Regulation Up, Spinning Reserve and Non-Spinning Reserve Bids;

(f) Total MW purchased from the Regulation Up, Spinning Reserve, and Non-Spinning Reserve markets will not be changed by this Section 8.2.3.5; and

(g) Regulation Energy resulting from Regulation that substituted for another Ancillary Service continues to be treated as Regulation Energy regardless of what service it substituted.

* * *

11.10.2.2.2 Hourly Net Obligation for Regulation Up

Each Scheduling Coordinator's hourly net obligation for Regulation Up is determined as follows: (a) the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up, reduced by accepted Self-Provided Ancillary Services specified as Regulation Up, plus or minus any Regulation Up Reserve obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Regulation Up Reserve obligation for the applicable Trading Hour may only be less than zero if that credit supports an Inter-SC Trade of Ancillary Services. Each Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up in that hour is equal to the total requirement for Regulation Down in that hour divided by the hourly metered CAISO Demand for that hour.

* * *

11.10.3.2 Hourly Net Obligation for Spinning Reserves

Each Scheduling Coordinator's hourly net obligation for Spinning Reserves is determined as follows: the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Spinning Reserves in the hour to the CAISO's total Operating Reserve Obligations in the hour (and if negative, multiplied by NOROCAF), reduced by the accepted Self-Provided Ancillary Services for Spinning Reserves, plus or minus any Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services.

The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of six (6) percent of its CAISO Demand and three (3) percent of its Energy for exports from the CAISO Balancing Authority Area (excluding export Dynamic Schedules); less three (3) percent of its Energy from imports into the CAISO Balancing Authority Area (excluding import Dynamic Schedules). The Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour may be less than zero (0) only if the resulting credit supports an Inter-SC Trade of Ancillary Services or the credit results from the portion of Operating Reserve Obligation associated with Energy from imports. The CAISO does not apply Self-Provided Ancillary Services to reduce a Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour below zero (0). ~~five (5) percent of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) met by Generation from hydroelectric resources plus seven (7) percent of its Demand (except the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) met by Generation from non-hydroelectric resources, plus one hundred (100) percent of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, plus its scheduled on-demand obligations.~~

* * *

11.10.4.2 Hourly Net Obligation for Non-Spinning Reserves

Each Scheduling Coordinator's hourly net obligation for Non-Spinning Reserves is determined as follows: the product of the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour (and if negative, multiplied by NOROCAF) multiplied by the ratio

of the CAISO's total Ancillary Services Obligation for Non-Spinning Reserves in the hour to the CAISO's total Operating Reserve obligations in the hour, reduced by the accepted Self-Provided Ancillary Services for Non-Spinning Reserves, plus or minus any Non-Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of six (6) percent of its CAISO Demand and three (3) percent of its Energy for exports from the CAISO Balancing Authority Area (~~in~~excluding export Dynamic Schedules); less three (3) percent of its Energy from imports into the CAISO Balancing Authority Area (excluding import Dynamic Schedules). The Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour may be less than zero (0) only if the resulting credit supports an Inter-SC Trade of Ancillary Services or the credit results from the portion of Operating Reserve Obligation associated with Energy from imports. The CAISO does not apply Self-Provided Ancillary Services to reduce a Scheduling Coordinator's total Operating Reserve Obligation for the applicable Trading Hour below zero (0). ~~five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, plus five percent (5%) (if hydro) or seven percent (7%) (if thermal) of any unit-contingent or dynamic imports which it schedules.~~

* * *

11.10.6 Upward Ancillary Services Neutrality Adjustment

For each Settlement Period the difference between the upwards Ancillary Service cost and the product of the total Ancillary Service net requirements at the relevant Ancillary Service user rate will be allocated to all Scheduling Coordinators in proportion to their upward Ancillary Service Obligation (before taking into consideration the Inter-SC Trades of Ancillary Services). The CAISO shall exclude EIM Transfers between the CAISO and an EIM Entity from the calculation of

the upwards Ancillary Service Obligation for this neutrality adjustment. The upwards Ancillary Service cost is the sum of the Regulation Up, Spinning Reserve and Non-Spinning Reserve cost described in Sections 11.10.2.2.1, 11.10.3.1 and 11.10.4.1. The Ancillary Service net requirement is the sum of the Real-Time Regulation Up net requirement in Section 11.10.2.2.3, Spinning Reserve net requirement in Section 11.10.3.3 and Non-Spinning Reserve net requirement in Section 11.10.4.3.

* * *

29.11 Settlements And Billing For EIM Market Participants.

(n) **EIM Transfers and Settlement for Contingency Reserve Obligations.** The CAISO shall allocate Operating Reserve Obligations to EIM Entity Scheduling Coordinators for EIM Transfers as follows –

(1) EIM Entity Scheduling Coordinators will receive a payment equal to three (3) percent of the hourly MW EIM Transfer into the CAISO Balancing Authority Area multiplied by the hourly user rate for Spinning Reserves and Non-Spinning Reserves, as calculated per Section 11.10.3.2 and 11.10.4.2, respectively; and

(2) EIM Entity Scheduling Coordinators will receive a charge equal to three (3) percent of the hourly MW EIM Transfer out of the CAISO Balancing Authority Area multiplied by the hourly user rate for Spinning Reserves and Non-Spinning Reserves, as calculated per Section 11.10.3.2 and 11.10.4.2, respectively.

* * *

Appendix M
Dynamic Scheduling Protocol (DSP)

1.5.4 ~~The CAISO will treat dynamically scheduled Energy as a resource contingent firm import.~~ The CAISO will procure (or allow for self-provision of) Operating Reserves for Loads served by imports from Dynamic System Resources. ~~as required by NERC and WECC reliability standards and any requirements of the NRC.~~

2.5.3 ~~The CAISO will treat dynamically scheduled exports of Energy from a Generating Unit Energy as a resource contingent firm export.~~ The Balancing Authority receiving the Dynamic Schedule of the export of Energy from the CAISO Balancing Authority Area is responsible for Operating Reserves for L~~l~~oads served by such exports of Energy. ~~as required by NERC and WECC reliability standards and any requirements of the NRC.~~

Attachment C – Board Memo

Contingency Reserve Cost Allocation Tariff Amendment

California Independent System Operator Corporation

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: July 8, 2014

Re: **Decision on contingency reserve cost allocation**

This memorandum requires Board action.

EXECUTIVE SUMMARY

On November 13, 2013, the Federal Energy Regulatory Commission (FERC) approved a new regional reliability standard for contingency reserves submitted by the North American Electric Reliability Corporation (NERC) and the Western Electricity Coordinating Council (WECC). The new standard applies to balancing authorities and reserve sharing groups in the WECC region and specifies the quantity and types of required contingency reserves to ensure reliability. Contingency reserves consist of spinning reserves and non-spinning reserves. This new contingency reserve standard becomes effective on October 1, 2014 and changes the way the ISO will calculate its contingency reserve requirement.

The ISO tariff currently allocates the costs of procuring contingency reserves to scheduling coordinators in a manner that is consistent with the existing reliability standard. As the new standard changes the contingency reserve requirement calculation, Management proposes to revise the way it allocates contingency reserve costs to be consistent with the new standard. This memorandum describes how Management proposes to align the cost allocation with the new requirement, and also describes two related changes: no longer allowing credits for excess self-provision of contingency reserves and not allowing capacity e-tags for recallable energy.

> ***Moved, that the ISO Board of Governors approves the contingency reserve cost allocation proposal, as described in the memorandum dated July 8, 2014; and***
>
> ***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.***

DISCUSSION AND ANALYSIS

Alignment of Cost Allocation and Reserve Calculation

Under the current WECC contingency reserve standard, each balancing area's contingency reserve requirement is based on the greater of:

(a) The loss of generating capacity due to forced outages of generation or transmission equipment that would result from the most severe single contingency; or

(b) The sum of five percent of the load responsibility served by hydro generation and seven percent of the load responsibility served by thermal generation.

The ISO allocates contingency reserve costs to scheduling coordinators consistent with these requirements. Specifically, the ISO determines each scheduling coordinator's reserve obligation based on the amount of hydro and thermal generation resources used to serve their load. The cost of procuring contingency reserves is allocated to scheduling coordinators based on their share of the total reserves obligations. The allocation can result in a charge or a credit. A credit can arise if a scheduling coordinator is importing firm power because the contingency reserves are procured from the source balancing authority instead of within the ISO.

The WECC's new contingency reserve requirement is based on the greater of:

(a) The loss of on-line generation due to the most severe single contingency; or

(b) The sum of three percent of hourly integrated load plus three percent of hourly integrated generation.

The new reliability standard simplifies the calculation of the contingency reserve requirement as it does not consider the fuel source of generation serving load or the type of energy associated with imports or exports. This difference enables a simpler approach to allocating the cost of reserve procurement.

To maintain consistency between the contingency reserve requirement and allocation of contingency reserve procurement costs, Management proposes to allocate these costs to scheduling coordinators using the following formula:

Scheduling coordinator's contingency reserve obligation = 6% metered load + 3% exports – 3% imports

For example, if a scheduling coordinator has 100 MW of metered load served by internal generation, its reserve obligation is 6 MW. The ISO must procure contingency reserves of 3 MW for the load and 3 MW for the generation. If a scheduling coordinator has 100 MW of metered load served by an import, its reserve obligation is 3 MW (6%*100 MW metered load – 3%*100 MW imports). This aligns with what the ISO must

procure for contingency reserves as the new standard (part b) requires contingency reserves for 3% of the 100 MW of load (3 MW), but does not require the ISO to procure contingency reserves for the import because the source balancing authority must carry the 3 MW of reserves for the generation supporting its export to the ISO. If a scheduling coordinator has a 100 MW export served by internal generation, its reserve obligation is 3 MW (6%* 0 MW metered load + 3%*100 MW exports). This also aligns with what the ISO must procure for contingency reserves as the new standard (part b) requires contingency reserves for 3% of the 100 MW of generation (3 MW), but does not require the ISO to procure contingency reserves for the load served in the sink balancing authority.

In addition to this general formula for determining contingency reserve requirements and cost allocation, the proposal also includes provisions for handling dynamic transfers that are described below.

Dynamic transfers

Dynamic transfers are imports or exports that can be dispatched every five minutes. The new contingency reserve standard specifies rules for determining whether the importing or exporting balancing authority must procure the contingency reserves for dynamic transfers. Similar to static imports and exports, the default is that the source balancing authority is responsible for carrying the contingency reserves. However, the standard enables balancing areas to contractually agree to transfer the contingency reserve responsibility for dynamic transfers. Currently, the tariff provides that the ISO will take on the reserve obligation for dynamically-scheduled imports, which is contrary to the default rule under the new standard. Management does not propose to change this obligation. For dynamically scheduled exports, which the ISO currently does not have, Management proposes to modify the pro-forma dynamic scheduling agreement to state that the receiving balancing authority is responsible for the contingency reserves. As a result, under the new contingency reserve standard the ISO will exclude dynamic transfers from its calculation of a scheduling coordinator's contingency reserve cost obligation. Since the ISO will procure contingency reserves for dynamic imports, a scheduling coordinator will not receive the 3% credit for dynamic imports in its portfolio, which means scheduling coordinators will effectively be charged for the cost of the contingency reserve for the dynamic imports.

Energy Imbalance Market (EIM) transfers

Under EIM, dynamic scheduling is used to account for the energy resulting from EIM transfers between balancing authorities. In order to have similar treatment for both EIM static and dynamic intertie schedules, Management proposes to treat contingency reserve obligations for dynamic EIM transfers differently than other dynamic schedules as described above. Specifically, Management proposes to include EIM transfers in the calculation of contingency reserve cost obligations. This will result in the EIM entity scheduling coordinator being charged and paid for contingency reserves procured as a result of the EIM transfer, depending on the direction of their EIM transfer. If there is an

EIM transfer into the ISO, the EIM entity scheduling coordinator will receive a payment equal to the 3% of the hourly transfer. If there is an EIM transfer out of the ISO, the EIM entity scheduling coordinator will be charged for 3% of the hourly transfer. This cost allocation approach aligns incentives for tagging EIM intertie transactions to maximize available EIM transfer capability in real-time.

The last two elements of Management's proposal pertain to limits on the amount of contingency reserve that can be self-provided and a disallowance of recallable energy imports.

Capping credits for self-provision

A scheduling coordinator can reduce its obligation for contingency reserve costs by self-scheduling certified capacity as contingency reserves. Currently, scheduling coordinators can self-schedule contingency reserves in excess of their share of the obligation and receive a credit for the excess self-supply. Management proposes that scheduling coordinators no longer obtain a credit for excess self-provision. Self-provision is provided to reduce a scheduling coordinators exposure to cost allocation and should not be used for additional compensation.

Capacity tags for recallable energy

Management proposes not to accept capacity e-tags for recallable energy. Recallable energy e-tags are a new type of e-tags created by WECC to facilitate the implementation of the new contingency reserve standard by reserve sharing groups. Under this type of e-tag, the associated energy is recallable within ten minutes of activation of reserves and is included in the source balancing authority's generation resources meeting its contingency reserve procurement requirement. Recallable energy e-tags allow reserve requirements to be transferred between balancing authorities. However, the ISO does not participate in any reserve sharing groups and Management has not identified any benefits of accepting this tag type that would justify the additional implementation complexity.

POSITIONS OF THE PARTIES

Stakeholders generally support the elements of Management's proposal. In particular, they support the changes to the cost allocation of contingency reserves and agree that the calculation of a scheduling coordinator's contingency reserve obligation should be consistent with the procurement requirement calculation of new reliability standard. However, some stakeholders expressed the need to address tangential issues such as the treatment of energy types for intertie transactions and potential market optimization enhancements to evaluate EIM transfers based upon the potential cost of contingency reserves. These issues are outside the scope of this initiative and can be raised in the annual stakeholder initiatives catalog process to prioritize future market enhancements. The 2014 stakeholder initiatives catalog process will commence in late Q3 2014.

CONCLUSION

Management requests Board approval for the changes to the contingency reserve cost allocation. The proposed changes align a scheduling coordinator's contingency reserve obligation with the new contingency reserve procurement requirement. The proposed cost allocation will be implemented when the new procurement requirement becomes effective on October 1, 2014.

Board of Governors **July 15-16, 2014** **Decision on contingency reserve cost allocation**

Motion

Moved, that the ISO Board of Governors approves the contingency reserve cost allocation proposal, as described in the memorandum dated July 8, 2014; and

Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.

Moved: Bhagwat **Second: Galiteva**

Board Action: **Passed**	Vote Count: **5-0-0**
Bhagwat	Y
Foster	Y
Galiteva	Y
Maullin	Y
Olsen	Y

Motion Number: 2014-07-G3