



Comments from Phoenix Consulting

Phoenix is submitting clarifying comments for selected sections in the draft tariff language. These comments were assembled through conversations with several clients and are offered for the CAISO’s consideration in order to help the process. We have accepted the CAISO’s proposed tariff changes and show our suggested additional comments below.

Dispatch Instruction and Operating Instruction

4.2.1 Comply with Dispatch Instructions and Operating Instructions

With respect to this Section 4.2, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating Transmission Owners, Participating Generators, Participating Loads, Demand Response Providers, Distributed Energy Resource Providers, Balancing Authorities (to the extent the agreement between the Balancing Authority and the CAISO so provides), and MSS Operators within the CAISO Balancing Authority Area and all System Resources shall comply fully and promptly with the Dispatch Instructions and Operating Instructions, unless such ~~compliance: (1) would impair public health or safety; (2) is exempted pursuant to Section 34.13.1; or is physically impossible,~~ Shedding Load for a System Emergency does not constitute impairment to public health or safety. The Market Participant shall immediately notify the CAISO of its inability to ~~comply with the Operating Instruction due to (1) or (3) above.~~

4.6.3.4.3 Operating Requirements for a Net Scheduled Generating Unit

A Participating Generator that has entered into a Net Scheduled PGA shall abide by CAISO Tariff provisions regarding the CAISO’s ability to dispatch or curtail Generation from the Net Scheduled Generating Units listed in its Net Scheduled PGA. The CAISO shall only dispatch or curtail a Net Scheduled Generating Unit of the Participating Generator: (a) to the extent the Participating Generator bids Energy or Ancillary Services from the Net Scheduled Generating Unit into the CAISO Markets or the Energy is otherwise available to the CAISO under Section 40, subject to the restrictions on Operating

- Deleted:** operation
- Commented [A1]:** Simplification
- Deleted:** or
- Deleted:** otherwise
- Deleted:** . A Market Participant is not required to comply with a CAISO Operating Instruction if it
- Deleted:** for the Market Participant to perform in compliance with that Operating Instruction
- Deleted:** perform in compliance
- Commented [A2]:** Ditto



Instructions set forth below; or (b) if the CAISO must dispatch or curtail the Net Scheduled Generating Unit in order to respond to an existing or imminent System Emergency or condition that would compromise CAISO Balancing Authority Area integrity or reliability as provided in Sections 7 and 7.6.1. The CAISO will not knowingly issue an Operating Instruction to a Participating Generator that has entered into a Net Scheduled PGA that: (1) requires a Participating Generator to reduce its Generation below the delineated minimum operating limit, ~~other than in a System Emergency~~; (2) conflicts with operating limitations provided to the CAISO by the Participating Generator; or (3) results in damage to the Participating Generator's equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator's operating limitations. ~~If the Participating Generator: (1) receives a Schedule which requires operation below the minimum operating limit, and (2) deviates from that Schedule to continue to operate at the minimum operating limit, it will not be subject to any penalties or sanctions as a result of operating at the minimum operating limit. [The Participating Generator's consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.~~

The CAISO shall have the authority to coordinate and approve Generation Outage schedules for the Generating Unit(s) listed in a Net Scheduled PGA, in accordance with the provisions of Section 9.

4.6.3.5.4 Operating Requirements for a Net Scheduled Generating Unit

A Participating Generator that has entered into a Net Scheduled PGA shall abide by CAISO Tariff provisions regarding the CAISO's ability to dispatch or curtail Generation from the Net Scheduled Generating Units listed in its Net Scheduled PGA. The CAISO shall only dispatch or curtail a Net Scheduled Generating Unit of the Participating Generator: (a) to the extent the Participating Generator bids Energy or Ancillary Services from the Net Scheduled Generating Unit into the CAISO Markets or the Energy is otherwise available to the CAISO under Section 40, subject to the restrictions on Operating Instructions set forth below; or (b) if the CAISO must dispatch or curtail the Net Scheduled Generating Unit in order to respond to an existing or imminent System Emergency or condition that would

Commented [A3]: Operation below the MOL would seem to be physically impossible by definition, unless the unit is curtailed to zero, so why would the CAISO issue such an instruction? Also, please see below for further questions.

Deleted: provided to the CAISO

Commented [A5]: This paragraph says that: (1) the CAISO may issue an **Operating Instruction** directing the unit to operate below the MOL; but (2) a **Schedule** below the MOL need not be complied with. Is compliance with the Operating Instruction required (even though that would seem to be physically impossible – see above), while compliance with the Schedule is not?

Commented [A6]: An obvious statement – so is everything else. It would be helpful, however, to clarify whether these would be economic consequences only or a tariff violation.

Commented [A7]: Tariff sections 4.6.3.4.3 and 4.6.3.5.4 appear to be exact duplicates – seems to be duplication in the tariff. If both are retained, make same clarifications here as above.



compromise CAISO Balancing Authority Area integrity or reliability as provided in Sections 7 and 7.6.1. The CAISO will not knowingly issue an Operating Instruction to a Participating Generator that has entered into a Net Scheduled PGA that: (1) requires a Participating Generator to reduce its Generation below the delineated minimum operating limit, other than in a System Emergency; (2) conflicts with operating limitations provided to the CAISO by the Participating Generator; or (3) results in damage to the Participating Generator's equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator's limitations provided to the CAISO. If the Participating Generator: (1) receives a Schedule which requires operation below the minimum operating limit, and (2) deviates from that Schedule to continue to operate at the minimum operating limit, it will not be subject to any penalties or sanctions as a result of operating at the minimum operating limit. The Participating Generator's consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.

The CAISO shall have the authority to coordinate and approve Generation Outage schedules for the Generating Unit(s) listed in a Net Scheduled PGA, in accordance with the provisions of Section 9.

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34.13.1 Response Required by Resources to Dispatch Instructions

Resources must:

- (a) unless otherwise stated in the Dispatch Instruction, comply with a Dispatch Instruction immediately upon receipt;
- (b) respond to all Dispatch Instructions in accordance with Good Utility Practice;
- (c) meet voltage criteria in accordance with the provisions in the CAISO Tariff;
- (d) meet any applicable Operational Ramp Rates;
- (e) respond to Dispatch Instructions for Ancillary Services within the required time periods and (in the case of Participating Generators providing Regulation) respond to AGC from

the EMS; and

- (f) if a time frame is stated in a Dispatch Instruction, respond to a Dispatch Instruction within the stated time frame.

~~Despite~~ the requirement to follow Dispatch Instructions, an Eligible Intermittent Resource may produce to its capability, in excess of its Dispatch Operating Target, ~~unless CAISO issues an Operating Instruction, after exhausting all effective economic bids,~~ directing the Eligible Intermittent Resource to follow its Dispatch Operating Target if necessary to maintain system reliability, consistent with Sections 7.6 ~~or 7.7~~ of the CAISO tariff. Upon receiving such an Operating Instruction, an Eligible Intermittent Resource must return to its Dispatch Operating Target and not generate in excess of its Dispatch Operating Target until the Operating Instruction expires. When such an Operating Instruction is in effect, Eligible Intermittent Resources must follow a linear ramp between Dispatch Operating Targets, ~~to the extent that they are physically able to do so.~~

37.2 Comply with Operating Instructions

37.2.1 Compliance with Orders Generally

37.2.1.1 Expected Conduct

Market Participants must comply with Operating Instructions issued by the CAISO as authorized under the CAISO Tariff. . Deviation from an ADS Dispatch Instruction shall not constitute a violation of this Section 37.2.1.1. A Market Participant's failure to obey an Operating Instruction containing multiple instructions to address a specific operating condition will result in a single violation of Section 37.2. If some limitation prevents the Market Participant from fulfilling the action requested by the CAISO then the Market Participant must promptly and directly communicate the nature of any such limitation to the CAISO, ~~pursuant to Section 4.2.1.~~

Commented [A8]: Clearer.

Deleted: Notwithstanding

Commented [A9]: Strongly suggest this simple statement that the EIR can produce to its capability (in excess of the DOT) unless an Operating Instruction is received directing otherwise.

It's not necessary to specify how the DOT was developed. Moreover: (1) Some resources may not have ADS access and/or know what their "forecast" or "scheduled output" are; and (2) the CAISO plan to use a "yes" or "no" SUPP indicator (which requires more discussion) makes generator knowledge of the forecast or schedule unnecessary anyway.

(If the language here is not stricken, suggest clarifying the Appendix Q reference as follows, consistent with the CAISO's intent expressed on the 4/2 call: "An Eligible Intermittent Resource in the process of providing MW output and meteorological data necessary for the CAISO to produce an output forecast pursuant to Section 3.1 of Appendix Q...")

Deleted: when its Dispatch Instruction is equal to its forecasted output. An Eligible Intermittent Resource in the process of developing a CAISO forecast pursuant to Section 3.1 of Appendix Q may produce to its capability, in excess of its Dispatch Operating Target, when its Dispatch Instruction is equal to its scheduled output. Notwithstanding the above, the

Deleted: may

Commented [A10]: In Section 7.6 "Normal System Operations," 7.6.1 - Actions for Maintaining Reliability of CAISO Controlled Grid" requires use of effective Economic Bids for Energy & A/S before taking further action.

Commented [A11]: Makes sense to add Section 7.7 "Management of Abnormal System Conditions," including "Imminent or Actual Emergency" (in 7.7.1).

Commented [A12]: VER compliance depends on fuel availability.

Commented [A13]: Virtually this same sentence appears in this other section and references physical inability to comply; clarifies that this is the same obligation and not some different one.



Appendix A

Master Definition Supplement

- Dispatch Instruction

An instruction by the CAISO for an action with respect to specific equipment, or to a resource for increasing or decreasing its Energy Supply or Demand to a specified Dispatch Operating Target pertaining to Real-Time operations.

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- Dispatch Operating Point

The expected trajectory of the resource operating point as it ramps from one Dispatch Operating Target to the next; the ramping across Dispatch Intervals is linear, unless the operational ramp rate of the resource changes during the ramp or achievement of that trajectory is not physically possible.

Commented [A14]: See above – VER compliance depends on fuel availability.

- Dispatch Operating Target

The expected operating point of a resource that has received a Dispatch Instruction. The resource is expected to operate at the Dispatch Operating Target after completing the Dispatch Instruction, taking into account any relevant Ramp Rate and time delays. Energy expected to be produced or consumed above or below the Day-Ahead Schedule in response to a Dispatch Instruction constitutes Instructed Imbalance Energy. For resources that have not received a Dispatch Instruction that have a Day Ahead Schedule, the Dispatch Operating Target defaults to the corresponding Day-Ahead Schedule.

Commented [A15]: Clarification

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- Operating Instruction

A command by operating personnel responsible for the Real-time operation of the interconnected Bulk Electric System to change or preserve the state, status, output, or input of an Element of the Bulk Electric System or Facility of the Bulk Electric System. An Operating Instruction will be communicated consistent with three-part communication requirements in NERC Reliability Standard COM-002-4.

Commented [A16]: Best to spell out what these are, instead of forcing Market Participants to consult another document (not easy to find for a non-NERC member).

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Appendix B.3 Net Scheduled Participating Generator Agreement



ARTICLE IV

GENERAL TERMS AND CONDITIONS 4.3 Obligations Relating to Ancillary Services

4.2.5 Limitations on CAISO Operating Instructions. The CAISO will not knowingly issue an Operating Instruction that: (1) requires the Participating Generator to reduce its Generation below the delineated minimum operating limit, other than in a System Emergency; (2) conflicts with operating limitations provided by the Participating Generator; or (3) results in damage to the Participating Generator’s equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator’s operating limitations to the CAISO. If the Participating Generator: (1) receives a Schedule which requires operation below the minimum operating limit, and (2) deviates from that Schedule to continue to operate at the minimum operating limit, it will not be subject to any penalties or sanctions as a result of operating at the minimum operating limit. The Participating Generator’s consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.

Appendix N Pseudo-Tie Protocol

1.2 CAISO Operating, Technical, and Business Requirements

1.2.2.3 If there is no Scheduled Generation in the DAM or Real-Time markets, a Pseudo-Tie Generating Unit shall not generate except when issued an Exceptional Dispatch or Operating Instruction as defined in the CAISO Tariff from the CAISO.

Commented [A17]: See comments on Section 4.6.3.4.3 above – same changes recommended here.

Commented [A18]: Not clear why the rules for a PT generator in these situations would be different from an internal generator.