

October 15, 2013

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 Revise Requirement for Bids of Multi-Stage
Generator Resource Adequacy Resources**

Dear Secretary Bose:

The California Independent System Operator Corporation (ISO) submits this filing to amend the ISO tariff to revise the manner in which both multi-stage generating resources register their unit parameters with the ISO and how the ISO generates bids for multi-stage generating resources with resource adequacy obligations that do not submit bids to meet such obligations.¹ The ISO respectfully requests that the tariff changes contained in this filing become effective as of December 17, 2013. To ensure market participants and the ISO have sufficient time to prepare their software systems for this change and implement contingency plans in the event this amendment were not granted, the ISO respectfully requests that the Commission issue an order in this matter no later than December 11, 2013.

This amendment does not present a departure of existing policy regarding the registration of multi-stage generating resources or how multi-stage resources can participate as a resource adequacy resource. In 2012 the Commission approved enhancements to the multi-stage resource functionality generally, including specific changes to how that functionality interacts with the resource adequacy program.² The ISO now proposes an additional refinement to an existing

¹ These amendments are submitted pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Part 35 of the rules and regulations of the Federal Energy Regulatory Commission, 18 C.F.R. Part 35, and in compliance with Order No. 714 Electronic Tariff Filings, Order No. 714, FERC Stats. & Regs. ¶ 31,276 (2008).

² *Cal. Indep. Sys. Operator Corp.*, Docket No. ER12-992-000 (Mar. 27, 2012) (unpublished letter order).

rule to maximize the benefit of the multi-stage functionality for resource adequacy resources, more fully implement the policy behind the already-approved enhancements, and account for intervening market rule changes.

Accordingly, the ISO seeks to require that all multi-stage generating resources provide a table that identifies the default configuration applicable for each segment of the unit's output from its minimum operating level ("PMin") to its maximum operating level ("PMax"). This will replace the current requirement that multi-stage resources submit a single resource adequacy default path, which the ISO currently uses to generate a bid for resource adequacy multi-stage generating resources that fail to submit a bid for their resource adequacy capacity. The current single default path inhibits the ISO from accessing a resource's capacity that a scheduling coordinator has replaced or uses for a replacement. The table containing the multiple available options for multi-stage generating resources with a resource adequacy obligation will enable the ISO to generate bids for any configuration that has a minimum output below the resource adequacy level.

The Commission should accept this modest rule change as it enables the ISO and resources to get the full benefit of existing market rules previously approved by the Commission.

I. Background

A multi-stage generating resource is a generating resource (including certain generating resources outside the ISO's Balancing Authority Area) that operates in various configurations but that can only operate in one configuration during any single dispatch interval. Multi-stage generating resources can be a: (1) combined cycle gas turbine resource; (2) generating unit with multiple operating or regulating ranges that can operate in only one of these ranges at any given time; or (3) generating unit that has one or more forbidden operating regions.³

Until recently, the ISO's resource adequacy operations assumed that resource adequacy resources provided a constant monthly amount of resource adequacy capacity. Multi-stage resources submit a default resource adequacy configuration corresponding to the monthly resource adequacy capacity and a preferred single configuration path to get to the default configuration. If the scheduling coordinator for the resource fails to submit a bid or self-schedule for the resource's capacity under a resource adequacy must-offer requirement, then the ISO uses the default configuration and default transition path to generate a bid on behalf of the resource.⁴ The default configuration and transition path are only

³ A forbidden operating region is a range of output in which the generating unit cannot operate stably and through which it must ramp without stopping.

⁴ ISO tariff, section 30.7.3.5.

relevant for market purposes to the extent a resource fails to submit a bid that covers its resource adequacy obligation, which occurs on very limited occasions.

On September 20, 2012, the ISO proposed an amendment to the ISO tariff to implement a replacement requirement for resource adequacy capacity. This required and enabled scheduling coordinators to provide replacement capacity for resources that are listed as resource adequacy capacity in a given month but are also scheduled for a maintenance outage and thus are not operationally available to the ISO for all or a portion of the month. The Commission approved the amendment effective November 20, 2012.⁵ Under the replacement requirement, a resource adequacy resource with a planned outage or unit derate during the month may need to replace the capacity for days when overall system resource adequacy capacity is below the monthly requirement. Because of this replacement requirement, the resource adequacy capacity of a particular resource can change on a daily basis, rather than remaining constant for the entire month. For example, a unit qualified to provide 400 MW of resource adequacy capacity that has an existing obligation to provide 100 MW to a load serving entity can provide up to 300 MW of replacement capacity per day for other resources that are on planned outages during the month. If another resource adequacy unit with 100 MW of resource adequacy capacity is on a planned outage for the first week of the month and yet another resource adequacy unit with 250 MW of resource adequacy capacity is on a planned outage for the third and fourth weeks of the month, then the 400 MW unit could, in addition to providing the initial 100 MWs of capacity for the entire month on behalf of a load serving entity, also provide 100 MW of replacement capacity for the first week of the month and 250 MW of replacement capacity for the third and fourth weeks of the month.

Because the resource adequacy capacity may change on a daily basis but changes to master file values require at least five business days lead time,⁶ it is no longer practical for the ISO to rely on a single constant default path for generating bids when a multi-stage resource adequacy resource fails to submit its own bids or self-schedule. With the resource adequacy value potentially changing on a daily basis, the current single value for the default resource adequacy configuration is no longer sufficient to determine the appropriate default bid because the single default path may no longer be representative of the resource's original resource adequacy obligations that have been modified by replacements made in that month. Additionally, because the applicable configuration may change because of the change in capacity, the default configuration path may also change.

If the multi-stage unit's registered default configuration and path do not align with the revised resource adequacy obligation, then the automatically generated

⁵ *Cal. Indep. Sys. Operator Corp.*, 141 FERC ¶ 61,135 (2012).

⁶ ISO tariff, section 30.7.3.2.

bids (created in the absence of a scheduling coordinator bid) will fail the ISO's regular bid validation process. As a result, the resource adequacy unit will not participate in the market. The unit will be unavailable to the ISO and the resource owner will be identified as not having met its resource adequacy obligations. This result dilutes the intended effect of the ISO resource adequacy must-offer requirements, which anticipates the scheduling coordinator will make the resource fully available to the ISO given the compensation the unit has received through the resource adequacy programs managed by the local reliability authorities. It is not the ISO's intent for these consequences to occur solely because a multi-stage unit with a resource adequacy obligation failed to submit bids.

II. Proposed Tariff Provisions

To address the issues described above, the ISO is proposing to modify the requirement that participants submit a single default path and instead require that they submit a table indicating the potential default resource adequacy capacities under which the resource could function. This change requires modifications to three areas of existing tariff provisions that all reference the single default resource adequacy path.

First, the ISO proposes to revise section 27.8.2 of the ISO tariff so that it would require scheduling coordinators for multi-stage generating resources to submit a table which shows the default configuration for potential resource adequacy capacities, one for each segment of production from PMin to PMax. The proposed table of configurations and resource adequacy capacities will ensure that the ISO can use an appropriate default configuration despite the potential daily variation in resource adequacy capacity. The table is a tool to dynamically implement the concept of a default path and will be used as the basis for applying the bid validation and generated bid rules. This default configuration table will be registered in the ISO master file and subject to the change timeline that applies generally to master file changes.

Second, the ISO proposes to revise section 30.7.3.5 to eliminate the language under which the scheduling coordinator for a multi-stage generating resource specifies a default configuration path. For most resource adequacy capacities and default configurations, there likely will be only one possible path. When there is more than one potential path, the ISO has concluded that the ISO optimization software, rather than the registered default value, should determine the path. Allowing the ISO optimization software to do so will allow the path determination to take into account the current market situation and the expected situation in the near future. This will enhance the ability of the ISO to optimize resources available to it in the market in the most efficient manner.

Under the proposed amendment the ISO would "create a Generated Bid for every MSG Configuration that has a minimum output below the MW level of the

Resource Adequacy must-offer obligation” In applying this rule, if the MW level of the resource adequacy obligation falls within the output of multiple configurations, then the ISO will generate bids for each of those configurations. The generated bid in any of the configurations, however, would only be up to the resource adequacy amount. This rule is necessary to ensure that the entire range of resource adequacy capacity would be available to the market if the ISO needs to generate bids. Resource adequacy units can, of course, avoid having the ISO generate bids in the first place by always submitting their own bids for the resource.

Third, the ISO proposes to remove the term “Default Resource Adequacy Path” from Appendix A of the tariff. If the ISO no longer utilizes a default path, then the ISO does not see the purpose in this case of retaining it as a defined term.

III. Stakeholder and Board Consideration

The ISO initiated a stakeholder process on this matter by posting a draft final proposal and providing a market notice on August 6, 2013. The draft final proposal is available at http://www.caiso.com/Documents/DraftFinalProposal-Multi-StageGenerationTariffChange_ReplacementRequirements.pdf.

The proposal was the subject of an August 12, 2013 stakeholder teleconference. The ISO received substantive comments from Southern California Edison Company and San Diego Gas & Electric Company.

Southern California Edison requested clarification regarding: (a) the timeline for amending the configuration table; and (b) how the configuration table would account for overlapping configurations. Regarding the first concern, as described above, the configuration table will be registered in master file and will be subject to the timing requirements that are generally applicable to the master file. Regarding the second concern, for a given MW output level that can be reached by multiple configurations, it will be up to the scheduling coordinator to identify which of the multiple configurations will be the default configuration for that given MW output level. However, based on the proposed rule in section 30.7.3.5 for generating bids explained above, the ISO would have the authority to generate bids for both of the overlapping configurations. For implementation purposes, the ISO would require the default configuration table to also identify the default configuration for MW ranges that do not involve overlapping configurations.

San Diego Gas & Electric expressed concern that the ISO’s proposed tariff language may be implemented in a way that requires scheduling coordinators to provide a default configuration corresponding to every distinct potential MW level, rather than provide a configuration applicable to a specified range of MW levels. To clarify, the ISO would not require scheduling coordinators to list separately the default configuration applicable to literally every potential MW level of resource adequacy obligation. Scheduling coordinators can specify the default configuration

applicable to a range of MW levels. The ISO believes the proposed tariff language contains sufficient clarity.

The proposed tariff revisions are a further implementation of policies approved by the ISO Board in October 2011. Accordingly, no separate Board approval was necessary.

IV. Effective Date

The ISO requests that the Commission make the tariff revisions contained in the instant filing effective for the December 17, 2013.⁷ ISO plans to deploy these changes on December 17, 2013, consistent with other planned software upgrades that are also being implemented on that date. The ISO requests that the Commission issue an order by December 10, 2013 to ensure an orderly implementation and to provide the ISO and its market participants some measure of time to implement alternative procedures in the event that the ISO needs to consider changes to the proposal as a result of the Commission's order.

V. Communications

Communications regarding this filing should be addressed to the following individuals, whose names should be put on the official service list established by the Commission with respect to this submittal:

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⁷ A December 17, 2013, effective date in this case means that the rules will apply for both the day-ahead market and the real-time market for the December 17 trading day. This means the new requirements will apply to the bids submitted for the day-ahead market conducted on December 16 for December 17, and they will apply for the real-time market conducted on December 17.

- * Individuals designated for service pursuant to Rule 203(b)(3), 18 C.F.R. § 385.203(b)(3) (2013).

VI. Request for Waiver

The information submitted with this filing substantially complies with the requirements of Part 35 of the Commission's regulations applicable to filings of this type. The ISO requests waiver of any applicable requirement of Part 35 if necessary, in order to permit this filing to become effective as proposed.

VII. Service

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

VIII. Attachments

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

- A. Clean ISO tariff sheets incorporating the proposed tariff amendments.
- B. Marked document showing the revisions contained in the proposed tariff amendments.

IX. Conclusion

For the reasons stated above, the ISO respectfully requests that the Commission approve these tariff amendments, effective as of the December 17, 2013 trading day.

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Respectfully submitted,

/s/ David Zlotlow

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Attachment A – Clean

**Amendment to Revise Requirement for Bids of
Multi-Stage Generator Resource Adequacy Resources
California Independent System Operator Corporation**

October 15, 2013

27.8.2 Informational Requirements

As part of the registration process described in Section 27.8.1, the Scheduling Coordinators for Generating Units or Dynamic Resource-Specific System Resources that seek to qualify as Multi-Stage Generating Resources must submit to the CAISO a Transition Matrix, which contains the Transition Costs and operating constraints associated with MSG Transitions. The Scheduling Coordinator may register up to six (6) MSG Configurations without any limitation on the number of transitions between the registered MSG Configurations in the Transition Matrix. If the Scheduling Coordinator registers seven (7) or more MSG Configurations, then the Scheduling Coordinator may only include two (2) eligible transitions between MSG Configurations for upward and downward transitions, respectively, starting from the initial MSG Configuration in the Transition Matrix. For each MSG Configuration, the responsible Scheduling Coordinator shall submit an Operational Ramp Rate and, as applicable, an Operating Reserve Ramp Rate and Regulating Reserves ramp rate, each of which shall have at least one (1) segment and no more than two (2) segments. The Scheduling Coordinator must submit a table establishing the default MSG Configuration for every MW quantity for which the Multi-Stage Generating Resource potentially could hold a Resource Adequacy must-offer obligation. The Scheduling Coordinator may submit changes to this information consistent with Sections 27.8.1 and 27.8.3, as they may apply.

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30.7.3.5 Bid Validation Rules for Multi-Stage Generating Resources

If a Scheduling Coordinator does not submit a Bid in the Day-Ahead Market or Real-Time Market for a Multi-Stage Generating Resource with a Resource Adequacy must-offer obligation at a MSG Configuration that can meet the applicable Resource Adequacy must-offer obligation, the CAISO will create a Generated Bid for the default Resource Adequacy MSG Configuration. If the Multi-Stage Generating Resource is not capable of Start-Up in the default Resource Adequacy MSG Configuration, then the ISO will, based on feasibility of transitions, create a Generated Bid for every MSG Configuration that has a minimum output below the MW level of the Resource Adequacy must-offer obligation, which will cover the operating range from its minimum output to the minimum of its maximum output and the MW level of the Resource Adequacy must-offer obligation. In the event that the Scheduling Coordinator does not submit a Bid in compliance with

section 30.5.1(p), the CAISO will create a Generated Bid for all of the capacity not bid into the CAISO Market between the maximum bid-in Energy MW and the higher of Self-Scheduled Energy MW and the Multi-Stage Generating Resource plant-level PMin. If the Scheduling Coordinator submits a Bid for the Multi-Stage Generating Resource, the CAISO will create this Generated Bid for the registered MSG Configurations before the Market Close, and if it does not submit such a Bid the CAISO will create this Generated Bid after the Market Close. Any Generated Bid created by the CAISO for the default Resource Adequacy MSG Configuration will be in addition to the MSG Configurations bid into the Real-Time Market by the responsible Scheduling Coordinator. If the Scheduling Coordinator submits a Bid in the Day-Ahead Market or Real-Time Market for a MSG Configuration that is not the default Resource Adequacy MSG Configuration and that does not cover the full amount of the resource's Resource Adequacy requirements, the CAISO will create a Generated Bid for the full Resource Adequacy Capacity. Before the market closes, if a Scheduling Coordinator submits a Bid in the Day-Ahead Market or Real-Time Market for the default Resource Adequacy MSG Configuration of a Multi-Stage Generating Resource that only meets part of the resource's Resource Adequacy must-offer obligation, the CAISO will extend the last segment of the Energy Bid curve in the submitted Bid for the Multi-Stage Generating Resource up to the Multi-Stage Generating Resource's Resource Adequacy must-offer obligation. After the market closes, to the extent that no Bid is submitted into the Real-Time Market for a Multi-Stage Generating Resource scheduled in the Integrated Forward Market as required in Section 30.5 the CAISO will create a Self-Schedule for MSG Configuration equal to the Day-Ahead Schedule for that resource for the MSG Configuration scheduled in the IFM. To the extent a Multi-Stage Generating Resource is awarded Operating Reserves in the Day-Ahead Market and no Economic Energy Bids is submitted for that resource in the Real-Time Market, the CAISO will insert Proxy Energy Bid in the MSG Configuration that was awarded in the Day-Ahead Market to cover the awarded Operating Reserves. To the extent that a Multi-Stage Generating Resources RUC Schedule is greater than its Day-Ahead Schedule, if the Scheduling Coordinator does not submit an Energy Bid in the RTM to cover the difference, then the CAISO will either create a Bid in the MSG Configuration awarded in RUC, or extend the

Bid submitted by the Scheduling Coordinator before the Market Close. After the Market Close, the CAISO will create a Generated Bid if there is no Bid submitted for the resource for this difference. The CAISO will validate that the combination of the Day-Ahead Ancillary Services Awards and Submissions to Self-Provide Ancillary Services are feasible with respect to the physical operating characteristics of the applicable MSG Configuration. The CAISO will reject Ancillary Services Bids or Submissions to Self-Provide Ancillary Services for MSG Configurations that are not certified Ancillary Services. For any given Multi-Stage Generating Resource, for any given CAISO Market and Trading Hour if one MSG Configuration's Bid fails the bid validation process, all other Bids for all other MSG Configurations are also invalidated.

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Appendix A

Master Definition Supplement

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- [Not Used]

Attachment B – Marked

**Amendment to Revise Requirement for Bids of
Multi-Stage Generator Resource Adequacy Resources
California Independent System Operator Corporation**

October 15, 2013

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* * *

30.7.3.5 Bid Validation Rules for Multi-Stage Generating Resources

If a Scheduling Coordinator does not submit a Bid in the Day-Ahead Market or Real-Time Market for a Multi-Stage Generating Resource with a Resource Adequacy must-offer obligation at a MSG Configuration that can meet the applicable Resource Adequacy must-offer obligation, the CAISO will create a Generated Bid for the default Resource Adequacy MSG Configuration. If the Multi-Stage Generating Resource is not capable of Start-Up in the default Resource Adequacy MSG Configuration, ~~the CAISO will create a Generated Bid for every MSG Configuration in the registered Default Resource Adequacy Path~~ then the ISO will, based on feasibility of transitions, create a Generated Bid for every MSG Configuration that has a minimum output below the MW level of the Resource Adequacy must-offer obligation, which will cover the operating range from

its minimum output to the minimum of its maximum output and the MW level of the Resource

Adequacy must-offer obligation. In the event that the Scheduling Coordinator does not submit a Bid in compliance with section 30.5.1(p), the CAISO will create a Generated Bid for all of the capacity not bid into the CAISO Market between the maximum bid-in Energy MW and the higher of Self-Scheduled Energy MW and the Multi-Stage Generating Resource plant-level PMin. If the Scheduling Coordinator submits a Bid for the Multi-Stage Generating Resource, the CAISO will create this Generated Bid for the registered MSG Configurations before the Market Close, and if it does not submit such a Bid the CAISO will create this Generated Bid after the Market Close. Any Generated Bid created by the CAISO for the default Resource Adequacy MSG Configuration will be in addition to the MSG Configurations bid into the Real-Time Market by the responsible Scheduling Coordinator. If the Scheduling Coordinator submits a Bid in the Day-Ahead Market or Real-Time Market for a MSG Configuration that is not the default Resource Adequacy MSG Configuration and that does not cover the full amount of the resource's Resource Adequacy requirements, the CAISO will create a Generated Bid for the full Resource Adequacy Capacity. Before the market closes, if a Scheduling Coordinator submits a Bid in the Day-Ahead Market or Real-Time Market for the default Resource Adequacy MSG Configuration of a Multi-Stage Generating Resource that only meets part of the resource's Resource Adequacy must-offer obligation, the CAISO will extend the last segment of the Energy Bid curve in the submitted Bid for the Multi-Stage Generating Resource up to the Multi-Stage Generating Resource's Resource Adequacy must-offer obligation. After the market closes, to the extent that no Bid is submitted into the Real-Time Market for a Multi-Stage Generating Resource scheduled in the Integrated Forward Market as required in Section 30.5 the CAISO will create a Self-Schedule for MSG Configuration equal to the Day-Ahead Schedule for that resource for the MSG Configuration scheduled in the IFM. To the extent a Multi-Stage Generating Resource is awarded Operating Reserves in the Day-Ahead Market and no Economic Energy Bids is submitted for that resource in the Real-Time Market, the CAISO will insert Proxy Energy Bid in the MSG Configuration that was awarded in the Day-Ahead Market to cover the awarded Operating Reserves. To the extent that a Multi-Stage Generating Resources RUC Schedule is greater than its Day-Ahead Schedule,

if the Scheduling Coordinator does not submit an Energy Bid in the RTM to cover the difference, then the CAISO will either create a Bid in the MSG Configuration awarded in RUC, or extend the Bid submitted by the Scheduling Coordinator before the Market Close. After the Market Close, the CAISO will create a Generated Bid if there is no Bid submitted for the resource for this difference. The CAISO will validate that the combination of the Day-Ahead Ancillary Services Awards and Submissions to Self-Provide Ancillary Services are feasible with respect to the physical operating characteristics of the applicable MSG Configuration. The CAISO will reject Ancillary Services Bids or Submissions to Self-Provide Ancillary Services for MSG Configurations that are not certified Ancillary Services. For any given Multi-Stage Generating Resource, for any given CAISO Market and Trading Hour if one MSG Configuration's Bid fails the bid validation process, all other Bids for all other MSG Configurations are also invalidated.

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Appendix A

Master Definition Supplement

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~~-Default Resource Adequacy Path [Not Used]~~

~~The registered sequence of MSG Configurations a Multi-Stage Generating Resource has to Start-Up and transition from off-line to reach the default Resource Adequacy MSG Configuration.~~