

January 3, 2013

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Docket Nos. ER13-\_\_\_\_-000;  
Tariff Amendment – Blackstart and System Restoration Plan**

Dear Secretary Bose:

The California Independent System Operator Corporation (ISO) proposes to align its determination of the location and amount of blackstart needs with the requirements of a revised North American Electric Reliability Corporation (NERC) emergency and preparedness operations reliability standard, scheduled to take effect on July 1, 2013.<sup>1</sup> The ISO requests an effective date for these tariff revisions of April 3, 2013 to ensure resources providing blackstart services have sufficient time to amend their interim blackstart agreements with the ISO.

## **I. Background and Summary of Tariff Amendment**

Blackstart is a procedure by which a resource self-starts without an external source of electricity. The output from the resource can then serve to restore power to the ISO balancing authority area following a system or local area outage. Since its inception, the ISO has obtained blackstart services from generating units under interim blackstart agreements or reliability must-run contracts.<sup>2</sup> This tariff amendment does not change this approach to the procurement of blackstart services. In 2011, the Commission approved NERC reliability standard EOP-005-2,<sup>3</sup> replacing EOP-005-1. This reliability standard

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<sup>1</sup> The ISO submits this filing pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Section 35.13 of the Commission's regulations, 18 C.F.R. § 35.13. Capitalized terms not otherwise defined have the same meaning as set forth in ISO tariff, appendix A, master definitions supplement.

<sup>2</sup> ISO tariff section 8.3.1: "The CAISO will procure Black Start capability through individual contracts with Scheduling Coordinators for Reliability Must-Run Units and other Generating Units which have Black Start capability." The ISO currently procures black start from one reliability must-run generator. The remainder of the ISO's blackstart capability is provided by resources under interim blackstart agreements.

<sup>3</sup> *System Restoration Reliability Standards* 134 FERC ¶ 61215 (Order 749) March 2011.

requires, among other things, that transmission operators have a system restoration plan approved by their reliability coordinator.<sup>4</sup> The ISO plans to submit its system restoration plan for approval to the Western Electricity Coordinating Council next month.

The ISO is proposing to change to its tariff to specify that the ISO will determine its blackstart needs pursuant to a system restoration plan that meets the requirements of EOP-005-2. The standard requires transmission operators to implement testing requirements to verify that each blackstart resource is capable of meeting the requirements of restoration plans. Separately, the ISO is working with its participating transmission owners and resource owners to amend interim black start agreements and reliability must-run contracts to incorporate those testing requirements into these contracts as applicable.

## **II. The ISO's proposed tariff revisions align the ISO tariff with applicable reliability criteria**

The ISO's proposed tariff revisions are consistent with an approved reliability standard.<sup>5</sup> They specify that the ISO will prepare a system restoration plan to meet the requirements of applicable reliability criteria. The ISO's existing tariff defines Applicable Reliability Criteria in part to mean: "[t]he Reliability Standards and reliability criteria established by NERC and WECC and Local Reliability Criteria, as amended from time to time, . . ."<sup>6</sup> As part of this tariff amendment, the ISO is also proposing revisions governing the development of its system restoration plan. The Commission should approve these changes as just and reasonable because they are consistent with approved reliability standards and provide the framework to ensure the ISO has sufficient blackstart capability available in the event of a system or local outage.

In tariff section 8.2.3.4, the ISO proposes clarifying changes to state that it shall determine the amount and location of black start generation it requires through a system restoration plan that meets the requirements of applicable reliability criteria. The changes to this section also explain that the ISO will consult with participating transmission owners in making a determination of the amount and location of black start generation. As part to this effort, the tariff will

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<sup>4</sup> *Id.* at P 13. See also Requirement 1 of EOP-005-02 available at <http://www.nerc.com/files/EOP-005-2.pdf>

<sup>5</sup> In this filing, the ISO is proposing only limited changes to its tariff. The ISO intends to undertake a broader review of tariff provisions that apply to blackstart as part of a stakeholder process it intends to start later this year

<sup>6</sup> ISO tariff, Appendix A, Master Definition Supplement.

require participating transmission owners with their own system restoration plans to provide these plans to the ISO upon request and will also require the ISO to consider these plans. The ISO is also proposing revisions to tariff section 8.2.3.4 to clarify scheduling coordinators' obligation to notify the ISO of restoration time requirements for any loads that provide emergency services.

Over the last several months, the ISO has conferred with participating transmission owners to develop the system restoration plan. As part of this effort, the ISO has worked with participating transmission owners that are jointly registered as transmission operators with the ISO under the NERC functional model to prepare a system restoration plan and conduct simulations to ensure the viability of the plan. The ISO has also adopted operating procedure 4600 to memorialize this work and ensure the ISO can restore the electric system to a normal condition in the event of a partial or total shut down of the system. This operating procedure is non-public in light of the fact that it contains information related to the security of the system as well as proprietary information provided by participating transmission owners.

The ISO intends to continue to work with participating transmission owners as it examines updates to future system restoration plans. This collaboration is essential for the ISO to understand how participating transmission owners' systems function and how to restore the ISO system in the event of a system wide or local outage. The ISO also requires information from scheduling coordinators with loads that provide emergency services. While the ISO needs to reserve final decisions about any ISO system restoration plans, it is prudent to make these decisions in consultation with participating transmission owners because of their unique knowledge of how their transmission systems operate. The tariff revisions proposed by the ISO create the framework for this process.

### **III. Stakeholder process**

Earlier this year, the ISO initiated a stakeholder process to address policy changes involving the administration of blackstart services consistent with NERC reliability standard EOP-005-2. The ISO accepted written comments, held conference calls with stakeholders and refined its proposal through this process.<sup>7</sup> Ultimately, the ISO decided to split its stakeholder process into two phases. The ISO limited the first phase to ensure that it has mechanism in place to comply with NERC reliability standard EOP-005-02, when it takes effect on July 1, 2013.

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<sup>7</sup> More information concerning the ISO's stakeholder process, including copies of stakeholders' comments, is available at the following web site:  
[http://www.caiso.com/informed/Pages/StakeholderProcesses/Blackstart\\_SystemRestoration.aspx](http://www.caiso.com/informed/Pages/StakeholderProcesses/Blackstart_SystemRestoration.aspx)

In its stakeholder process, the ISO proposed to revise its tariff to introduce a *pro-forma* blackstart agreement that would standardize rates, terms and conditions so that all blackstart generators included in the ISO's system restoration plan would be subject to the same *pro-forma* blackstart agreement. Stakeholders submitted comments expressing concerns that NERC reliability standards are imposing significant incremental costs and risks that generators did not anticipate when the ISO established its existing practice to obtain blackstart services. Stakeholders recommended that the ISO, as a transmission operator, procure blackstart services directly from generators that voluntarily agree to provide blackstart service. Among other comments, stakeholders asked that the ISO not designate generators in a system restoration plan unless (1) the generator has agreed to provide blackstart services; (2) the generator has demonstrated that it is blackstart capable; and (3) the participating transmission owner and ISO have determined that including the generator in a system restoration plan is technically feasible. The ISO generally agrees with these criteria but believes additional discussion on how to compensate resources is necessary.

Stakeholders also raised questions concerning how the ISO intends to allocate the cost of blackstart procurement to the ISO market. One stakeholder maintained that blackstart is a system need and as such those costs are more reasonably allocated to all users of the ISO grid. Other stakeholders raised concerns about the ISO's system restoration plan, including the identification of the cranking path and the target units and what testing plan and procedures exist to follow in the event of a blackstart event.

Based on these comments, the ISO recognizes the development of a *pro-forma* blackstart agreement involves a variety of topics that require additional stakeholder input. For this reason, the ISO separated this initiative into two phases. The first phase, which is the subject of this tariff amendment, clarifies that the ISO will determine blackstart capability needs through a system restoration plan that complies with NERC standard EOP-005-002. In addition, the ISO is working with existing black start resources to incorporate testing procedures into their applicable agreements.<sup>8</sup> The ISO expects generators will file these revised agreements with the Commission in the second quarter of 2013. This phase will not create additional costs for the ISO market as a result of securing blackstart capability. The second phase of this initiative will address how the ISO will procure blackstart capability, including how the ISO will compensate resources for this service and how the ISO will allocate those costs

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<sup>8</sup> The ISO has published these testing procedures as part of ISO Operating Procedure 5330 <http://www.caiso.com/Documents/5330.pdf> and ISO Operating Procedure 5530H <http://www.caiso.com/Documents/5330H.doc>

to the market. This effort will require a more comprehensive stakeholder process, which the ISO intends to initiate in the first quarter of 2013.

With respect to the first phase of this initiative, the ISO conducted a tariff stakeholder process. One stakeholder objected to the proposed phasing of this initiative on the grounds that the ISO was establishing a new blackstart procurement mechanism without rules governing how the ISO will compensate resources and allocate those costs. The ISO explained that it plans to use existing interim blackstart agreements to obtain blackstart services to develop a system restoration plan under EOP-005-2.<sup>9</sup> Under this approach, the ISO market will not incur incremental costs for blackstart procurement.

In connection with the first phase of its initiative, other stakeholders encouraged the ISO to consider that system restoration is a critical undertaking that requires detailed knowledge of the cranking path between the blackstart resources and the receiving resources. These stakeholders stressed the fact that the ISO will have to rely on participating transmission operators for necessary technical information and encouraged the ISO to include tariff language that ensures a collaborative process between the ISO and the participating transmission owners to develop a system restoration plan. As part of tariff section 8.2.3.4, the ISO has proposed language to reflect this collaborative process.

#### **IV. Effective date and request for order**

The ISO requests that the Commission make the tariff revisions contained in this filing effective as of April 3, 2013. Acceptance of the tariff revisions by this date will ensure that the framework for the ISO's determination of blackstart needs is in place before NERC reliability standard EOP-005-02 takes effect on July 1, 2013.

#### **V. Communications**

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

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<sup>9</sup> ISO tariff section 8.3.1.

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\* Individuals designated for service pursuant to Rule 203(b)(3).<sup>10</sup>

## **VI. Service**

The ISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission, the California Energy Commission, and parties with effective scheduling coordinator service agreements under the ISO tariff. In addition, the ISO is posting this transmittal letter and all attachments on the ISO Web site.

## **VII. Attachments**

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

Attachment A	Revised ISO tariff sheets
Attachment B	Proposed changes to the ISO tariff shown in black-line format
Attachment C	Materials presented to the ISO's Board of Governors as well as a record of the Board of Governor's vote.

## **VIII. Conclusion**

The ISO is proposing to align its tariff provisions relating to identifying blackstart needs with a revised emergency and preparedness operations

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<sup>10</sup> 18 C.F.R. § 385.203(b)(3).

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reliability standard. The ISO requests an effective date of April 3, 2013 for the tariff changes proposed in this filing.

Please contact the undersigned if you have any questions regarding this matter.

Respectfully submitted,

**By: /s/ Andrew Ulmer**

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Attorneys for the California Independent  
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**Attachment A – Clean Tariff**

**Tariff Amendment – Black Start and System Restoration Plan**

**California Independent System Operator**

**Fifth Replacement FERC Electric Tariff**

**January 3, 2013**



#### **8.2.3.4 Black Start Capability**

The CAISO shall determine the amount and location of Black Start Generation it requires through a system restoration plan that meets the requirements of Applicable Reliability Criteria. In making this determination, the CAISO shall consult with Participating Transmission Owners.

Participating Transmission Owners with their own system restoration plans that include transmission lines and associated facilities that are part of the CAISO Controlled Grid shall upon the request of the CAISO provide the CAISO with these system restoration plans. The CAISO shall consider Participating Transmission Owners' system restoration plans in developing a system restoration plan for the CAISO system and may identify Black Start Generation needs for the CAISO system not identified in Participating Transmission Owners' system restoration plans. Scheduling Coordinators shall notify the CAISO of their Load restoration time requirements for any Loads that provide emergency services. This notice shall include the MW amount of Load, required restoration time, and associated Node on the CAISO Controlled Grid. For purposes of preparing system restoration plans, the CAISO shall consult with applicable Participating Transmission Owners concerning any Load restoration information provided by Scheduling Coordinators.

**Attachment B – Marked Tariff**

**Tariff Amendment – Black Start and System Restoration Plan**

**California Independent System Operator**

**Fifth Replacement FERC Electric Tariff**

**January 3, 2013**

#### 8.2.3.4 Black Start Capability

The CAISO shall determine the amount and location of Black Start Generation it requires through a system restoration plan that meets the requirements of Applicable Reliability Criteria. In making this determination, the CAISO shall consult with Participating Transmission Owners. contingency studies that are used as the basis of the CAISO's emergency plans. ~~The studies shall specify:~~

- ~~(a) — the initiating disturbance;~~
- ~~(b) — the magnitude of the Outage, including the extent of the Outage (local area, CAISO Controlled Grid, or WECC), the assumed status of Generation after the initiating disturbance, the status of interconnections, the system Demand level at the time of the disturbance, the interconnection support, and assumptions regarding the availability of support from other utilities to help restore Generation and Demand;~~
- ~~(c) — the Generator performance including a percentage of Black Start units (to be determined by the CAISO) which are expected to fail to start, and;~~
- ~~(d) — expected transmission system damage.~~

~~The CAISO shall also specify the following Load restoration performance goals:~~

- ~~(i) — Black Start unit startup and connection times;~~
- ~~(ii) — CAISO Controlled Grid restoration times; and~~
- ~~(iii) — Load restoration times.~~

Participating Transmission Owners with their own system restoration plans that include transmission lines and associated facilities that are part of the CAISO Controlled Grid shall upon the request of the CAISO provide the CAISO with these system restoration plans. The CAISO shall consider Participating Transmission Owners' system restoration plans in developing a system restoration plan for the CAISO system and may identify Black Start Generation needs for the CAISO system not identified in Participating Transmission Owners' system restoration plans.

Scheduling Coordinators shall ~~notify~~provide the CAISO ~~of~~with their Load restoration time requirements for any Loads that provide emergency services. This notice shall include the MW

amount of Load, required restoration time, and associated Node on the CAISO Controlled Grid.

For purposes of preparing system restoration plans, the CAISO shall consult with applicable

Participating Transmission Owners concerning any Load restoration information provided by

Scheduling Coordinators.

**Attachment C – Materials Presented to ISO Board of Governors**  
**Tariff Amendment – Black Start and System Restoration Plan**  
**California Independent System Operator**  
**Fifth Replacement FERC Electric Tariff**  
**January 3, 2013**

# Memorandum

**To:** ISO Board of Governors  
**From:** Eric Schmitt, Vice President, Operations  
**Date:** October 25, 2012  
**Re:** **Decision on Blackstart Needs and System Restoration Plan**

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*This memorandum requires Board action.*

## EXECUTIVE SUMMARY

Blackstart is a procedure by which a generating unit self-starts without an external source of electricity. The output from the generating unit can then serve to restore power to the ISO balancing authority area following a system or local area outage. Management proposes to align its determination of blackstart needs with a revised emergency and preparedness operations reliability standard, scheduled to take effect on July 1, 2013.

Earlier this year, the ISO initiated a stakeholder process to address policy changes involving the administration of blackstart services consistent with NERC Reliability Standard EOP-005-2. This reliability standard revises the obligations, requirements and testing responsibility for each blackstart resource and transmission operator. Transmission operators must now have a system restoration plan approved by their reliability coordinator. The ISO proposes to modify its tariff to provide that the ISO will base its determination of blackstart needs on a system restoration plan that meets the requirements of this reliability standard.

Management recommends that the Board approve the following motion:

***Moved, that the ISO Board of Governors approves the proposed tariff change regarding determining blackstart needs, as described in the memorandum dated October 25, 2012; and***

***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.***

## **DISCUSSION AND ANALYSIS**

Since its inception, the ISO has obtained blackstart services from generating units under interim blackstart agreements or reliability must run agreements. In 2011, FERC approved NERC reliability standard EOP-005-2, which will be effective July 1, 2013. EOP-005-2 replaces EOP-005-1. This reliability standard requires, among other things, that transmission operators have a system restoration plan approved by their reliability coordinator. In the case of the ISO, we will need to obtain approval of our system restoration plan from the Western Electricity Coordinating Council. The standard also requires transmission operators to implement testing requirements to verify that each blackstart resource is capable of meeting the requirements of their restoration plans. The ISO is proposing to make conforming changes to its tariff to specify that the ISO will determine its blackstart needs pursuant to a system restoration plan that meets the requirements of this standard. The ISO also will need to modify existing agreements to ensure they incorporate applicable testing requirements. In anticipation of FERC's approval of this standard, the ISO has worked with participating transmission owners to develop a system restoration plan that will comply with the new standard. The ISO intends to submit this system restoration plan to WECC for its approval in the first quarter of 2013.

Beyond compliance with EOP-005-02, the ISO also has commenced a stakeholder process to examine blackstart and system restoration more generally. The ISO separated this initiative into two phases based on stakeholder feedback. The first phase clarifies that the ISO will determine blackstart capability needs through a system restoration plan that complies with NERC standard EOP-005-002. The second phase will address the process by which the ISO will procure blackstart capability, including how the ISO will compensate resources for this service, and how the ISO will allocate those costs to the market. This effort will require a more comprehensive stakeholder process, which the ISO intends to initiate in the first quarter of 2013.

## **POSITIONS OF THE PARTIES**

Stakeholders are generally supportive of the proposed phased approach to addressing procurement of blackstart capacity. Stakeholders have expressed strong interest in participating in the ISO's policy development for phase 2 of the initiative, which will address potential changes to how the ISO procures blackstart services, the compensation the ISO will pay for those services and the allocation of those procurement costs.

## **CONCLUSION**

Management respectfully requests Board approval of the proposal described in this memorandum. The ISO's proposed change to determine blackstart needs pursuant to a WECC-approved system restoration plan will align the ISO's tariff with applicable reliability standards.



California ISO  
Shaping a Renewed Future

# Decision on Blackstart Needs and System Restoration Plan

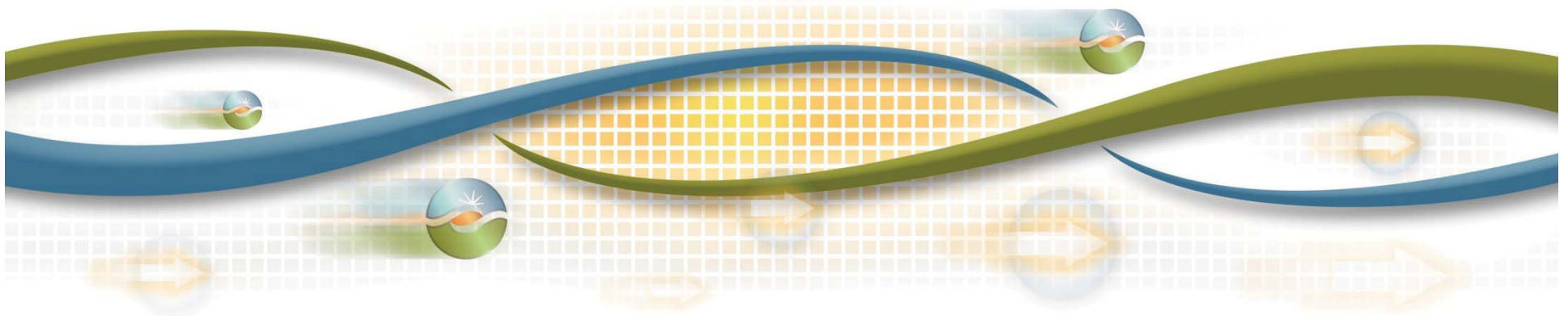
Dede Subakti, P. E.

Director, Operations Engineering Services

Board of Governors Meeting

General Session


November 1, 2012





# NERC Reliability Standard EOP-005-02 revises blackstart obligations, requirements and testing.

- Effective July 1, 2013.
- Requires transmission operators to have a system restoration plan approved by their reliability coordinator.
- Requires agreements to reflect testing requirements to verify that each blackstart resource is capable of meeting the requirements of its restoration plan.



The ISO stakeholder process is focused on blackstart issues to address NERC requirements.

- Complete restoration plan;
- Obtain WECC approval;
- Align tariff with reliability standard; and
- Modify interim blackstart agreements to reflect new testing procedures.

## Positions of stakeholders

- Stakeholders have expressed general support for this approach.
- Stakeholders have expressed strong interest in the next steps in the ISO's policy development initiative.

# Next steps



- Align ISO tariff with reliability standard:
  - ISO will determine amount of blackstart.
  - ISO will determine location of blackstart.
  - Determination consistent with applicable reliability criteria, which includes the requirements of EOP-005-02.
- Modify interim blackstart agreements to reflect new testing procedures.
- Procurement of blackstart services.
- Compensation for blackstart services.
- Cost allocation to the ISO market.



**Board of Governors      November 1, 2012      Decision on Blackstart Needs and System Restoration Plan**

**Motion**

**Moved, that the ISO Board of Governors approves the proposed tariff change regarding determining blackstart needs, as described in the memorandum dated October 25, 2012; and**

**Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.**

**Moved: Foster      Second: Bhagwat**

<b>Board Action: Passed      Vote Count: 5-0-0</b>	
Bhagwat	Y
Foster	Y
Galiteva	Y
Mullin	Y
Olsen	Y

**Motion Number: 2012-11-G2**