**Marked Tariff**

**Multi-Stage Generating Resource Tariff Modifications**

**California Independent System Operator Corporation**

**Fifth Replacement FERC Electric Tariff**

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**27.8.3 Changes in Status and Configurations of Resource**

Scheduling Coordinators may seek modifications to the Multi-Stage Generating Resource attributes listed below consistent with the process and timing requirements specified in Section 27.8.1 and the additional requirements discussed below in this Section 27.8.3:

1. Registration and qualification of a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource.
2. Changes to the MSG Configurations attributes, which include:
	1. addition of new MSG Configurations;
	2. removal of an existing MSG Configuration;
	3. a change in the physical units supporting the MSG Configuration;
	4. a change to the MSG Configuration Start Up and Shut Down flags;
	5. adding or removing an MSG Transition to the Transition Matrix;

f. a material change in the Transition Times contained in the Master File, which consists of a change that more than doubles the Transition Times or reduces it to less than half; and

g. a material change to the maximum Ramp Rate of the MSG Configuration(s) contained in the Master File, which consists of a change that more than doubles the maximum Ramp Rate or reduces it to less than half.

When transitioning to implement these changes across the midnight hour, for any Real-Time Market run in which the changes specified in this Section 27.8.3 are to take effect within the Time Horizon of any of the Real-Time Market runs, the CAISO will Schedule, Dispatch, or award resources consistent with either the prior or new status and definitions, as appropriate, and required by any Real-Time conditions regardless of the resource’s state scheduled or awarded in the immediately preceding Day-Ahead Market. A Scheduling Coordinator may unregister a Generating Unit or Dynamic Resource-Specific System Resource from its Multi-Stage Generating Resource status subject to the timing requirements for Master File changes, and such changes are not subject to the timing requirements in Section 27.8.3. For the first forty-four (44) days after the effective date of this Section, Scheduling Coordinators may not change any of Multi-Stage Generating Resource attributes listed above in this Section. On the forty-fifth(45th) day following the effective day of this Section, changes to the attributes listed above in this Section may take effect, including the registration of new Multi-Stage Generating Resources, provided Scheduling Coordinators have previously followed the registration process requirements listed in Section 27.8.1. Subsequently, further changes to the attributes listed above in this Section 27.8.3 may not take effect until after the one hundred-and fifth (105th) day following the effective date of this Section, subject to the procedures described in Section 27.8.1. As of the one hundred-fifth (105th) day following the effective date of this Section, changes to these attributes may only be made every sixty (60) days after the day on which any such changes have taken effect.

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# Appendix AA

# Transition Plan for Multi-Stage Generating Resources

This Appendix AA describes the registration and qualification requirements for Generating Units and Dynamic Resource-Specific System Resources that intend to qualify and participate in the CAISO Markets as Multi-Stage Generating Resources as of the first day on which the Multi-Stage Generating Resource CAISO Tariff provisions are effective.

No later than fifty-four (54) days prior to effective date of the CAISO Tariff provisions enabling the Multi-Stage Generating Resource functionality, Scheduling Coordinators shall commence the registration process to register and qualify Generating Units or Dynamic Resource-Specific System Resources as Multi-Stage Generating Resources, or any other change to the fundamental attributes as described below, as of the effective date of the CAISO Tariff provisions for the Multi-Stage Generating Resource functionality. The registration process commences with the submission by the responsible Scheduling Coordinator of the completed Multi-Stage Generating Resource registration form and the resource data template for Generating Unit or Dynamic Resource-Specific System Resource, which the CAISO provides as part of the registration process. After such submission, the CAISO will coordinate with the responsible Scheduling Coordinator to validate that the resource qualifies as a Multi-Stage Generating Resource, and that all the requisite information has been successfully provided to the CAISO. Successful completion of the registration process will occur upon the CAISO’s notification to the responsible Scheduling Coordinator that the resource has been successfully qualified as a Multi-Stage Generating Resource. Once the CAISO has provided such notice, the resource will be registered and qualified to participate as a Multi-Stage Generating Resource as of the effective date of the CAISO Tariff provisions enabling the implementation of the Multi-Stage Generating Resource functionality. Scheduling Coordinators may register the number of MSG Configurations as are reasonably appropriate for the unit based on the operating characteristics of the unit, which may not, however, exceed a total of ten MSG Configurations and cannot be fewer than two MSG Configurations. The resource will be successfully registered and qualified for the requested status and MSG Configuration definitions on the date that the CAISO sends the notification to the responsible Scheduling Coordinator that the resource has been successfully qualified. If the CAISO has reason to believe that the resource’s operating and technical characteristics are not consistent with the registered and qualified attributes, the CAISO may request that the Scheduling Coordinator provide additional information necessary to support their registered status and, if appropriate, may require that the resource be registered and qualified more consistent with the resource’s operating and technical characteristics, including the revocation of its status as a Multi-Stage Generating Resource. Failure to provide such information may be grounds for revocation of Multi-Generating Resource status.

As part of the registration process, the Scheduling Coordinators must submit to the CAISO a Transition Matrix, which contains the cost and operating constraints associated with feasible transitions between MSG Configurations. The responsible Scheduling Coordinator shall submit for each MSG Configuration a single segment Operational Ramp Rate, and as applicable an Operating Reserves Ramp Rate and Regulating Reserves Ramp Rate. The Scheduling Coordinator must establish the default MSG Configuration and its associated Default Resource Adequacy Path that apply to Multi-Stage Generating Resources that are subject to Resource Adequacy must-offer obligations as part of the resource data template provided in the registration process. The MSG Configurations and operational characteristics submitted to and accepted by the CAISO during this registration process will be in effect until the forty-fourth (44th) day following the effective date of Section 27.8 of the CAISO Tariff, unless modified as specified below. Prior to that date, the Scheduling Coordinators may not make the following changes to a Generating Unit’s or Dynamic Resource-Specific System Resource’s attributes, which for the purposes of this Appendix AA are described as the fundamental attributes:

1. Register a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource;
2. Change the registered MSG Configurations for a Multi-Stage Generating Resource, which includes the;

(a) addition of new MSG Configurations;

(b) removal of an existing MSG Configuration;

(c) a change to the definition of a registered MSG Configuration, which includes:

1. a change in the physical units supporting the MSG Configuration;
2. a change to the MSG Configuration Start Up and Shut Down flags; and
3. adding or removing a MSG Transition to the Transition Matrix;

(d) a material change in the Transition Times contained in the Master File, which consists of a change that more than doubles a Transition Time or reduces it to less than half; and

1. a material change to the maximum Ramp Rate of the MSG Configuration(s) contained in the Master File, which consists of a change that more than doubles the maximum Ramp Rate or reduces it to less than half.

Scheduling Coordinators may make any other changes to their non-fundamental attributes, until twenty-one days prior to the effective date of the CAISO Tariff provisions enabling the implementation of the Multi-Stage Generating Resource functionality, subject to the timing requirements of the Master File time line. After the twenty-first (21st) day prior to the effective date of the CAISO Tariff provisions enabling the implementation of the Multi-Stage Generating Resource functionality, no changes may be made to any of the Multi-Stage Generating Resource attributes, fundamental or otherwise, except that the resources can drop out Multi-Stage Generating Resource status subject to the timing requirements of the Master file time line. When transitioning to implement these changes across the midnight hour, for any Real-Time Market run in which the changes specified above are to take effect within the Time Horizon of any of the Real-Time Market runs, the CAISO will Schedule, Dispatch, or award resources consistent with either the prior or new status and definitions, as appropriate and required by any Real-Time conditions regardless of the resource’s state Scheduled or awarded in the immediately preceding Day-Ahead Market.

Resources that will be participating in the CAISO Markets as Multi-Stage Generating Resources when the CAISO Tariff Multi-Stage Generating Resource provisions become effective must submit all Outages reports required in Section 9 of the CAISO Tariff consistent with the registered MSG Configurations for such resources no later than forty-eight hours prior to the start of the first hour of the effective date of the CAISO Tariff provisions enabling the implementation of the Multi-Stage Generating Resource functionality.

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