

161 FERC ¶ 61,116
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Cheryl A. LaFleur, and Robert F. Powelson.

California Independent System Operator Corporation Docket No. ER17-2237-000

ORDER ACCEPTING PROPOSED TARIFF REVISIONS

(Issued October 30, 2017)

1. On August 3, 2017, the California Independent System Operator Corporation (CAISO) filed, pursuant to section 205 of the Federal Power Act (FPA),¹ proposed revisions to sections 4, 5, 8, and 11 and Appendices A, D, and K of its tariff addressing the procurement and cost allocation of black start capability. As discussed below, we accept CAISO's tariff revisions, effective November 1, 2017, as requested.

I. Background

2. Black start capability refers to the ability of a generating unit or station to begin operating and delivering electric power without external assistance from the electric system. Black start resources are essential to restart other generation and to restore power to the grid in the event of an outage.² CAISO's tariff requires black start units to have a number of attributes, including the ability to: start without external aid from the grid, make a minimum number of starts, operate in stand-alone and parallel modes, have start-up load pickup capability, produce and absorb reactive power, and have necessary communication/control equipment.³

3. In Order No. 749, the Commission, among other things, approved North American Electric Reliability Corporation Reliability Standard EOP-005-2 (Reliability

¹ 16 U.S.C. § 824d (2012).

² *System Restoration Reliability Standards*, Order No. 749, FERC Stat. & Regs. ¶ 32,666 (Order No. 749), at P 2 (2011).

³ CAISO Tariff, Appendix D.

Standard EOP-005-2).⁴ That standard requires transmission operators to have a system restoration plan approved by the relevant reliability coordinator. Reliability Standard EOP-005-2 has the stated purpose to “[e]nsure plans, [f]acilities, and personnel are prepared to enable [s]ystem restoration from [b]lack [s]tart resources to assure reliability is maintained during restoration and priority is placed on restoring the Interconnection.” In addition, Reliability Standard EOP-005-2 requires periodic testing of the resources, verification, and execution of the system restoration plan, and further states that each transmission operator should have testing requirements to verify that black start resources are capable of following the transmission operator’s restoration plan.⁵

4. In response to Order No. 749, CAISO revised its tariff to align its process for determining its black start needs and to develop a system restoration plan consistent with the requirements of Reliability Standard EOP-005-2.⁶ CAISO states that the system restoration plan is developed in consultation with participating transmission owners and that it may also identify black start needs for the CAISO transmission system that have not been identified in the plans of participating transmission owners.⁷ CAISO states that it also amended its existing black start agreements to incorporate testing requirements under Reliability Standard EOP-005-2.⁸

5. Currently, CAISO’s tariff allocates the costs for black start capability using measured demand,⁹ excluding exports and any demand for which the metered subsystem operator has self-provided black start. However, CAISO states that it has not allocated

⁴ The current version is Reliability Standard EOP-005-2. The Commission recently proposed to supersede this rule with Reliability Standard EOP-005-3. *See Emergency Preparedness and Operations Reliability Standards*, 82 Fed. Reg. 44,746 (Sept. 26, 2017), 160 FERC ¶ 61,072 (2017).

⁵ Reliability Standard EOP-005-2, Requirement 9.

⁶ CAISO Transmittal Letter at 3. *See also California Independent System Operator Corp.*, Docket No. ER13-699-000 (February 13, 2013) (delegated letter order).

⁷ CAISO Transmittal Letter at 3. *See also* CAISO tariff section 8.2.3.4.

⁸ CAISO Transmittal Letter at 3.

⁹ Measured demand is defined as the metered CAISO demand plus real-time interchange export schedules, excluding that portion of demand of non-generator resources dispatched as regulation through regulation energy management.

any costs using this method because to date, no capability costs have been incurred under its black start contracts.¹⁰

6. In 2016, CAISO determined that additional black start capability was needed in the San Francisco Bay area. CAISO initiated a stakeholder process to examine the appropriate method for allocating the costs of this incremental black start capability and to describe the processes for black start capability procurement.¹¹ CAISO states that, to date, it has secured black start capability either through reliability must run agreements or through interim black start agreements. In the instant filing, CAISO proposes to revise tariff language addressing black start capability procurement and cost allocation.

II. Notice of Filings and Responsive Filings

7. Notice of CAISO's filing was published in the Federal Register, 82 Fed. Reg. 37,201 (2017), with interventions and protests due on or before August 24, 2017. NRG Power Marketing and GenOn Energy Management, LLC, Southern California Edison Company, Northern California Power Agency, the City of Santa Clara, California, and Modesto Irrigation District filed timely motions to intervene. Pacific Gas and Electric Company (PG&E) filed a motion to intervene and comments in support. The Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, CA (Six Cities) filed a limited protest. On September 7, 2017, CAISO filed an answer to Six Cities' protest.

III. Discussion

A. Procedural Matters

8. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2017), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

9. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2017), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process.

¹⁰ CAISO Transmittal Letter at 4.

¹¹ *Id.* at 7.

B. Substantive Issues**1. Proposed Tariff Changes**

10. CAISO has proposed tariff revisions to, among other things: (1) reorganize and consolidate provisions related to black start capability and agreements, (2) establish provisions related to technical requirements and performance tests, (3) remove black start-related provisions that are outdated or inapplicable, and (4) designate the costs of procured incremental black start capability as reliability services costs under the CAISO tariff and allocate these costs to the participating transmission owner in whose service area the black start generators are located. CAISO also proposes tariff changes to reflect its current operating procedures and reliability requirements. We address these proposed tariff provisions below. In addition, we find any aspects of CAISO's proposal that are not specifically addressed below, and are not contested, to be just and reasonable and therefore accept them for filing.

a. Reorganization and Consolidation of Tariff Provisions**i. CAISO Proposal**

11. CAISO proposes to consolidate provisions related to black start agreements by moving them to a different part of the tariff. Specifically, CAISO proposes to move tariff provisions relating to black start from ancillary services sections to separate new sections that are specific to black start and system restoration, e.g., new tariff sections 5 (Black Start and System Restoration) and 11.4 (Black Start Settlements). CAISO also proposes to move certain language from tariff section 8 (addressing Black Start Services and Additional Requirements for Black Start Units) to Appendix D (Black Start Units). These existing provisions address, among other things, technical and operational requirements for black start units.

12. Under new tariff sections 5.1¹² and 5.2,¹³ CAISO will: (1) determine the amount and location of needed black start capability in accordance with Applicable Reliability Criteria, (2) consult with participating transmission owners in developing its own system restoration plan and consider participating transmission owners' plans, (3) contract annually (or for any other period that CAISO determines is economically advantageous)

¹² CAISO proposes to incorporate into new section 5.1 existing language from tariff section 8.2.3.4 (Black Start Capability).

¹³ CAISO proposes to incorporate into new section 5.2 existing language from tariff sections 8.2.3.4.1 (Black Start Units), 8.3.1 (Procurement of Ancillary Services), and 8.3.5 (Daily and Hourly Procurement).

for black start services, and (4) provide additional detail about the appropriate locations for black start resources. Section 5.1 also states that scheduling coordinators will notify CAISO of their load restoration time requirements for any loads that provide emergency services. Regarding section 5.2, CAISO states that these modifications do not change CAISO's authority to contract for black start capability.

13. In addition, new tariff section 5.3¹⁴ provides that: (a) all black start units must satisfy the technical requirements specified in their black start agreements and in Appendix D (Black Start Generating Units) of the CAISO tariff, (b) CAISO shall undertake performance tests from time to time with or without prior notification, (c) CAISO has the sole right to determine when a black start resource is needed to respond to CAISO system conditions, (d) if CAISO suspends its energy or ancillary services markets, then the price paid to black start resources should be sufficient to cover its costs over the resource's operating period, (e) if a black start unit fails to start when called upon, or if the unit fails a performance test, then the resource (or market participant that has contracted to supply black start service from the resource) shall be subject to remedies or penalties specified in its black start agreement, and (f) CAISO will dispatch black start units as required in accordance with the applicable black start agreement.

14. CAISO also proposes to add new sections 11.4 (Black Start Settlements) and section 11.4.1 (Black Start Energy).¹⁵ These sections include modifications to reflect defined terms from elsewhere in the tariff. Proposed section 11.4 states that payments for black start capability will fall under black start agreements. Additionally, if a resource's energy and start-up costs are not included in its black start agreements, or if CAISO conducts a performance test, the payments for black start energy will be paid according to CAISO's exceptional dispatch provisions. Payments for black start capability provided by units designated as Reliability Must Run units are compensated according to their reliability must run agreements. CAISO also proposes a modification to existing section 11.5.6.5 addressing exceptional dispatch settlement to clarify that black start energy resulting from dispatch instructions is characterized as a Real-Time Dispatch Instructed Imbalance Energy (RTD IIE), noting that all RTD IIE settlement amounts

¹⁴ New section 5.3 includes language moved from tariff sections 8.2.3.4.2 (Black Start Services), 8.4.6.1 (Additional Requirements for Black Start Units), 8.8 (Black Start), and 8.10.5 (Black Start).

¹⁵ CAISO tariff section 11 covers Settlements and Billing. These sections incorporate certain language from sections 11.10.1.5 (Black Start) and 11.10.8 (Black Start), respectively.

associated with black start would receive the exceptional dispatch settlement price unless otherwise specified in the black start agreement.

15. CAISO proposes to add new sections to Appendix D that address voice communications, start-up load pickup, and reactive power requirements for black start generating units.¹⁶ Finally CAISO proposes to add a new definition for a Black Start Generating Unit to Appendix A, defining such resources as generating units that are part of the system restoration plan under a black start agreement.

16. CAISO states that these modifications are part of its efforts to consolidate tariff provisions relating to black start and to clarify that black start is not akin to the types of ancillary services procured through CAISO's day-ahead and real-time market processes. CAISO asserts that reorganizing and consolidating black start tariff provisions will make it easier for market participants and others to identify relevant tariff rules governing the provision and settlement of black start capability.¹⁷

ii. Commission Determination

17. We find that the proposed tariff revisions to consolidate and reorganize tariff provisions related to black start service are just and reasonable. Specifically, we find that new tariff sections 5.1, 5.2, 5.3, 11.4, and 11.4.1 and CAISO's further revisions reflected in section 11.5.6.5, Appendix A, and Appendix D improve the readability and clarity of the tariff, and are consistent with Reliability Standard EOP-005-2. Additionally, we find that these tariff provisions describe CAISO's authority to procure black start capability as well as the technical expectations and certain compensation mechanisms for black start units. Moreover, as CAISO explains and as described above, much of its proposal is to move longstanding tariff language to these new sections of the tariff. We therefore also find that the proposed deletions from sections 8 and 11 are appropriate because the provisions are now addressed elsewhere in the tariff or are no longer relevant. We also agree with CAISO that distinguishing black start capability from other types of ancillary services is appropriate, because black start capability, unlike certain other ancillary services, is not procured in CAISO's day-ahead and real-time markets. Finally, we note that these proposed tariff revisions were not protested.

18. Accordingly, we accept CAISO's proposed additions in sections 5.1, 5.2, 11.4, 11.4.1, 11.5.6.5, Appendix A, and Appendix D of its tariff, and the deletion of language

¹⁶ These new subsections of Appendix D concern requirements moved from existing tariff sections 8.4.2(d) and 8.4.3(b).

¹⁷ CAISO Transmittal Letter at 5.

in sections 8.2.3.4, 8.2.3.4.1, 8.2.3.4.2, 8.3.5, 8.4.2(d), 8.4.3(b), 8.4.6.1, 8.8, 11.10.1.5, and 11.10.8 of its tariff. Proposed section 5.3 is addressed separately below.

b. Technical Requirements and Performance Tests

i. CAISO Proposal

19. As described above, CAISO proposes a new tariff section 5.3 (Black Start Services) that is comprised, in part, of language moved from existing tariff section 8.2.3.4.2, and includes provisions related to technical requirements and performance tests for black start units. In proposed subsection (e), CAISO proposes to move and modify existing tariff language that stated if a black start resource fails a CAISO-administered performance test, that resource must repay CAISO any reserve payments that it has received since its last performance test. New proposed section 5.3 provides that a black start resource that fails a performance test or that fails when called upon will be subject to the remedies or penalties specified in its black start agreement with CAISO. New additions to Appendix D include provisions related to testing requirements, a requirement not to use a black start unit to serve non-station load while there is a need for black start service, and a requirement for black start resources to comply with Applicable Reliability Criteria.

20. In addition to deleting existing section 8.2.3.4.2 of its tariff, as described above, CAISO proposes to delete existing sections 8.9.5 (Compliance Testing for Black Start), 8.9.13 (Performance Audit for Black Start), and 8.10.5 (Black Start). CAISO proposes to move the provisions of these sections, which address unannounced compliance testing and other performance audits of black start resources, to section 5.3.

21. CAISO explains that it proposes to delete existing tariff provisions requiring an immediate rescission of payments in the event of a test failure because such provisions would result in commercial risk that could discourage resource owners from offering the service.¹⁸ CAISO states that a number of reasons exist for a test failure and that a unit that could provide black start for an overwhelming number of operating hours during the year would lose a substantial portion of its fixed cost payments if forced to return payments. If a resource fails a performance test, CAISO expects the resource to remedy the issue and immediately complete another performance test. CAISO further states that if a black start resource is unable to remedy the issue, then CAISO would have grounds for terminating the black start agreement without further payment.¹⁹ Regarding

¹⁸ CAISO Transmittal Letter at 10.

¹⁹ *Id.* at 11.

unannounced tests and other performance audits, CAISO explains that its operating procedures describe CAISO's methods for testing the performance of black start units.²⁰

ii. Comments and Protest

22. Six Cities request that CAISO be directed to incorporate further revisions to the proposed tariff language to limit prospective payments to black start resources that do not pass performance tests or fail to provide black start service when called upon to do so. Six Cities also suggest additional language on the frequency of performance testing. Specifically, Six Cities state that the Commission should require the following additional language to proposed section 5.3(b) of CAISO's tariff, addressing performance tests:

Such performance testing shall occur no less frequently than required by applicable requirements in NERC Reliability Standards. In the event that no applicable NERC Reliability Standard provides for a performance testing interval, the CAISO shall conduct performance testing at least once every three years.²¹

23. Six Cities also propose to insert the following underlined language into section 5.3(e), which addresses failed performance tests:

If a Black Start Generating Unit fails to achieve a Black Start when called upon by the CAISO, or fails to pass a performance test administered by the CAISO, the Market Participant that has contracted to supply Black Start service from the Generating Unit shall be subject to (i) immediate suspension of all payments for service under the Black Start Agreement unless and until either (a) the Black Start Generating Unit successfully passes a subsequent performance test administered by the CAISO or (b) the Black Start Agreement is terminated; and (ii) all other remedies or penalties as specified in its Black Start Agreement.²²

Six Cities seek to include this additional language on the basis that no party should be able to retain compensation for services it is not capable of providing, and that CAISO's tariff should provide for meaningful performance testing.²³

²⁰ CAISO Transmittal Letter at 10-11.

²¹ Six Cities Limited Protest at 3.

²² *Id.* at 4.

²³ *Id.* at 2.

iii. CAISO's Answer

24. CAISO states that the additional revisions suggested by Six Cities are not necessary because (1) it would undertake performance testing consistent with the applicable NERC standard, and (2) black start resources will need to pass performance tests in order to receive payments under black start agreements. CAISO states that Six Cities' proposed performance testing language is consistent with CAISO's existing practices and that CAISO must comply with the Reliability Standard EOP-005-2 testing requirements.²⁴ CAISO further states that if a resource fails a performance test, it will need to remedy the problem and complete another performance test.²⁵ Finally, CAISO states that the terms of individual black start agreements will inform any payment obligations by CAISO to any unit providing black start capability. CAISO notes that these agreements require Commission approval, and that these agreements will ensure that customers will not face charges for black start capability until the resource demonstrates it can provide the service.

iv. Commission Determination

25. We find that proposed section 5.3 is just and reasonable and not unduly discriminatory or preferential. This section requires black start units to satisfy certain technical requirements, permits CAISO to undertake performance tests, allows CAISO to determine when black start units must respond, allows for cost recovery under certain system conditions, provides for penalties for failed tests, and obligates CAISO to dispatch black start units in accordance with the applicable black start agreement. Taken together, these provisions outline the roles and responsibilities of CAISO, as well as black start resources, consistent with Reliability Standard EOP-005-2. Additionally, as we found above with respect to other tariff revisions CAISO submitted in this filing, consolidating these provisions improves the readability and clarity of the tariff.

26. Six Cities support additional revisions to section 5.3(b) which would require CAISO to conduct performance testing in accordance with the NERC reliability standards and would prescribe a testing interval in the absence of a specific standard. Our review concludes that these suggested revisions are not necessary because CAISO has proposed language stating that "all black start generating units will comply with applicable reliability criteria."²⁶ As CAISO notes, its definition of "applicable reliability

²⁴ CAISO Answer at 3.

²⁵ CAISO Answer at 4.

²⁶ See Appendix D, new section (i).

criteria” under its tariff includes NERC standards and criteria, which specify testing of at least once every three years, as Six Cities propose.²⁷ Therefore, we find that Six Cities’ suggested addition is not necessary to find CAISO’s tariff revisions just and reasonable.

27. Regarding Six Cities’ proposed addition to section 5.3(e) concerning the suspension of black start capability payments under black start agreements, we find that this proposed addition is not necessary because adequate provisions already exist in black start agreements to address failed performance tests. Thus, we find it is reasonable for the individual black start agreements between CAISO and the black start resources to address the matter of test failures.

c. Removal of Outdated or Inapplicable Tariff Provisions

i. CAISO Proposal

28. CAISO proposes to remove black start-related tariff provisions that it claims are outdated or inapplicable.²⁸ These include section 4.9.4.5 (Metered Subsystem Responsibilities), the reference to black start capability in section 8.1 (Scope [of Ancillary Services]), the reference to specific contracts for black start capability in section 8.3.1 (Procurement of Ancillary Services), a reference to a black start certification process in section 8.3.4 (Certification and Testing Requirements), language that has moved elsewhere or is no longer applicable in section 8.8 (Black Start), certain cross-references in section 11.27 (Voltage Support and Black Start Charges), language including black start with other ancillary services in Appendix A, language related to the term “interim” in the definition of Black Start Agreements in Appendix A, and the entirety of Part E (Certification for Black Start) of Appendix K (Ancillary Service Requirements Protocol).

29. CAISO proposes to delete section 4.9.4.5 because it contains provisions allowing metered subsystem operators to self-provide black start capability to avoid paying for the service.²⁹ CAISO explains that there is no longer an opportunity for metered subsystem operators to self-provide this capability. Instead, they may offer to provide a black start generating unit to CAISO. According to CAISO, under Reliability Standard EOP-005-2, it must incorporate black start capability into its system restoration plan and accordingly, may enter into individual agreements for black start capability. CAISO states that if such agreements do not include charges for black start capability, then that will reduce

²⁷ CAISO Answer at 4.

²⁸ CAISO Transmittal Letter at 5.

²⁹ *Id.* at 11-12.

CAISO's overall costs of black start capability, which would then reduce the amount allocated to participating transmission owners.³⁰

30. CAISO also proposes to delete the term "interim" in characterizing black start agreements in Appendix A, as well as references to black start in section 11.27. CAISO states that the existing tariff defines interim agreements as those in place until terminated or superseded by the black start auction.³¹ CAISO clarifies, however, that it has not pursued and does not intend to pursue the development of an auction process for black start.³² Additionally, CAISO states that certain cross-references are not necessary to explain settlement rules. Regarding its proposal to delete Appendix K (Ancillary Service Requirements Protocol), Part E (Certification for Black Start), CAISO states that deleted language is unnecessary because it uses the performance testing requirements from Reliability Standard EOP-005-2 and not the protocol contained therein.

ii. Commission Determination

31. We find that CAISO's explanation that metered subsystems may not self-supply but instead may offer black start capability to CAISO for inclusion in its system restoration plan consistent with Reliability Standard EOP-005-2 is reasonable. Accordingly, we accept CAISO's deletion of section 4.9.4.5 and the removal of language referencing black start in sections 8.1, 8.3.1, 8.3.4, 8.8, 11.27, and Appendix A because this language does not reflect CAISO's current operating procedures or is duplicative of other tariff language, as described above.

32. We further accept CAISO's deletion of the word "interim" in the definition of Black Start Agreement in Appendix A, because the word is unnecessary in light of CAISO's decision not to pursue an auction process. We also accept the deletion of the language from Appendix K, Part E as CAISO will use requirements from Reliability Standard EOP-005-2, and we currently see no need for additional protocols or requirements. Additionally, we accept the deletion of Appendix K, Part E because CAISO conducts performance tests according to its system restoration plan per Reliability Standard EOP-005-2 and not according to the protocol described in Appendix K, Part E.

³⁰ *Id.* at 12.

³¹ CAISO Tariff, Appendix A.

³² CAISO Filing, Attachment A, at 18.

d. Reliability Services Costs and Cost Allocation

i. CAISO Proposal

33. CAISO proposes to add a new section 11.4.2 to its tariff stating that CAISO will allocate payments for black start capability under a black start agreement as reliability services costs to the participating transmission owner in whose service area the black start generating unit is located. CAISO also proposes to amend the definition of Reliability Services Costs in Appendix A to include costs associated with services provided under a black start agreement. CAISO states that designating black start capability costs as reliability services costs is consistent with the way that CAISO allocated such costs under reliability must run agreements. CAISO argues that this method allocates the cost of meeting reliability needs to the participating transmission owner in whose system the reliability need exists.³³ CAISO further notes that this approach is consistent with Commission-accepted black start cost allocation in other markets, such as PJM.³⁴

ii. Comments

34. PG&E states that it supports CAISO's efforts to revise its tariff rules for allocating costs for black start capability procurement.³⁵ PG&E also agrees that CAISO needs to procure additional black start capability in the San Francisco Bay Area, and that it is appropriate to designate the costs of incremental black start capability as reliability services costs. PG&E also argues that is appropriate for CAISO to allocate the incremental costs of procuring additional black start capability to the Participating Transmission Owners in whose service area the black start resources are located.³⁶

iii. Commission Determination

35. We find it just and reasonable for CAISO to designate the costs of black start capability as reliability services costs under its tariff. CAISO proposes to coordinate its system restoration plans with those of participating transmission owners, per Reliability Standard EOP-005-2, and procure incremental black start capability as needed in the service area where the black start resource is located. Because individual black start

³³ CAISO Transmittal Letter at 6.

³⁴ *Id.* at 7 (citing *PJM Interconnection, L.L.C.* 144 FERC ¶ 61,191 (2013) as an example of a Commission-accepted black start cost allocation approach).

³⁵ PG&E Comments at 1.

³⁶ *Id.* at 2-3.

capacity resources do not benefit all parts of the system equally, it is just and reasonable to recover these costs from a participating transmission owner where the resource is located and serves the reliability need. We find that CAISO's proposed cost allocation, to which no party has objected, is calculated in a manner that allocates costs roughly commensurate with the benefits provided by the provision of black start capability. Accordingly, we accept CAISO's proposed addition of section 11.4.2 to its tariff and the amended definition of Reliability Services Costs in Appendix A.

The Commission orders:

CAISO's proposed tariff revisions are hereby accepted, effective November 1, 2017, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.