CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

STAKEHOLDER COMMENTS ON DRAFT MULTI-STAGE GENERATING UNIT TARIFF LANGUAGE

May 14, 2010

NEW COMMENTS AND RESPONSES ARE HIGHLIGHTED IN YELLOW

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
1	PGE	8.4.1	April 2, 2010	CAISO Proposed Tariff Language *Scheduling Coordinators for Multi-Stage Generating Resources must comply with the certification requirements in Section 8, Appendix K of the CAISO Tariff, and the Business Practice Manuals at the configuration levels and Scheduling Coordinators can only submit Ancillary Services Bids or Submissions to Self-Provide Ancillary Services into the CAISO Markets for the Multi-Stage Generating Resource configurations for which they are certified.* Comments The proposed language above is confusing and should be broken into distinct sentences.	Proposed modifications to this section to address this comment.
2	Dynegy	8.4.1	April 2, 2010	Each Generating Unit, System Unit, Participating Load or System Resource for which a Scheduling Coordinator wishes to submit a Bid to provide Ancillary Services must comply with the requirements for the specific Ancillary Service as set forth in Appendix K and the Business Practice Manual. Scheduling Coordinators for Multi-Stage Generating Resources must comply with the certification requirements in Section 8, Appendix K of the CAISO Tariff, and the Business Practice Manuals for each Multi-Stage Generation Resource Configuration~~at the configuration levels~~ and Scheduling Coordinators can only submit Ancillary Services Bids or Submissions to Self-Provide Ancillary Services into the CAISO Markets for the Multi-Stage Generating Resource configurations for which they are certified. In addition, to the extent the CAISO requires specific operating characteristics for Ancillary Services certification, the responsible Scheduling Coordinator must submit to the CAISO such specific operating characteristics for each Configuration~~at the configuration level~~. The requirements in	Proposed modifications to this section to address this comment.

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				Appendix K and the Business Practice Manuals include Ancillary Service control, capability and availability standards. The requirements also involve the following operating characteristics	
3	Dynegy	8.9	April 2, 2010	Availability of contracted and Self-Provided Ancillary Services and RUC Capacity shall be verified by the CAISO by unannounced testing of Generating Units, Loads and System Resources, by auditing of response to CAISO Dispatch Instructions, and by analysis of the appropriate Meter Data, or Interchange Schedules. The CAISO may test the capability of any Generating Unit, System Unit, System Resource, external import of a System Resource, Participating Load, or reactive device providing Ancillary Services or RUC Capacity. Participating Generators, owners or operators of Participating Loads, operators of System Units or System Resources, owners or operators of reactive devices and Scheduling Coordinators shall notify the CAISO immediately whenever they become aware that an Ancillary Service or RUC Capacity is not available in any way. All Participating Generators, owners or operators of Participating Loads, operators of System Units or System Resources and owners or operators of reactive devices shall check, monitor and/or test their system and related equipment routinely to assure availability of the committed Ancillary Services and RUC Capacity. These requirements apply to Ancillary Services whether the Ancillary Services are contracted or self-provided. For a duration specified by the CAISO, the CAISO may suspend the technical eligibility certificate of a Scheduling Coordinator for a Generating Unit, System Unit, Load or System Resource, which repeatedly fails to perform. The CAISO shall develop measures to discourage repeated non-performance on the part of both bidders and self-providers. Further, all of these requirements apply to each Multi-Stage Generating Resource Configuration~~at the configuration level to Multi-Stage Generating Resources~~.	Proposed modifications to this section to address this comment.
4	Dynegy	8.9.6	April 2, 2010	The CAISO may test the capability of a Generating Unit, System Unit or an external import of a System Resource to provide RUC Capacity by issuing unannounced Dispatch Instructions requiring the Generating Unit or System Unit to come on line and ramp up or, in the case of a System Resource, to affirmatively respond to a Real-Time	Proposed modifications to this section to address this comment.

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				Interchange Schedule adjustment; all in accordance with the Scheduling Coordinator's Bid. Such tests may not necessarily occur on the hour. The CAISO shall measure the response of the Generating Unit, System Unit or external import of a System Resource to determine compliance with its stated capabilities. For a Multi-Stage Generating Resource the ~~full~~ range of RUC Capacity ~~is~~ evaluated is the range for~~at~~ the applicable C~~c~~onfiguration.	
5	Dynegy	8.9.9	April 2, 2010	The CAISO will audit the performance of a Generating Unit providing Regulation by monitoring its response to CAISO EMS control or, in the case of an external import of a System Resource providing Regulation, by monitoring the dynamic Interchange response to CAISO EMS control around its Set Point within its rated MW/minute capability over the range of Regulation capacity scheduled for the current Settlement Period. For a Multi-Stage Generating Resource the range of Regulation capacity ~~is~~ evaluated is the range for~~at~~ the applicable configuration.	Proposed modifications to this section to address this comment.
6	Dynegy	8.9.10	April 2, 2010	The CAISO will audit the performance of a Generating Unit or external import of a System Resource providing Spinning Reserve by auditing its response to Dispatch Instructions and by analysis of Meter Data associated with the Generating Unit. Such audits may not necessarily occur on the hour. A Generating Unit providing Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move at the MW/minute capability stated in its Bid, reach the amount of Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO, and respond to system frequency deviations outside the allowed frequency deadband. An external import of a System Resource providing Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move at the MW/minute capability stated in its Bid, reach the amount of Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO. For a Multi-Stage Generating Resource the range of Spinning Reserve capacity ~~is~~ evaluated is the range for~~at~~ the applicable C~~c~~onfiguration.	Proposed modifications to this section to address this comment.

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7	Dynegy	8.9.11	April 2, 2010	The CAISO will audit the performance of a Generating Unit, Load, or System Resource providing Non-Spinning Reserve by auditing its response to Dispatch Instructions, and by analysis of Meter Data associated with the resource. Such audits may not necessarily occur on the hour. A Generating Unit providing Non-Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute capability stated in its Bid, and reach the amount of Non-Spinning Reserve capacity under the control of the CAISO scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO. An external import of a System Resource providing Non-Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute capability stated in its Bid, and reach the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO. A Load providing Non-Spinning Reserve from Curtailable Demand shall be evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute capability stated in its Bid, and reach the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO. For a Multi-Stage Generating Resource the range of Non-Spinning Reserve capacity ~~is~~ evaluated is the range for~~at~~ the applicable C~~c~~onfiguration.	Proposed modifications to this section to address this comment.
8	Dynegy	8.9.14	April 2, 2010	The CAISO will audit the performance of a Generating Unit, Participating Load, or System Resource providing RUC Capacity by auditing its response to Dispatch Instructions, and by analysis of Meter Data associated with the resource. Such audits may not necessarily occur on the hour. A Generating Unit providing RUC Capacity shall be evaluated on its ability to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute capability stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period. An external import of a System Resource providing RUC Capacity shall be	Proposed modifications to this section to address this comment.

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				evaluated on its ability to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute capability stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period. For a Multi-Stage Generating Resource, the ~~full~~ range of RUC Capacity ~~is~~ evaluated is the range for~~at~~ the applicable C~~c~~onfiguration.	
9	Dynegy	8.10.2	April 2, 2010	The CAISO shall test the Spinning Reserve capability of a Generating Unit, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, System Unit or System Resource to ramp up to its ten (10) minute capability. The CAISO shall measure the response of the Generating Unit, System Unit or System Resource to determine compliance with requirements. Such tests may not necessarily occur on the hour. The Scheduling Coordinator for the Generating Unit, System Unit or System Resource shall be paid pursuant to Section 11.5.6. For a Multi-Stage Generating Resource the ~~full~~ range of Spinning Reserve capacity ~~is~~ evaluated is the range for~~at~~ the applicable C~~c~~onfiguration.	Proposed modifications to this section to address this comment.
9.1	Dynegy	8.10.2	May 3, 2010	The CAISO shall test the Spinning Reserve capability of a Generating Unit, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, System Unit or System Resource to ramp up to its ten (10) minute capability. The CAISO shall measure the response of the Generating Unit, System Unit or System Resource to determine compliance with requirements. Such tests may not necessarily occur on the hour. The Scheduling Coordinator for the Generating Unit, System Unit or System Resource shall be paid pursuant to Section 11.5.6. For a Multi-Stage Generating Resource the range of Spinning capacity evaluated is the range for the applicable MSG Configuration.	Accept change.
10	Dynegy	8.10.3	April 2, 2010	The CAISO may test the Non-Spinning Reserve capability of a Generating Unit, Load, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, Load, System Unit or System Resource to come on line	Proposed modifications to this section to address this comment.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				and ramp up or to reduce Demand to its ten (10) minute capability. The CAISO shall measure the response of the Generating Unit, System Unit, System Resource or Load to determine compliance with requirements. The Scheduling Coordinator for the Generating Unit, System Unit, Load or System Resource shall be paid pursuant to Section 11.5.6. For a Multi-Stage Generating Resource the ~~full~~ range of Non-Spinning Reserve capacity ~~is~~ evaluated is the range for~~at~~ the applicable C~~c~~onfiguration.	
11	Dynegy	8.10.8.1	April 2, 2010	The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from Ancillary Services capacity or Self-Provided Ancillary Services capacity for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10. For the Multi-Stage Generating Resource the Configuration-specific maximum operating capability and the Operational Ramp Rate are used~~considered at the applicable configuration level.~~ System Resources that are awarded Ancillary Services capacity in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) the Ancillary Services capacity. If the amounts of Ancillary Services capacity in an electronic tag differ from the amounts of Ancillary Services capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1.	Proposed modifications to this section to address this comment.
12	Dynegy	8.10.8.2	April 2, 2010	If the CAISO determines that a Scheduling Coordinator has supplied Uninstructed Imbalance Energy to the CAISO during a Settlement Interval from the capacity of a Generating Unit, Participating Load, System Unit or System Resource that is obligated to supply Spinning Reserve or Non-Spinning Reserve to the CAISO, payments to the Scheduling Coordinator for the Ancillary Service capacity used to supply Uninstructed Imbalance Energy shall be eliminated to the extent of the deficiency, in accordance with the provisions of Section 11.10.9.2. For Multi-Stage Generating Resources the determination of~~or~~ which payments will be rescinded shall consider the ~~at the resource level with the~~ maximum operating capability for~~at~~ the applicable	Proposed modifications to this section to address this comment.

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				~~C~~configuration ~~level.~~	
13	SCE	8.10.8.3	April 2, 2010	No-pay determination should be at the configuration (not resource) level.	The rescission of payments for the undelivered capacity is can only be done at the plant level because it is based on inputs that are all at the resource level, *i.e.*, the meter and expected energy is all at the resource level. However, because this is no different for MSG resources than it is for all other resources, the ISO is proposing this reference from this section.
14	Dynegy	8.10.8.3	April 2, 2010	For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or System Resource fails to supply Energy from Spinning Reserve or Non-Spinning Reserve capacity in accordance with a Dispatch Instruction, or supplies only a portion of the Energy specified in the Dispatch Instruction, the capacity payment will be reduced to the extent of the deficiency, in accordance with the provisions of Section 11.10.9.3. For a Multi-Stage Generating Resource this determination is made at the resource level. [What is the "resource level"? And is that last sentence even needed?]	See answer to # 13.
15	Dynegy	9.7	April 2, 2010	Participating Generators for~~of~~ Multi-Stage Generating Resources shall comply with~~provide~~ the Outage reporting requirements in Section 9 ~~by resource and~~ for each C~~c~~onfiguration, as applicable. In addition, to the extent that the responsible Scheduling Coordinator modifies the registered Multi-Stage Generating Resource's characteristics as provided in Section 27.8.3, the Participating Generator for the Multi-Stage Generating Resource shall modify any information or reports previously submitted pursuant to this Section 9 to account for any registered status and characteristic changes as soon as possible after receiving notice from the CAISO accepting the registered status or characteristics changes and no later than two (2) days prior to the date on which the Section 27.8.3 changes are expected to be in effect.	References to the fact that the outage requirements apply at the resource or plant level in this section is helpful. However, the ISO agrees that the use of the term "resource" may be confusing. The ISO proposes to use the term Generating Unit when necessary to refer to the plant level for certain requirements.
15.1	Dynegy	9.7	May 3, 2010	Participating Generators of Multi-Stage Generating Resources shall ~~provide~~ report Outages in accordance with the Outage reporting requirements in Section 9 for the	Accept change.

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				Generating Unit and for each MSG Configuration, as applicable. In addition, to the extent that the responsible Scheduling Coordinator modifies the registered Multi-Stage Generating Resource's characteristics as provided in Section 27.8.3, the Participating Generator for the Multi-Stage Generating Resource shall modify any information or reports previously submitted pursuant to this Section 9 to account for any registered status and characteristic changes as soon as possible after receiving notice from the CAISO accepting the registered status or characteristics changes and no later than two (2) days prior to the date on which the Section 27.8.3 changes are expected to be in effect.	
16	PGE	11.8	April 2, 2010	Tariff Section 11.8 CAISO's proposed language often includes the phrase "the CAISO will evaluate". The CAISO should indentify the relevant tariff section that explains its evaluation methodology when using this phrase." For example, Section 11.8.3.1.1 (a) states: *"An actual Start-Up is detected between two consecutive Settlement Intervals when the relevant metered Energy in the applicable Settlement Intervals increases from below the Minimum Load Energy and reaches or exceeds the relevant Minimum Load Energy. The Minimum Load Energy is the product of the relevant Minimum Load and the duration of the Settlement Interval.* ***The CAISO will evaluate the Minimum Load Energy for Multi-Stage Generating Resources based on the CAISO-committed configuration."*** This language in bold is unclear. The CAISO should indentify the relevant tariff section that explains the how the CAISO will evaluate Minimum Load Energy for MSG Resources.	Agree to use the term determine instead of evaluate in the various parts of Section 11.8 for clarity.
17	Dynegy	11.8.1.1	April 2, 2010	….For Multi-Stage Generating Resources, the Minimum Run Time and Minimum Down	The SC may submit the Minimum Run Time and Minimum Down

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				Time will be evaluated at both the Cconfiguration and resource level to determine whether an extension of the IFM Self-Commitment Period applies. ***[again, what is the "resource level"? How does it differ from the most expansive Configuration level? If the CAISO retains this term, it should be defined.]***	Times both at the resource level (i.e., plant level) and the configuration level. The resource level Minimum Run Times and Minimum Down Times apply the MSG resource regardless of the configuration they are in. However, the Minimum Run Time and Minimum Down Time at the configuration apply only to the particular MSG configurations committed. Both must be considered for the purposes of determining the IFM self-commitment periods. The ISO proposes revisions consistent with this clarification.
17.1	Calpine	11.8.1.1	May 3, 2010	Does the last sentence suggest that the resource and configuration min run and min down are additive? That is, if I self commit a unit that has a 3 hour resource min run and a 3 hour configuration min run, that the first 6 hours will be deemed a self-commitment period? Seems it should be the longer of, resource or commitment configuration, not both.	The minimum run and down times are not additive. The ISO proposes clarifying language to reflect that in considering the extension of the self-commitment period the ISO will consider these values at the plant and at the configuration level and will ensure that they are simultaneously respected.
18	SCE	11.8.1.1 and 11.8.1.2	April 2, 2010	Both these section contain the statement "For Multi-Stage Generating Resources, the Minimum Run Time and Minimum Down Time will be evaluated at both the configuration and resource level to determine whether an extension of the IFM Self-Commitment Period applies". Please clarify if the Min Run and Min Down time is associated with the configuration level only? If so, is evaluation of MRT and MDT at the resource level correct?	See answer to number 17
19	Dynegy	11.8.1.2	April 2, 2010	**11.8.1.3 Multi-Stage Generating Resource Start-Up, Minimum Load, or Transition Costs** For the settlement of the Multi-Stage Generating Resource Start-Up Cost, Minimum Load Cost, and Transition Cost in the IFM, RUC, and RTM, the CAISO will select the applicable Start-Up Cost, Minimum Load Cost, and Transition Cost based on the following rules.	The ISO is proposing clarifying changes that describe the commitment periods for these purposes as the same as the CAISO Commitment Periods. The CAISO Commitment Period, CAISO Commitment Period, and Self-Commitment Period, are pre-existing terms used to identify the period in which a resource is committed by the ISO and not self-committed. These are the only periods under the ISO tariff in which a resource can recover its commitment

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				(1) In any given Settlement Interval, the CAISO will first apply the following rules to determine the applicable Start-Up Cost, Minimum Load Cost, and Transition Cost for the Multi-Stage Generating Resources: ***[Does the CAISO need to define the word "commit"? Does it simply mean "to start-up?" Or does it mean "to start-up and specify a certain operating level and/or Configuration"? Or perhaps just "to direct to operate in a particular configuration"? Perhaps this term should be defined…]*** (a) If the CAISO commits the Multi-Stage Generating Resource in the IFM and/or RUC in different Ceonfigurations than it commits the Multi-Stage Generating Resource in the RTM, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the RTM Start-Up Cost, Minimum Load Cost, and Transition Cost from the Real-Time Market committed Ceonfiguration as described in Section 11.8.4.1. [??] (d) If the Multi-Stage Generating Resource is self-committed in IFM or RUC in the same Ceonfiguration as the ISO commits the Multi-Stage Generating Resource in RTM, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the RTM Start-Up Cost, Minimum Load Cost, and Transition Cost for the Ceonfiguration committed in the Real-Time Market as described in Section 11.8.4.1. (2) In any given Settlement Interval, after the rules specified in Section 1 have been executed, the ISO will apply the following rules to determine whether the IFM or RUC Start-Up Cost, Minimum Load Cost, and Transition Cost apply for Multi-Stage Generating Resources: (a) If the CAISO commits the Multi-Stage Generating Resource in the IFM in a different Ceonfiguration than it commits the Multi-Stage Generating Resource in RUC, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the RUC Start-Up Cost, Minimum Load Cost, and Transition Cost from the RUC-committed	costs through the ISO market.

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				Ceonfiguration as described in Section 11.8.3.1. (b) If the CAISO commits the Multi-Stage Generating Resource in the IFM in a Ceonfiguration other than the Multi-Stage Generating Resource is self-committed in RUC, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the IFM Costs of the Ceonfiguration committed in the IFM, as described in Section 11.8.2.1 (c) If the CAISO commits the Multi-Stage Generating Resource in the IFM in the same Ceonfiguration the CAISO commits the Multi-Stage Generating Resource in RUC, then Multi-Stage Generating Resource's Bid Costs will be based on the IFM Start-Up Cost, Minimum Load Cost, and Transition Cost for the configuration committed in the IFM as described in Section 11.8.2.1. (d) If the Multi-Stage Generating Resource is self-committed in IFM in the same Ceonfiguration as the ISO commits the Multi-Stage Generating Resource in RUC, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be based on the RUC Start-Up Cost, Minimum Load Cost, and Transition Cost for the Ceonfiguration committed in the RUC, as described in Section 11.8.3.1.	
20	SCE	11.8.1.3	April 2, 2010	Would the ISO provide comment on SCE's interpretation of this section, which is that MSGs are settled at the CAISO committed configuration if there was both a CAISO and a self-commitment in the same interval? Also, settlement is at RTM>RUC>IFM committed configuration in order of precedence in those situations when the CAISO has more than one commitment, with different configurations, in the same interval. This makes sense since it uses the "final" configuration that CAISO commits.	Agree with SCE's reading of this section.
20.1	SCE	11.8.1.3	May 03, 2010	**Section 11.8.1.3 (Rules 1a-1d)** SCE understands there to be twelve possible combinations when looking at different MSG Configurations between the IFM/RUC and RTM results. These twelve combinations come from the differences in CAISO commitments versus Self-	1) The ISO confirms that the direction of the change does not matter in considering which commitment period and costs apply. Therefore, it is correct to state that there are only eight possible combinations.

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				Commitment and the three possible relationships between IFM configuration costs and RTM configuration costs (same, up, down). SCE would like clarification around a few points regarding this understanding versus the language found in section 11.8.1.3. 1) It appears that the CAISO views only two possible relationships between IFM and RTM (same, different). Is it correct that the direction of the change (up, down) is not considered? (If so, then there appears to only be eight possible combinations.) 2) Given the 12 (or 8) possible configurations does the CAISO feel they have covered all scenarios with the provided language? What about CAISO committed in IFM and self-committed in RTM in the same configuration? 3) In rule d what does the term "incremental" mean? In particular how do you have incremental SUC, MLC, TC if the configuration stay the same between IFM/RUC and RTM?	2) The ISO agrees that it should clarify the result for the case the CAISO commits the resource in the IFM and then the resource self-commits in the same configuration. See proposed changes to Section 11.8.1.3 1(b) 3) The ISO proposes to remove the term incremental.
20.2	PG&E	11.8.1.3 1(a)	May 3, 2010	**1) Section 11.8.1.3 1(a): Multi-Stage Generating Resource Start-Up, Minimum Load, or Transition Costs** CAISO Proposed Tariff Language ***IFM Commitment Period and/or RUC Commitment Period*** *MSG Configuration(s) are different than the RTM CAISO Commitment Period MSG Configuration, the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the RTM CAISO Commitment Period MSG Configuration Start-Up Cost, Minimum Load Cost, and Transition Cost as described in Section 11.8.4.1.* Comments As is done in other sections, the language above should define whether IFM and RUC	In the particular case in 11.8.1.3 1(a), it does not make a difference whether it is a ISO committed or self-commitment during the relevant commitment period. Therefore, the ISO states simply that if there is a IFM or RUC commitment period with a MSG configuration different than it then commits in the RTM, the costs and commitment period fall back to the RTM commitment period costs. Therefore, in this case there should be no distinction in the first clause.

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				Commitment Period is a CAISO or Self Commitment.	
20.3	PG&E	11.8.1.3.1 2(a)	May 3, 2010	**2) Section 11.8.1.3 1 2(a): Multi-Stage Generating Resource Start-Up, Minimum Load, or Transition Costs** **CAISO Proposed Tariff Language** ***"IFM Commitment Period MSG Configuration is different than the RUC CAISO Commitment Period MSG Configuration than, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the RUC CAISO Commitment Period MSG Configuration Start-Up Cost, Minimum Load Cost, and Transition Cost as described in Section 11.8.3.1"*** **Comments** **As is done in other sections, the language above should define whether IFM Commitment Period is a CAISO or Self Commitment. Also, the word "than" (which is in red text) should be deleted.=**	See answer to 20.2
21	PGE	11.8.1.3 (c)	April 2, 2010	CAISO Proposed Tariff Language *"If the CAISO commits the Multi-Stage Generating Resource in the IFM and RUC in the same configuration the ISO commits the Multi-Stage Generating Resource in RTM, then the Multi-Stage Generating Resource's Start-Up Cost, Minimum Load Cost, and Transition Cost will be settled based on the* ***IFM or RUC Start-Up Cost, Minimum Load Cost, and Transition Cost*** *for the configuration committed in the IFM or RUC, described in Sections 11.8.2.1 and 11.8.3.1, and further determined pursuant to part (2) below."* Comments This tariff section is not consistent with MSG Business Rule (BRQ114) which states:	See answers to numbers 19 and 20.

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				The transition cost and minimum load cost will be evaluated following the order of RTM -> RUC -> IFM. If a transition cost or minimum load cost has been determined by that market, the eligibility for the subsequent market will not be considered.	
22	SCE	11.8.2	April 2, 2010	For purposes of determining the IFM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and the purposes of allocating Net IFM Bid Cost Uplift as described in Section 11.8.6.4 the CAISO shall calculate the IFM Bid Cost Shortfall or the IFM Bid Cost Surplus as the algebraic difference between the IFM Bid Cost and the IFM Market Revenues for each Settlement Interval. The IFM Bid Costs shall be calculated pursuant to Section 11.8.2.1 and the IFM Market Revenues shall be calculated pursuant to Section 11.8.2.2. The Energy subject to IFM Bid Cost Recovery is the ~~actual~~ Energy awarded in the IFM. ~~delivered in the Real-Time that is within the Day-Ahead Schedule for each eligible resource.~~	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.
23	SCE	11.8.2.1.1 (g)	April 2, 2010	This section addresses long start units that start before the IFM commitment period within the same trading day. SCE believes that the tariff also needs to address those units that must start on prior days to meet the IFM commitment timeline.	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.
23.1	Dynegy	11.8.2.1	May 3, 2010	The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the IFM Minimum Load Cost in a CAISO IFM Commitment Period is eligible for Bid Cost Recovery. The IFM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is in an IFM Self Commitment Period for the Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract prior to the Day-Ahead Market or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule for the applicable Settlement Interval; or (3) the Bid Cost Recovery Eligible Resource is determined not actually On during the applicable Settlement Interval. For the purposes of determining IFM Minimum Load Cost, a Bid Cost Recovery	Accept change.

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				Eligible Resource is assumed to be On if its metered Energy in a Settlement Interval is equal to or greater than the difference between its Minimum Load Energy and the Tolerance Band. Otherwise, it is determined to be Off. The CAISO will determine the IFM Minimum Load Costs for Multi-Stage Generating Resources, based on the CAISO Commitment Period MSG Configuration. For Settlement Intervals that contain two Dispatch Intervals with ~~two~~ different MSG Configurations, the CAISO will determine the Minimum Load Costs based on the sum of the two applicable Dispatch Intervals. **[Deleted the "two" because it suggests that there could be two different MSG Configurations in the same Dispatch Interval.]**	
24	SCE	11.8.2.1.2 and 11.8.4.1.2	April 2, 2010	Need clarification on determination of ML costs for settlement intervals that contain two dispatch intervals with two different configurations.	The ISO clarifies that in such instances the ML for the settlement interval will be determined as the sum of the two applicable intervals. The ISO agrees to include this clarification in the tariff.
25	SCE	11.8.2.15	April 2, 2010	For any Settlement Interval, the IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, shall be the integral of the relevant Energy Bid submitted to the IFM, if any, from the higher of the registered Bid Cost Recovery Eligible Resource's Minimum Load and the Day-Ahead Total Self-Schedule up to the relevant MWh scheduled in the Day-Ahead Schedule, divided by the number of Settlement Intervals in a Trading Hour. ~~The IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, for any Settlement Interval is set to zero for any portion of the Day-Ahead Schedule that is not delivered from the otherwise Bid Cost Recovery Eligible Resource that has metered Generation below its Day-Ahead Schedule; any portion of the Day-Ahead Schedule that is actually delivered remains eligible for IFM Energy Bid Cost Recovery.~~ The CAISO will evaluate the IFM Energy Bid Cost for a Multi-Stage Generating Resource at the resource level.	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.
26	Dynegy	11.8.2.1.5	April 2, 2010	For any Settlement Interval, the IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, shall be the integral of the relevant Energy Bid	See answer to number 15.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				submitted to the IFM, if any, from the higher of the registered Bid Cost Recovery Eligible Resource's Minimum Load and the Day-Ahead Total Self-Schedule up to the relevant MWh scheduled in the Day-Ahead Schedule, divided by the number of Settlement Intervals in a Trading Hour. The IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, for any Settlement Interval is set to zero for any portion of the Day-Ahead Schedule that is not delivered from the otherwise Bid Cost Recovery Eligible Resource that has metered Generation below its Day-Ahead Schedule; any portion of the Day-Ahead Schedule that is actually delivered remains eligible for IFM Energy Bid Cost Recovery. The CAISO will evaluate the IFM Energy Bid Cost for a Multi-Stage Generating Resource at the resource level	
27	Dynegy	11.8.2.1.6	April 2, 2010	For any Settlement Interval, the IFM AS Bid Cost shall be the product of the IFM AS Award from each accepted IFM AS Bid and the relevant AS Bid Price, divided by the number of Settlement Intervals in a Trading Hour. The CAISO will evaluate and calculate IFM Ancillary Services Bid Cost for a Multi-Stage Generating Resource at the resource level.	Proposed modifications to this section to address this comment.
28	SCE	11.8.2.1.7	April 2, 2010	Does a MSG unit still qualify for transition costs when part of the configuration is running on self schedule?	The question is not clear. However, the ISO clarifies that if the resource is transitioned into the self-scheduled configuration, then the resource is not eligible for transition costs. However, it the resource is transitioned out of the self-scheduled configuration and into a bid-in configuration, then the resource is eligible for the transition costs.
29	Dynegy	11.8.2.1.7	April 2, 2010	For each Settlement Interval, the IFM Transition Costs shall be based on the Cconfiguration to which the Multi-Stage Generating Resource is transitioning and is allocated to the CAISO Ccommitment Pperiod of that Cconfiguration.	Proposed modifications to this section to address this comment.
30	SCE	11.8.2.1.5, 11.8.2.1.6,	April 2, 2010	With regards to "cost is at resource level," please clarify how the bid cost level is calculated at the resource level when bids and awards are at the configuration level.	In calculating the BCR at the resource level the ISO will use the submitted bids and costs at the configuration level.

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		11.8.4.1.5 and 11.8.4.1.6			
31	SCE	11.8.2.1.4 and 11.8.4.1.7	April 2, 2010	Are transition costs guaranteed? Are there any checks (like the ones found in the SUC section) that an MSG can fail and not receive Transition Cost recovery? What if the unit doesn't transition?	The ISO will verify based on the metered data whether the resource transitioned. If they do not transition, they do not receive transition cost recovery. The ISO will make sure this is clear in the tariff.
31.1	SCE	11.8.2.1.4 and 11.8.4.1.7	May 03, 2010	The ISO's answer to SCE's question regarding transition costs (Q 31 on ISO's reply to comments) includes the phase "The ISO will make sure this [i.e. that the ISO will use metered data to verify if a resource has transitioned from one configuration to another and that only resources that are verified to have transitioned will receive transition cost recover] is clear in the tariff". Would the CAISO please identify where within the tariff this clarification has been made.	The ISO is revising its answer to Q31. The ISO is currently conducting an additional stakeholder process to define the transition costs more explicitly for MSGs. Because of this current effort, the ISO deemed it to be more appropriate to consider this detail in that process and the filing that will follow. Therefore, this detail will not be included in this draft.
32	SCE	11.8.2.2, 11.8.3.2 and 11.8.4.2.1	April 2, 2010	Revenues calculations need to be at the configuration (not the resource) level.	The tariff language is consistent with the final policy arrived at in the preceding stakeholder process for this initiative, which was to determine the market revenues based on the resource level.
33	Dynegy	11.8.2.2	April 2, 2010	For any Settlement Interval in a CAISO IFM Commitment Period the IFM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the delivered MWh, in the relevant Day-Ahead Schedule in that Trading Hour where for Pumped-Storage Hydro Units and Participating Load operating in the pumping mode or serving Load, the MWh is negative, and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour. In the case of a Multi-Stage Generating Resource, the CAISO will calculate the market revenue at the resource level. For any Settlement Interval in a IFM Self-Commitment Period the IFM Market Revenue	See answer to number 15.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the delivered MWh above the greater of Minimum Load and Self-Scheduled Energy, in the relevant Day-Ahead Schedule in that Trading Hour and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour.	
34	SCE	11.8.2.2	April 2, 2010	For any Settlement Interval in a CAISO IFM Commitment Period the IFM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the awarded ~~delivered~~ MWh, in the relevant Day-Ahead Schedule in that Trading Hour where for Pumped-Storage Hydro Units and Participating Load operating in the pumping mode or serving Load, the MWh is negative, and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour. In the case of a Multi-Stage Generating Resource, the CAISO will calculate the market revenue at the resource level. For any Settlement Interval in a IFM Self-Commitment Period the IFM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the ~~delivered~~ awarded MWh above the greater of Minimum Load and Self-Scheduled Energy, in the relevant Day-Ahead Schedule in that Trading Hour and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour.	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.
34.1	Calpine	11.8.2.2	April 13, 2010	IFM Market Revenue –The statement below leads us to believe that our self schedule IFM revenue would be used in determining our eligibility for BCR. This would not be accurate and would prevent us from recovering our maximum allowed as in the case currently. This statement should either be revised, explained or excluded (section 11.8.2.2) "In the case of a Multi-Stage Generating Resource, the CAISO will calculate the	Proposed modifications to this section to address this comment. This statement is added to clarify that for MSG's the same principles that apply to all other Generating Units in calculating the market revenues will be done at the Generating Unit level and not

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				market revenue at the resource level."	the MSG Configuration level.
35	PGE	11.8.2.3 (2c)	April 2, 2010	CAISO Proposed Tariff Language *"If the CAISO commits the Multi-Stage Generating Resource in the IFM in the same configuration the CAISO commits the Multi-Stage Generating Resource in RUC, then Multi-Stage Generating Resource's Bid Costs will be based on the* ***IFM Start-Up Cost, Minimum Load Cost, and Transition Cost*** *for the configuration committed in the IFM as described in Section 11.8.2.1."* Comments This tariff section is not consistent with MSG Business Rule (BRQ114) which states: The transition cost and minimum load cost will be evaluated following the order of RTM -> RUC -> IFM. If a transition cost or minimum load cost has been determined by that market, the eligibility for the subsequent market will not be considered.	Since the BRS publication, the ISO has provided additional details on this rule which are reflected in the draft tariff language and the MSG FAQs. The ISO will correct the previously posted BRS documents.
36	SCE		April 2, 2010	For purposes of determining the RTM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and for the purposes of allocation of Net RTM Bid Cost Uplift as described in Section 11.8.6.6 the CAISO shall calculate the RTM Bid Cost Shortfall or the RTM Bid Cost Surplus as the algebraic difference between the RTM Bid Cost and the RTM Market Revenues for each Settlement Interval. The RTM Bid Costs shall be calculated pursuant to Section 11.8.4.1 and the RTM Market Revenues shall be calculated pursuant to Section 11.8.4.2. ~~The Energy subject to RTM Bid Cost Recovery is the actual Energy delivered in the Real-Time associated with Instructed Imbalance Energy described in Section 11.5.1, excluding Standard Ramping Energy, Residual~~	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.

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				~~Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, Ramping Energy Deviation, Regulation Energy and MSS Load Following Energy.~~	
37	Dynegy	11.8.3.1.1 (f)	April 2, 2010	(f)The RUC Start-Up Cost for a RUC Commitment Period is qualified if an actual Start-Up occurs within that RUC Commitment Period. An actual Start-Up is detected between two consecutive Settlement Intervals when the relevant metered Energy in the applicable Settlement Intervals increases from below the Minimum Load Energy and reaches or exceeds the relevant Minimum Load Energy. ***[No tolerance band?]*** The Minimum Load Energy is the product of the relevant Minimum Load and the duration of the Settlement Interval. The CAISO will evaluate the Minimum Load Energy for Multi-Stage Generating Resources based on the CAISO-committed Ceonfiguration.	No tolerance band will apply for the Start-Up Costs.
38	Dynegy	11.8.3.2	April 2, 2010	For any Settlement Interval, the RUC Market Revenue for a Bid Cost Recovery Eligible Resource is the RUC Availability Payment as specified in Section 11.2.2.1 divided by the number of Settlement Intervals in a Trading Hour. If the RUC Availability Bid Cost of a BCR Eligible Resource is reduced to zero (0) in a Settlement Interval because of Uninstructed Deviation as stated in Section 11.8.3.1.3, then the RUC Market Revenue for that resource for that Settlement Interval shall also be set to zero (0) since the resource is subject to rescission of RUC Availability Payments as specified in Section 31.5.7. The CAISO will evaluate the RUC Market Revenues for Multi-Stage Generating Resources based on the Multi-Stage Generating Resource resource level.	See answer to number 15.
38.1	Dynegy	11.8.4.1	May 13, 2010	For Multi-Stage Generating Resources, the incremental RTM Start-Up Cost, Minimum Load Cost, and Transition Cost to provide RTM Scheduled Energy or Awarded capacity for an MSG Configuration other than the self-scheduled MSG Configuration are determined by the RTM optimization rules in specified in Section 34. [OK, I admit these change seem a bit pedantic, but the shorthand structure fragments the defined terms.	Accept these changes.

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				If this is OK practice I rescind the comment.]	
39	Dynegy	11.8.4.1.5	April 2, 2010	For any Settlement Interval, the RTM Energy Bid Cost for the Bid Cost Recovery Eligible Resource except Participating Loads shall be computed as the sum of the products of each Instructed Imbalance Energy (IIE) portion, except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load Following Energy, Ramping Energy Deviation and Regulating Energy, with the relevant Energy Bid prices, if any, for each Dispatch Interval in the Settlement Interval. The RTM Energy Bid Cost for a Bid Cost Recovery Eligible Resource except Participating Loads for a Settlement Interval is set to zero for any undelivered Real-Time Instructed Imbalance Energy by the Bid Cost Recovery Eligible Resource. Any Uninstructed Imbalance Energy in excess of Instructed Imbalance Energy is also not eligible for Bid Cost Recovery. For a Multi-Stage Generating Resource the CAISO will evaluate the RTM Energy Bid Cost based on the Multi-Stage Generating Resource resource level.	See answer to number 15.
40	SCE	11.8.4.1.5	April 2, 2010	For any Settlement Interval, the CAISO shall compute two RTM Energy Bid Cost for the Bid Cost Recovery Eligible Resource except Participating Loads. The first shall be computed as the sum of the products of each Instructed Imbalance Energy (IIE) portion, except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load Following Energy, Ramping Energy Deviation, Real-Time Minimum Load Energy, and Regulating Energy, with the relevant Energy Bid prices, if any, for each Dispatch Interval in the Settlement Interval. The second shall be computed as the sum of the products of each delivered energy portion less the corresponding IFM Energy award, except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load Following Energy, Ramping Energy Deviation, Real-Time Minimum Load Energy, and Regulating Energy, with the relevant Energy Bid prices, if any, for each Dispatch Interval in the Settlement Interval. For the first RTM Energy Bid Cost the relevant Energy Bid price equals the corresponding IFM Energy Bid price if the Instructed Imbalance Energy (IIE) portion is	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.

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				negative, else, it equals the RTM Energy Bid price. For the second RTM Energy Bid Cost the relevant Energy Bid price equals the corresponding IFM Energy Bid Price if the delivered Energy is less than the corresponding IFM Energy award, else it equals the RTM Energy Bid price. RTM Revenue is also computed using both Instructed Imbalance Energy and the actual Energy delivered. The RTM Energy Bid Cost eligible for Bid Cost Recovery is the amount that when netted against the corresponding RTM Revenue amount, excluding revenue from Minimum Load Energy, produces the largest surplus or smallest shortfall. ~~The RTM Energy Bid Cost for a Bid Cost Recovery Eligible Resource except Participating Loads for a Settlement Interval is set to zero for any undelivered Real-Time Instructed Imbalance Energy by the Bid Cost Recovery Eligible Resource. Any Uninstructed Imbalance Energy in excess of Instructed Imbalance Energy is also not eligible for Bid Cost Recovery.~~ For a Multi-Stage Generating Resource the CAISO will evaluate the RTM Energy Bid Cost based on the Multi-Stage Generating Resource resource level.	
41	Dynegy	11.8.4.1.6		For each Settlement Interval, the Real-Time Market AS Bid Cost shall be the product of the average Real-Time Market AS Award from each accepted AS Bid submitted in the Settlement Interval for the Real-Time Market, reduced by any relevant tier-1 No Pay capacity in that Settlement Interval (but not below zero), with the relevant AS Bid price. The average Real-Time Market AS Award for a given AS in a Settlement Interval is the sum of the 15-minute Real-Time Market AS Awards in that Settlement Interval, each divided by the number of 15-minute Commitment Intervals in a Trading Hour and prorated to the duration of the Settlement Interval (10/15 if the Real-Time Market AS Award spans the entire Settlement Interval, or 5/15 if the Real-Time Market AS Award spans half the Settlement Interval). For a Multi-Stage Generating Resource the CAISO will evaluate the RTM AS Bid Cost based on the Multi-Stage Generating Resource resource level.	Proposed modifications to this section to address this comment.
42	Dynegy	11.8.4.2.1	April 2, 2010	For each Settlement Interval in a CAISO Real-Time Market Commitment Period, the RTM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of the	See answer to number 15.

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				~~following:~~ elements listed below in this Section. For Multi-Stage Generating Resources the RTM Market Revenue calculations will be made at the resource level.	
43	SCE	11.8.4.2.1	April 2, 2010	For each Settlement Interval in a CAISO Real-Time Market Commitment Period, the RTM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of the elements listed below in this Section. For Multi-Stage Generating Resources the RTM Market Revenue calculations will be made at the resource level. (a) The CAISO shall calculate two Energy revenue amounts. The first shall equal the sum of the products of the Instructed Imbalance Energy (including Energy from Minimum Load of Bid Cost Recovery Eligible Resources committed in RUC where for Pumped-Storage Hydro Units and Participating Load operating in the pumping mode or serving Load, the MWh is negative), except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load following Energy, Ramping Energy Deviation and Regulation Energy, with the relevant Real-Time Market LMP, for each Dispatch Interval in the Settlement Interval~~,~~, the second shall equal the sum of the products of the delivered Energy less IFM Energy awards (including Energy from Minimum Load of Bid Cost Recovery Eligible Resources committed in RUC where for Pumped-Storage Hydro Units and Participating Load operating in the pumping mode or serving Load, the MWh is negative), except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load following Energy, Ramping Energy Deviation and Regulation Energy, with the relevant Real-Time Market LMP, for each Dispatch Interval in the Settlement Interval. The RTM Energy revenue eligible for Bid Cost Recovery is the amount that when netted against the corresponding RTM Bid Cost amount, excluding revenue from Minimum Load Energy, produces the largest surplus or smallest shortfall.	SCE's proposed changes do not pertain to requirements for integration of the MSG modeling approach and are therefore outside the scope of this initiative. Moreover, these issues were not raised during the stakeholder process that preceded this tariff stakeholder process.
44	Dynegy	27.8.1	April 2, 2010	Scheduling Coordinators must comply with the registration and qualification process described in this Section 27.8.1, in order to effectuate any of the changes described in	The ISO proposes changes to the draft tariff language to address the

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				Section 27.8.3. No less than sixteen (16) days prior to the date that a Scheduling Coordinator seeks to have the resource participate in the CAISO Markets under the new settings or configuration details, the Scheduling Coordinator must complete and submit to the CAISO the registration form and the resource data template provided by the CAISO for registration and qualification purposes. After the submission of a request for change in status ***[what is a "change in status"? Does it mean a non-MSG resource becoming an MSG resource? If so, can we say that instead? "Status" is a very broad word.]*** or ~~C~~configuration definitions by a Scheduling Coordinator, the CAISO will coordinate with the responsible Scheduling Coordinator to validate that the resource qualifies for the requested status and that all the requisite information has been successfully provided to the CAISO. The resource will be successfully registered and qualified for the requested status and configuration definitions on the date that the CAISO sends the notification to the responsible Scheduling Coordinator that the resource has been successfully qualified. After the date on which the CAISO has provided this notice, any changes to the items listed in Section 27.8.3 will be subject to the requirements in Section 27.8.1 and 27.9.3. If the CAISO determines that the resource's operating and technical characteristics have changed since the time that the CAISO issued the notice of qualification to the responsible Scheduling Coordinator, 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. ***[What happens in the event that the CAISO and the SC cannot agree as to whether a resource qualifies for a certain "status"?]*** Such changes in status or ~~C~~configuration details would be subject to the registration and qualification requirements in this Section 27.8. Scheduling Coordinators may register the number of Multi-Stage Generating Resource ~~C~~configurations as are reasonably appropriate for the resource based on the technical and operating characteristics of the resource, which may not, however, exceed a total of ten configurations and cannot be fewer than two configurations. The information requirements specified in Section 27.8.2 will apply.	issues raised in this comment.

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45	PGE	27.8.1	April 2, 2010	CAISO Proposed Tariff Language *"After the submission of a request for change in status or configuration definitions by a Scheduling Coordinator, the CAISO will coordinate with the responsible Scheduling Coordinator to validate that the resource qualifies for the requested status and that all the requisite information has been successfully provided to the CAISO (…)."* Comments The CAISO should clarify its timeline for validating a resource's status with the responsible Scheduling Coordinator.	The ISO believes the timeline should not be restricted in the tariff as the ISO intends to work with Scheduling Coordinator to the maximum extent practicable to qualify and register resources as MSGs, provided that the qualification is accomplished within the timing requirements for changes to the Master File. Specification of timing requirement in the tariff would prevent the ISO from qualifying a unit beyond such times if, for whatever reason, the ISO under specific circumstances could actually qualify and register the unit after such time has elapsed. The ISO notes that because the Master File changes have to be accomplished within 5 to 11 business days, the ISO is likely to complete the registration process before T-5 business days in order to get it into the Master File.
46	Dynegy	27.8.2	April 2, 2010	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 cost and operating constraints associated with feasible transitions between Configurations. The responsible Scheduling Coordinator shall submit for each 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 Configuration and its associated start-up path that apply to Multi-Stage Generating Resources that are subject to Resource Adequacy must-offer obligations. The Scheduling Coordinator may submit changes to this information consistent with Sections 27.8.3 and 27.8.4. All registered Configurations for Multi-Stage Generating Resources must be operable on-line Configurations.	The reference to start up paths will be changed to the Default Resource Adequacy Path, for which the ISO has already proposed a definition.
46.1	Calpine	27.8.3	May 3, 2010	It is very common for our RA obligation to change month-by-month, depending on the demand for capacity. Therefore, the "default RA configuration and start-up path"	The ISO already removed this requirement from the list of

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				might change as well. However, this section freezes the default designation. I'd suggest that this change be considered "less significant" and be allowed to change monthly.	attributes that are restricted to the timing requirements in Section 27.8.3.
47	SCE	27.8.3	April 2, 2010	Why does the CAISO feel it is necessary to restrict changes in the status and configurations of MSG units to once every 60 days? SCE has experienced situations in the past where strict time limits in the tariff have prevented the CAISO from changing erroneous data. If the CAISO insists on maintaining such a limit in the tariff, SCE requests that language be added to allow CAISO to waive the limit under special circumstances. However, such a waiver is a second choice to eliminating the language altogether.	The ISO proposes revisions in response to these concerns. However, it is important that the type of data in Section 27.8.3 is managed carefully to ensure that the resources are modeled and integrated into the ISO market systems accurately. More frequent changes could stress this process and lead to errors and would prevent the ISO from being able to isolate the source of modeling issues caused by the integration of these resources into the market. Section 27.8 also makes clear that other data such as PMax PMin can be changed more frequently. Only changes of the types described in Section 27.8.3 are subject to the timing restrictions in draft Section 27.8.3. In response to concerns raised by participants the ISO did modify the proposal to allow parties to opt out of MSG modeling if they do not believe it to be appropriate for their resource. The ISO's proposed changes attempt to balance the need for such certainty and the Scheduling Coodinator's need for the ability to modify certain attributes more frequently to avoid detrimental economic impact.
48	Dynegy	27.8.3	April 2, 2010	Scheduling Coordinators must submit requests for changes to the status and Ceonfiguration definitions listed below to the CAISO consistent with the process and timing requirements discussed in Section 27.8.1. ***[Are the following items what the CAISO intended to be "definitions"? They might be "requirements" but they do not seem to be "definitions".]*** (1) Register a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource.	Use attributes instead of definition.

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				(2) Unregister a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource. (3) Change the registered Cconfigurations for a Multi-Stage Generating Resource, which includes the (a) addition of new Cconfigurations; (b) removal of an existing Cconfiguration; (c) a material change to the definition of a registered configuration, which includes (i) a change in the physical units supporting the Cconfiguration, and (ii) designation of the default Resource Adequacy Cconfiguration with the associated default start-up path; or (d) changes of "from" and "to" configurations within the~~ir~~ transition matrix. Scheduling Coordinators may not modify any of the above settings [are the above definitions, settings or requirements?] or Cconfigurations for sixty (60) days after any of these settings or Cconfiguration details have taken effect. 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 Dispatch, Award, or commit ***[the fact that "Dispatch" and "Award" are defined terms strongly suggests that "Commit" should be a defined term, too]*** 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 in the immediately preceding Day-Ahead Market. Changes to Multi-State Generating Resource characteristics will take effect at midnight or at the earliest time after midnight the resource is operating in the affected Configuration.	
48.0	PG&E	30.5.1	May 12, 2010	PG&E interprets the proposed tariff language in this section to mean: • Any self-schedule or self- provision of AS will be restricted to being in the configuration that was awarded in the IFM (see subsection (g)). Because these requirements extend to energy awards as well as Ancillary Services and RUC (per subsection (o)), it will in general not be possible for MSG resources to offer the capability to "dec" to lower configurations from the awarded one,	The ISO confirms that the scenarios outlined in PG&E's comment are consistent with the changes proposed in Section 30.5.1. However, if there is no ancillary service capacity from IFM or RUC binding commitment for a given trading hour, in other words, only IFM energy schedule is awarded in that trading hour for a given configuration, then market participants can still bid in energy bids in that configuration and then submit energy self schedule or ancillary

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				without losing the ability to self-schedule. • If the configuration awarded in the IFM cannot be satisfied in RT (for example because of an outage), the MSG resource cannot submit any self schedule or self provision of AS. In addition, a bid will be created automatically in the awarded configuration but that the outage in SLIC will prevent the automatically created bid from being used in the market. ***Given that the proposed tariff language in Section 30.5.1 clarifies and modifies previous language in the MSG white paper and presentations, PG&E would like the CAISO to confirm that the above interpretation is correct.***	service self provision in other configurations, lower or higher. With respect to the first bullet, the ISO notes that given the recently proposed enhancement, the SC will have additional opportunities to bid in other configurations.
48.01	Dynegy	30.5.1(g)(k)	May 13, 2010	(g) For Multi-Stage Generating Resources that receive a Day-Ahead Schedule, are awarded a RUC Schedule, or receive an Ancillary Services Award the Scheduling Coordinator must submit an Energy Bid, which may consist of a Self-Schedule, in the Real-Time Market for the same Trading Hour or Trading Hours for either the same MSG Configuration scheduled or awarded in the Integrated Forward Market or committed in RUC. In addition, the Scheduling Coordinator for such Multi-Stage Generating Resources may also submit Bids into the Real-Time Market for three other MSG Configurations provided that the MSG Transitions between~~within~~ the MSG Configurations bid into the Real-Time Market are feasible and the transition from the previous Trading Hour are also feasible. (k) For any given Trading Hour, a Scheduling Coordinator may submit Self-Schedules and/or Submissions to Self-Provide Ancillary Services in only one MSG Configuration for each Generating Unit or Dynamic Resource-Specific System Resource. [Could the CAISO please explain the reason for this limitation?]	Accept the proposed change in (g). With respect to the question regarding the requirements in (k), recall the draft final proposal discussion regarding this issue. The ISO then explained that: We recommend that Market Participants be able to bid in up to *three* configurations of a multi-stage unit into the Real Time Market. This limitation is recommended in order to limit the number of configurations over which the Real Time Market must optimize, but at the same time enable the multi-stage units to fully participate in the market. If one of a multi-stage unit's configurations is taken in the IFM, then that configuration or one that can support the day-ahead energy schedule and RUC schedules or awards must be bid into the real time market for that same hour.

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					Two other configurations may also be bid into the real time market provided that transitions within those three configurations are feasible and that the transition from the previous hour is feasible. All configurations bid into the real time market must reflect a reservation of capacity in the amount and for the product of any day-ahead award of ancillary services. The SIBR software will validate real-time configuration-level bids to ensure that these stipulations are met, and that transitions between bid-in configurations are feasible according to the information in the ISO Master File data. To reiterate, the main limitations, in addition to the number of configurations that participants may bid into real time for an MSG unit, are the requirements as follow: 1. At least one configuration's bid must be sufficient to cover any day-ahead energy schedule **and** any Resource Adequacy must-offer obligation; 2. At least one configuration's bid must be sufficient to cover any Residual Unit Commitment schedule or award **and** transition to this configuration must be feasible given the configurations bid into the previous hour; 3. All configurations bid into real time must reserve capacity to fulfill day-ahead ancillary services awards; 4. Configurations bid into the real time market for a particular hour can be feasibly transitioned between one another by the 15-minute unit commitment that occurs in real time; and 5. At least one configuration bid into the real-time market

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					must be feasible given the configurations bid into the previous hour. The intention of the first three requirements listed above is not to place any additional or different burdens on MSG units. The motivation is to ensure that the units are not physically withheld from the real time ISO market. If, between the day-ahead and real-time market timeframes, the costs associated with operating at a particular level or in a given configuration change, market participants should submit bids commensurate with those updated costs and trade-offs. The fourth and fifth requirements are intended to avoid situations in which a resource cannot be utilized by the market because it cannot be feasibly transitioned from the configuration in which it is operating to the ones it has bid into the market for the subsequent interval. In section 4.8 below, there is a discussion of the transition matrix which will contain the cost and operating constraints associated with transitioning between configurations. Transitions for which those parameters are specified are feasible by definition. In addition, it is important to consider that in any given moment the resource cannot be in more than one configuration. In the optimization, this translates to one configuration per interval. In that interval the energy and ancillary services must be in the same configuration otherwise one of the two cannot be used. When we have a self-schedule or self provision then the that configuration "must" be running regarding optimization. Because we cannot have two configurations running at the same time with a "must

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					run" then the two must be on the same configuration. It is, therefore, infeasible for the optimization to evaluate two configuration in the same interval and be required to choose between self-schedule or self provision. Additionally, a self schedule or a self provision in a given configuration does not prevent the optimization from committing the MSG resource into other configurations. A self schedule or self provision is considered as a "plant level self commitment." When CAISO considers other configurations other than the self scheduled configuration, only the incremental commitment cost beyond the self scheduled configuration is considered.
48.1	Calpine	30.5.1	May 3, 2010	This section establishes configuration bidding limits and requirements. 1) Section (j) requires that the SC must bid at least one configuration to meet its RA obligation in both DA and RT. Other than in SLIC conditions, I expect this is no problem in the DA. However, in RT it is much more likely that the default RA configuration would be infeasible, for instance, due to min down times. Example, in HE 13 you dispatch us off of 2x1, and we have a 3 hour min down time. If our RA obligation is for 2X1, would you require a 2X1 RT bid in HE 14 even though it is infeasible?? If not, add ",if feasible" to the end of the sentence. Also reference same language in appendix AA. 2) In addition, I simply do not understand (i). I think you are saying that one cannot bid a configuration that does not have a registered transition from the current state. Pls clarify. 3) Sections (k), (l) and (m) establish that an SC can only submit a SS in one configuration. Further, that if awarded IFM energy, A/S or RUC, that the SC can ONLY SS in the "awarded" configuration. Pls confirm that there is no chance that IFM awards would be in different configurations (for instance, IFM energy and A/S in a 1X1, then	1) The ISO agrees to add the terms "as feasible" in part (j). 2) This rule was established during the policy development process and it requires that if the Scheduling Coordinator bids in a MSG configuration to the CAISO Markets, it must ensure that the MSG has sufficient Bids in other MSG Configurations that are required for the requisite MSG Transition. This ensures that the resources are bid into the markets in a manner that in clearing the market the ISO can consider them feasible to participate with the bid in configuration. 3) The ISO has clarified that while the MSG can only submit a self-schedule in one configuration for the plant, it can actually submit economic bids for the other configurations, provided that they are feasible. Therefore, it is possible that the IFM commits the resource in one configuration and then RUC commits it to a different configuration based on the bids submitted.

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				RUC up to 2X1. If on the other hand this can happen, which configuration dominates and established the SS-eligible configuration?	
48.2	Dynegy	30.5.1 (g)	May 3, 2010	(g) For Multi-Stage Generating Resources that receive a Day-Ahead Schedule, are awarded a RUC Schedule, or receive an Ancillary Services Award the Scheduling Coordinator must submit an Energy Bid, which may consist of a Self-Schedule, in the Real-Time Market for the same Trading Hour or Trading Hours for either the same MSG Configuration scheduled or awarded in the Integrated Forward Market or committed in RUC**. [Shouldn't the Energy Bid be for the MSG Configuration in which the MWG unit is actually operating in real time, rather than for the configuration awarded in RUC or IFM?]** In addition, the Scheduling Coordinator for such Multi-Stage Generating Resources may also submit Bids into the Real-Time Market for two other MSG Configurations provided that the MSG Transitions within the three MSG Configurations bid into the Real-Time Market are feasible and the transition from the previous Trading Hour are also feasible.	The energy bid to be submitted cannot be for the configuration the MSG is actually operating in for the applicable interval because at the time that the bids are submitted in the real-time market, the only known committed configuration is the one that was committed in the IFM or RUC.
48.3	PGE	30.5.1 (k)	May 3, 2010	**3) Section 30.5.1 (k): General Bidding Rules** CAISO Proposed Tariff Language *For any given Trading Hour, a Scheduling Coordinator may submit Self-Schedules and/or Submissions to Self-Provide Ancillary Services in only one Multi-Stage Generating Resource registered MSG Configuration. If in any given Trading Hour the Multi-Stage Generating Resource was awarded Regulation or Operating Reserves in the IFM, any Self-Schedules or Submissions to Self-Provide Ancillary Services the Scheduling Coordinator submits for that Multi-Stage Generating Resource in the RTM must be for the same MSG Configuration for which Regulation or Operating Reserve is Awarded in IFM for that Multi-Stage Generating Resource in that given Trading Hour* Comments The language above does not match our previous understanding of the constraints on	The ISO notes that the previous draft does reflect the proposal developed in the Draft Final Proposal. However, the ISO has agreed to pursue a software change that would allow it to modify the rules so that MSGs would have the opportunity to submit three configurations in the real-time *in addition to* the ones committed in the IFM or RUC. This should relieve the concerns raised with the prior restriction in which the configurations submitted in the real-time would be possessed by the prior market's committed configurations. These changes are reflected in Sections 30.5.1 and 30.5.2.2. In addition, the ISO has clarified that while there is a restriction to one self-schedule per MSG, if the SC submits economic bids that make it possible to transition to the various configurations, it can also submit economic bids for other configurations.

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				MSG units in RT bidding, per the draft final proposal section 4.2, which states: *To reiterate, the main limitations, in addition to the number of configurations that participants may bid into real time for an MSG unit, are the requirements as follow:* *1. At least one configuration's bid must be sufficient to cover any day-ahead energy schedule **and** any Resource Adequacy must-offer obligation;* *2. At least one configuration's bid must be sufficient to cover any Residual Unit Commitment schedule or award **and** transition to this configuration must be feasible given the configurations bid into the previous hour;* *3. All configurations bid into real time must reserve capacity to fulfill day-ahead ancillary services awards;* *4. Configurations bid into the real time market for a particular hour can be feasibly transitioned between one another by the 15-minute unit commitment that occurs in real time; and* *5. At least one configuration bid into the real-time market must be feasible given the configurations bid into the previous hour.* As multiple configurations may satisfy the IFM awards of energy, AS and RUC, we believe the language in 4.2 indicates that any configuration satisfying the awards should "cover" the awards, and that therefore a bid in the configuration specifically awarded by the ISO's IFM should not required to be bid in the real-time. It is our understanding that in the Markets and Performance stakeholder meeting, the CAISO committed to address this issue.	
48.1	Dynegy	30.5.1 (g –m)	April 2, 2010	(g) For Multi-Stage Generating Resources that receive a Day-Ahead Schedule, are committed in RUC, or receive an Ancillary Services Award, the Scheduling Coordinator must submit an Energy Bid, which may consist of a Self-Schedule, in the Real-Time Market for the same Trading Hour or Trading Hours for ~~either~~ the same Cconfiguration scheduled or awarded in the Integrated Forward Market or	Rules in section 11.8.3 will apply to determine the applicable commitment costs in the Bid Cost Recovery process.

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				committed in RUC. ***[What happens if one Configuration is specified in IFM and a different Configuration is specified in RUC? Wouldn't the RUC Configuration control?]*** In addition, the Scheduling Coordinator for such Multi-Stage Generating Resources may also submit Bids into the Real-Time Market for two other Cconfigurations provided that the transitions within the three Cconfigurations bid into the Real-Time Market are feasible and the transition from the Configuration for~~from~~ the previous Trading Hour are also feasible. (h) For the Trading Hours that Multi-Stage Generating Resources do not have a CAISO commitment from a prior market ~~they can bid in~~ up to three Cconfigurations can be bid into the RTM. (i) The Scheduling Coordinator cannot bid in a Cconfiguration to the CAISO Markets into which the Multi-Stage Generating Resource cannot transition due to lack of Bids ~~for the specific resource~~ in other Cconfigurations that are required for the ~~requisite~~ transition. . (j) In order for Multi-Stage Generating Resource to meet any Resource Adequacy must-offer obligations, the responsible Scheduling Coordinator must submit either as an Economic Bid or Self-Schedule for at least one Cconfiguration that is capable of fulfilling that Resource Adequacy obligation into the Day-Ahead Market and Real-Time Market ~~that is capable of fulfilling that Resource Adequacy obligation~~ (k) For any given Trading Hour, a Scheduling Coordinator may submit Self-Schedules and/or Submissions to Self-Provide Ancillary Services in only one ~~Multi-Stage Generating Resource~~ registered Cconfiguration. If in any given Trading Hour the Multi-Stage Generating Resource was awarded Regulation or Operating Reserves in the IFM, any Self-Schedules or Submissions to Self-Provide Ancillary Services the Scheduling Coordinator submits for that Multi-Stage Generating Resource in the RTM must be for the same Cconfiguration for which Regulation or Operating Reserve is awarded in the IFM ~~for that Multi-Stage Generating Resource in that given Trading Hour~~.	

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				(l) If a Multi-Stage Generating Resource has received a binding RUC Start-Up Instruction as provided in Section 31, any Self-Schedule or Submission to Self-Provide Ancillary Services in the RTM must be in the same Cconfiguration committed in RUC. (m) If in any given Trading Hour the Multi-Stage Generating Resource is scheduled for Energy in the IFM, any Self-Schedules the Scheduling Coordinator submits for that Multi-Stage Generating Resource in the RTM must be for the same Cconfiguration for which Energy is scheduled in IFM ~~for that Multi-Stage Generating Resource in that given Trading Hour~~.	
49	SCE	30.5.1 (k, l, m) and 30.5.2.1	April 2, 2010	These sections describe the rules around self-scheduling. These rules seem unnecessary and overly restrictive compared to the flexibility allowed for non-MSG resources. Could the CAISO please describe why these rules are necessary?	
50	Dynegy	30.5.2.1	April 2, 2010	In addition to the resource-specific Bid requirements of this Section, all Supply Bids must contain the following components: Scheduling Coordinator ID Code; Resource ID and Multi-Stage Generating Resource Cconfiguration ID ***[does each Configuration have an ID?]*** as applicable; Resource Location; PNode or Aggregated Pricing Node as applicable; Energy Bid Curve; Self-Schedule component; Ancillary Services Bid; RUC Availability Bid; the Market to which the Bid applies; Trading Day to which the Bid applies; Priority Type (if any). Supply Bids offered in the CAISO Markets must be monotonically increasing. Energy Bids in the RTM must also contain a Bid for Ancillary Services to the extent the resource is certified and capable of providing Ancillary Service in the RTM up to the registered certified capacity for that Ancillary Service less any Day-Ahead Ancillary Services Awards. Scheduling Coordinators must submit the applicable Supply Bid components, including Self-Schedules, at the registered Cconfiguration level. ***[Could an MSGR have unregistered Configurations? If not, do we have to refer to registered Configurations?]***	Yes each configuration has an ID. A unit may have more operating modes than are registered with the ISO as a configuration. However, the ISO only recognizes the registered configurations. The ISO proposes the use of the defined term MSG Configuration to provide this clarification.

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50.1	PG&E	30.5.2.2	May 12, 2010	Comments This proposed language in this section provides for more flexibility in the submission of RT bid configurations than had been previously understood, as it allows market participants to submit a "required" RT bid to cover RUC capacity and AS self provision awarded in the IFM, as well as three *additional* feasible RT configurations. PG&E's previous understanding was that the CAISO would automatically create the "required" configuration bid (awarded in the IFM), leaving the market participant free to bid three configurations other than the required one. But this language seems to explicitly state that the CAISO will enable market participants to create the required bid as well as three additional configuration bids. ***Given that the proposed tariff language in Section 30.5.2 clarifies and modifies previous descriptions of SIBR RT business rules, PG&E would like the CAISO to confirm that the above understanding is correct.***	This understanding is consistent with the new proposed language, which reflects the ISO's adoption of the enhanced flexibility in the real-time to allow participants three configurations in addition to the ones possessed by the day-ahead schedules and awards.
51	Dynegy	30.7.3.1	April 2, 2010	The CAISO conducts Bid validation in three steps as described below. For a Multi-Stage Generating Resource the validation described herein is done for each ~~at the~~ C~~c~~onfiguration ~~level~~ for which Bids are submitted.~~:~~	The ISO accepts this proposed change.
52	Dynegy	30.7.3.5	April 2, 2010	If a Scheduling Coordinator does not submit a Bid in the Day-Ahead Market or RTM for a Multi-Stage Generating Resource with a Resource Adequacy must-offer obligation at a C~~c~~onfiguration that can meet an Resource Adequacy must-offer obligation, the ISO will create a Generated Bid for the default Resource Adequacy configuration. If the resource cannot be start-up in the default Resource Adequacy C~~c~~onfiguration ~~is not capable of start up~~ the CAISO will create a Generated Bid for every C~~c~~onfiguration in	The ISO accepts the proposed changes. The ISO will provide the bid validation data as it does today.

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				the ~~registered~~ Default Resource Adequacy Path. If the Scheduling Coordinator submits a Bid for the Multi-Stage Generating Resource, the CAISO will create this Generated Bid for the registered C~~c~~onfigurations 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 configuration will be in addition to the C~~c~~onfigurations bid into the Real-Time Market by the responsible Scheduling Coordinator. If the Scheduling Coordinator submits a Bid in the Day-Ahead or RTM for a C~~c~~onfiguration that is not the default Resource Adequacy C~~c~~onfiguration ~~of the MSG~~ and that does not provide the full amount of the resource's RA capacity~~only partly meets 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 or RTM for the default Resource Adequacy C~~c~~onfiguration of an 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 equal to the Day-Ahead Schedule for that resource for the C~~c~~onfiguration scheduled in the IFM ~~equal to the Day-Ahead Schedule for that resource~~. To the extent a Multi-Stage Generating Resource is awarded Operating Reserves in the Day-Ahead Market and no Economic Energy Bids are~~is~~ submitted for that resource in the Real-Time Market, the CAISO will insert a Proxy Energy Bid in the C~~c~~onfiguration that was awarded in the Day-Ahead Market to cover the awarded Operating Reserves.. To the extent that an Multi-Stage Generating Resource's RUC Schedule is greater than its~~the~~ 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~~s~~ an Energy Bid in the configuration committed in RUC, or extends the Energy Bid that they did submit ~~if there is one~~ before the Market Close. After the Market Close, the CAISO will create a Generated Bid if there is no Energy Bid submitted for the resource for this difference.	

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				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 Multi-Stage Generating Resource. The CAISO will reject Ancillary Services Bids or Submissions to Self-Provide Ancillary Services for Cconfigurations that are not certified to provide Ancillary Services. For any given Multi-Stage Generating Resource, for any given CAISO Market and Trading Hour if the Bids for one Cconfiguration~~'s Bid~~ fails the bid validation process, all other Bids for all other Cconfigurations are also invalidated. ***[Will the CAISO~~o~~ provide information to the SC so it is quickly and plainly evident which Bids triggered the rejection?]***	
53	Dynegy	30.7.8	April 2, 2010	For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Time expressed in minutes (min) as a function of down time expressed in minutes (min) must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Time pairs. The Start-Up Time is the time required to start the resource if it is offline longer than the corresponding down time. The ISO models Start-Up Times for Multi-Stage Generating Resource for each ~~at the C~~configuration ~~level~~ and Multi-Stage Generating Resource transition times are validated based on the Multi-Stage Generating Resource transition matrix submitted as provided in Section 27.8. The last segment will represent the time to start the unit from a cold start and will extend to infinity. The submitted Start-Up Time function shall be validated as follows: (a) The first down time must be zero (0) min. (b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the maximum Start-Up Time function, as registered in the Master File for the relevant resource. I The Start-Up Time for each segment must not exceed the Start-Up Time of the corresponding segment of the maximum Start-Up Time function, as registered in the Master File for the relevant resource. (d) The Start-Up Time function must be strictly monotonically increasing, i.e., the	The ISO accepts most of the proposed changes and notes that in light of having adopted the defined term Transition Times, the last sentence is no longer needed.

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				Start-Up Time must increase as down time increases. For Participating Load, a single Shut-Down time in minutes is the time required for the resource to Shut-Down after receiving a Dispatch Instruction. For a Multi-Stage Generating Resource ~~resources~~ transition time is the time required for~~to~~ the resource to transition from one C~~c~~onfiguration to another.	
54	Dynegy	30.7.9	April 2, 2010	For Participating Loads, a single Shut-Down Cost in dollars ($) is the cost incurred to Shut-Down the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative. For Multi-Stage Generating Resources the Start-Up Costs must be provided for each~~by~~ C~~c~~onfigurations into which the resource can be started.	The ISO proposes changes to address this comment.
54.1	Calpine	31.2.2.2	May 3, 2010	Unclear. I believe this suggests that mitigation for MSGs is similar to other resources, that is, any incremental energy cleared in the ACC will be subject to mitigation. I further understand that the insertion of default energy bids will be determined by configuration. What is unclear is whether all other, higher configurations will be mitigated as well. I believe that is the intention, but the section leaves this unclear.	This is the correct concept the ISO intends to convey and the ISO proposes come clarifying language.
55	SCE	31.2.2.2	April 2, 2010	This language is a bit unclear. SCE believes the CAISO is trying to say that the decision to mitigate will be done on a configuration by configuration level but the actual bid mitigation will occur across all configurations. SCE suggest the CAISO add some clarity to the section to either confirm our interpretation or make an alternative meaning evident.	The ISO proposes changes to address this comment and clarifies that the mitigation does apply across all submitted MSG Configurations.
56	Dynegy	31.2.2.2	April 2, 2010	If the dispatch level produced through the ACR is greater than the dispatch level produced through CCR, then the resource is subject to Local Market Power Mitigation, in which case the entire portion of the unit's Energy Bid Curve that is above the CCR dispatch level will be mitigated to the lower of the Default Energy Bid as specified in Section 39, or the DAM Bid, but no lower than the unit's highest Bid price that cleared the CCR. In the case of Multi-Stage Generating Resource, the CAISO will perform any applicable Local Market Power Mitigation on a C~~c~~onfiguration-by-C~~c~~onfiguration basis	Use "dispatch level" instead "MWh cleared."

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				and will flag individual Cconfigurations' Bids for mitigation. To the extent a Multi-Stage Generating Resource's MWhs cleared in the All Constraints Run is greater than the MWhs cleared in the Competitive Constraints Run, the CAISO will evaluate for purposes of mitigation all Energy Bids for all configurations that are submitted based on the relevant Default Energy Bids for the applicable configuration . The CAISO will calculate the Default Energy Bids for Multi-Stage Generating Resources by configuration. When the ACR dispatch level is higher than the CCR level, the market Bid at and below the CCR dispatch level will be retained in the IFM. If the dispatch level produced through the ACR is not greater than the dispatch level produced through the CCR, the unit's original, unmitigated DAM Bid will be retained in its entirety. ***Does the CAISO use "MWHs cleared" as a synomym for "the operating level to which the resource is dispatched" outside of using it for MSGRs?]***	
57	Dynegy	31.3	April 2, 2010	After the MPM-RRD and prior to RUC, the CAISO shall perform the IFM. The IFM (1) performs Unit Commitment and Congestion Management (2) clears mitigated or unmitigated Bids cleared in the MPM-RRD as well as Bids that were not cleared in the MPM-RRD process against bid-in Demand, taking into account transmission limits and honoring technical and inter-temporal operating Constraints, such as Minimum Run Times (3) and procures Ancillary Services to meet one hundred percent (100%) of the CAISO Forecast of CAISO Demand requirements. The IFM utilizes a set of integrated programs that: (1) determine Day-Ahead Schedules and AS Awards, and related LMPs and ASMPs; and (2) optimally commits resources that are bid in to the DAM. The IFM utilizes a SCUC algorithm that optimizes Start-Up Costs, Minimum Load Costs, Transition Costs, and Energy Bids along with any Bids for Ancillary Services as well as Self-Schedules submitted by Scheduling Coordinators. The IFM selects the optimal Configuration from ~~optimizes~~ up to ten Cconfigurations of each Multi-Stage Generating Resource as a mutually exclusive resource~~s~~. The IFM also provides for the optimal management of Use-Limited Resources. The ELS Resources committed through the ELC Process conducted two days before the day the IFM process is conducted for the next Trading Day as described in Section 31.7 are binding.	Accept proposed change.

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

STAKEHOLDER COMMENTS ON DRAFT MULTI-STAGE GENERATING UNIT TARIFF LANGUAGE

May 14, 2010

NEW COMMENTS AND RESPONSES ARE HIGHLIGHTED IN YELLOW

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57.1	Calpine	31.3.1.2 and 34.2	May 3, 2010	These sections establish no pay conditions for A/S transitions. I think it leaves one question. This seems to suggest that if an MSG receives an A/S award for, say HE12 in the IFM, but is transitioned in the RT in that hour, will the DA IFM A/S be rescinded? I would hope not, because a RT dispatch through a transition is one form of dispatching the A/S.	In this case the resources IFM AS award would be rescinded.
58	SCE	31.3.1.2 and 34.2	April 2, 2010	CAISO proposes to not award any AS for resources which are in transition the same interval (hour in IFM, 15 min in RTUC). This seems overly restrictive since many instances will arise where the transition takes place in less than 10 minutes. Preventing a resource from selling AS for an entire interval based off a sub-10 minute transition will unnecessarily limit the AS available to the market.	For MSG resources, this rule only applies when the relevant market interval (hourly for IFM and 15-minute for RTUC) is completely within the transition period. Therefore, in the IFM if the transition time is less than one hour, the resource will be awarded AS. In the RTUC, it the unit's transition time is less than 15 minutes, they will be awarded AS. Generally, where the transition time is less than 10-minutes, there would be no interval in which this rule applies.
59	Dynegy	31.3.1.2	April 2, 2010	As provided in Section 30.7.6.2 the CAISO shall co-optimize the Energy and Ancillary Services Bids in clearing the IFM. To the extent that capacity subject to an Ancillary Services Bid submitted in the Day-Ahead Market is not associated with an Energy Bid, there is no co-optimization, and therefore, no opportunity cost associated with that resource for that Bid for the purposes of calculating the Ancillary Services Marginal Price as specified in Section 27.1.2.2. When the capacity associated with the Energy Bid overlaps with the quantity submitted in the Ancillary Services Bid, then the Energy Bid will be used to determine the opportunity cost, if any, in the co-optimization to the extent of the overlap. Therefore, the capacity that will be considered when co-optimizing the procurement of Energy and Ancillary Services from Bids in the IFM will consider capacity up to the total capacity of the resource as reflected in the Ancillary Services Bid as derated through SLIC, if at all. In the case of Regulation, the capacity that will be considered is the lower of the capacity of the resource offered in the Ancillary Services Bid or the upper Regulation limit of the highest Regulating Range as contained in the Master File. For any Trading Hour in which the Multi-Stage Generating Resource is transitioning from one Configuration to another Confirugation, ~~in a transition period~~, the IFM will not award Ancillary Services and any Self-Provided	Ancillary Services are awarded in the IFM and not committed. Therefore, the use of the term awarded is appropriate.

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				Ancillary Services will be disqualified. Any Ancillary Services Awards in the IFM to Multi-Stage Generating Resources will carry through to the Real-Time Market in the same Ceonfiguration that the Multi-Stage Generating Resource is awarded ***[committed? Need to be consistent.]*** in the IFM.	
60	Dynegy	31.5	April 2, 2010	The CAISO shall perform the RUC process after the IFM. In the event that the IFM did not commit sufficient resources to meet the CAISO Forecast of CAISO Demand and account for other factors such as Demand Forecast error, as described in the Business Practice Manuals, the RUC shall commit additional resources and identify additional RUC Capacity to ensure sufficient on-line resources to meet Demand for each hour of the next Trading Day. RUC Capacity is selected by a SCUC optimization that uses the same Base Market Model used in the IFM adjusted as described in Section 27.5.1 and 27.5.6 to help ensure the deliverability of Energy from the RUC Capacity. In the case of Multi-Stage Generating Resources, the RUC will optimize Transition Costs in addition to optimizing the Start-Up and Minimum Load Costs. ***[Does the CAISO mean it will optimize Transition Costs separately or optimize SU ML and TC as a whole?]***	The SU, ML and TC will be optimized as a whole.
61	Dynegy	31.5.1.2	April 2, 2010	Scheduling Coordinators may only submit RUC Availability Bids for capacity (above the Minimum Load) for which they are also submitting an Energy Bid to participate in the IFM. The RUC Availability Bid for the Resource Adequacy Capacity submitted by a Scheduling Coordinator must be $0/MW per hour for the entire Resource Adequacy Capacity. If the Scheduling Coordinator fails to submit a $0/MW per hour for Resource Adequacy Capacity, the CAISO will insert the $0/MW per hour for the full amount of Resource Adequacy Capacity for a given resource reduced by any upward Ancillary Services awards. For MSGs~~, for resources~~ that fail to submit a $0/MW per hour for their Resource Adequacy Capacity, the CAISO will insert the $0/MW per hour for the resource's Resource Adequacy Capacity at the Ceonfiguration level up to the minimum of the Resource Adequacy Capacity or the PMax of the Ceonfiguration. Scheduling Coordinators may submit non-zero RUC Availability Bids for the portion of a resource's capacity that is not Resource Adequacy Capacity.	Accepted proposed changes.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
62	PGE	31.5.1.4	April 2, 2010	CAISO Proposed Tariff Language *"All resources that are eligible for RUC participation as described in Section 31.5.1.1 with RUC Bids that are unconstrained due to Ramp Rates or other temporal constraints, including Multi-Stage Generating Resource transitions, are eligible to set the RUC Price."* Comments There is no proposed language regarding Forbidden Operating Regions"(FORs); since FORs are not considered marginal when in transition, we would like the CAISO to clarify if FOR units can or cannot set the RUC Price.	Because RUC is only a capacity commitment and does not involve energy dispatch, the FOR is not a consideration. Therefore, the FOR does not factor in as an element that removes MSG Resources from the set of resources that are eligible to set the RUC price.
63	SCE	31.5.5	April 2, 2010	It seems the CAISO might have been overzealous in adding the term "Transition Costs" everywhere that Startup and Minimum Load existed in the tariff. When a resource has already been committed in IFM but is transitioned to another configuration in RUC it would make sense to consider the Transition Costs. Additionally, the new configuration will have a different minimum load cost. It seems like RUC should consider the difference in minimum load costs as well. Will RUC transition to "lower" configurations?	It is possible that RUC may transition an MSG to a "lower" configuration. A new set of transition costs associated with a different configuration will be considered in RUC.
64	Dynegy	31.5.7.1	April 2, 2010	The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from or capacity committed in RUC for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10, which for a Multi-Stage Generating Resource is evaluated for each~~at the~~ configuration ~~level~~. If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the	Accepted proposed edits.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				appropriate Local Regulatory Authority.	
65	Dynegy	31.5.7.2	April 2, 2010	For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or System Resource fails to supply Energy from capacity committed in RUC in accordance with a Dispatch Instruction, or supplies only a portion of the Energy specified in the Dispatch Instruction, the RUC Availability Payment will be reduced to the extent of the deficiency, in accordance with the provisions of Section 11.2.2.2.2, which for a Multi-Stage Generating Resource is evaluated at the resource level.	Propose use of Generating Unit to refer to resource or plant level requirements.
66	SCE	31.5.7.2	April 2, 2010	RUC no-pay at the configuration (not resource) level.	As is the case for AS no-pay, the RUC no-pay will use certain MSG configuration input data.
66.1	Dynegy	34	May 13, 2010	In the case of Multi-Stage Generating Resources, ~~the all~~the RTM procedures will optimize Transition Costs in addition to the Start-Up and Minimum Load Costs. If a Scheduling Coordinator submits a Self-Schedule or a Submission to Self-Provide Ancillary Services for a given MSG Configuration in a given Trading Hour, all of the RTM processes will consider the Start-Up Cost, Minimum Load Cost, and Transition Cost associated with any Economic Bids for other MSG Configurations as incremental costs between the other MSG Configurations and the self-scheduled MSG Configuration. In such cases, incremental costs are the additional costs incurred to transition or operate in an MSG Configuration that are in addition to the costs associated with the self-scheduled MSG Configuration.	Accept change.
67	Dynegy	34.2	April 2, 2010	The Real-Time Unit Commitment (RTUC) process uses SCUC and is run every fifteen (15) minutes to: (1) make commitment decisions for Fast Start and Short Start resources having Start-Up Times within the Time Horizon of the RTUC process, and (2) procure required additional Ancillary Services and calculate ASMP used for settling procured Ancillary Service capacity for the next fifteen-minute Real-Time Ancillary Service interval. In any fifteen minute RTUC interval that a Multi-Stage Generating Resource is transitioning between Configurations~~in transition~~, the CAISO: (1) will not award any incremental Ancillary Services; (2) will disqualify any Day-Ahead Ancillary Services	The ISO proposes changes to this section to specify the time period. The ISO will only issue a binding Transition Instruction. Changes to the draft tariff language are proposed to address this issue.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				Awards; (3) will disqualify Day-Ahead qualified Submissions to Self-Provide Ancillary Services Award, and (4) will disqualify Submissions to Self-Provide Ancillary Services in RTM. In addition, the RTUC will not transition Multi-Stage Generating Resources with transition times longer than the RTUC Time Horizon. ***[How long is that? Where in the tariff it is specified?]*** A Transition Instruction is considered binding in a given RTUC run if the Transition Time of the resource is such that there would not be sufficient time for a subsequent RTUC run to transition the resource, otherwise the Transition Instruction is considered advisory. ***[How will the SC know if the Transition Instruction is binding or mandatory?]*** For Multi-Stage Generating Resources the RTUC will issue the binding Transition Instruction separately from the binding Start-Up or Shut Down instructions. The RTUC can also be run with the Contingency Flag activated, in which case the RTUC can commit Contingency Only Operating Reserves. If RTUC is run without the Contingency Flag activated, it cannot commit Contingency Only Operating Reserves. RTUC is run four times an hour, at the following times for the following Time Horizons: (1) at approximately 7.5 minutes prior to the next Trading Hour, in conjunction with the HASP run, for T-45 minutes to T+60 minutes; (2) at approximately 7.5 minutes into the current hour for T-30 minutes to T+60 minutes; (3) at approximately 22.5 minutes into the current hour for T-15 minutes to T+60 minutes; and (4) at approximately 37.5 minutes into the current hour for T to T+60 minutes where T is the beginning of the next Trade Hour. The HASP, described in Section 33, is a special RTUC run that is performed at approximately 7.5 minutes before each hour and has the additional responsibility of: (1) pre-dispatching Energy and awarding Ancillary Services for hourly dispatched System Resources for the Trading Hour that begins 67.5 minutes later, and (2) performing the necessary MPM-RRD for that Trading Hour. In the RTUC if a Multi-Stage Generating Resource Cconfiguration committed in the IFM or RUC that is later impacted by the resource's derate or outages, the CAISO will re-optimize ***[what wil be re-optimized?]*** taking into consideration the impacts of the derate or outage on the available Cconfigurations.	
68	PGE	34.2	April 2, 2010	CAISO Proposed Tariff Language	The ISO will revise the previously posted business requirements

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				In any fifteen minute RTUC interval that a Multi-Stage Generating Resource is in transition, the CAISO: (1) will not award any incremental Ancillary Services; (2) will disqualify any Day-Ahead Ancillary Services Awards; (3) will disqualify Day-Ahead qualified Submissions to Self-Provide Ancillary Services Award, and (4) will disqualify Submissions to Self-Provide Ancillary Services in RTM (…).” Comments The tariff language above is not supported by current Business Rules. Will revisions to Business Rules be provided?	document to address this issue.
69	Dynegy	34.2.1	April 2, 2010	RTUC produces binding and advisory Start-Up and Shut-Down Dispatch Instructions for Fast Start and Short Start resources that have Start-Up Times that would allow the resource to be committed prior to the end of the relevant Time Horizon of the RTUC run. A Start-Up Dispatch Instruction is considered binding in any given RTUC run if the Start-Up Time of the resource is such that there would not be sufficient time for a subsequent RTUC run to ~~could not achieve the target start time as determined in the current RTUC run in a subsequent RTUC run as a result of the~~ Start-Up ~~Time of~~ the resource. A Start-Up Instruction is considered advisory if it is not binding, such that the resource could achieve its target Start-Up Time as determined in the current RTUC run in a subsequent RTUC run based on its Start-Up Time. A Shut-Down Instruction is considered binding if the resource could achieve the target Shut-Down Time as determined in the current RTUC in a subsequent RTUC run. A Shut-Down Dispatch Instruction is considered advisory if the resource Shut-Down Instruction is not binding such that the resource could achieve its target Shut-Down time as determined in the current RTUC run in a subsequent RTUC run. A binding Dispatch Instruction that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. An advisory Dispatch Instruction changing the Commitment Status of a resource may be modified by the CAISO Operator to a binding Dispatch Instruction and communicated in accordance with Section 6.3 after review and acceptance by the CAISO Operator. Only binding and not advisory Dispatch Instructions will be issued by the CAISO. For Multi-	Non-binding transition instructions will not be issued. See answer to number 67 above. Proposing changes to address this issue.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				Stage Generating Resources the CAISO will also issue binding Transition Instructions when the Multi-Stage Generating Resource must change from one Cconfiguration to another. A Transition Instruction is considered binding in any given RTUC run if the Transition Time of that transition for that resource is such that there would not be sufficient time for a subsequent RTUC run to transition the resource. ***[Again – will the SC know whether the instruction is binding or advisory?]***	
70	Dynegy	34.4	April 2, 2010	At the top of each Trading Hour, immediately after the RTUC run is completed, the CAISO performs an approximately five (5) hour Short-Term Unit Commitment (STUC) run using SCUC and the CAISO Forecast of CAISO Demand to commit Medium Start Units and Short Start Units with Start-Up Times greater than the Time Horizon covered by the RTUC. The Time Horizon for the STUC optimization run will extend three hours beyond the Trading Hour for which the RTUC optimization was run, and will replicate the Bids used in that Trading Hour for these additional hours. The CAISO revises these replicated Bids each time the hourly STUC is run, to utilize the most recently submitted Bids. A Start-Up Instruction produced by STUC is considered binding if the resource could not achieve the target Start-Up Time as determined in the current STUC run in a subsequent RTUC or STUC run as a result of the Start-Up Time of the resource. A Start-Up Instruction produced by STUC is considered advisory if it is not binding, such that the resource could achieve its target start time as determined in the current RTUC run in a subsequent STUC or RTUC run based on its Start-Up Time. A binding Dispatch Instruction produced by STUC that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. The STUC will only decommit a resource to the extent that resource's physical characteristics allow it to be cycled in the same Time Horizon for which it was decommitted. STUC does not produce prices for Settlement. In the STUC, if a Multi-Stage Generating Resource Cconfiguration committed in the IFM or RUC ~~that~~ is later impacted by the resource's derate or outage, the CAISO will re-optimize ***[again, re-optimize what?]*** taking into consideration the impacts of the derate or outage on the available Cconfigurations.	The ISO proposes changes to the draft tariff language to address this issue.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
70.1	Dynegy	34.5 (5)	April 2, 2010	(5) The Dispatch Instructions of a resource for a subsequent Dispatch Interval shall take as a point of reference the actual output obtained from either the State Estimator solution or the last valid telemetry measurement and the resource's operational ramping capability. For Multi-Stage Generating Resource the point of reference is further evaluated for each ~~at the~~ configuration ~~level~~ and is also based on the Transition Matrix; ***[How does the Transition Matrix influence the point of reference? Should "point of reference" be a defined term?]*** (12) Through Transition Instructions the CAISO may instruct resources to Transition from one C~~c~~onfiguration to another over the Time Horizon for the RTM based on submitted Bids, Transition Costs and Minimum Load Costs, as appropriate ~~for Multi-Stage Generating Resource~~ for the C~~c~~onfigurations involved in the transition, consistent with the Multi-Stage Generating Resource T~~t~~ransition M~~m~~atrix and operating characteristics of the~~se~~ configurations. The RTM optimization may factor in limitations on daily maximum number of transitions between configuration as defined in the T~~t~~ransition M~~m~~atrix and their Minimum Up Time and Minimum Down Time as defined for each~~at the~~ C~~c~~onfiguration ~~level~~.	The point of reference can indicate that the resource is in transition from one configuration to another based on the information in the Transition Matrix. The ISO proposes changes to the draft tariff language to address this question.
71	SCE	34.5 (12)	April 2, 2010	Language reads "The RTM optimization may factor in limitations on daily maximum number of transitions between configurations as defined in the transition matrix and their Minimum Up Time and Minimum Down Time as defined at the configuration level." Should the term "may" read "will".	This sentence will be modified to say "will" instead of "may."
72	PGE	34.9	April 2, 2010	CAISO Proposed Tariff Language The CAISO has not proposed language for this section of the Tariff.	The ISO proposes to make the following changes to Section 34.9 Exceptional Dispatch. The CAISO may issue Exceptional Dispatches for the circumstances described in this Section 34.9, which may require the issuance of forced Shut-Downs, forced Transition, or forced Start-Ups and shall be consistent with Good Utility Practice. Dispatch Instructions

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				Comments This section was not included in the proposed MSG Tariff language; proposed tariff language should be added to reflect MSG Business Rule (BRQ105) which discusses the inclusion of Transition Costs for MSG units that are Exceptionally Dispatched.	issued pursuant to Exceptional Dispatches shall be entered manually by the CAISO Operator into the Day-Ahead or RTM optimization software so that they will be accounted for and included in the communication of Day-Ahead Schedules and Dispatch Instructions to Scheduling Coordinators. Exceptional Dispatches are not derived through the use of the IFM or RTM optimization software and are not used to establish the LMP at the applicable PNode. The CAISO will record the circumstances that have led to the Exceptional Dispatch. Except as provided in this Section 34.9, the CAISO shall consider the effectiveness of the resource along with Start-Up Costs, Transitions Costs, and Minimum Load Costs when issuing Exceptional Dispatches to commit a resource to operate at Minimum Load. When the CAISO issues Exceptional Dispatches for Energy, the CAISO shall also consider Energy Bids, if available and as appropriate. The goal of the CAISO will be to issue Exceptional Dispatches on a least-cost basis. Imbalance Energy delivered or consumed pursuant to the various types of Exceptional Dispatch is settled according to the provisions in Section 11.5.6.
73	Dynegy	34.15.1 (e)		e) Minimum Run Time and Down Time. The SCED shall not start up off-line resources before their Minimum Down Time expires and shall not shut down on-line resources before their Minimum Run Time expires. For Multi-Stage Generating Resources this shall be enforced~~observed~~ both at the resource and configuration level.	Proposing changes to address this comment.
73.1	Calpine	34.15.1(e)	May 3, 2010	As we discussed at the stakeholder meeting, the min run time MUST not prohibit further incremental, upward dispatch, or transitions to higher configurations. It should only prohibit downward transitions prior to expiration.	This is a consequence of having decided early on during the stakeholder process to pursue a logical generator modeling approach rather than the physical plant model. Consequently, these intertemporal constraints are considered at the plant level and not on a configuration by configuration basis.

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

STAKEHOLDER COMMENTS ON DRAFT MULTI-STAGE GENERATING UNIT TARIFF LANGUAGE

May 14, 2010

NEW COMMENTS AND RESPONSES ARE HIGHLIGHTED IN YELLOW

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
73.2	Dynegy	34.15.1	May 13, 2010	(e) Minimum Run Time and Down Time. The SCED shall not start up off-line resources before their Minimum Down Time expires and shall not shut down on-line resources before their Minimum Run Time expires. For Multi-Stage Generating Resources these ~~is~~shall be observed both for the Generating Unit or Dynamic Resource-Specific System Resource and MSG Configuration.	Accept change.
74	Dynegy	34.15.2 (c)	April 2, 2010	(c) For Multi-Stage Generating Resources, after RTUC issues a Transition Instruction: (1) for non-overlapping ~~C~~configurations ***[what is a "non-overlapping Configuration as opposed to an "overlapping Configuration"? Can this be set forth in a definition of "Configuration"?]***, the RTD moves the Dispatch Operating Point of the resource immediately from the boundary of the "from" ~~C~~configuration to the boundary of the "to" ~~C~~configuration, as defined in the Master File or as modified via SLIC, ~~of a Multi-Stage Generating Resource;~~ and (2) for over-lapping ~~C~~configurations, RTD moves the Dispatch Operating Point of the resource within the overlapping operating range of the ~~C~~configuration until the transition is complete.	Overlapping configurations occur when the operating ranges of two configuration overlap. Proposing changes to address this issue.
75	SCE	39.7.1	April 2, 2010	What is the reason behind limited the DEB option for 90 days after status changes? This seems unnecessary.	This is necessary because the LMP option requires historical resource-specific data for 90 days, which for the MSG resource will not be available for the first 90 days. Specifically, the LMP option requires information regarding how the resources was treated in the Market Power Mitigation (MPM) process during the prior 90 days. Prior to go live with MSG, the ISO will not have information on how the MSG Configurations fare in MPM.
76	Dynegy	39.7.1	April 2, 2010	Default Energy Bids shall be calculated by the CAISO, for the on-peak hours and off-peak hours for both the DAM and RTMs, pursuant to one of the methodologies described in this Section. The Scheduling Coordinator for each Generating Unit owner or Participating Load must rank order the following options of calculating the Default Energy Bid starting with its preferred method. The Scheduling Coordinator must provide the data necessary for determining the Variable Costs unless the Negotiated Rate Option precedes the Variable Cost option in the rank order, in which case the	See answer to comment # 76.

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				Scheduling Coordinator must have a negotiated rate established with the Independent Entity charged with calculating the Default Energy Bid. If no rank order is specified for a Generating Unit or Participating Load, then the default rank order of (1) Variable Cost Option, (2) Negotiated Rate Option, (3) LMP Option will be applied. For the first ninety (90) days after changes to resource status and Cconfigurations as specified in Section 27.8.3, including the first ninety (90) days after the effective date of Section 27.8.3, the Default Energy Bid option for the resource is limited to the Negotiated Rate Option or the Variable Cost Option. ***[This warrants further explanation and justification.]***	
76.1	Dynegy	Appendix A – Definitions	May 13, 2010	Multi-State Generating Resources: A Generating Unit or Dynamic Resource-Specific System Resource that for reasons related to its technical characteristics can be operated in various ~~configuration~~MSG Configurations such that only one such ~~configuration~~MSG Configuration can be operated in any given Dispatch Interval. Subject to the requirements in Section 27.8, t~~T~~he following technical characteristics qualify a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource: the resource 1) is a combined cycle gas turbine resource; 2) is a Generating Unit or Dynamic Resource-Specific System Resources with multiple operating or regulating ranges but which can ~~that limit the resource to~~ operate in only one of these ranges at any given time; or 3) has a Forbidden Operating Region. Metered Subsystems, Pumped-Storage Hydro Units, and Pumping Loads, and System Resources that are not Dynamic Resource-Specific System Resources do not qualify as Multi-Stage Generating Resources.	Accept change but also propose an additional change as reflected in green highlight the prior cell.
77	PGE	Appendix A - Definitions	April 2, 2010	Comments Appendix A does not include a definition of RUC Transition cost.	Transition Costs are defined. RUC Transitions Costs are those that can be considered in RUC. The concatenation of the two defined terms works fine for this reference and does not require an additional defined term.
77.1	PG&E	Appendix A-	May 4, 2010	**4) CAISO Tariff Appendix A**	RUC Bid Costs are defined as: "The total Bid Costs associated with commitment by the CAISO through the RUC process used for

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
		Definitions		Comments RUC Bid Cost is not redefined to include RUC Transition cost as done for IFM and RTM Transition Cost.	determination of Unrecovered Bid Cost Uplift Payments and RUC Bid Cost Uplift allocation." The ISO has already proposed to include Transition Costs in the definition of Bid Costs. Because the RUC Bid Costs definitions make use of the term Bid Costs which will include Transition Costs, no further changes to the definition of RUC Bid Costs are necessary.
77.2	Dynegy	Appendix A – Definitions	May 13, 2010	Transition Instructions A~~n~~ binding instruction issued by the CAISO to Multi-Stage Generating Resources in the Real-Time that directs the Multi-Stage Generating Resource to move from between MSG Configurations and indicates: 1) "from" and "to" ~~configuration~~MSG Configurations; and 2) the start time and end time of the MSG T~~t~~ransition.	Accept changes.
77.3	Dynegy	Appendix A – Definitions	May 13, 2010	Transition Matrix A matrix that, f~~F~~or Multi-State Generating Resources defines the possible MSG T~~t~~ransitions between all online ~~configuration~~MSG Configurations including the Transition Times and Transition Costs.	Accept changes.
78	Dynegy	Appendix A – Definitions - Configuration		For a Multi-Stage Generating Resource, a particular combination of generating components that are operated together, which have a distinct set of operating characteristics (e.g., maximum and minimum energy output, ramp rate, and heat rate function). ***[I know this needs work but this seems like too important a concept not to expressly define.] An over-lapping Configuration is one in which…. A non-overlapping Configuration is one in which….***	The ISO proposes a definition for MSG Configuration.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
79	SCE	Appendix AA – Transition Plan	April 2, 2010	The transition plan mentions that market simulation will take place two months before go-live and that 75 days prior to go-live Scheduling Coordinators will have to commence the MSG registration process. It is likely that market simulation will enhance the CAISO and market participant understanding of the MSG enhancement. This newfound understanding may result in a need to register additional resources, unregister resources, and/or change the characteristics of registered resources. How does the CAISO plan to deal with these inevitable situations? Also in the transition plan is the notion that certain aspects of an MSG cannot be changed during the first 60 days after go-live. What is the purpose of this limitation? One unchangeable value is the default RA configuration and its associated startup path. Since RA values change on a monthly basis (sometimes more than once a month) it is unreasonable to prevent this designation from changing when the basis for making the designation can change. SCE recommends the CAISO remove the constraint or at least reconcile the discrepancy with other tariff provisions. Note: The last paragraph of the transition plan refers to creating Outages at the configuration level 48 hours before go-live. This will require the CAISO to make the Outage reporting mechanisms available to the market with sufficient time to meet the 48-hour deadline. SCE suggests CAISO make the Outage report mechanism available 168 hours before go-live.	The ISO will specify that the default RA configuration and the associated Start Up Path will not be part of the attributes for which changes are restricted under Section 27.8.3. In addition, in response to concerns raised by stakeholders, the ISO is proposing further modifications to this timeline and restrictions in changing fundamental attributes of MSG resources within certain time periods. As discussed during the April 20 implementation meeting, and in the April 13 Tariff review meeting, the pre-go live restrictions are necessary to ensure that the ISO has sufficient confidence in the integration and modeling of the resources that will be participating as MSG resources as of October 1, 2010. It is possible that up to 65 resources may be going live with MSG on October 1, 2010. The integration of these resources as MSG requires the specification and evaluation of characteristics to be considered in the optimization. The ISO also believes that resource operators and owners will benefit from the ability to test the configurations during structured and unstructured market simulation. Such testing will be beneficial in obtaining familiarity with how their resources attributes should be registered with the ISO. By locking down these configurations after approximately three weeks of unstructured testing, the ISO and market participants are more certain that the configurations they go live with will be feasible and will not cause an implementation or performance issue.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
					After go live, the ISO believes it is important to restrict changes to configurations in order to give the resources and the market to a static time during which the system is not further challenged by multiple configuration changes that prevent the ISO from identifying problems that may be raised by these changes.
80	Dynegy	Appendix AA – Transition Plan	April 2, 2010	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. During the market simulation activities scheduled two months prior to effective date of the CAISO Tariff provisions enabling the implementation of MSG functionality, Scheduling Coordinators will be permitted to register and participate in market simulation either with or without the use of the Multi-Stage Generating Resource functionality. However, no later than seventy-five days prior to the effective date of the CAISO Tariff provisions enabling the Multi-Stage Generating Resource functionality, Scheduling Coordinators that intend to register and qualify Generating Units or Dynamic Resource-Specific System Resources as Multi-Stage Generating Resources as of the effective date of the CAISO Tariff provisions for the Multi-Stage Generating Resource functionality shall ~~commence the registration process for the resources by~~ submit~~ting~~ to the CAISO the completed MSG 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. ***[Are these posted on the web site?]*** 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	Conflicts regarding the nature of the configurations would be resolved the same way as any other resource characteristic dispute that arises when resources are being registered. The ISO also proposes changes to this Appendix to address many of the issues raised in this comment.

NUM	Company	Related Tariff Section	Date of Comments	Comments	CAISO Response to Comments
				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 an MSG. ***[Can SCs be assured that the CAISO will provide notice before the effective date or, if the information is not complete, that the CAISO will provide a reasonable cure period that would not delay registration?]*** Once the CAISO has provided such notice, the resource will be registered and qualified to participate as an MSG as of the effective date of the CAISO Tariff provisions enabling the implementation of the MSG functionality. ~~-~~Scheduling Coordinators may register the number of Multi-Stage Generating Resource C~~c~~onfigurations as are reasonably appropriate for the unit based on the operating characteristics of the unit, which may not, however, exceed a total of ten C~~c~~onfigurations and cannot be fewer than two C~~c~~onfigurations. ***[Is it possible that there could be some dispute between the CAISO and the SC as to the number of Configurations that may be registered? How would such a dispute be resolved?]*** The resource will be successfully registered and qualified for the requested status and C~~c~~onfiguration 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 determines that the resources operating and technical characteristics have changed since the time that the CAISO the notice of qualification to the responsible Scheduling Coordinator, 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. As part of the registration process, the Scheduling Coordinators must submit to the CAISO a T~~t~~ransition M~~m~~atrix, which contains the cost and operating constraints associated with feasible transitions between C~~c~~onfigurations. The responsible Scheduling Coordinator shall submit for each C~~c~~onfiguration a single segment Operational Ramp Rate, and as applicable an Operating Reserves ramp rate and Regulating Reserves ramp rate. The Scheduling Coordinator must establish as part of the RDT in the registration the default C~~c~~onfiguration and its associated start-up path that apply to Multi-Stage Generating Resources that are subject to Resource Adequacy	

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				must-offer obligations ~~as part of the RDT in the registration~~. The ~~C~~configurations and operational characteristics submitted to and accepted by the CAISO during this pre-registration process will be in effect for the first sixty days after the effective date of the Multi-Stage Generating Resources CAISO Tariff provisions. Sixty days after the effective date of the Multi-Stage Generating Resources, the following modeling conversions will be possible as further described in the CAISO Tariff: (1) Register a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource. (2) Unregister a Generating Unit or Dynamic Resource-Specific System Resource as a Multi-Stage Generating Resource. (3) Change the registered ~~C~~configurations for a Multi-Stage Generating Resource, which includes the (a) addition of new ~~C~~configurations; (b) removal of an existing ~~C~~configuration; (c) a material change to the definition of a registered ~~C~~configuration, which includes (i) a change in the physical units supporting the ~~C~~configuration, and (ii) designation of default Resource Adequacy ~~C~~configuration with associated default start-up path; or (d) changes of "from" and "to" ~~C~~configurations within their transition matrix. 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 is to take effect within the Time Horizon of any of the Real-Time Market runs, the CAISO will Dispatch, Award, or commit 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 in the immediately preceding Day-Ahead Market. ***[see comments on 27.8.1].***	
81	SCE	General Questions/ Comments	April 2, 2010	○ Would the ISO please confirm whether changes to the Tariff will cause MSG units to be settled differently in the Real-Time Market than non-MSG units?	The energy settlement in the real-time market should be no different. However, the commitment costs in the RTM will be different as described in the proposed changes to Section 11.8.

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				○ Would the ISO please clarify how it will treat situations whereby an MSG Resource receives feasible schedules in IFM that become infeasible dispatches in Real-Time?	The second bulleted question is not clear. However, the ISO provides the following clarification. What happens when an MSG configuration that is scheduled in the Integrated Forward Market becomes unavailable in the real-time will depend on the following cases: 1. If RTM dispatches the resource in a different configuration that is still available, then the energy settlement is done no different from a normal case by comparing the DA schedule and real-time dispatch at the generation unit level. Our expected energy calculation is at generation unit level; 2. If the unavailability prevents RTM from dispatching any configuration, similar de-rate energy may be calculated in this case to account for the decremental energy from the DA schedule. Again, this calculation does not really pertain to the configuration but rather to the Day-Ahead schedule and real-time dispatch.
82	Dynegy	General Questions/ Comments	April 2, 2010	To help market participants understand this tariff language, the CAISO should define several key terms: “commit”, configuration”, “resource level”, “status”, start-up path”, “register”,”default Resource Adequacy Configuration”, “Configuration indicators” “in transition”, In regards to moving between the different operating configurations - perhaps there is a need to distinguish between “commit” and “transition”.?	The ISO will provide a definition for Configuration. The ISO will clarify the use of the term commit.
83	Calpine	General	April 13, 2010	“at the Resource level” – there are a lot of sections in the tariff containing this phrase, but we believe this should be defined better or not include it at all if it doesn’t really	The ISO is proposing to use the terms Generating Unit and Dynamic

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		Questions/ Comments		affect the computation from how it is being recognized currently (without the MSG functionality). Dynegy I believe had this same comment.	Resource Specific System Resources
84	Calpine	General Questions/ Comments	April 13, 2010	Transition Cost – CAISO has not posted any BPM calculations for transition cost settlements; therefore it is too soon to tell if our compensation would be fair and reasonable. However, since the BPM configurations are the calculation spin-off of the Tariff provision, we realized that the tariff has to be approved first, but we need clarification as to when this transition cost is applicable for bid cost recovery since the tariff provisions are open for interpretation. For instance, let's assume that the resource was committed by CAISO from HE1-5, starting from a lower configuration and transitions to a higher configuration half-way through the commitment period. The start-up cost would be for the lower configuration and the transition cost would refer to the cost incurred for going to a higher configuration from the previous configuration (i.e. maybe starting up another turbine). But will CAISO rescind the transition cost; thereby charge the resource as opposed to reimbursing it if for instance the resource started at a higher configuration and transitioned to a lower configuration? In this scenario, we assume that the start up cost would be higher because it started with a higher configuration, but if it eventually transitions to a lower configuration, more than likely the cost is lower.	
85	SCE	General Questions/ Comments	May 03, 2010	Overall MSG settlement concern: Based on the tariff and BPM language currently available it seems that the CAISO will not be providing the expected configuration by interval in any settlements data. This piece of data is vital to understand how the CAISO is determining payments and charges and SCE would like to see it included in future language and design documents.	The ISO is investigating whether it is possible to provide this information through CMRI. However, this issue has no tariff impact.