March 2, 2018

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 24026

INFORMATIONAL FILING – NO NOTICE REQUIRED

Re: California Independent System Operator Corporation
Informational Readiness Certification for Idaho Power Company's Participation in the Energy Imbalance Market
Docket No. ER15-861-000

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) submits this informational filing in compliance with section 29.2(b)(6) of the CAISO tariff.[1] The CAISO, in consultation with Idaho Power Company (Idaho Power), has determined that, following market simulation and an adequate period of parallel operations, the CAISO and Idaho Power have met all readiness criteria specified in section 29.2(b)(7) of the CAISO tariff. In support of this determination the CAISO hereby submits the sworn CAISO affidavit of Petar Ristanovic, Vice President of Technology, and the sworn Idaho Power affidavit of Tessia Park, Vice President of Power Supply. This filing certifies the readiness of the CAISO and Idaho Power to proceed with Idaho Power's participation in the CAISO's Energy Imbalance Market (EIM) on April 4, 2018, without exception, consistent with the requirement to do so at least 30 days prior.

I. Background

The EIM provides other balancing authority areas the opportunity to participate in the real-time market for imbalance energy that the CAISO operates in its own balancing authority area. PacifiCorp's balancing authorities were the first two balancing authorities to join the EIM beyond the CAISO balancing authority area. The CAISO's EIM tariff provisions went into effect on

[1] The Commission has determined that readiness certifications are considered informational filings and will not be noticed for comment. *See Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,205 at P 86 and n.173 (2015); *see also Cal. Indep. Sys. Operator Corp.*, 155 FERC ¶ 61,283 at P 8 (2016).

October 24, 2014, in time for the first trading day of November 1, 2014.[2] In a March 16, 2015 order,[3] the Commission concluded that certain readiness safeguards are necessary prior to activating a prospective EIM entity in production.[4] Accordingly, the Commission directed the CAISO to include provisions in its tariff to ensure the readiness of any new EIM entity. The Commission further required that the certification of market readiness include a sworn affidavit from an officer of the CAISO and an officer of the prospective EIM entity attesting that both have prepared and made ready the systems and processes for the new EIM entity to commence financially binding participation in the EIM.[5] Following two compliance filings, the Commission accepted the CAISO's proposed readiness criteria.[6] These criteria appear in section 29.2(b)(7) of the CAISO Tariff.

II. Readiness Reporting, Determination, and Attestation

The CAISO and Idaho Power ran market simulation scenarios from December 1, 2017 to January 31, 2018. Parallel (*i.e*., financially nonbinding) operations, which began on February 1, 2018, will run through at least February 28, 2018 and, in any event, will continue to be supported and available to Idaho Power until April 4, 2018. During market simulation and parallel operations the CAISO and Idaho Power have engaged in daily discussions to track progress and confirm the status of each readiness criterion, and the CAISO has regularly reported on readiness status in market forum discussions and publicly posted a table or "dashboard," showing progress towards meeting the readiness criteria.[7] The process of updating the readiness dashboard through this joint effort involved representatives from both organizations, including the senior officers who have attested that the parties' processes and systems are ready for Idaho Power's participation in the EIM.

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2 *See Cal. Indep. Sys. Operator Corp.*, 147 FERC ¶ 61,231 (2014) (June 19 Order) (conditionally accepting tariff revisions to implement Energy Imbalance Market); *Cal. Indep. Sys. Operator Corp.*, 149 FERC ¶ 61,058 (2014) (order denying requests for rehearing, granting in part and denying in part requests for clarification, and conditionally accepting tariff revisions on compliance with regard to order listed above); Commission Letter Order, 149 FERC ¶ 61,005 (Oct. 2, 2014) (order granting CAISO request to extend effective date of Energy Imbalance Market tariff revisions from September 23, 2014, to October 24, 2014, for trading day November 1, 2014).

3 *Cal. Indep. Sys. Operator Corp.,* 150 FERC ¶ 61,191 (2015) (March 16 Order).

4 March 16 Order at P 30.

5 *Id.* n.85.

6 *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,205 (2015).

7 More information on the status of these other reports consistent with CAISO tariff section 29.2(b)(8) is available on the CAISO website under the EIM Entities Idaho Power entry at: http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx.

The market simulation confirmed system functionality and connectivity by identifying issues and software variances in advance of implementation that have since been resolved. In addition, market simulation permitted the CAISO and Idaho Power to validate performance of the systems and processes under a variety of structured scenarios. The market simulation dashboard dated January 31, 2018 demonstrated that the CAISO and Idaho Power were ready to enter parallel operations. Having achieved the benefits from market simulation, the CAISO and Idaho Power transitioned to parallel operations on February 1, 2018.

The parallel operations phase is designed to test performance of the systems and processes in a financially non-binding environment using historical data and information from production systems to the maximum extent possible. The CAISO and Idaho Power have engaged in parallel operations to examine capabilities at different times and conditions (morning ramp, evening ramp, low load and peak load). Doing so has permitted Idaho Power to understand the interaction between resource plans, base schedules, outage management, manual dispatch, and the CAISO full network model. This period has also allowed the CAISO and Idaho Power to identify and resolve software issues. The dashboard dated February 20, 2018 showed the progress during initial parallel operations as additional readiness criteria were met. The final dashboard, dated March 1, 2018, is included as Attachment A. The dashboard sets forth each of the readiness criteria in the tariff, the metrics by which the CAISO measures satisfaction of the criteria, and the actions or status that demonstrate Idaho Power's compliance with criteria. The dashboard shows that all readiness criteria have been satisfied or will be satisfied by April 4, 2018.

CAISO tariff section 29(b)(6) requires that a senior officer of the CAISO and a prospective EIM entity attest (1) that the processes and systems of the prospective EIM Entity have satisfied or will have satisfied the readiness criteria set forth in section 29.2(b)(7) as of the Implementation Date; (2) to any known issues requiring resolution prior to the Implementation Date in accordance with section 29.2(b)(8); (3) to any exceptions from the established thresholds specified in the Business Practice Manuals, and that despite such exceptions the criteria were met or will be met as specified in 29.2(b)(7); and (4) that the Implementation Date is conditional on the resolution of the known issues identified in the certificates and any unforeseen issues that undermine the satisfaction of the readiness criteria. Attachments B and C, respectively, contain the sworn CAISO affidavit of Petar Ristanovic, Vice President of Technology and the sworn Idaho Power affidavit of Tessia Park, Vice President of Power Supply in satisfaction of this requirement.

The affidavits are based upon the engagement by these senior officers in assessing the readiness criteria as reported in the dashboard, including supporting documentation. The CAISO believes that the market simulation and

parallel operations to date demonstrate that Idaho Power is prepared to enter financially binding production EIM operations on April 4, 2018. As discussed in the Market Quality Report included as Attachment D, any issues identified in the parallel operations have been resolved or will be resolved.[8] Neither the CAISO nor Idaho Power has identified any exception to any of the readiness criteria.

III. Market Quality Report on Parallel Operations

Parallel operations allowed the CAISO and Idaho Power to identify and resolve numerous input, process, and software issues prior to the commencement of financially binding operations.[9] The CAISO and Idaho Power worked diligently during parallel operations to identify the cause of the infeasibilities that arose. The attached Market Quality Report demonstrates that the majority of the power balance infeasibilities identified during the period of parallel operations associated with the readiness determination were caused by input data issues, some of which are unique to the parallel operations environment and software issues, all of which have been or will be resolved by the implementation date.

The CAISO validated both prices and schedules based on the data input to the market systems throughout the first 15 days of parallel operations. This validation demonstrates that the market solution produced is as expected and consistent with the market rules as designed based on the input data. The analysis conducted for the report accounts for the fact that input data may be influenced by limitations inherent in the parallel operations environment and these limitations may affect the quality of the solution. When factors affecting the input data are controlled for, the numerical quality of the market solution is good and indicates that the systems and processes of Idaho Power are ready to operate in production.

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[8] For example, it was identified during parallel operations that some Idaho Power submitted intertie schedules were not being correctly processed in the EIM and software fixes required to resolve this issue are being tested and expected to be resolved prior to the Implementation Date. In addition, Idaho Power expects that some software fixes for the settlement functionality required to properly allocate certain EIM charges to its transmission customers in accordance with Idaho Power's OATT will be delivered, tested and deployed in production prior to the Implementation Date.

[9] The market quality report on parallel operations dated February 28, 2018 explains how each of these issues impacted the market results and how they were resolved by the CAISO and Idaho Power.

V. Attachments

The following attachments, in addition to this transmittal letter, are provided with the instant filing:

Attachment A: Readiness Dashboard Report;

Attachment B: Affidavit of Petar Ristanovic;

Attachment C: Affidavit of Tessia Park; and

Attachment D: Parallel Operations Market Quality Report.

VI. Conclusion

The CAISO respectfully requests that the Commission accept this certification as consistent with section 29.2(b)(6) of the CAISO tariff. The CAISO or Idaho Power will notify the Commission in the event of any subsequent determination that the implementation of Idaho Power into the EIM on April 4, 2018 should be delayed, the reason for the delay, the new implementation date if it can be determined, and whether a portion or all of this certification needs to be reissued.

Respectfully submitted,

By: *<u>/s/ John C. Anders</u>*
John C. Anders

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Counsel for the California Independent System Operator Corporation

Attachment A – Readiness Dashboard Report

EIM Readiness Certification for Idaho Power Company

California Independent System Operator Corporation

Readiness Criterion Identifier	Readiness Category	Criteria	Measurable Elements	Threshold	Owner	Status	Evidence	Tariff Mapping
1	Prospective EIM Entity Full Network Model Integration	Generation, Interchange and Load comparison	Load, EIM Internal Intertie and EIM External Interties, and Generating Unit definition in the Full Network Model is consistent with the Load, EIM Internal Intertie and EIM External Interties, and Generating Unit definition in the exported prospective EIM Entity network model file that it delivered to the CAISO.	Data matches within 10%, measured in MW capacity to start parallel operation, and within 5% before full activation. Discrepancies, if any, are accounted for in terms of imbalance adjustment	CAISO	Complete	The CAISO provided reports indicating that the Generating Unit, Intertie and Load definition in the CAISO's Full Network Model is consistent with the network modeling information in the Idaho Power network model.	Tariff section 29.2(b)(7)(A)(i)
2	Prospective EIM Entity Full Network Model Integration	Comparison of SCADA measurement	SCADA measurements used in prospective EIM Entity EMS model match the measurements observed by the CAISO through the CAISO EMS model	Critical and used SCADA measurements match 90% to start parallel operation and 95% before full activation, measured in MW, outside of any exception in EMS model	CAISO	Complete	The CAISO provided reports indicating critical and used SCADA measurements that Idaho Power is publishing match 99.93% to the values seen by the CAISO.	Tariff section 29.2(b)(7)(A)(ii)
3	Prospective EIM Entity Full Network Model Integration	State Estimator solution	CAISO state estimator solution is equivalent or superior to the prospective EIM Entity state estimator solution for its Balancing Authority Area.	State Estimator solutions converge >90% of the time in two days before parallel operation and three days before full activation. Solution differences within 10% before parallel operation and 5% before full activation measured in MW or justified due to different external BAA modeling	CAISO	Complete	The CAISO provided reports indicating that the CAISO state estimator is solving on 30-second continuous basis on the CAISO EMS system and the solution is converging 99.9% of the time.	Tariff section 29.2(b)(7)(A)(iii)
4	Prospective EIM Entity Full Network Model Integration	Non-Conforming Load, Behind-the-Meter Generation, Pseudo Ties, and Dynamic Schedules	Physical representation of the prospective EIM Entity's network matches the Base Market Model that accounts for non-conforming load, behind-the-meter generation, pseudo-ties, and dynamic schedules, and third party transmission service provider and path operator information that supports EIM Transfers and Real-Time Dispatch in the Energy Imbalance Market, as applicable	Prospective EIM Entity major non-conforming loads > 5% of prospective EIM Entity total actual load in MW are modeled separately from conforming load in market model	CAISO	Complete	Idaho Power provided an email stating that they have no non-conforming loads that meet the criteria.	Tariff section 29.2(b)(7)(A)(iv)
5	Agreements	Execution of Necessary Agreements	The prospective EIM Entity has executed all necessary agreements.	The prospective EIM Entity will execute all agreements, as outlined in Section 5 of the EIM BPM within the required timelines outlined in Section 5.	JOINT	Complete	All agreements have been executed. Agreement checklist and executed agreements are evidence.	Tariff section 29.2(b)(7)(K)(i)
6	Operations Training	Completion of mandatory training courses	Prospective EIM Entity operators who will have responsibility for EIM operations, transactions and settlements, will complete CAISO training modules.	Prospective EIM Entity operators will Complete training and close-of-training assessment in the appropriate timeframes as outlined in · "100 series"– an introduction to Energy Imbalance Market training · "200 series"– the specific hourly and daily tasks and duties for normal operation training module; and · "300 series"– the assessment of market results and response to contingencies and abnormal situations training module.	IPC	Complete	Idaho Power provided evidence that all necessary training has been completed.	Tariff section 29.2(b)(7)(B)

Readiness Criterion Identifier	Readiness Category	Criteria	Measurable Elements	Threshold	Owner	Status	Evidence	Tariff Mapping
7	Forecasting Capability	Load forecast capability	Definition of EIM demand forecast boundaries based on the conforming and non-conforming load characteristics, as applicable · Accuracy of the CAISO forecast of EIM demand based on historical actual load data for the defined EIM demand forecast boundaries. · Identification of weather station(s) locations used in forecasting, if applicable.	All Plant Information (PI) tags and historical data for defined load area(s), and non-conforming load, if applicable, compared with load forecasts provided from CAISO (if CAISO load forecast used).	CAISO	Complete	The CAISO provided an email and report indicating that all load PI tags and historical data has been delivered to the CAISO, and forecast models have been developed using this data, as well as, relevant weather stations.	Tariff sections 29.2(b)(7)(C)(i)-(iii)
8	Forecasting Capability	Variable Energy Resource (VER) forecast capability	Identification of the source of VER forecasts. (If a participating wind or solar unit requires a CAISO forecast, then BPM and Tariff requirements apply.)	Forecasting entity must demonstrate delivery of Unit MW forecast at 5 min intervals for at least three hours ahead. Forecasting entity must also provide base schedule by T-75, T-55 and T-40. EIM Entity provides to CAISO real-time MW production PI tags.	CAISO	Complete	The CAISO provided an email with a sample chart, indicating that VER forecasts have been submitted and the data flow has been demonstrated.	Tariff section 29.2(b)(7)(C)(iv)
9	Forecasting Capability	Flexible capacity requirements	CAISO has established flexible capacity requirements for the prospective EIM Entity Balancing Authority Area and the combined EIM Area including the prospective EIM Entity	The CAISO has received and stored all historical data from the prospective EIM Entity necessary and sufficient for the CAISO to perform the flexible ramp requirement.	CAISO	Complete	The CAISO provided an email stating that they have received and stored all historical data from Idaho Power, sufficient for the CAISO to perform the flexible ramp requirement.	Tariff section 29.2(b)(7)(K)(iv)
10	Balanced Schedules	Base schedule balancing capability	The prospective EIM Entity Scheduling Coordinator demonstrates its ability to balance EIM demand and EIM supply for the prospective EIM Entity's Balancing Authority Area	90% or greater of base schedules balance tests during monitored hours are within 10% average imbalance of load forecast over one day period before parallel operation, and 5% average over five full days before full activation. The CAISO will provide examples of MW thresholds for each prospective EIM Entity to indicate a reasonable threshold as it applies to a given EIM Entity and indicate the potential implications of a swing from 5% over to 5% under forecast in one hour to the next.	IPC	Complete	The CAISO provided reports indicating that Idaho Power has met the base schedule balancing criteria for at least 22 hours per day for at least 5 days.	Tariff section 29.2(b)(7)(D)(i)
11	Balanced Schedules	Flexible ramping sufficiency test capability	The prospective EIM Entity \ Scheduling Coordinator demonstrates its ability to pass the flexible ramping sufficiency test.	Passes 90% of the time or greater over monitored hours of one day before parallel operation and five non-consecutive days before full activation.	IPC	Complete	The CAISO provided reports indicating that Idaho Power has met the flexible ramping sufficiency test (both Up and Down) for at least 23 hours per day for at least 5 days.	Tariff section 29.2(b)(7)(D)(iii)

Readiness Criterion Identifier	Readiness Category	Criteria	Measurable Elements	Threshold	Owner	Status	Evidence	Tariff Mapping
12	Balanced Schedules	Capacity test capability	The prospective EIM Entity Scheduling Coordinator demonstrates its ability to pass capacity test	Passes 90% of the time or greater over monitored hours of one day before parallel operation and five non-consecutive days before full activation. The CAISO will explain the implications of any potential issues with the reliability of an EIM Entity to meet its capacity requirements.	CAISO	Complete	The CAISO provided reports indicating that Idaho Power has met the capacity test capability for at least 22 hours per day for at least 5 days.	Tariff section 29.2(b)(7)(D)(ii)
13	Operating Procedures	CAISO operating procedures (relevant to EIM operations)	The prospective EIM Entity signs CAISO non-disclosure agreement and receives appropriate CAISO "public" and "restricted" operating procedures	Operating procedures NDA signed by the prospective EIM Entity. The prospective EIM Entity receives CAISO operating procedures four months prior to the parallel operations date.	JOINT	Complete	Signed non-disclosure agreement has been provided as evidence.	Tariff section 29.2(b)(7)(K)(i)
14	Operating Procedures	Prospective EIM Entity operating procedures	The prospective EIM Entity operating procedures are defined, updated, and tested for the EIM Entity Scheduling Coordinator	The prospective EIM Entity operating procedures are updated tested and implemented prior to parallel operations date.	IPC	Complete	Idaho Power confirmed that their operating procedures have been updated, tested and implemented for use during parallel operations. Procedures will continue to be tested through parallel operations and into production.	Tariff section 29.2(b)(7)(K)(ii)
15	System Readiness & Integration	Functional Testing	The prospective EIM Entity and the CAISO will test the functional and system elements in accordance with functional and system testing documentation posted on the CAISO website	All tasks identified in the functional and system testing documentation are complete and will not have any issues deemed significant. Any exceptions will be explained or have an interim solution that is functionally equivalent.	IPC	Complete	Idaho Power provided the Idaho Power EIM Test Results Summary document providing an explanation of an interim solution for any items deemed significant.	Tariff section 29.2(b)(7)(E)(i)
16	System Readiness & Integration	System Integration	The prospective EIM Entity and CAISO will test system integration testing in accordance with the system integration testing documentation posted on the CAISO website	All tasks identified in the system integration testing documentation are complete and will not have any issues deemed significant. Any exceptions will be explained or have an interim solution that is functionally equivalent.	IPC	Complete	Idaho Power provided the Idaho Power EIM Test Results Summary document providing an explanation of an interim solution for any items deemed significant.	Tariff section 29.2(b)(7)(E)(ii)
17	System Readiness & Integration	The prospective EIM Entity system access complete	All prospective EIM Entity employees who require system access to perform EIM-related job functions identified and have necessary certificates.	All prospective EIM Employees performing job functions for EIM market are identified. All CAISO issued certificates are requested within the appropriate timeframes. All identified employees provided the necessary EIM system access certificates.	IPC	Complete	The CAISO provided evidence that all necessary Idaho Power staff have required access for Parallel Operations. Idaho Power confirmed the access is in place and plan is in place for production.	Tariff section 29.2(b)(7)(E)(iii)

Readiness Criterion Identifier	Readiness Category	Criteria	Measurable Elements	Threshold	Owner	Status	Evidence	Tariff Mapping
18	System Readiness & Integration	ISO - prospective EIM Entity interfaces	Data interfaces between prospective EIM Entity's systems and CAISO systems are tested	ISO and prospective EIM Entity identify significant data interface issues. EIM Entity and CAISO executives to approve exceptions.	JOINT	Complete	Idaho Power provided the testing timeline summary document reflecting that all interface testing completed.	Tariff section 29.2(b)(7)(E)(i)
19	Market Simulation	Day in the life simulation	The prospective EIM Entity operators are able to meet the market timelines	The prospective EIM Entity grid operations staff complete end-to-end daily market workflow with no critical defects.	JOINT	Complete	Idaho Power confirmed that all Day in the Life test scenarios were executed successfully. Idaho day in the life readiness document provided as evidence.	Tariff section 29.2(b)(7)(I)(ii)
20	Market Simulation	Structured scenarios simulation	The prospective EIM Entity operators execute and pass all structured scenarios provided by CAISO	All significant issues resolved or have an interim solution that is functionally equivalent.	JOINT	Complete	Idaho Power confirmed that all structured scenarios were executed successfully and validated. Structured scenario progress sheet, and detailed structured scenario documents provided as evidence.	Tariff section 29.2(b)(7)(I)(iii)
21	Market Simulation	Unstructured scenarios simulation	The prospective EIM Entity operators execute and pass all unstructured scenarios provided by prospective EIM Entity	All significant issues resolved or have an interim solution that is functionally equivalent.	JOINT	Complete	Idaho Power sent an email that they planned to not run any unstructured scenarios.	Tariff section 29.2(b)(7)(I)(iv)
22	Market Simulation	Market results reports	Market results are appropriate based on inputs	The prospective EIM Entity and CAISO executive project sponsors approve the market results reports during market simulation	IPC	Complete	The CAISO provided an email summarizing the market results during market simulation.	Tariff section 29.2(b)(7)(I)(v)
23a	Market Simulation	Market quality review	Prices are validated based on input data	Market simulation prices and MWs schedules/dispatches are validated by CAISO market quality team for entry into parallel operations	CAISO	Complete	The CAISO Market Quality team provided a report validating that the market prices and MW schedules/dispatches observed during market simulation meets the requirements.	Tariff section 29.2(b)(7)(I)(vi)
23b	Parallel Operations	Market quality review	Prices are validated based on input data	Parallel operations prices and MWs schedules/dispatches are validated by the CAISO market quality team	CAISO	Complete	The CAISO Market Quality team provided a detailed market quality report and an email summarizing that CAISO validated both prices and schedules and the market solution is consistent with market rules as designed.	Tariff section 29.2(b)(7)(I)(vi)
24	Market Simulation	The prospective EIM Entity Identification	Validation of SCID's and Resource ID's	The CAISO has established and the prospective EIM Entity has tested all necessary SCIDs and Resource IDs established for the prospective EIM Entity's Balancing Authority Area	JOINT	Complete	The CAISO provided a schedule 1 and a completed roles matrix as evidence along with an email confirming that the SCIDs and resource IDs are in place at the CAISO and have been tested.	Tariff section 29.2(b)(7)(I)(i)

Readiness Criterion Identifier	Readiness Category	Criteria	Measurable Elements	Threshold	Owner	Status	Evidence	Tariff Mapping
25	Settlements	ISO Settlement Statements and Invoices published to the prospective EIM Entity and EIM Participating Resources	The CAISO Settlement statements and invoices match the operational data published to stakeholders or fed into settlement system and the resulting calculations correspond to the formulas defined in ISO's tariff and BPMs	Monthly settlement statement and invoice with corresponding daily statements produced during market simulation and parallel operations are verifiably accurate against available data.	JOINT	Complete	Idaho Power provided evidence that they have completed validation of the settlement statements and invoices. The CAISO confirmed.	Tariff section 29.2(b)(7)(F)(i)
26	Settlements	The prospective EIM Entity settlement statements and invoices reflect accurate allocations to the prospective EIM Entity customers prior to financially binding operations.	Verification that settlement statements and invoices accurately reflects system and market data	The prospective EIM Entity settlement statements and invoices that allocate charges and credits to its customers accurately reflect system and market data during parallel operations.	JOINT	Complete	Idaho Power provided an email stating that it has reviewed the Settlements Statements and allocations. Idaho Power has been unable, in certain cases, to verify the accuracy of certain EIM settlement charge assignments to its transmission customers under its OATT. Several vendor software updates have been identified and Idaho Power anticipates that delivery of the software fixes and further coordination with the CAISO will fully meet this threshold prior to April 4, 2018.	Tariff section 29.2(b)(7)(F)(ii)
27	Monitoring	Data monitoring	Sufficient and adequate data is available to the CAISO and the Department of Market Monitoring	All required market monitoring data is available during testing and during post go-live for the key metrics (any exceptions will be addressed). CAISO will provide a market report that will provide publicly available information to all market participants.	CAISO	Complete	The CAISO Market Quality team provided an email, and a market report, as evidence that the data is available for reporting. DMM provided an email that the data is also available to them.	Tariff section 29.2(b)(7)(K)(v)
28	Parallel Operations Plan	Deployment plan	Parallel operations run consistently and in accordance with the timeframe set forth in the prospective EIM Entity specific parallel operation plan	Parallel operations runs consistently within normal production CAISO Market disruption tolerances.	CAISO	Complete	The CAISO provided an email with supporting reports stating the CAISO has verified that the Parallel Operations ran consistently within normal CAISO disruption tolerances.	Tariff section 29.2(b)(7)(J)
29	Outage Management System	Transmission and generation outage submittal and retrieval	The prospective EIM Entity will verify its ability to submit and retrieve outage information with the CAISO	The prospective EIM Entity validate their ability to submit and retrieve transmission out-of-service outages, generation Pmax derates, generation Pmin rerates, and generation out-of-service outage tickets within the required timelines.	JOINT	Complete	Idaho power submitted outages in the Map Stage environment. The CAISO confirmed that these were received and processed in the CAISO systems.	Tariff section 29.2(b)(7)(G)
30	Communications between the CAISO and the prospective EIM Entity	Voice and/or electronic messaging	Implemented process and procedures used for voice and/or electronic messaging	The process and procedures are incorporated into the prospective EIM Entities business processes before the start of market simulation.	IPC	Complete	Idaho Power sent email evidence that these processes are in place.	Tariff section 29.2(b)(7)(H)(i)

Readiness Criterion Identifier	Readiness Category	Criteria	Measurable Elements	Threshold	Owner	Status	Evidence	Tariff Mapping
31	Communications between the CAISO and the prospective EIM Entity	Communication tools	Staff are trained on communication procedures and tools	The prospective EIM Entity operations staff who will have responsibility for EIM operations, transactions and settlements are trained on the relevant operating procedures and tools used for EIM related communications before the start of parallel operations	IPC	Complete	Idaho Power sent email evidence that their staff has been trained on the communication procedures and tools.	Tariff section 29.2(b)(7)(H)(ii)
32	Communications between the CAISO and the prospective EIM Entity	3rd party transmission service provider	The third party transmission service provider information that supports EIM Transfers and Real-Time Dispatch included in the Full Network Model is available during parallel operations	The CAISO provides third party transmission service provider and path operator information to the prospective EIM Entity through parallel operations	IPC	Complete	The CAISO provided an email stating that this is not applicable for Idaho Power.	Tariff section 29.2(b)(7)(H)(iii)
33	EIM Available Balancing Capacity	Identification of EIM Available Balancing Capacity	Participating resources and non-participating resources for EIM Available Balancing Capacity.	The prospective EIM Entity has identified EIM participating resources and non-participating resources that it intends to designate in the EIM Resource Plan as EIM Available Balancing Capacity	IPC	Complete	Idaho Power provided an email listing the resources they intend to designate with ABC and that the feature has been tested.	Tariff section 29.2(b)(7)(K)(iii)

Attachment B – Affidavit of Petar Ristanovic

EIM Readiness Certification for Idaho Power Company

California Independent System Operator Corporation

California ISO

Affidavit of Petar Ristanovic Certifying Readiness of Idaho Power Company (IPC) to Operate as an EIM Entity

I, Petar Ristanovic, Vice President of Technology for the California Independent System Operator Corporation (CAISO), hereby certify as follows:

1. As the Vice President of Technology, I am responsible for the systems and processes that support and enable the Energy Imbalance Market and, as such, I have responsibility for the implementation of IPC into that market.

2. I have reviewed the readiness dashboard and find that it is accurate and complete. All readiness criteria set forth in the CAISO's tariff and business practice manual have been satisfied or are expected to be satisfied as of Idaho Power's April 4, 2018 implementation date.

3. Based on the readiness dashboard and other materials and my own review of relevant information and direct involvement with the readiness efforts, including testing, market simulation, training and parallel operations, and barring unforeseen developments, the systems and processes of the CAISO and IPC will be ready to implement IPC into the Energy Imbalance Market on April 4, 2018.

4. I will ensure that the CAISO maintains resource commitments necessary to sustain readiness through April 4, 2018 and address any unexpected conditions that may arise before April 4, 2018 that could undermine grid operation or market operation within the existing EIM Area. I will continue to monitor progress and resolve any unexpected conditions that may arise.

5. Actual implementation of IPC on April 4, 2018 is conditioned upon the lack of any unexpected and unresolved issues that could undermine grid operation or market operation within the existing EIM Area. I will update this certification in the event any unexpected issues are not resolved as of April 4, 2018.

I hereby declare under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, information, and belief:

Petar Ristanovic, Vice President of Technology

March 2, 2018

Attachment C – Affidavit of Tessia Park

EIM Readiness Certification for Idaho Power Company

California Independent System Operator Corporation

AFFIDAVIT OF TESSIA PARK CERTIFYING READINESS OF IDAHO POWER COMPANY ("IPC") TO OPERATE AS AN ENERGY IMBALANCE MARKET ("EIM") ENTITY

I, Tessia Park, Vice President of Power Supply at IPC, hereby certify as follows:

1. As the Vice President of Power Supply, I am responsible for the systems and processes that support and enable the EIM for IPC, as well as the operations that relate to keeping IPC's Balancing Authority Area in balance. As such, I have overall responsibility for the implementation of IPC's entry into that market.

2. I have reviewed the readiness dashboard and find that it is accurate and complete. All applicable readiness criteria set forth in the California Independent System Operator's ("CAISO") tariff and business practice manual for the EIM have been satisfied or are expected to be satisfied as of Idaho Power's April 4, 2018, implementation date.

3. Based on the readiness dashboard and other materials prepared for me or for those that report directly to me and my own review of relevant information and direct involvement with readiness efforts, including testing, market simulation, training and parallel operations, and barring unforeseen developments, the systems and processes of CAISO and IPC will be ready to implement IPC's entry into the EIM on April 4, 2018.

4. I will ensure that IPC maintains resource commitments necessary to sustain readiness through April 4, 2018, and address any unexpected conditions that may arise before April 4, 2018, that could undermine grid operation or market operation within the existing EIM area. I will continue to monitor progress and resolve any unexpected conditions that may arise.

5. Actual implementation of IPC's entry on April 4, 2018, is conditioned upon the lack of any unexpected and unresolved issues that could undermine grid operation or market operation within the existing EIM area. I will update this certification in the event any unexpected issues are not resolved as of April 4, 2018.

I hereby declare under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, information, and belief.

Tessia Park

Tessia Park
Vice President of Power Supply
February 26, 2018

Attachment D – Parallel Operations Market Quality Report

EIM Readiness Certification for Idaho Power Company

California Independent System Operator Corporation

Market Validation of Parallel Operations

For IPCO EIM Entity

March 1, 2018

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Executive Summary

Parallel operations activities of the Energy Imbalance Market (EIM) started on February 1, 2018 for purposes of evaluating the readiness of Idaho Power Company (IPCO), the prospective EIM Entity. The readiness criteria requires the ISO to provide a market performance report for the period of parallel operations carried out for the integration of the IPCO balancing authority area (BAA) into the real-time energy imbalance market. This report fulfills that requirement and summarizes the main findings of market validation carried out by the ISO with an emphasis on the EIM results for the IPCO Balancing authority area (BAA). This report encompasses both the fifteen and five-minute real-time markets.

The ISO validated both prices and schedules based on input data that was fed through the market systems parallel operations from February 1 through February 15. This validation demonstrates that the market solution produced is as expected and consistent with the market rules as designed, recognizing that the input data may be influenced by limitations inherent in the parallel operating environment and these limitations may affect the quality of the solution. When factors affecting the input data are controlled for, the quality of the market solutions are as expected and indicate that the systems and processes of IPCO are capable of operating in production.

Background and Scope

The intent of parallel operations is to run the market to simulate as close as practically possible actual operating conditions of the system, and to provide IPCO with an opportunity to go over specific day-to-day processes and activities required for the operation of the EIM. This set-up provides IPCO and the ISO with an opportunity to test their systems and procedures in advance of financially binding market operations.

Although closely resembling actual operations, parallel operations has some limitations that need to be considered when evaluating market results, including the following:

i) The real time market requires a set of data inputs to run. In actual real-time market operations, many of these inputs are dynamic, dependent on the participants' resources actual performance, and following of instructions. For example, in an actual operating environment, telemetry received from resources gives the information to the ISO system of the operating status of the units, which are changing dynamically and interact with the market systems as the conditions change. During parallel operations these iterative and interactive data processes are limited because the resources of the prospective EIM entity are not yet required to follow their five-minute dispatch instruction. Similarly, if telemetry from actual production is used, there may be a potential for mismatches between what the actual system is running with versus what the market is projecting due to units potentially not following closely the market instructions. Therefore, the information regarding the resource's performance fed back to the market systems may or may not be related to the dispatch instruction issues through the parallel operations environment.

ii) In actual operations, intertie resources require a closed loop for the market system to fully reflect the system and market conditions and intertie schedules eventually need to be tagged in order to reflect the system data flows. For parallel operations, it is not possible to replicate fully the actual tagging process, which may pose an additional challenge based on the data that is fed into the market system.

iii) During parallel operations, the market participant is still defining its resources' data including characteristics and bids, which consist of three-part bids used for generation resources that require careful consideration of start-up, minimum load and energy bid costs. During this period, the participant is also learning the impacts of the resources constraints on the actual operations of the market.

iv) During the period of parallel operations, the prospective EIM entities bids and base schedules are merged with the bids and base schedules from the current production systems to simulate the actual production environment. The process of combining information from two systems needs some time to synchronize the data flow across various applications.

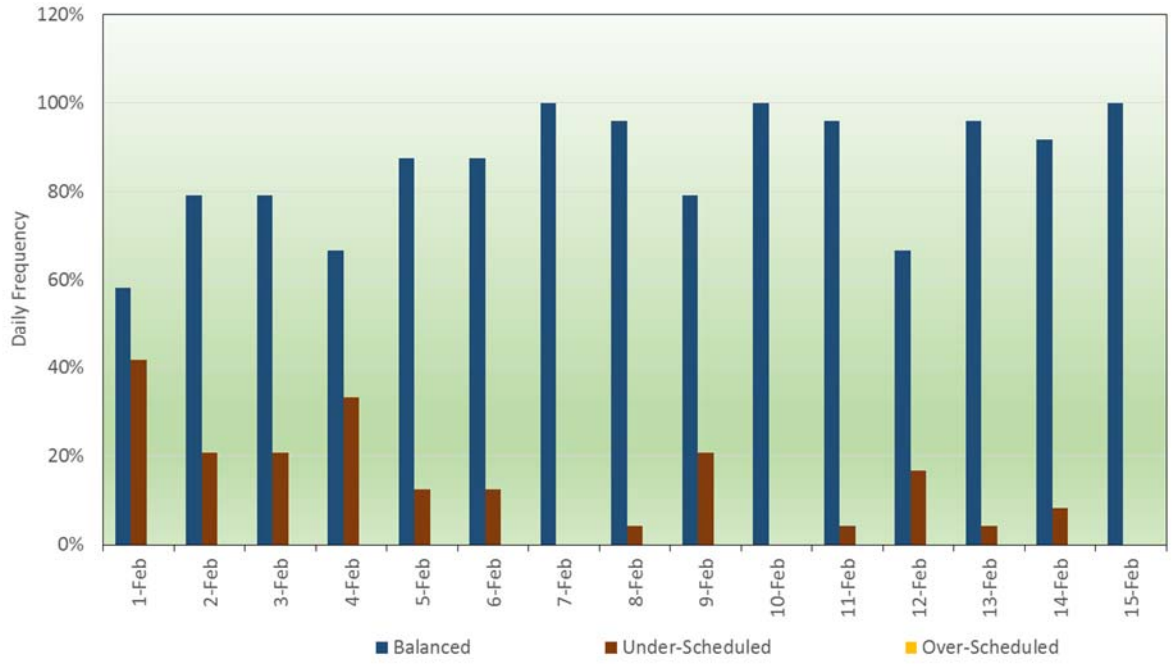
These factors, among others, have an effect on the market results and the quality of the solution. Therefore, conclusions on the quality of the market results must consider the input data and the

inherent set-up for parallel operations to avoid misleading conclusions about the actual functionality and robustness of the market.

Market Trends

Figure 1 shows the percentage of hours failing the balancing test as required under section 29.34(k) of the ISO tariff. Only under-supply test failures were observed. The ISO calculated the frequency for each day, by dividing by 24 hours the number of hours where the prospective EIM entity failed the balancing test. The figures below present the results for both under-schedule and over-schedule cases.

Figure 1: Daily frequency of power balancing test results

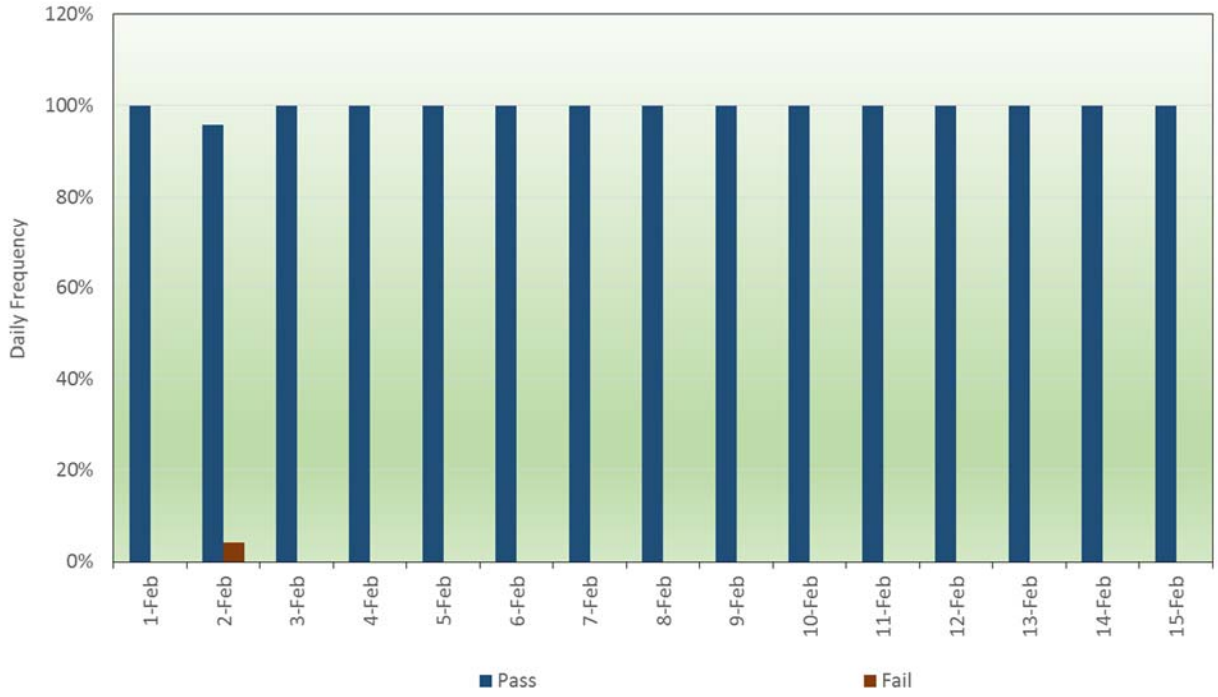


The balancing test provides a reference of how well balanced (energy supply and demand defined by the hourly base schedules and forecast respectively) the EIM entity BAA is going to come into the real-time energy imbalance market. Since IPCO used the ISO forecast therefore the balancing, as well as the capacity, test apply. Having a large percentage of positive imbalance means the real-time market will be the last resort to incrementally balance the area. The incremental balancing of supply will come from the bid-in capacity made available in the market in addition to the base schedule or EIM transfers between the participating EIM entities' BAAs. There were several parallel operation environment-specific and process set up and tuning issues that had to be resolved during the first few days and impacted parallel operations between February 1 through February 5 and the system stabilized starting on February 6. For the period of parallel operations from February 6, through February 15, the IPCO area passed the balancing test in 92.9 percent of the hours. IPCO BAA passed the balance test more than 95

percent of the hours on February 7, 8, 10, 11, 12, 13 and 15 exceeding the requirement for satisfying the corresponding readiness criteria 95 percent for 5 days.

A second test carried out prior to running the real-time market is the capacity test. As stated before, there were several parallel operation's environment-specific and process set up and tuning issues that impacted parallel operations between February 1 through February 5 and the systems stabilized starting on February 6. IPCO passed the capacity test in all hours (100 percent) between February 6 and February 15.

Figure 2: Daily frequency of capacity test results



A third test carried out prior to running the real-time market is the flexible ramp sufficiency test as required by section 27.34 (m) of the ISO tariff. The flexibility test evaluates whether the EIM entity has sufficient flexible capacity to meet its both upward and downward ramp requirements based on submitted energy at the time. Figure 3 shows the daily frequency of flex ramp up test failures observed in the first 15 days of parallel operation for the IPCO BAA, and Figure 4 shows the daily frequency of flex ramp down test failures observed in the first 15 days of parallel. For the period of February 6 through February 15, IPCO passed the flexible ramp up test in 97.5 percent of the hours and passed the flex ramp down test 98.33 percent of the hours. IPCO passed the flex ramp up test in more than 95 percent of the hours between February 6 through February 12 and again on February 14 and 15. IPCO passed the flex ramp down test in more than 95 percent of the hours between February 6 through February 10 and between February 12 and February 15.

Figure 3: Daily frequency of flexible ramp up test results

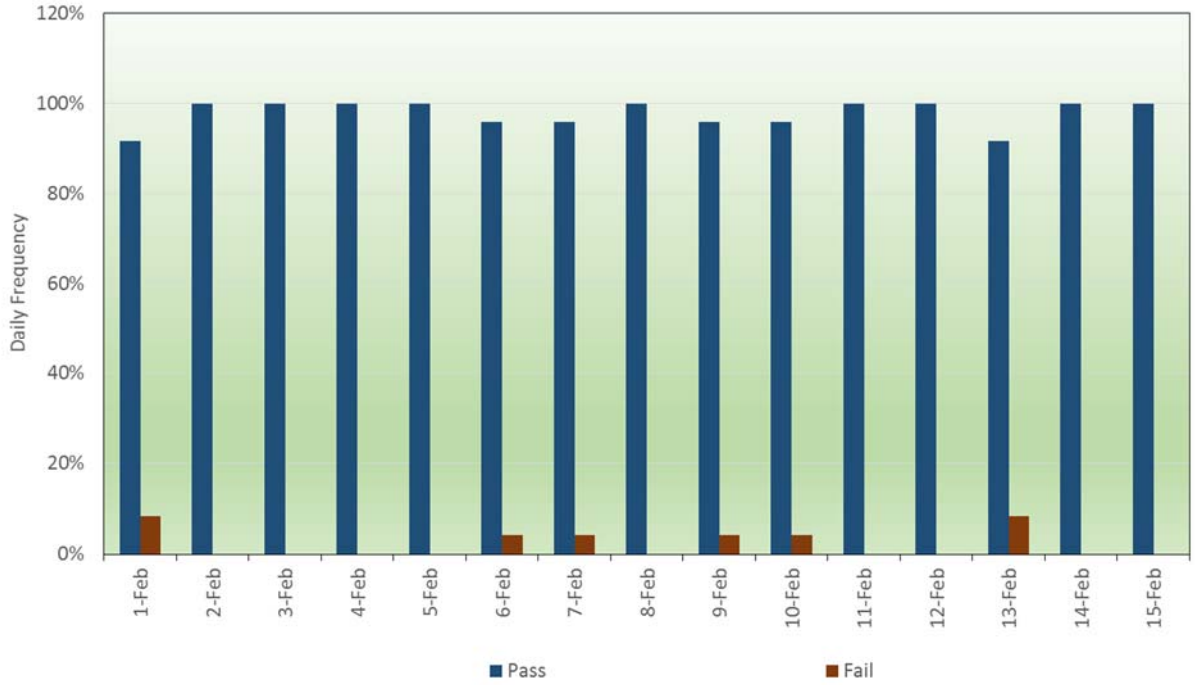


Figure 4: Daily frequency of flexible ramp down test results

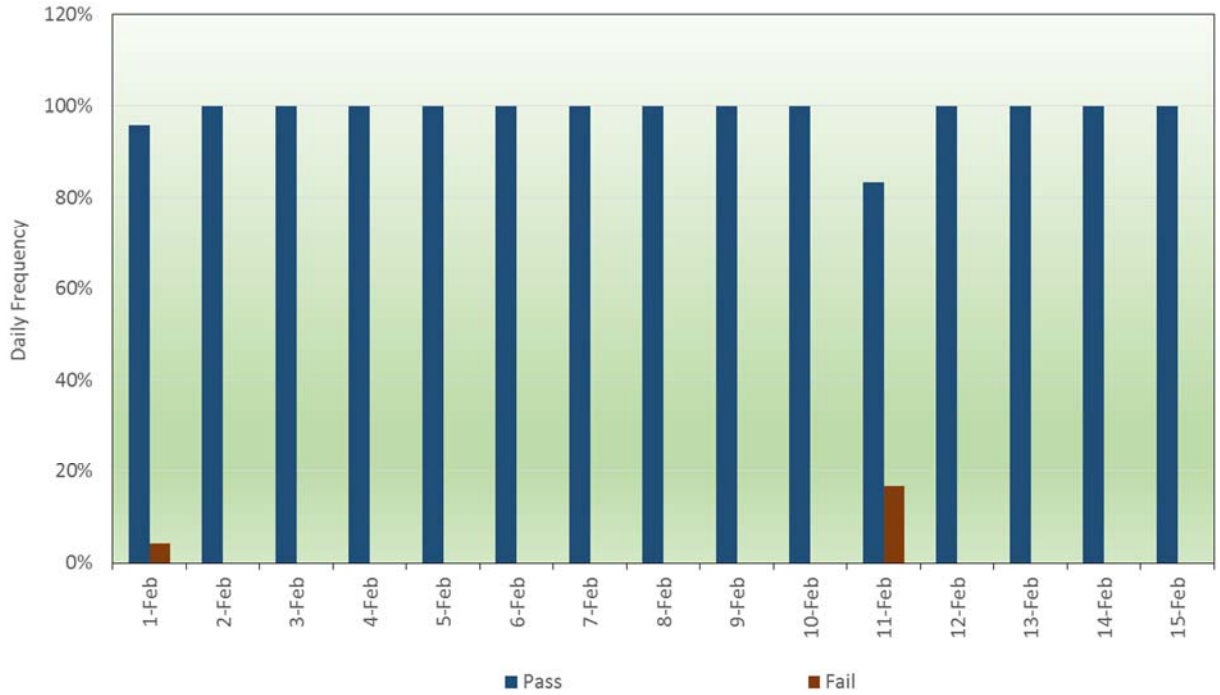
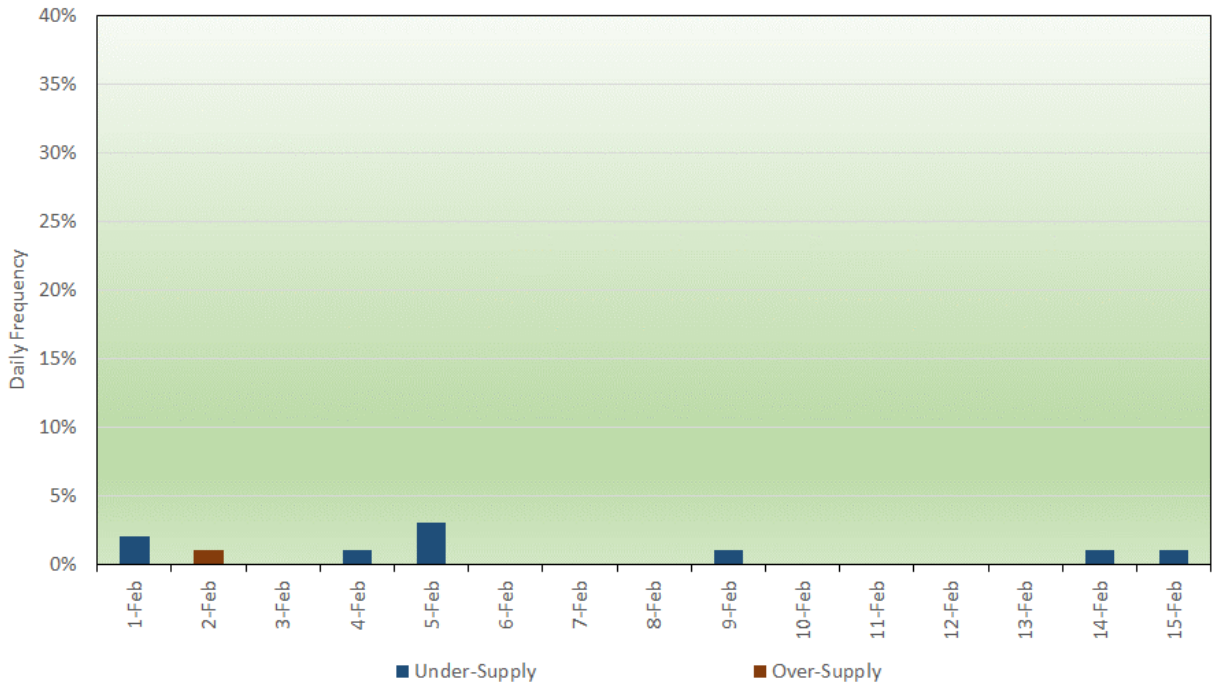


Figure 5 and 6 shows the frequency of power balance infeasibilities for both under-generation and over-generation conditions in both the FMM and RTD markets. The power balance constraint infeasibilities are pegged to the corresponding penalty prices, of $1000/MWh for under-supply infeasibilities, and about -$150/MWh for over-supply infeasibilities. However, during parallel operations, the EIM market for IPCO has been set-up to run under the conditions reflecting the price discovery mechanism that is in effect under the transitional measurement period (the first six months in actual production system); under this functionality, when a power balance constraint is infeasible, the market will reflect the last economical signal instead of the penalty prices. The first six months transitional period pricing is based on the FERC Order[1] which grants the prospective EIM entity the time to re-adjust and fine tune its systems, processes, and procedures to avoid conditions that trigger administrative penalty prices due to false under-supply or over-supply conditions. The transition period pricing also shields the prospective EIM entity from getting administrative penalty prices during the first six month while gaining production experience for the timely response to inform the market about operators' manual actions that are taken or decided outside the market to maintain the EIM entity BAA reliability or balancing needs such as deployment of operating reserve in response to forced outages.

Figure 5: Daily frequency of supply infeasibilities in the fifteen-minute market



During February 6 through February 15 when the parallel operations system were generally free from market setup issues, the majority of infeasibilities occurred for under-supply conditions. These infeasibilities were related to resources not following their DOTs, deviation of renewable resource, submission of inter-change transaction with missing ramping profiles and designation of unit connectivity

[1] *Calif. Ind. System Op.*, 153 FERC ¶ 61,104 (2015).

status for circuit breaker connecting generating units to the rest of the system. All these issues are explained in more detail in subsequent sections.

Figure 6: Daily frequency of supply infeasibilities in the five-minute market

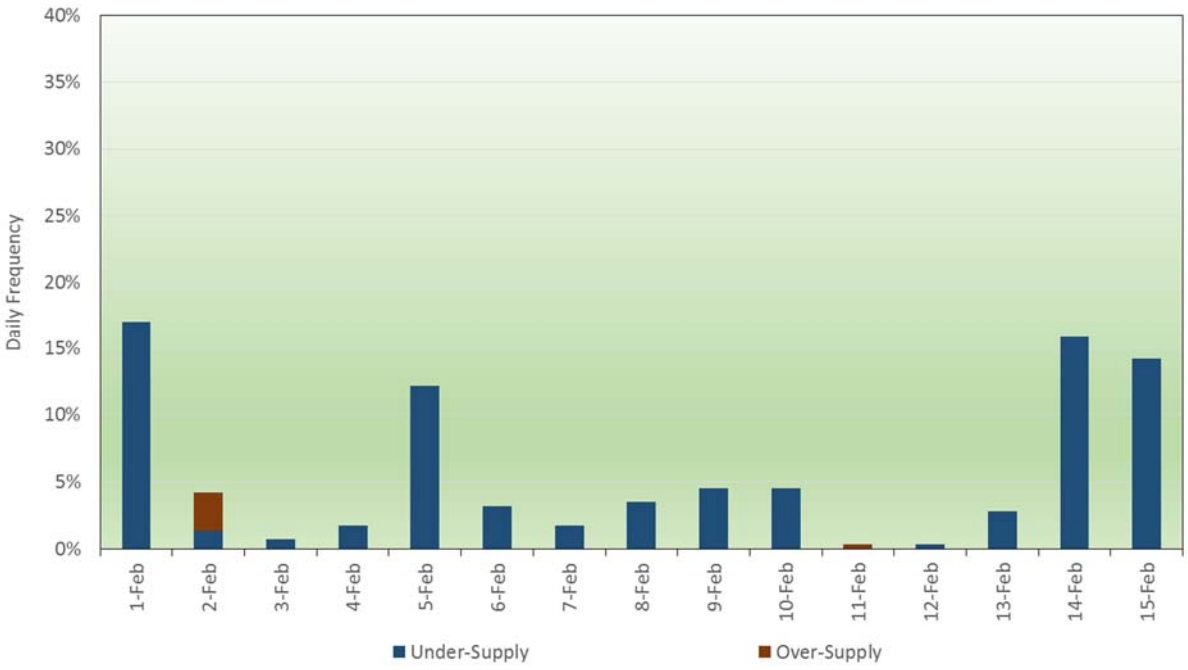


Figure 7 and 8 show the daily average ELAP LMPs for the fifteen-minute market and the five-minute markets. The average daily prices from February 1 through February 15 in the fifteen market were between -$1.52 and $77.52. The average five minute prices were between -$16 and $20.

Figure 7: Daily average of fifteen-minute prices

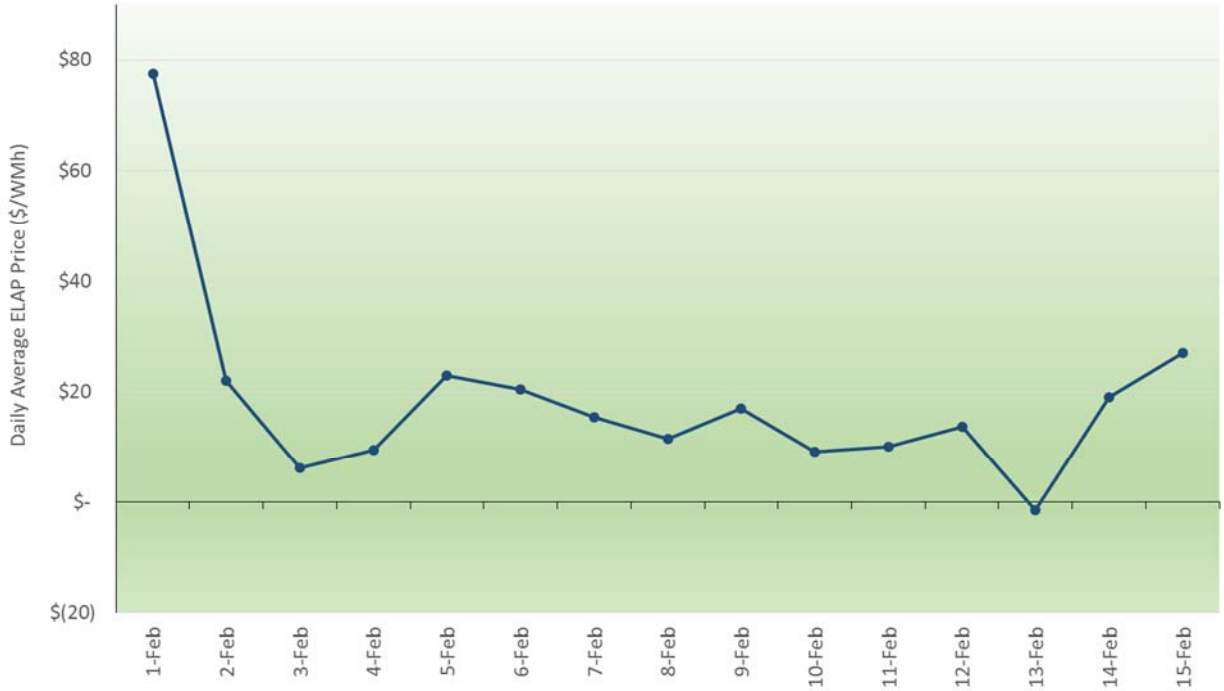


Figure 8: Daily average of five-minute prices

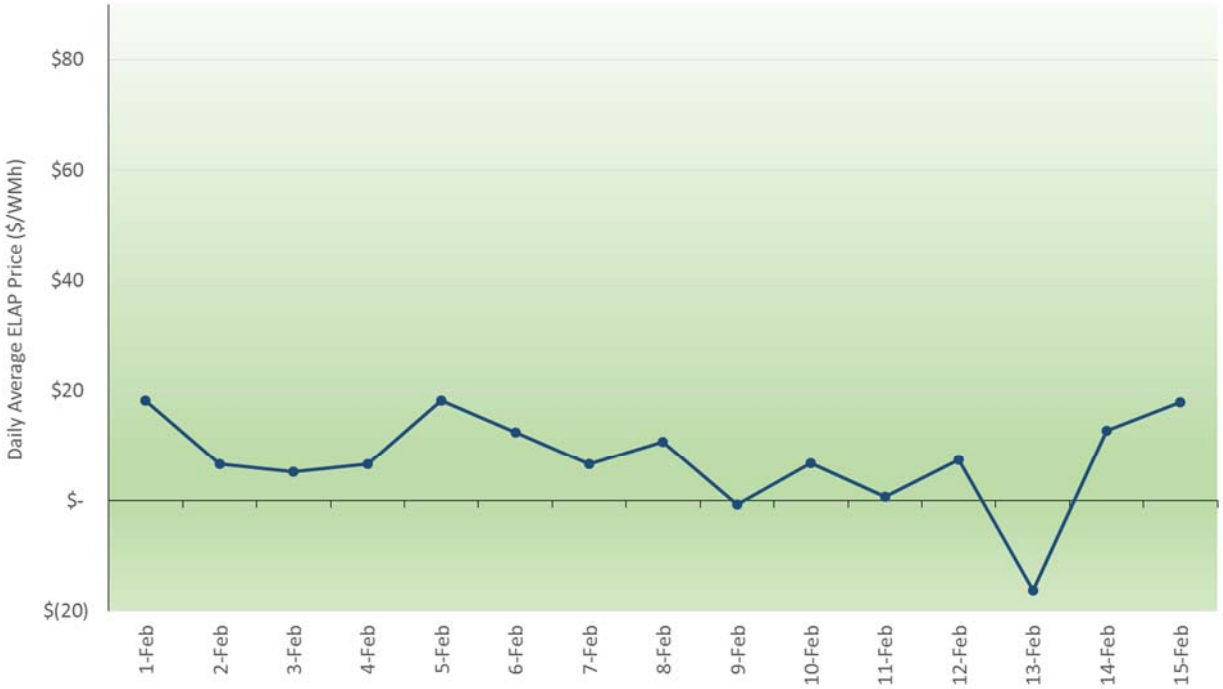
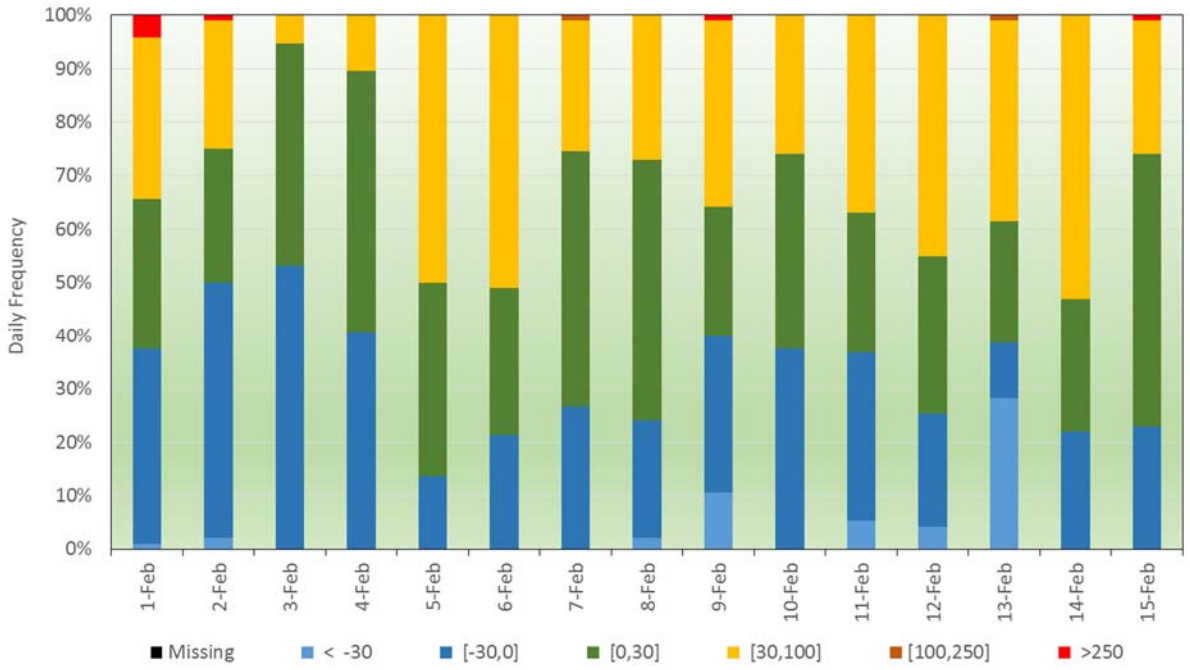


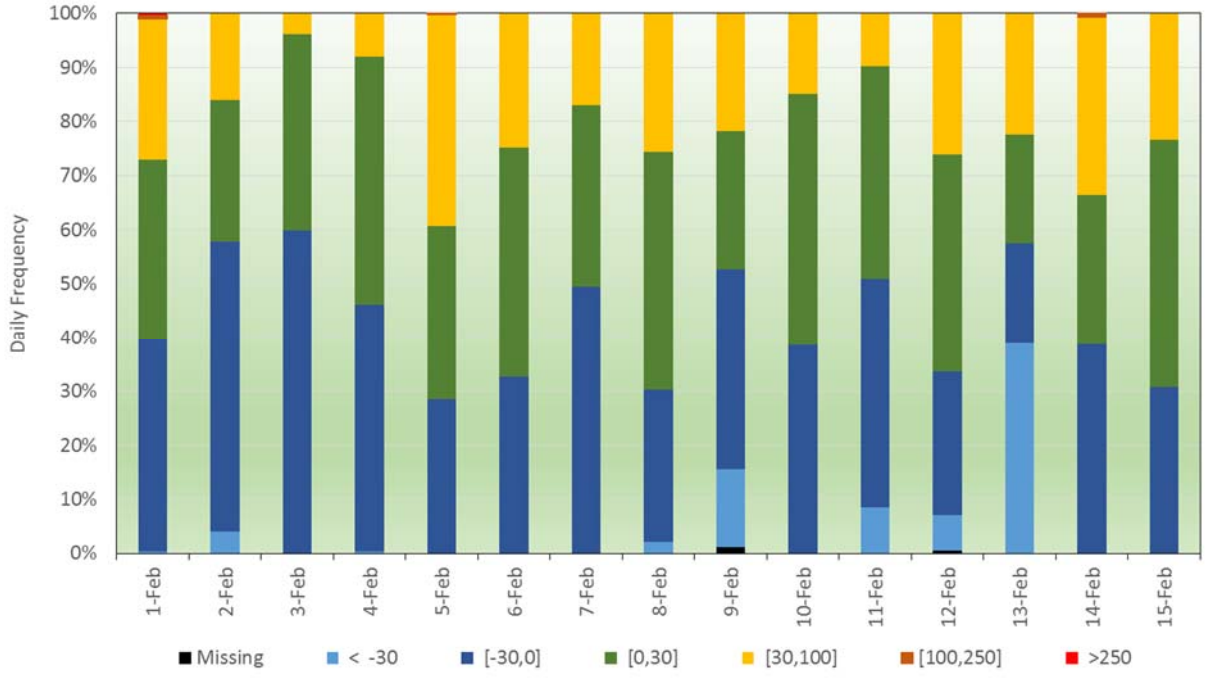
Figure 9 shows the fifteen minute ELAP prices classified by price bins and Figure 10 shows the five minute ELAP prices classified by the same price bins.

Figure 9: Daily frequency of fifteen-minute prices organized by price ranges



For all trade dates from February 6 through February 15, more than 91 percent of the FMM intervals observed prices were between -$30 and $100 and more than 89 percent of the RTD intervals observed prices were between -$30 and $100.

Figure 9: Daily frequency of five-minute prices organized by price ranges



Market Validation Items

1. Balancing failures due to set-up issue.

Type of issue: Hourly Inter-Tie Transaction

During the period of parallel operations, the prospective EIM entities bids and base schedules are merged with the bids and base schedules from the current production systems to simulate an actual production environment. The process of combining information from two systems encountered three sets of issues.

First, the ISO system uses an Energy Transfer System Resource (ETSR) to represent an hourly transaction on inter-ties between two EIM BAAs. In the current production system, any schedule on hourly ties with IPCO and a neighboring BAA are scheduled on an inter-tie system resource. Whereas, in parallel operations, these schedules should be captured on base ETSRs. When the input bids were combined with parallel operations and current productions the hourly transactions were captured on both base ETSRs and inter-tie system resources which resulted in double counting of these hourly schedules on the ties. This issue was resolved on February 1, 2018 by deleting all schedules on the hourly inter-tie system resources. Second, between February 1 and February 5, there were some duplicated inter-tie resource names on an inter-tie path in the market applications which were causing the market applications to drop these hourly transactions scheduled on that path. This resulted balancing failures for the BAA. Third, some balancing tests at T-40 on February 12 did not get the latest base schedule information due to a timing issue that caused the parallel operation merge process of most up to date base schedules submitted by IPCO on parallel operations system and rest of the existing EIMs on production system to come late and miss the T-40 test or not come at all for some hours. This was an ISO issue related to the parallel operation environment and was fixed on February 13.

2. Missing ramping profiles on inter-tie System Resources (SR)

Type of issue: Inter-tie transaction ramping profile.

All hourly transactions are required to ramp 20 minutes across the hour based on Western Electricity Coordinating Council (WECC) e-tagging guidelines. The ISO market applications are designed to consume hourly inter-tie transactions on system resources with ramping profile embedded in them for any change across the hour. Also, the ISO systems use different system resources for inter-tie transactions based on the timeframe a transaction is created; for instance, all hourly schedules created 40 minutes before a trading hour are scheduled on inter-tie system resources and all transactions generated after this time for the same trade hour are scheduled on a specifically designated type of System Resources. In some instances, IPCO had a schedule on these system resources for a specific hour which was connected to an inter-tie system resource in the subsequent hour. The market application was expecting that the system resources schedule would ramp off across the hour and the inter-tie schedule would ramp up across the hour to form one

smooth schedule across the hour. However, IPCO systems were not sending ramping profiles across the hour for both the system resources and the corresponding linked system resources. The ISO has provided details on expected ramping profiles across the hour for such a scenario to IPCO and its software vendor. IPCO has already received the required software change and both ISO and IPCO are in process of testing the change and have it ready prior to go live.

3. Generating Resource unit connectivity status in Full Network Model.

Type of issue: Unit connectivity (UCON) status for circuit breakers.

The physical generating system is modeled as a combination of substations (also known as bus) and transmission lines in the ISO's Network Application (NA). At each substation, circuit breakers (or switches) are used to define a connection or set of connections between a generator and the transmission lines which connect all the units to the rest of the system. These switches must be designated as unit connectivity (UCON) switches. A generator in the ISO's Network Application (NA) is assumed to be offline, and the UCON switches are considered to be in open state unless the fifteen-minute market determines the unit is required to be online based on economics. Once the fifteen-minute market issues a start-up for the resource, the NA will close only the UCON switches to connect the unit to the rest of the system. For IPCO, some of the switches connecting the generating units to the rest of the systems were not designated as UCON, so NA could not connect the unit to the system when it received a start-up instruction. This issue was identified for several units and the UCON status and mapping was modified in the network application. The same fix was also deployed and verified in the production NA on February 22, 2018 as part of the cut-over network model for IPCO.

4. VER resource Forecast

Type of issue: VER forecast accuracy.

IPCO has observed several intervals with power balance infeasibilities in the five-minute market due to change in VER forecast between base schedule submission and five minute market. One issue was that the telemetry being used in parallel operations was not reflecting the actual values; this gap was mitigated with the most recent network model update on February 22, 2018. Also, IPCO VER forecast is being provided by IPCO; the VER forecast used in parallel operations has been a simulated forecast and the ISO may have limited visibility to assess accuracy; the actual VER forecast will be streaming once the parallel operations is cut over.

5. Software Defect

All hourly transaction between two EIM BAA on inter-tie paths which are used to schedule EIM Transfers are modeled as base EIM Transfers. The base ETSR schedules can change across the hour and hence would contribute towards system ramping. The application was not considering the ramping capability of the schedules on base ETSRs for the flex ramp sufficiency test. So, an enhancement was implemented to capture this ramping capability on February 8, 2018.

Conclusion

The ISO validated both prices and schedules based on input data that was fed through the market systems parallel operations from February 1 through February 15. This validation demonstrates that the market solution produced is as expected and consistent with the market rules as designed, recognizing that the input data may be influenced by limitations inherent in the parallel operating environment and these limitations may affect the quality of the solution. When factors affecting the input data are fixed or controlled for, the quality of the market solutions are as expected and indicate that the systems and processes of IPCO are capable of operating in production.

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California, this 2nd day of March, 2018.

/s/ Grace Clark
Grace Clark