



**Reliability Coordinator
Rate Design, Terms, and Conditions
Straw Proposal**

**Stakeholder Comments
and CAISO Responses**

May 31, 2018

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1. Scope of Service

1.1 RC Services Description

Overview

The RC is the entity that constitutes the highest level of authority responsible for the reliable operation of the bulk electric system (BES), has the wide area view of the BES, and has the operating tools, processes and procedures necessary to do so. The RC is vested with the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations through instructions issued to participating BAs and TOPs. The CAISO will provide RC services to all entities and TOPs within its current BA area, BAs outside of its BA area that decide to take services from the CAISO and, through those BAs, the TOPs within those BA areas. These entities are collectively referred to as RC Customers. The CAISO will also separately offer services such as hosted advanced applications and other reliability services to interested RC Customers.

Stakeholder Input

PacifiCorp, PG&E supports the ISO's proposal on the scope of core and supplemental RC services.

BPA recommends that the CAISO more fully develop and describe its reliability coordinator services, including supplemental services. A higher degree of clarity is needed to ensure that each participant knows what services the CAISO will and will not provide prior to making a decision on the reliability coordinator. In addition, more detail regarding the scope of services is needed to ensure that the cost estimates and rate design proposed by the CAISO are reasonable and stable.

BPA commented that to the greatest extent possible, the CAISO should consider having designated reliability coordinator operators that are separate and apart from the CAISO's functions as a balancing authority, transmission operator, and market operator. This separation of functions would ensure that the CAISO is not providing preferential treatment to itself, and demonstrates that the CAISO's reliability coordinator function will resolve issues among balancing authorities fairly and reliably. The CAISO, in conjunction with the participants in this process, should also establish an independent body that resolves issues regarding how the CAISO provides reliability coordinator services. This independent body should have the ability to modify how the CAISO performs its reliability coordinator function.

PG&E, SCE would like to request CAISO provide additional detail with regard to the service levels under each of the services, as compared to current Peak RC service.

Tacoma Power looks to the RC to ensure the operating tools, processes and procedures necessary to have the wide area view of the bulk electric system (BES), and the knowledge to prevent or mitigate emergency operating situations. In addition, Tacoma Power would like this performed in a fair and equitable manner. Tacoma Power has reviewed and concurs with the comments provided by Salt River Project (SRP) which was supplied to us.

Public Service Company of New Mexico (PNM) commented that the list of core RC services indicates a number of data exchange sites and capabilities. CAISO should establish a common data exchange

platform that has multiple web rooms or pages dedicated to the different data exchange activities to reduce overall administration and reduce administrative burden for CAISO and RC Customers.

The Six Cities¹ have a general comment with respect to the CAISO's proposal to provide Reliability Coordinator ("RC") services within the CAISO Balancing Authority Area, as well as external to the CAISO. Based on information provided during the regional information sessions held earlier this year as well as in the Straw Proposal and the associated stakeholder meeting, the Six Cities observe that much of the focus on initial implementation of the CAISO's RC services is understandably on coordination as between the RC and Balancing Authorities and Transmission Operators located within the future RC footprint. The Six Cities urge the CAISO, as it moves forward, to ensure that registered entities in other functional categories, such as Distribution Providers, Transmission Owners, Generator Owner/Operators, and Resource Planners, are kept apprised of any developments that may impact their compliance with and documentation for applicable Reliability Standards. For example, if there are relevant changes to the CAISO's procedures for issuance of Operating Instructions to Generator Operators or Distribution Providers (as contemplated under Reliability Standard IRO-001-4) as a result of the CAISO assuming the role of the RC, those changes should be clearly communicated to relevant entities so that their procedures can be revised if necessary. Similarly, if the CAISO, in its capacity as the Reliability Coordinator, will require registered entities to provide additional or new information in the data specification developed under Reliability Standard IRO-010 that should likewise be clearly communicated to the relevant registered entities. These Reliability Standards are examples of where the Reliability Coordinator may interface, either directly or indirectly, with registered entities other than Balancing Authorities and Transmission Operators. The CAISO should consider these and any other Reliability Standards where potential changes in compliance procedures, documentation, or other information may be appropriate and ensure that registered entities.

CAISO Response

The CAISO proposes to offer a full scope of reliability services. The core RC services are those required by the standards as explained in the proposal. These services will be offered at the RC services rate also explained in the proposal. The CAISO does not propose to explain these services beyond what has been outlined in the straw proposal. In fact, the CAISO anticipates that the core RC services will be defined primarily by reference to the reliability standards. The functional responsibilities of a reliability coordinator are defined by the applicable reliability standards, which are subject to enforcement under those rules and are likely to change over time. Repeating anything already addressed by the reliability standards in a tariff or agreement would create an unacceptable risk of a potential for inconsistency between a reliability standard requirement and a tariff/contractual requirement. Accordingly, the CAISO anticipates that its tariff and services agreement will largely defer to the reliability standards in terms of the scope of core RC services to be provided, focusing instead on the rates, terms and conditions of those services.

The straw proposal also includes several items as core RC services which are not expressly defined by the reliability standards, but that CAISO considers to be best business practices that should be

¹ Six Cities are the California Cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside.

incorporated in the core reliability coordinator service offering. These include, but are not limited to, access to real time situational awareness tools and displays, providing centralized messaging for the CAISO RC area, facilitating stakeholder and working group processes, providing a secure website for posting and exchanging documents, reports and data files and providing a platform for data exchange services. The CAISO will work through design and implementation details with the RC Customers with respect to these additional services that are essential to delivering the core RC services.

Other reliability services not required of an RC by the standards will be offered by the CAISO separately for a separate charge. These services will be optional and will include hosted advanced applications, operational reviews for CIP standards and shared tools. The CAISO has committed to offer these services for the same cost or less than the cost the currently reliability coordinator provides them. Since the straw proposal the CAISO has been working with vendors and other entities that administer and access these services to develop a clear understanding of which entities are interested in such services and what vendor costs may be incurred to support them. More detail concerning the scope of these additional reliability services and the pricing of such services will be provided in the draft final proposal. Additional information regarding the WIT, ECC, and hosted advanced applications can be found in succeeding sections.

The CAISO appreciates and welcomes the additional input from the Distribution Providers, Transmission Owners, Generator Owner/Operators, and Resource Planners. The CAISO recognizes that there is an opportunity for the Reliability Coordinator to engage with these entities to ensure that they are also prepared for upcoming changes to processes, procedures and reliability standards. The IRO-010 Data Request and Specification, planning for Generator Operator involvement in Reliability Coordinator Restoration Drills and issuance of Operating Instructions to the Distribution Providers and Generator Operators are just a few of the areas being discussed. Where appropriate, the CAISO will either work directly with these entities, or indirectly through their Balancing Authorities and Transmission Operators, in order to ensure that these additional affected entities are kept apprised of developments which may impact their processes and procedures and compliance with applicable reliability standards.

1.2 Western Interchange Tool (WIT) and Enhanced Curtailment Calculator (ECC)

Overview

Currently PEAK hosts the Western Interchange Tool (WIT) through an agreement with OATi and supports the Enhanced Curtailment Calculator (ECC). Both of these tools are needed by all of the entities in the Western Interconnection and an agreement among the reliability coordinators must be worked out.

Stakeholder Input

PacifiCorp recommends that the ISO seek a shared management agreement with other RCs in the Western Interconnection for critical joint use tools such as the Western Interchange Tool (WIT) and Enhanced Curtailment Calculator (ECC).

SDG&E commented that CAISO RC should explore ways to support the joint-use tools such as Western Interchange Tool (WIT) and Enhanced Curtailment Calculator (ECC). SDG&E also sees the need to establish a common data exchange platform that has multiple web rooms or pages dedicated to the

different data exchange activities. Such a configuration would reduce overall administration and reduce administrative burden for CAISO and RC Customers.

PGE strongly supports the CAISO's efforts to facilitate the continuation of the Western Interconnection tools. PGE believes that these tools fundamentally enhance the reliability of the Western Interconnection. CAISO's work with the other RCs to ensure that these tools continue to provide west-wide visibility and equitable sharing of costs should remain a priority.

PNM questioned whether the WIT and ECC will be included as Core RC Services and questions whether there are plans in place if a Joint Services agreement on items such as WIT and ECC are not available for an extended period of time after the Go Live date.

CAISO Response

As a Balancing Authority, the CAISO understands the importance of the Western Interchange Tool (WIT) and Enhanced Curtailment Calculator (ECC) in the Western Interconnection daily operations. The CAISO also understands that historically these types of tools have been centrally managed by either WECC or the Reliability Coordinator. Although the Interchange Authority function has been removed from the NERC Functional Model, the CAISO agrees that these tools need to continue to be used in the Western Interconnection, without any disruption to service. The CAISO is actively working with Peak, AESO, SPP, WECC and NERC to develop a transition plan to ensure that these tools continue to be centrally managed and available. Several options are being considered for the initial transition and the long term. The current and future management and development of the tools as well as the allocation of the associated costs will be documented in agreements with the other Reliability Coordinators. More information will be shared as it becomes available at future WECC meetings and in the CAISO RC project steering committee and working group meetings that are ongoing with interested balancing authorities and transmission operators that have signed a non-disclosure agreement with the CAISO.

1.3 Intellectual Property

Overview

Stakeholders commented that they paid for the development of the Joint Use Tools as a party to the Peak Funding Agreement and as such should still have access and use of the tools regardless of the reliability coordinators. The CAISO RC needs to investigate this issue and determine the durability of the intellectual property that was created.

Stakeholder Input

PG&E, SCE commented that with regard to the Joint Use Tools, which are owned by Peak (which is in turn owned by the Peak Funding Parties), PG&E requests that CAISO engage with Peak as to how the Intellectual Property (IP) for these tools might be placed on a durable footing, such that both CAISO RC and those Peak Funding Parties who join CAISO RC will continue to have full access and use of the tools, as well as the ability to fund future upgrades and receive support. This could, for example, take the form of an agreement with a third party software vendor, to whom Peak would assign rights to modify and maintain official versions of the tools, while assigning undiluted shares in the IP to each of the Peak

Funding Parties, such that those who choose to do so may modify source code and maintain their own in-house versions.

CAISO Response

The CAISO agrees that coordinating with Peak in regards to the intellectual property issues surrounding the Joint Use Tools is a vital component of implementing the RC Services. The CAISO is currently reviewing the Peak Funding Agreement and intends to engage in discussions with Peak in the near future to establish the framework and timeline for an agreement that will allow the Peak Funding Parties to continue to have access and use of the tools while taking services from the CAISO RC.

2. Supplemental Services

2.1 General Comments

Overview

In the draft proposal the CAISO RC identified two supplementation services – hosted advanced applications (HAA) and third-party review of CIP-014 risk assessments. Stakeholders commented on the cost allocation and the hosted advanced applications.

Stakeholder Input

NaturEner commented that payments the CAISO receives from RC service members utilizing Hosted Advanced Applications should be credited to RC services-related ABC process and task codes to properly offset the fees the CAISO charges to its RC customers.

SCE commented that HAA tools should be offered at a reduced cost as compared to those offered by Peak RC. Avangrid supports the proposal to charge separately for hosted advance applications.

WAPA expects that CAISO will provide and maintain platforms and tools similar to the existing Peak Reliability Hosted Advanced Applications (HAA). This includes but is not limited to the Areva (was Alstom, now GE) wide area Supervisory Control and Data Acquisition (SCADA) data and visualization tools; state estimator functionality; power flow and contingency analysis; displays; model build; and enhancements. The technology platform provided by HAA plays an important role in assisting BAs and TOPs to maintain situational awareness and to perform operational planning and real time assessments. Furthermore, CAISO should host user groups similar to the current HAA forum of users to discuss best practices, bug fixes and requested tool updates/modifications.

CAISO Response

The CAISO understands the importance of the HAA as a tool for RC Customers. The CAISO has committed to offer these services for the same cost or less than the cost the currently reliability coordinator provides them. Since the straw proposal the CAISO has been working with vendors and other entities that administer and access these services to develop a clear understanding of which entities are interested in such services and what vendor costs may be incurred to support them. More

detail concerning the scope of these additional reliability services and the pricing of such services will be provided in the draft final proposal.

The CAISO would also like to point out that any time or expense it incurs to offer and manage the HAA tools, as well as the revenue it receives to offset costs associated with these tools, will be properly categorized as transactions that benefit the RC Customers utilizing the HAA tools.

3. Funding Requirement

3.1 RC Operations Budget

Overview

The CAISO proposes to develop an RC Funding Requirement which is the sum of the annual RC Operating Budget, RC Operating Budget Reserve, and the RC Revenue Adjustment. The CAISO proposes to treat the RC Funding Requirement as a revenue item in the CAISO Revenue Requirement's "Other Cost and Revenue" category. The RC Funding Requirement will be used as the numerator in order to calculate the RC Rate per MWh for BAs and TOPs. The CAISO proposes to develop an RC percentage to apply against its corporate Revenue Requirement in order to determine the RC Operating Budget. The RC percentage will represent the direct and indirect time and expense necessary for the CAISO to perform its RC services. The percentage will be updated as part of the triennial cost of service study the CAISO completes as part of its tariff requirements.

Stakeholder Input

NaturEner is concerned that it is premature in the process for the CAISO to define rate design related to RC services, given that many technical issues remain to be defined or vetted. In addition, they would like the CAISO to validate that its plan for staffing the RC is sufficiently robust for a sustainable operation. Clearly, cost savings is a key benefit that the CAISO is pointing to in its provision of RC services compared to other alternatives. NaturEner would like to have greater confidence that the CAISO has adequately designed its shifts and staffing to manage services without having to increase staffing levels later to manage issues that should have been identified today (Staffing Issues) including whether the CAISO has factored into its current cost projections, including Staffing Issues, the time and resources that will be needed to adequately address the seams issues that will arise with the presence of multiple RCs (Seams Issues). To this end, they believe that the CAISO should engage an independent expert immediately as part of the RFP process mentioned below to offer guidance and advice on whether the staffing plan and its RC functions' cost projections are adequately sized for long-term sustainable operations.

PG&E is generally comfortable with the proposed cost allocation mechanism to determine appropriate rate design for the RC function. However, PG&E is concerned that any underestimation or under-representation of the RC costs will likely lead to cross-subsidization by BAA customers (and ultimately by California load) of RC services. For example, during the stakeholder meeting, CAISO staff stated that, in addition to the 28 estimated full time equivalent (FTE) staff working to provide RC services, an additional 7 CAISO FTE would support RC services on a part-time basis. This would presumably include, among

other things, CAISO IT staff supporting RC applications, CAISO stakeholder representatives supporting RC customers, CAISO HR recruiting personnel for RC roles, CAISO Legal staff working on RC agreements, and CAISO senior management supervising the RC function, along with their other duties. PG&E would like to request additional detail on the basis for the 7 FTE support resource estimate. In particular, with regard to the support functions, PG&E wishes to know, whether CAISO has made any estimate of the time and travel budget for CAISO staff to prepare and attend the many working group, steering committee and oversight committee meetings, including external outreach with stakeholders outside of California. In the EIM context, PG&E notes that CAISO routinely supports out-of-state meetings with 6-10 CAISO staff (including A/V support, stakeholder relations, subject matter experts, and officers). SDG&E and SCE had similar concerns and requested that CAISO provide additional detail to illustrate how it arrived at an expected staffing level of 28 FTE for CAISO RC functions, what level of effort, process throughput, and assumptions were made to arrive at 28 FTE.

APS, NaturEner, BANC-SMUD, SCL, SRP, Tacoma and TEP requests transparency in the benchmarking efforts used to determine the proposed CAISO RC staffing levels. In addition, they request a review of the September 8, 2011 event findings for Peak. Both APS, NaturEner and PNM commented that the proposed 10% cumulative cap of the current RC Operating Budget is determined to be too high. The regulatory lag is currently greater than eighteen months; therefore an acceptable cap should be 3-5% unless approved by RC Customers for special assessment.

PacifiCorp, proposes an annual cap (somewhere between 0% to 5%) on year-over-year increases unless approved by the funding parties for special assessment. PGE, BPA, BANC-SMUD, APS, SCL, SRP, Tacoma and TEP recommends that the CAISO adopt an annual cap of about 3% year-over-year increases unless approved by RC Funding Parties for special assessment in order to provide assurance of cost increase stability.

NaturEner, BANC-SMUD, SCL, SRP, Tacoma and TEP commented further that CAISO should provide transparency into the analysis that was undertaken on the geographic diversity of its current control centers. The last thing anyone should want is for decisions to be made on financial information that turns out to be faulty or incomplete, and then risk the CAISO seeking to materially increase the charges to RC customers to support the costs necessary to provide the RC services. BANC-SMUD, SCL SRP and Tacoma commented further that they would like to understand why the CAISO is confident that the locations provide sufficient insulation from common large-scale events such as wildfires, earthquakes or severe storms that may affect control center staff (including how they plan to staff both control centers simultaneously) or affect the operation of the two centers themselves.

CAISO Response

The CAISO provides the following responses by grouping them into two sections; financial and staffing.

CAISO disagrees with the concept of an annual cap on year over year increases as ultimately, CAISO is a non-profit that must recover its costs. The FERC approved Revenue Requirement Cap that CAISO has in place was originally designed to comfort stakeholders concerned about future rising costs. The existing cap would only allow for a maximum Revenue Requirement of \$202 million, an increase of less than

2.5% from the 2018 Revenue Requirement. A proposal to increase the cap would require a full stakeholder process, cost of service study, and Board and FERC approval, giving RC Customers multiple opportunities to question and understand the need for the increase. Finally a cap on year over year increases would not work if there was a large default or a large entity were to exit.

In 2014/2015, CAISO performed a detailed analysis of potential sites for its replacement backup center. Security, geographic diversity & natural disasters, business continuity, and technology requirements were some of the many factors CAISO studied. The Board of Governors and ISO Management were engaged in these discussions and supported the results from an independent consultant who specializes in business continuity matters regarding backup facilities. A high-level summary of CAISO's recommendation to build the backup center in Lincoln, CA is contained in the Board of Governors General Session [memo](#) dated June 30, 2015.

Staffing discussion

CAISO appreciates the comments and has reviewed the Pacific Southwest event report, specifically finding 14 and recommendation 14 of the report discuss the need to evaluate the effectiveness of RC staffing level, training, and tools both for normal operations as well as emergency conditions.

In development of its Reliability Coordinator Operator staffing plan, CAISO reviewed the staffing at MISO, PJM and Peak. Given the CAISO design principle to keep RC and BA/TOP activities separate, we found the MISO and PJM staffing structure is not directly comparable because they allow for shared functions and/or staff moving between RC and BA assigned duties. Similarly, the CAISO has found that a direct comparison between PEAK and CAISO is not straight forward. The CAISO already has a robust operating infrastructure and enhanced tools that it has developed to support its ongoing operational responsibilities as a BA and TOP.

In preparation for providing RC services, the CAISO developed a scalable staffing plan. For RC footprint that only entails the CAISO BA, CAISO will have two dedicated RC Operators on shift 24x7x365. One RC in each CAISO control center (Folsom and Lincoln) providing full coverage during meal breaks, as well as providing continuous coverage if one control center is evacuated or becomes untenable. CAISO will also add a 12x 7 x 365 operations engineer.

CAISO's operators are on a 6-week rotation, which allows for relief and training time. Similar to the current CAISO BA and TOP operations, as part of the normal emergency preparation program, CAISO operations plan considers forecasted conditions in order to determine if additional staffing may be needed, and can draw from RC operators and engineers on relief and in training.

For an expanded CAISO RC Footprint, the RC staffing plan will scale up. Considering a scenario with the largest possible RC area, CAISO will have staffing comparable to Peak, which is in addition and separate from the CAISO BA and TOP staffing. CAISO RC will have three RC Operators on shift during the day, each with a section of the foot print under their jurisdiction. For example, one RC each for the Northwest, California and Southwest/Rocky Mountain areas. During night shifts, the three areas will be arranged into two, with one RC for each area. In short, during the day three RC Operators on duty, and

two RC Operators on duty at night. Similar expansion of six Operations Engineering staff are planned to support the RC function providing Outage Coordination analysis, Day Ahead Operations Planning analysis, as well as real time operations for the expanded RC footprint.

As described above, the RC can benefit from the CAISO BA Operations Planning staff that includes 21 operations engineers who coordinate and analyze outages as well as support advanced network applications such as Real Time Contingency Analysis (RTCA), Real Time Voltage Stability Analysis (RT-VSA), Real Time Dynamic Stability Analysis (RT-DSA), and the look ahead applications that predict system condition up to 2-3 days into the future. Additionally, the CAISO RC will be incorporated into the emergency preparation program where CAISO considers forecasted conditions in order to determine if additional staffing may be needed, and can draw from off shift Reliability Coordinators, and engineers.

For emergency conditions, CAISO has an Emergency Response Coordination (ERC) program, which handles communication with CAISO staff and executives and outside parties, allowing system operations staff to concentrate on reliable BES operations and emergency response. This ERC program has been successfully implemented and was in fact utilized during the September 8, 2011 event.

In addition, the CAISO currently has a 24x7x365 service desk and processes that automatically page on-call system Subject Matter Experts in the event of data and tool anomalies or failures. This removes burden from the Operations staff and directs customer issues to the service desk staff, as well as provide fast response to technology issues, allowing the RC Operators to concentrate on BES reliability.

Further, CAISO support staff includes an Operational Readiness training and management group. This Director led group supports: tool development, testing and implementation, procedure writing and administration, a training group and simulation group with dedicated training staff. The RC Staff will have 40 hours dedicated to training in every shift rotation, to ensure RC staff has the opportunity to accumulate CEH hours to contribute to their RC certification and train on CAISO tools, and system operating procedures and guides.

Situational Awareness Tools

The CAISO BA operations developed a suite of automated tools to provide situational awareness for reliable operation of the BA. The SPS/RAS are used extensively by the California BA and TOP, as result SPS/RAS modeling is incorporated into tools such as RTCA, RT-VSA and RT-DSA. CAISO RC Services will leverage this robust set of tools, and add SPS/RAS modeling external to California to provide an accurate representation of post-contingent BES conditions, this will provide accurate situational awareness and during normal and emergency operations, ensuring reliable operation of the BES. Examples of additional tools used by RC include: State Estimation, on-line study power-flow, off-line power-flow study, forecast tools, day ahead analysis, weather, fire and mapping overlays, Outage Management System, ECC and WIT, Plant Information (PI), Electronic Messaging system, RCIS, electronic logging system. The CAISO Help Desk provides 24x7x365 health monitoring of many of these tools, as noted earlier. CAISO is testing a new EMS with advanced features including system overlays showing the BES, weather data, dynamic overlays, advanced alarming, as well as look ahead power-flow and expanded contingency analysis. All these tools will be made available for RC system operators to provide not only situational awareness for

current condition, but also look-ahead of potential prediction of system condition from the next 30 minute up to the next 2-3 days into the future. The look-ahead ability has been proven to allow system operators to be ready for potential issues that may arise in the operating day.

3.2 RC Reserve Account

Overview

The CAISO proposes to include an RC Operating Budget Reserve component in its annual RC Funding Requirement. The reserve will be used to pay for regulatory and other fines or penalties assessed on the CAISO RC if the CAISO RC cannot determine the specific entity that incurred the penalty. A modest reserve will provide a buffer against significant cost adjustments should a fine or penalty be assessed. The RC Operating Budget Reserve will be 2% of the annual RC operating budget with a cumulative cap of no more than 10% of the current RC Operating Budget.

Stakeholder Input

PacifiCorp proposes for the RC operating budget reserve a range between 3% to 4% with a cumulative cap of 5%.

Avangrid, BPA supports the CAISO proposal to collect a separate RC Operating Budget Reserve to pay for any fines that may be assessed to the RC function that cannot be attributed to a specific entity.

BPA believes that CAISO executive team should be held accountable for any penalties that the CAISO's reliability coordinator function incurs and such penalties should impact executive compensation.

BPA does not support CAISO's proposal that would allow it to directly allocate financial penalties to federal agencies. Federal agencies, like BPA, are not subject to financial penalties under section 215 of the Federal Power Act. *Southwestern Power Admin. v. Fed. Reg. Common*, 763 F.3d 2, (D.C. Cir. 2014). Under the CAISO's proposal, however, WECC or NERC could find that BPA's actions caused the CAISO to violate a NERC reliability standard and the CAISO could ask FERC to allocate that penalty to BPA. If that were to occur, FERC would be assessing a financial penalty to BPA, even though federal law prevents FERC from doing so.

PNM also commented that RC Operating Budget contingency should not be utilized to pay penalties, but should be used to cover RC Customer defaults for no more than 3 months in lieu of increases to the monthly invoicing.

CAISO Response

A number of stakeholders questioned the application of the current CAISO reliability standard compliance penalty allocation tariff provision to RC customers. These stakeholders also suggested that incentive compensation should be linked to penalties for non-compliance with reliability standards. In addition, the federal entities raised specific legal concerns about being allocated penalties assessed to the CAISO for its failure to comply with reliability standards. The CAISO will include several changes in the draft final proposal to address stakeholder concerns, which are explained below along with some additional responses.

The CAISO will eliminate the RC services specific operating reserve account in favor of the general CAISO operating reserves funded by RC customers through their share of indirect cost allocations (see the rates section for more details). The CAISO would therefore be able to pay fines received from FERC/NERC/WECC for failure to comply with a reliability standard from a single operating reserve, regardless of which function may have been penalized. This would avoid the complication of allocating reliability standard compliance penalties based on function, which would likely be difficult if not impossible and highly contentious in any event.

The general CAISO operating reserve account is funded at 15% of the CAISO's total revenue requirement, currently about \$26 million, and should be more than adequate to cover virtually any potential penalty levied upon the CAISO for any reliability standard compliance violation. In such a circumstance, the CAISO would apply an increase in the overall revenue requirement for the following year to cover the shortfall in operating reserves, which would then be recovered from all CAISO participants according to their share of the revenue requirement. This is essentially the same as how Peak would allocate a penalty to the funding parties today.

This will reduce or more likely eliminate the need to ever invoke the tariff provisions associated with reliability standard compliance penalty allocation, which the CAISO has never used. Nonetheless, the CAISO is not in a position to exempt RC customers from this requirement because it is necessary to comply with FERC's guidance order on penalty allocations by ISO/RTOs, which established a set of prescriptive requirements for penalty allocation that all ISO/RTOs must follow. In reality, the penalty allocation provision would be invoked only if there were an extremely substantial penalty that could not be covered by reserves or, if in the CAISO's discretion, there were a need to pursue a direct allocation or indirect allocation as permitted under the provisions currently included in the CAISO tariff.

Regardless of likelihood, the CAISO recognizes that the federal entities may desire to have an exemption from this tariff provision. The CAISO has reviewed the comments provided by the federal entities and respectfully disagrees that they are immune from a provision that allows the CAISO to recover from them a portion of the cost incurred by the CAISO for a penalty levied upon the CAISO. The appeals court decision cited in support of the federal entities' position concerned a penalty levied directly upon a federal entity by NERC and disputed by the federal entity before FERC. This is legally distinguishable from the CAISO potentially allocating to a federal entity that is its customer a portion of the cost incurred by the CAISO for a penalty levied upon the CAISO by FERC/NERC/WECC. Moreover, the current CAISO tariff provision applies to all market participants and there are federal entities in that class today. In any event, this stakeholder process is not a forum in which this matter can be resolved. The CAISO will defer the matter to the associated FERC proceeding if it continues to be an issue for the federal entities.

As for compensation incentives, CAISO executives, senior management and staff incentive compensation is already tied to reliable operations and compliance with reliability standards. The CAISO board adopted a strategic plan in 2015 that specifically includes a strategy targeted at reliable management of the grid during industry transformation. (See <http://www.aiso.com/Documents/2015StrategicVision.pdf>.) Each year the board approves corporate

goals designed to achieve the strategic objectives in the plan and then evaluates corporate performance against those corporate goals in December. Incentive compensation at various levels within the CAISO is tied directly to the corporate performance score approved by the board, so the current process already considers reliability and compliance as a factor.

4. Rate Design

4.1 RC Rate Design

Overview

The CAISO will leverage its existing rate design model and activity based costing (ABC) system to determine the amount it will charge for RC services. The model is based on seven guiding ratemaking principles which are cost causation, focus on use of services, transparency, predictability, forecastability, flexibility and simplicity. This is the same model used by the CAISO to determine its other rates, including the Grid Management Charges (GMC) and Energy Imbalance Market (EIM) administrative fees. The development of the RC rate will include an annual RC Revenue Adjustment. The adjustment will include the excess or shortfall in revenue collections from the prior year. In addition, the CAISO proposes to have the ability to adjust its RC rates quarterly, up or down, so that rates yield the annual RC revenue as stated in the applicable year's RC Funding Requirement.

Stakeholder Input

SCE commented that the quarterly adjustments mechanism needs to be further vetted including specifics on percentages, dollar figures, and how excess revenue collected will be utilized. Similarly BPA and BANC-SMUD commented that if a quarterly adjustment results in participants receiving money back from the CAISO, the CAISO should specify the interest rate that the participants would receive. If a quarterly adjustment results in participants paying an additional amount of money to the CAISO, the CAISO should specify how such amounts would be collected.

PacifiCorp noted that in the Straw Proposal, the CAISO determined estimated costs of the RC services using its existing activity based costing ("ABC") system and 2016 ISO cost of service study data. The ISO's methodology produced results that estimate approximately \$5 million in direct costs associated with RC services, and about \$6.2 million in indirect costs, which represent use of the ISO's support staff, facilities and technology, and capital. The ISO estimates that six percent of its revenue requirement will be attributable to its RC services function, and such percentage will be updated during the ISO's triennial cost of service study. PacifiCorp supports the ISO's methodology leading to the resulting initial funding requirement of approximately \$12 million for providing RC services, which includes an RC operating budget of \$11.8 million and an operating budget reserve amount of \$0.2 million. PacifiCorp supports the ISO's proposed methodology to determine the funding requirement. The ISO has proposed a volumetric billing determinant and a minimum charge of \$5,000 per year (or \$417 per month) for funding entities that have zero to "very low" trackable volumes in the RC footprint. The ISO states that the minimum charge represents the projected time and resources necessary to provide outage coordination, dispatch, and other services, which will be reassessed every three years as part of the

ISO's cost of service study. The ISO proposes that the rate/MWh will be determined by CAISO dividing the net RC funding requirement (\$12 million) by the forecasted volumes of net energy for load MWh (Net BA generation plus imports into BA less exports from BA less energy for storage) or forecasted volumes of net generation for generation only BAs. PacifiCorp supports the ISO's proposed methodology to determine the rate per MWh of RC services.

APS understands that the CAISO sets its revenue requirements pursuant to its stakeholder process and that it has proposed to manage RC services costs as part of the "other cost and revenue" category; however, as RC services customers will represent a small segment of CAISO's overall stakeholders, APS is concerned that RC services customers will be unable to discern and/or influence those portions of the revenue requirement that are RC services focused. APS questions what input will the RC Service members have into the budgetary process. Specifically, will RC members vote and approve RC-related items presented during the stakeholder process. APS suggests that CAISO clarify how RC services will be addressed during its overarching budget stakeholder processes.

NaturEner is also deeply troubled by the proposed cost of the CAISO's provision of RC Services. One of the selling points strongly advocated by the CAISO supporting its provision of RC services is that it can provide robust and compliant RC services, but at one-half (or less than one-half) of the current costs charged by the current RC. However, not only does the CAISO's Straw Proposal fail to offer such cost-savings benefits to NaturEner, if NaturEner correctly understands the CAISO's Straw Proposal, the CAISO's Straw Proposal would actually result in an approximately 275% price increase to NaturEner.

PGE, CHPD, BANC-SMUD, NaturEner, SCL, SRP, Tacoma supports the use of Net Energy for Load (NEL) and Net Generation (NG) as the appropriate billing determinants for RC Services. However, PGE recognizes that the introduction of the NG determinant is a change from the current formula to calculate costs for generation-only BAs and that some transitional adjustment may be warranted.

CAISO Response

At the public stakeholder meeting there were a couple of questions regarding the indirect cost allocation. With the benefit of more time and upon review of stakeholder comments, the CAISO wants to make clear and ensure all customers that the treatment of the RC costs will be handled in the same way as all of its other cost categories. Since the RC service will come online in between scheduled cost of service studies, CAISO attempted to develop a method to estimate the effects of the RC service on the activity based costing model. It was intended that this method would allow CAISO to establish a baseline rate that would serve as a bridge to the next cost of service study, at which point the usual calculation and treatment of direct and indirect costs would be employed. In the draft final proposal, CAISO will instead show the results of a pro forma cost of service study, incorporating RC services, ABC changes and estimated Revenue Requirement data. This method will be a better representation of how RC services will be allocated costs in future cost of service studies leading to more certainty and fairness in cost allocation.

The quarterly rate adjustment language will be stricken from the final draft proposal as it is not applicable under the annual billing process described in Section 5 below. Furthermore, CAISO will be

removing the RC Revenue Adjustment provision in the rate design as the true-up process will also not be applicable under the annual billing process.

RC Customers will have an equal chance to participate in the annual budget process. Each year in July, CAISO hosts a budget workshop with stakeholders to inform them of the coming budget development timeline, review the past year and current year financials, and discuss key budget drivers. Once the draft budget is posted publicly in late October, CAISO will host an additional budget workshop with stakeholders to review. The CAISO will respond to all questions and comments at the meeting and submitted afterwards.

The CAISO is aware that the proposal to charge Net Generation will lead to an increase in costs for RC Services for most generation only BAs. However, the CAISO believes that there is sound cost causation support that generation is just as critical to reliability as load and many of the same services will be applied by the CASIO RC Operators. The principle of cost causation is such that costs will be properly allocated to the correct cost category and charged to those who benefit from or utilize those services. Generation only balancing authorities have the same balancing authority obligations as traditional balancing authorities; as a result, the interaction between the reliability coordinator and the generation only balancing authorities have all the same NERC requirements as any other balancing authority.

4.2 Generation-Only Balancing Authority Allocation

Overview

The CAISO proposes to use Net Energy for Load MWh volumes as its RC billing data. As an alternative for generation only BAs and TOPs, the CAISO proposes to use Net Generation MWh volumes. In cases where the submitted MWh volumes yield a charge less than the established monthly minimum charge, the RC Customer will be charged the monthly minimum charge as described in 5.2 below.

Stakeholder Input

NaturEner commented that under the existing Funding Agreement, Peak calculates the parties' fees based upon their net load. Generation-only BAs such as NaturEner pay a minimum annual charge of the lower of \$10,000 or 0.015% of the final funding amount for any calendar year, with the minimum charge able to be adjusted on written approval of not less than 75% of the Peak Funding Parties, with such charge however not permitted to exceed \$10,000 for any calendar year of the Initial Term. Peak's offering is justified because generation-only BAs typically have small footprints, do not operate transmission or load, and have a limited impact to the BES. By comparison, under the current CAISO rate proposal, using a volumetric billing determinant of Net Generation (NG) MWh for generation-only BAs, NaturEner's internal analysis indicates that NaturEner would have to pay nearly three (3) times its current annual cost for the CAISO's RC services as compared to what Peak is currently charging. This is contrary to the CAISO's statements that it can provide RC services at a substantially reduced cost, and in fact under this proposal, generation-only BAs will be expected to pick up a larger share of RC costs. This might make sense if generation-only BAs were a proportional driver of higher RC related expenses, but as mentioned in the prior paragraph they are not. Similarly, in Slide 7 of the CAISO RC Rate Design, Terms and Conditions Straw Proposal presentation dated April 12, 2018, the CAISO outlines several core

RC service offerings that do not apply to generation-only BAs. NaturEner would like to see pricing for generation-only BAs which provides better, or at the very least equal, treatment for such BAs as compared to the current Peak Funding Agreement. The costs for the CAISO's RC services for Page 7 of 9 generation-only BAs should be less than (or at the very least no more) than what they currently pay to the incumbent RC.

For background, Avangrid Renewables expects to be an operational Balancing Authority in the Northwest on June 1, 2018. In the fall of 2019 when Avangrid could potentially receive RC services from CAISO, the Avangrid BA expects to have an approximate installed generation capacity of 2,500 MW with an expected annual average Net Generation of 8 TWh. Peak Reliability currently offers generation-only BAs a fixed price of \$10k/month for RC services. Peak's offering is justified because generation-only BAs typically have small footprints, do not operate transmission and have a limited impact to the BES. In Slide 7 of the CAISO RC Rate Design, Terms and Conditions Straw Proposal presentation dated April 12, 2018, the CAISO outlines several core RC service offerings that do not apply to generation-only BAs. Under the current CAISO rate proposal, using a volumetric billing determinant of Net Generation (NG) MWh for generation-only BAs, analysis has shown Avangrid would pay nearly double the annual cost for RC services if it were to use CAISO as the RC of the Avangrid BA versus what Peak Reliability is currently charging. This seems counter to the suggestion that the CAISO can provide this service at a reduced cost and in fact under this proposal, generation-only BAs will be expected to pick up a larger share of RC costs. If generation-only BAs were a proportional driver of RC related expenses then this would make sense, but Avangrid believes they are not. Avangrid would like to see a fixed price option for generation-only BAs, or a higher megawatt volume under the minimum charge proposed before the volumetric rate is imposed.

CAISO Response

While the CAISO understands NaturEner and Avangrid's concern of allocating RC Services charges to generator-only balancing authorities, they will receive the same NERC reliability coordinator services as those BAs that have load. Generation only balancing authorities rely completely on deliverability and use of the BES to deliver all its energy, the Reliability Coordinator oversees reliable operation of this deliverability. The physical limitations of the BES are defined by equipment capability. Energy produced by generators can challenge these limits and require monitoring by the Reliability Coordinators. Net generation MWh volumes is an effective measure of energy transported on the BES and its subsequent contribution to reliability issues requiring Reliability Coordinator response. Further, NERC standards do not differentiate between generation only balancing authorities and balancing authorities that are traditional in nature. Reliability Coordinators must manage operational aspects of generators, as well as their forced and planned outages. Generation only balancing authorities must be included in the Operational Planning Analysis (OPA) and Real-Time Analysis (RTA), which are required by NERC Standards and important to reliable operation of the BES.

The CAISO's proposal considers the impact on Reliability Coordinator services equally for all BAs. Load and generation on the grid must balance and to ignore the impact that output from a generation only BA would have on the level of RC services required to support a generation only BA would not be

comparable to those BAs that serve load. This proposal is consistent with the cost allocation principles applied by the CAISO in its rate development.

4.3 Penalty Allocation

Overview

The CAISO tariff sets forth a process by which the CAISO may seek, with FERC approval, to allocate reliability-related penalty costs assessed by FERC, NERC and/or WECC to specific entities whose conduct was found to have contributed to such penalty and to recover costs associated with such penalties from CAISO RC Customers. Because this provision refers broadly to penalties levied against the CAISO, it would apply to any penalties that the CAISO might receive in connection with performing the RC function. However, the CAISO plans to clarify in the tariff and/or Reliability Coordinator Services Agreement the application of this language to the RC function. In addition, penalties may be applied to specific RC Customers whose conduct was found to have contributed to such penalty and to recover costs associated with such penalties from that customer.

Stakeholder Input

SCE commented that CAISO should define the process of how penalties will be assessed and disbursed among RC Funding Parties (Customers). Provide specific examples to illustrate how penalties will be fairly distributed under different scenarios Annual Revenue Adjustments –Should include annual cap on year over year funding increases. A mechanism should be developed to address non-standard or exceptional increases.

As stated in the straw proposal, “the CAISO tariff sets forth a process by which the CAISO may seek, with FERC approval, to allocate reliability-related penalty costs assessed by FERC, NERC or WECC to specific entities whose conduct was found to have contributed to such penalty and to recover costs associated with such penalties from CAISO RC Customers.” CHPD understands that the CAISO tariff currently allows it to make a filing at FERC to allocate penalties to the entity whose conduct gave rise to the event. However, we do not understand how this framework would work in the provision of RC Services where the RC itself is penalized, and do not support this translation of the CAISO tariff provision to the RC function. A better model is one where the cost of any penalty or remedial action is allocated among those receiving RC Services along the same formula as annual expenses. CHPD does not see a framework where the RC pursues entities receiving services for allocation of costs as a beneficial one or one where the time spent in the filing to authorize the recovery of funds is warranted. Finally, the CAISO should propose an incentive structure where the compensation of key leadership and management is directly affected in the event of penalties and non-compliance events associated with the provision of RC Services (as is common with entities that need to prioritize reliability above all else).

CAISO Response

[Response can be found in Section 3.2 RC Reserve.](#)

4.4 Default

Overview

In the Straw Proposal RC Customers will be required to pay their invoice by the 5th business day following invoice issuance. If payment is not received by the 10th business day, the RC Customer will be charged a \$1,000 late payment fee on their next invoice. If payment is not made by the 15th business day, the RC Customer will be in default, and the CAISO will notify all RC Customers of a potential rate adjustment due to a pending default. Furthermore, if payment is not received by the 20th business day, the CAISO reserves the right to suspend that customer's RC services until such time payment is received.

Stakeholder Input

MID commented that the Straw Proposal would allow the CAISO to cease providing RC services by the end of the 20th business day. Particularly as the CAISO is suggesting a Tariff-centered structure to providing RC services the CAISO may find it difficult to offer reasonable waivers given that regulatory approval may be required, in order to grant such waivers. The potential consequences of suspending RC services to a particular entity are high, including steep financial penalties to the entity being suspended, and possible penalties imposed on the RC by compliance enforcement authorities and regulators, which in turn, may be borne by the broader RC membership. MID urges the CAISO to request and receive Board approval prior to suspending an entity receiving RC services, and then only under terms that would otherwise apply if the entity exited the RC voluntarily. MID believes that the CAISO, as RC, should have responsibility of collecting unpaid amounts from RC customers, and to that, MID acknowledges that the CAISO needs to have tools to enforce funding requirements. However, MID believes that this responsibility should take greater account of the reliability compliance consequences that may result from suspension of service.

WAPA has significant concerns about the payment default provisions contained in the Straw Proposal. Under the proposal, after 10 days a customer is charged a \$1,000 late payment fee and after 20 days the CAISO may suspend service. See Straw Proposal at 16. While WAPA recognizes it is important for CAISO to be able to enforce payment, RC services are required by mandatory reliability standards. If the CAISO suspends RC services after 20 days, the TOP or BA will violate those reliability standards. Violations of reliability standards can carry significant consequences. In addition, suspending one entity may have impacts on other entities. These impacts may affect reliability. A 20 day period, given the consequences, does not seem sufficient to suspend service. CAISO should have some process in place before it suspends RC services. There are many variables that can impact timely payment of an invoice, e.g., software or hardware malfunctions. Rather than a suspension after 20 days, WAPA recommends that CAISO, along with the stakeholders, develop a multi-stage process under which the CAISO could suspend service. Such a process would need to ensure safeguards are in place to protect reliability. In addition to having concerns about the suspension provisions as currently proposed, WAPA believes that the \$1,000 late payment fee may be excessive for some entities. If an entity pays the minimum charge (\$416 per month) and is assessed a \$1,000 late payment fee, the late payment fee will be more than twice its monthly bill. WAPA recommends a more proportional late payment fee. Avangrid also believes the \$1,000 late payment penalty charge is excessive and should be adjusted.

BPA commented that the CAISO's proposal to have the option to suspend reliability coordinator services if an entity does not pay within 20 days is too harsh and may negatively impact reliability.

PGE strongly encourages the CAISO to reexamine its approach for RC customers who are in default of payment. PGE is concerned that CAISO's proposal to terminate RC services after a default in payment of 20 days is not consistent with a "reliability first" approach. Rather, PGE recommends that CAISO consider an extended cure period for an RC Customer that has been unable to resolve its default status. PGE does not believe that the immediate termination of RC services is a reliable method of operation and fears that there could be adverse impacts to the Western Interconnection if the Straw Proposal is implemented as written relative to defaulting customers.

CAISO Response

CAISO agrees with all parties that 20 business days is too soon to declare a default and will seek to establish a balanced approach between "reliability first" and protection of RC Customers from defaults in the draft final proposal.

CAISO disagrees with the parties that claim the \$1,000 late payment fee could be excessive. The fee is not intended to be proportionate to the size of the bill. Instead, the fee is intended to represent the additional cost associated with the additional effort that CAISO staff must incur to collect on the late payment. With the change to an annual billing process described in Section 5, it lowers the opportunity to be assessed a late charge to once a year versus 12 times under the monthly billing process.

5. Settlements

5.1 Frequency of Settlement

Overview

The CAISO proposed to invoice BAs monthly for RC services. In addition, the CAISO will have the ability to directly invoice TOPs located within a BA area that are RC Customers. In addition, a settlement statement will be provided to detail the charges on the invoices when applicable. An annual billing and payment schedule will be provided to the BAs and TOPs reflecting the dates of RC settlement statements, invoices, and payment due dates.

Stakeholder Input

MID is concerned with the Straw Proposal's concept of billing on a monthly basis, and recommends that the CAISO consider offering an annual billing option (or shifting altogether to annual billing) with annual true-ups. One problematic aspect of monthly assessments is that RC Customers' peaking may vary across the broad, geographical area which may receive RC services from the CAISO. Because all entities in the RC area may not follow the same load pattern throughout the year, variability in the rate can lead to a disproportionate RC charge if adjusted. While this can benefit a portion of the RC Customers, it can burden other RC Customers, as long as the CAISO adopts the Net Energy for Load ("NEL") on an MWh basis as a billing determinant. An annual true-up charge (refund) provides for equal benefit and burden

to the RC Customers and will complement annual billing by taking into account and adjusting for each entity's entire NEL for the year.

PacifiCorp, PNM, NaturEner, Avangrid, BANC-SMUD, CHPD, SCL, SRP, Tacoma, TEP would prefer annual billing of RC services, to better align with budget processes. NaturEner, Avangrid, BANC-SMUD, CHPD, SRP, Tacoma and TEP also suggested quarterly would work.

PacifiCorp understands that TOPs within a BA receiving RC services from the CAISO must also receive RC services from the ISO, which will be billed to the BA scheduling coordinator for sub-allocation to the TOPs. However, a TOP within a BA that receives RC services from the ISO may choose to be directly billed by the ISO for its RC services, under a TOP RC services agreement. The ISO further proposes to enforce a late payment penalty of \$1,000, and such penalty will be recovered from scheduling coordinators within the defaulting BA only. PacifiCorp reserves its right to further comment on the settlements process when more details are provided in a pro forma RC services agreement.

BPA does not support the CAISO's proposal to calculate net energy for load (NEL) every month and submit that value to the CAISO. BPA does not perform this task on a monthly basis today and it would lead to additional and unnecessary workload. Instead the CAISO should use yearly NEL values, similar to what is done today. BPA understands that other participants are proposing to be billed for reliability coordinator services annually or quarterly. Such proposals would likely involve a participant paying for reliability coordinator services in advance of receiving them. Although BPA does not oppose such proposals in general, federal law limits BPA's ability to enter into contracts which require it to pay in advance of services rendered. 31 U.S.C. § 3324. Therefore, if the CAISO adopts the participants' proposal, BPA would seek an exception to allow it to be billed monthly. Per Attachment C of the Peak funding agreement, such an exception would reflect current practice. The CAISO should allow participants up to 21 days to pay an invoice, not five days. PNM, NaturEner, BANC-SMUD, CHPD, SCL, SRP, Tacoma, TEP agrees with this proposal. Five days is not enough time to validate and process the invoice. PNM, NaturEner, BANC-SMUD, CHPD, SCL, SRP, Tacoma, TEP also agrees with this statement. The CAISO should work with the RC Project Steering Committee to develop a process if an entity does not pay within 21 days.

NaturEner suggests a bill payment requirement of 30 days.

PGE finds that a five day invoicing period is unduly burdensome and would require manual processes to pay each bill. Additionally, while PGE does not oppose CAISO's proposal to invoice BAs on a monthly basis for RC services, PGE recognizes that this approach may not work for all potential RC customers. PGE and PNM encourages the CAISO to work with RC customers to identify solutions that are administratively efficient for all parties, including an extended invoicing period.

MID commented that the rapid schedule of the CAISO's settlement process may make the monthly billing format perilous for entities that fail to pay timely. Delays in payment may occur for a variety of reasons unrelated to the financial creditworthiness of the entity. First, MID requests that the CAISO require RC Customers to pay their invoices for RC services within thirty calendar days after receiving an invoice, rather than by the fifth business day. In addition, the late penalty payment of \$1,000 may be

excessive for small BAs and insufficient for large BAs. The CAISO may wish to consider the use of an interest fee based on a percentage of the invoiced amount that is applied after thirty calendar days. The interest rate could be based on the Federal Energy Regulatory Commission (“FERC”) interest rate or other appropriate and permissible government interest rate.

Snohomish supports CAISO’s ability to directly invoice TOPs located within a BA area that are RC Customers. Snohomish currently pays for RC services directly and would prefer to continue to do so.

CAISO Response

CAISO agrees with the majority of the parties to delete the monthly billing proposal in exchange for an annual billing similar to Peak RC. Further, the draft final proposal will describe an annual invoice process with 21 business days to pay. Exceptions for the federal entities will be provided in the RC service agreement.

[CAISO’s response to late payment penalty can be found in Section 4.4 Default.](#)

5.2 Minimum Charge

Overview

The CAISO believes a basic funding principle should note that regardless of whether an entity has load tracked through its RC footprint or not, it will still require a constant, although minimal, amount of administrative attention from its RC service provider. For this reason, the CAISO proposes to charge a minimum annual charge of \$5,000 to entities that fall into this category, such as a BA that has low MWh volumes of generation only or a TOP with transmission assets but no load. If the volumes submitted yield a charge that is less than the monthly minimum charge, the customer will be charged the monthly minimum charge amount. RC Customers that do not submit any volumes will be charged the minimum monthly charge amount. The annual minimum charge is \$5,000; the monthly minimum charge is 1/12 of the annual amount (or \$417).

Stakeholder Input

NaturEner, SCL, SRP, Tacoma, BANC-SMUD, APS, seeks clarification as to how the minimum charge was developed. The CAISO should provide more information regarding the formula for determining this charge, whether the figure will change based on expenses and what threshold/criteria will be used to determine a low MWh volume of generation or load. APS requested that the CAISO explain how these minimum charges will be allocated in terms of operating reserve versus direct cost payment.

NaturEner also commented that it makes sense to have the minimum charge be the lesser of a certain figure and a percentage of the total funding needs as is currently the case under the Peak Funding Agreement.

CAISO Response

The CAISO calculated the \$5,000 annual minimum charge using hourly projections provided by CAISO subject matter experts (SME) that would support RC functions. The SMEs weighed in on functions such as outage coordination, dispatch, settlements, administrative and contract support.

6. RC Agreement

6.1 Initial Commitment Terms

Overview

The Straw Proposal proposed that a BA or TOP that receives RC services from the CAISO make an initial commitment of 18 months (“Initial Commitment”). An early termination fee will apply if an RC Customer terminates its agreement with the CAISO prior to the expiration of the Initial Commitment. The early termination fee will be equal to the estimated RC service fees that would otherwise be due for the balance of the remainder of the Initial Commitment. This fee reasonably ensures recovery of any costs incurred by the CAISO for the initial integration and subsequent termination of service to the RC Customer.

Stakeholder Input

PacifiCorp, Portland General, NaturEner and WAPA support the ISO proposed initial commitment term of 18 months, with an early termination fee, equal to the estimate of service fees that would otherwise be due for the remainder of the initial commitment period, which would be applied if the RC services agreement is terminated prior to expiration of the initial commitment.

CAISO Response

The CAISO concurs with the comments received. The draft RC services agreement, attached as Appendix A to these responses, includes an initial 18 month term followed by a 12 month notice requirement. This eliminates potential for termination within the initial term and, when coupled with the 12 month notice period, ensures the parties will have sufficient time and resources to manage the transition.

6.2 Exiting Terms

Overview

The Straw Proposal proposed that an RC Customer may terminate its agreement with the CAISO, without penalty, by giving 6 months advance written notice to the CAISO after completion of the Initial Commitment. If the RC Customer gives less than 6 month notice, it will be charged an amount equal to the balance of estimated service fees remaining on the 6 month required notice period. The CAISO proposes to have two windows for exiting during the year, a spring window and a fall window. This is to ensure adequate preparation and resources, as well as to recognize seasonal challenges during the winter and summer months.

Stakeholder Input

BPA, PacifiCorp, APS, PG&E, PNM, NaturEner, WAPA, Avangrid, BANC – SMUD, MID, SCL, SRP, Tacoma and TEP commented that entities that no longer wish to take reliability coordinator services from the CAISO should provide 12 months advance written notice, not six months. This will provide greater cost stability and reliability to other participants. Furthermore, entities should only be able to provide notice of withdrawal at specified times during the year, such as one date in the spring and another in the fall. These times should align with times that new participants may begin to take reliability coordinator

services from the CAISO. In addition, strike the sentence “This is to ensure adequate preparation and resources, as well as recognize seasonal challenges during the winter and summer months” as it is unnecessary with a longer withdrawal period. APS commented further that, this will allow for entities the time necessary to adjust annual budgets accordingly and otherwise prepare for exit. MID commented that the exit date should align with the budget cycle.

PG&E, Naturener and SCL also commented that the CAISO should also consider whether to limit this notice to specified times during the year and if said times should align with entrances into the RC, if any.

CAISO Response

The CAISO greatly appreciated the stakeholders’ comments to move the exit time to 12-months and the CAISO agrees. Further, CAISO will delete the sentence noted by the stakeholders and CAISO agrees that the exit date and entrance date should align, which will be April 1 of each year to the extent possible. With respect to the RC Customer providing notice, the CAISO disagrees and believes that the RC Customers may provide their exit notice at any time provided they meet the minimum 12 months advance written notice requirement.

6.3 Service Agreement

Overview

The CAISO has developing a draft pro forma Reliability Coordinator Service Agreement and is providing that draft for general stakeholder review simultaneously with the reply to stakeholder comments. This agreement obligates the CAISO to provide the RC services and the RC Customer to pay for the RC services it receives from the CAISO pursuant to the rate design, terms and conditions included in the CAISO tariff. The pro forma agreement would be filed with FERC; individual service agreements would be executed and recorded in FERC’s electronic quarterly reports.

Stakeholder Input

PacifiCorp understands that the ISO will develop a pro forma RC services agreement in its upcoming draft final proposal, and intends to file the pro forma agreement with the Federal Energy Regulatory Commission (“FERC”) for recording in FERC’s electronic quarterly reports. PacifiCorp looks forward to working with the ISO and stakeholders on the terms of the RC services agreement.

SCE commented that CAISO should develop an RC Service Agreement for entities within the current CAISO BA. PNM also commented that the current proposal outlines that Balancing Authorities would be required to sign the Reliability Coordinator Service Agreement; PNM, TEP and APS would like additional information to understand why the Participating Transmission Owners will not be signing the Reliability Coordinator Service Agreement as well.

PGE, PNM and Six Cities encourages the CAISO to provide more detail—including drafts of the pro forma Service Agreement and the tariff references—in order to validate the feasibility of this approach.

PNM, NaturEner, CHPD, Snohomish, SRP, Tacoma, TEP, BPA, SCL, Avangrid and BANC requests the CAISO’s thinking as to why the CAISO believes the RCSA should be a pro forma agreement that is filed

with FERC, rather than standardized bilateral contract that the CAISO enters into with entities receiving RC services. CHPD, SRP, and Tacoma noted that they are not a FERC jurisdictional entity.

NaturEner, SRP, Tacoma, and TEP also requests the CAISO's view as to what provisions related to the RC function the CAISO believes must be included in its Tariff and its underlying reasoning. In order for NaturEner, BPA, SRP, Tacoma, and TEP to provide any meaningful and substantive comments on these issues, the CAISO should make available the draft form of the RCSA as soon as possible.

BPA and WAPA noted that special provisions are required in any agreement that federal entities execute.

CAISO Response

Several stakeholders questioned whether the CAISO should provide RC Services pursuant to a pro forma service agreement and associated CAISO tariff provisions. These stakeholders, which are generally non-jurisdictional entities, would prefer to enter into a bilateral arrangements with the CAISO. The CAISO offers the following explanation for those concerned with having the RC Services provided under the proposed tariff and pro forma agreement framework. Some additional information about the agreement and tariff development process moving forward is also provided to assist stakeholders understanding.

All of the rates, terms and conditions of the CAISO's market and reliability services have been filed with FERC for acceptance, either as a tariff provision, a pro forma agreement, a non-conforming agreement, a stand-alone agreement, or some combination thereof. The CAISO proposes to offer its RC Services to eligible customers pursuant to a similar framework because the rate structure for this new service relies upon the rate structure for other reliability and market services already provided by the CAISO. Leveraging the CAISO's current rate structure and the administration of the associated services represents a substantial benefit to RC customers. Moreover, it would be unworkable for the CAISO to receive revenue for some services and to share its expenses of providing those services with another service if the revenue from the other service was accounted for separately. While it may be possible with considerable effort and additional expense to separately account for RC services in this way, that is not what the CAISO has proposed and it is not clear that such an approach would be supported by a majority of stakeholders. The CAISO's existing systems, infrastructure and staff allows the CAISO to provide RC Services more efficiently than if the services were accounted for separately.

In addition to the ratemaking rationale, it would be administratively burdensome for the CAISO to negotiate bilateral agreements with potential RC Customers and to file them individually with FERC. As noted above, the CAISO would not provide RC Services unless it was pursuant to a rate schedule on file with FERC and, therefore, even if bilateral agreements were negotiated with RC Customers, they would be filed with FERC for acceptance. The number of potential RC Customers that are outside of the CAISO balancing authority area and are engaged in this process exceeds 40 entities. Negotiating and separately filing that many new service agreements is not a reasonable expectation. The CAISO will instead work with stakeholders to develop a pro forma agreement that balances the interests of the jurisdictional utilities, the non-jurisdictional utilities, and the federal entities.

A draft of the proposed pro forma agreement is included as an attachment to this response to stakeholder comments, and we look forward to your comments on the pro forma agreement as part of the tariff development process. Transmission operators in the CAISO balancing authority area that are not participating transmission owners will be required to sign this agreement. The associated tariff provisions are expected to be posted after the draft final proposal is published on June 20 and prior to the CAISO board meeting, which is currently targeted for July 25 and 26. The CAISO will engage with stakeholders through its tariff development process to finalize the pro forma agreement and associated tariff provisions, consistent with the draft final proposal, prior to filing the completed proposal with FERC. At this time that filing is expected to be submitted during August 2018.

The CAISO anticipates that a new section of its tariff will be developed to define the high level scope of the core RC Services and other reliability services offered by the CAISO, much as the services are outlined in the current straw proposal. The rates for these services would be represented in Appendix F – Rate Schedules, and a pro forma service agreement would be included in Appendix B – Pro Forma Agreements. The details concerning how the services are administered in accordance with the applicable reliability standards will be included in RC specific operating procedures, while the details associated with onboarding and other implementation and administrative RC processes will be included in a new business practice manual for RC Services.

The CAISO's proposed approach is consistent with how some other ISO/RTOs provide RC Services. For example, when the MISO filed with FERC to provide reliability services to eligible customers other than its members, it proposed to include a new attachment to its tariff and a new service agreement for customers outside of its balancing authority area to receive the services.² The CAISO proposes to follow a similar but simpler tariff framework to provide its RC Services to its eligible customers; i.e., the CAISO believes that the level of detail included in the MISO tariff is unnecessary and potentially problematic. The functional responsibilities of a reliability coordinator are defined by the applicable reliability standards, which are subject to enforcement under those rules and are likely to change over time. Repeating anything already addressed by the reliability standards in a tariff or agreement would create an unacceptable risk of a potential for inconsistency between a reliability standard requirement and a tariff/contractual requirement. Accordingly, the CAISO anticipates that its tariff changes will largely defer to the reliability standards in terms of the scope of services to be provided, focusing instead on the rates, terms and conditions of the services.

² *Midwest ISO*, 123 FERC ¶ 61,265 (2008) (order accepting MISO proposal to extend the reliability coordination services to all eligible customers); *see also* MISO Tariff, Module F – Coordination Services, Schedule 31 – Reliability Coordination Service Cost Recovery Adder, and Attachment KK-1 – Form of Service Agreement for Reliability Coordination Service.

7. Onboarding

7.1 Timing for Initial Onboarding

Overview

The goal of the CAISO's onboarding process is to ensure that each RC Customer is prepared, informed, and engaged in all aspects of receiving RC services. This preliminary onboarding process includes technology integration and customer service related tracks. The CAISO proposes a staggered onboarding integration for the set-up required for RC Customers with an official single start date in the fall of 2019. For future years, the CAISO proposes to onboard RC Customers at least once a year. There will be no implementation cost to obtain RC services from the CAISO. Monthly billings will begin once service is activated.

Stakeholder Input

Portland General commented that by offering RC services, CAISO is accepting the obligation to provide those services to all balancing authorities (BA) and transmission operators (TOP) that sign an RC Services Agreement with CAISO, potentially in the fall of 2018. CAISO must commit to a date certain on which all RC Customers that are not in the CAISO BA area will cutover to CAISO as the RC provider.

BPA commented that there should be a single implementation date for participants that initially agree to take reliability coordinator services from the CAISO. This date should reflect when all such participants are ready and able to take reliability coordinator services from the CAISO, and should be no earlier than January 1, 2020. January 1, 2020 is the effective date of many entities' revocable notice of withdrawal from Peak. Ensuring a common date for all interested participants will help make the transition to the CAISO as seamless as possible. Onboarding should also include a transition plan among the CAISO, Peak, and any other reliability coordinators in the western interconnection to ensure that all balancing authorities and transmission operators have a reliability coordinator and that reliability is maintained at all times.

PacifiCorp, PGE, BANC-SMUD, SCL, CHPD, SRP, TEP and Tacoma requests that the CAISO clarify this process in its next paper – the draft final proposal – to confirm that only the readiness work (i.e., technology, systems, and training) would be performed on a staggered basis, but that all RC customers who have signed an RC Services Agreement in the fall of this year, will begin receiving those services on the same start date in the fall of 2019. APS, PNM, BANC-SMUD, CHPD, SCL, SRP, TEP and Tacoma recommended that CAISO provide clarity regarding whether their single official start date is applicable only to internal CAISO RC customers or whether such date also considers the potential integration of external entities. If there is a differentiation, CAISO should clarify the approximate official start date for non-CAISO entities. The RPSC preference is to have a single implementation date for all entities expressing interest and that date should be the lowest common denominator of readiness of all entities that commit.

NaturEner noted that it is not entirely clear if this single official start date is applicable only to TOPs and BAs already within the CAISO's EIM program, or to all entities that have expressed interest in the initial CAISO RC service offering. NaturEner recommends that the CAISO promptly provide a clear answer on

this item and also that the CAISO choose a single second such implementation date for all entities who will be a part of the initial footprint (other than those already within the CAISO's BAA), and, that the date be the lowest common denominator of readiness for all entities that commit.

NaturEner noted that the onboarding should also include a detailed transition plan that ensures coordination among RCs and complete coverage of all BAs and TOPs. Under no circumstances should the CAISO's transition to an RC services provider leave any BA or TOP without an RC for even a short period of time. The CAISO, in conjunction with the incumbent RC Peak, any other potential RCs, WECC and NERC must work together ensure that no entities are abandoned as part of any evolution of RC services in the Western Interconnection. At a minimum, greater transparency around this process is necessary. APS, BANC-SMUD, SCL, CHPD, SRP, TEP and Tacoma agrees that there should be a detailed onboarding plan and all entities should be accounted for.

CAISO Response

The CAISO will provide Reliability Coordinator services to transmission operators in its balancing authority area and will offer to provide the same services to balancing authorities and transmission operators outside of its balancing authority area. The CAISO will develop and publish a detailed onboarding transition plan to ensure proper coordination among the RCs, BAs, and TOPs. This plan will provide information regarding onboarding process and timing, as well as, a status of all entities and their participation plans. Each entity will be individually responsible to ensure that it completes the tasks to support its onboarding process.

The CAISO will become the RC of record for transmission operators within its balancing authority area in the spring of 2019. The CAISO understands that interested balancing authorities and transmission operators outside of its balancing authority area are considering a single date in the fall of 2019 for the CAISO to become the RC of record on their behalf. The CAISO supports this effort and will be ready to be the RC of record on their behalf on or after September 1, 2019. However, the CAISO will need to know the scope of RC customers and the date they wish to receive the services by the end of 2018. The CAISO anticipates having available a pro forma RC services agreement in November of 2018, which will document the RC services date.

8. Other Comments

8.1 Oversight / Governance

Overview

The CAISO established a Reliability Project Steering Committee (RPSC) that includes working groups to support its objectives. The steering committee itself is primarily focused on developing the long term RC oversight structure, while the working groups that report to the RPSC are focused on developing the details necessary to implement RC services. The CAISO is committed to working with the RPSC to establish an oversight structure that meets the needs of its customers and encourages all of the entities that submitted oversight comments to continue and engage in that process. The issues raised by

stakeholders in their oversight comments will be further addressed through the RPSC, rather than this stakeholder process.

Stakeholder Input

BPA commented that the proposed governance framework for the CAISO's reliability coordination function needs to be addressed up front so that entities can consider how decisions will be made and who will be making them. Independent governance of the CAISO's reliability coordinator function is appropriate because the CAISO Board of Governors is currently appointed by the governor of California and, as such, is not representative of an expanded reliability coordinator footprint. BPA encourages the CAISO to work with the RC Project Steering Committee to select an appropriate governance structure as soon as possible.

Additionally BPA commented that to further develop and refine its reliability coordinator proposal, the CAISO should utilize the RC Project Steering Committee and its working groups to ensure that each participant's needs are being met to the greatest extent possible. Also, the CAISO should share any existing analysis of its scope of service, cost estimates, and rate design with the RC Project Steering Committee. In addition, the CAISO should benchmark the type and level of reliability coordinator provider services provided by other ISOs/RTOs, including the costs and number of employees involved in providing such services. This sort of benchmarking should be reported to the RC Project Steering Committee and used as a baseline to ensure that the CAISO's proposal has adequate detail and reasonable cost assumptions. Finally, the CAISO should analyze the costs and potential benefits of geographic diversity in its location of control centers and share such analysis with the RC Project Steering Committee.

PGE encourages the CAISO to leverage the expertise of each Working Group in order to fully validate the preliminary scope list.

PNM and NaturEner recommend the issue of governance be addressed in more detail, so potential RC members taking the opportunity presented by these comments might make some requests of the CAISO related to RC governance. The proposed governance framework for the RC function needs to be addressed up front so that entities evaluating options for provision of RC services can consider how decisions will be made and who will be making them. Independence, experience and depth in the Western Interconnection will be critical to thoughtful oversight of the reliability coordinator. PNM would like to have additional information on the CAISO's governance structure to understand if it supports what is required to adequately manage the RC function. It is not clear whether or how the RPSC would factor in to a long-term governance structure and PNM requests that the CAISO elaborate on its thinking in this regard.

CHPD recommended that the RC function needs its own governance structure, and the key staff providing RC services should report up to this RC-specific governing body. Decisions that drive the tools, investment and staffing to manage RC services provided to a diverse group of entities in the Western Interconnection need to be made independent of decisions that affect the markets operated by the CAISO. Oversight is best provided by a group of people, selected independently from the CAISO, with

years of appropriate technical experience. The current make-up and qualifications of the CAISO Governing Board are simply not designed with the RC function in mind. Despite the fact that there is synergy with use of systems and tools, RC services is very much a distinct service from the rest of the services offered by the CAISO. As such, CHPD proposes that the CAISO form a separate company with a separate governing board to oversee the RC function. This board would be seven to nine representatives of the balancing authorities and transmission operators receiving RC service. To provide additional transparency and ability to evaluate RC operator decisions, we also propose that the CAISO retain an independent expert to provide advice and guidance to the RC governing board and RC staff. PacifiCorp agrees with this proposal. CHPD is happy to engage immediately with the CAISO and other stakeholders to discuss this concept in more detail. CHPD strongly believes that governance is an issue that should be addressed immediately and we suggest that the CAISO plan to have a governance proposal to stakeholders for review no later than May 21.

The interim Reliability Coordinator Project Steering Committee (“RPSC”) provides helpful oversight of the development of the RC. PacifiCorp and SDG&E support the RPSC. As a long-term oversight function, MID believes that an organized Board should conduct oversight of the CAISO RC, and should consist of a representative of each Balancing Authority (“BA”) that is receiving services from the CAISO RC (or reasonable amalgam of BAs), as well as a representative for the CAISO BA. An oversight Board would provide representation and transparency for the RC members, and has the potential for reducing costs for members, to the extent that individual members do not have to conduct redundantly the types of activities that an oversight Board could perform.

SDG&E would like to see CAISO provide clarification relative to: the procedures and reporting structure between the RPSC and CAISO RC, lower-level sub-committees, and working groups; how consensus will be achieved when a discrepancy arises amongst the members of the RPSC or between working groups; dispute resolution process.

CAISO Response

The CAISO appreciates all of the feedback on oversight provided in response to the straw proposal and agrees that the oversight structure is an urgent matter to be resolved. As explained in the straw proposal, the CAISO established a Reliability Project Steering Committee (RPSC) that includes working groups to support its objectives. The steering committee itself is primarily focused on developing the long term RC oversight structure, while the working groups that report to the RPSC are focused on developing the details necessary to implement RC services. The CAISO has set up a secure site to share information from the RPSC efforts with entities that have signed a non-disclosure agreement. All of the entities that submitted comments in response to the straw proposal’s statement on oversight should have access to this secure site and will receive updates and invitations to the meetings and other activities of the RPSC. If any stakeholder that has signed a non-disclosure agreement does not have access to the CAISO secure site, please contact ISORC@CAISO.COM.

Many stakeholders refer to the concept of governance in their comments. Generally speaking, governance represents the rules and procedures that the CAISO’s board is responsible to administer, including its bylaws and committee charters. As a result, the CAISO does not envision the need to

change its current board-level governance structure with respect to the provision of RC services. Rather, the CAISO will work with RC customers to implement an oversight structure for the RC function that interacts with the CAISO at the executive, management and staff level. As part of the CAISO's project launch, it has received valuable insights from potential RC customers that have led to key principles reflected in the CAISO's proposed oversight structure. First, comments reiterate that the very nature of the RC function is to improve reliability of the interconnection by providing a wide-area view of the BAs and TOPs in compliance of NERC standards. Second, stakeholders support streamlining the administrative process by eliminating membership tiers and provide focus on the specific needs of the BAs and TOPs. The CAISO is committed to defining an oversight framework with potential RC customers.

The CAISO will work with the RPSC to establish an oversight structure that meets the needs of its customers and encourages all of the entities that submitted oversight comments to continue and engage in that process. However, that design must be completed prior to the completion of the stakeholder initiative on rate design to ensure the oversight function is supported by the rate design. The issues raised by stakeholders in their oversight comments will be addressed through the RPSC, rather than this stakeholder process. As a result, stakeholders can expect the draft final proposal will include a general statement of expectation concerning the outcome of the oversight efforts but will not include additional details with respect to oversight.

8.2 Business Practice Manuals

Overview

Business practice manuals (BPMs) provide detailed rules, procedures and examples for the administration, operation, planning and accounting requirements of the California ISO and participants that are consistent with the ISO tariff. Changes made to existing BPMs are subject to a BPM change management stakeholder review process. The RC services BPM will not establish the operating procedures and practices that apply to the CAISO's RC function. The RC operating procedures and practices will be developed and adopted through the RC services oversight process described in the straw proposal.

Stakeholder Input

NaturEner does not have sufficient knowledge to determine whether the listed business practice manuals represent the only manuals or modifications that would be required to appropriately incorporate RC services.

CAISO Response

The CAISO will administer RC Services in accordance with the applicable agreement, tariff provisions, business practice manual, and operating procedures. The CAISO will publish a business practice manual for stakeholder consideration after FERC acceptance of the tariff and prior to implementation of the services. As the RC Services evolve, the CAISO will ensure that all business practice manuals are updated as appropriate.

ATTACHMENT

DRAFT Pro Forma Reliability Coordinator Service Agreement

**CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

AND

[RC CUSTOMER]

**RELIABILITY COORDINATOR
SERVICES AGREEMENT**

RELIABILITY COORDINATOR SERVICES AGREEMENT (RCSA)

THIS AGREEMENT is dated this _____ day of _____, _____, and is entered into, by and between:

(1) **[Full Legal Name]**, having its registered and principal place of business located at [Address] (the “RC Customer”);

and

(2) **California Independent System Operator Corporation** (the “CAISO”), a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate.

The RC Customer and the CAISO are hereinafter referred to as the “Parties”.

Whereas:

- A. WHEREAS, the CAISO has registered with and is certified by NERC as a Reliability Coordinator;
- B. WHEREAS, the RC Customer is registered with and certified by NERC as a Balancing Authority and/or Transmission Operator;
- C. WHEREAS, the RC Customer has determined that there is a need for the RC Customer to identify a Reliability Coordinator for its operations, currently and into the foreseeable future; and
- D. WHEREAS, pursuant to this Agreement, the CAISO agrees to provide to the RC Customer services as set forth herein.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, the Parties agree as follows:

ARTICLE I

DEFINITIONS AND INTERPRETATION

1.1 Specific Definitions.

1.1.1 CAISO Tariff: The CAISO electric tariff, as amended from time to time.

1.1.2 Confidential Information: Documents, materials, data, or information (“Data”) provided to it by any other Party that reflects or contains: (a) Data treated as confidential or commercially sensitive under the confidentiality provisions of

Section 20 of the CAISO Tariff; (b) Critical Energy Infrastructure Information, as defined in Section 388.113(c)(1) of FERC's regulations; and (c) technical information and materials that constitute valuable, confidential, and proprietary information, know-how, and trade secrets belonging to a Party, including, but not limited to, information relating to drawings, maps, reports, specifications, and records and/or software, data, computer models, and related documentation.

1.1.3 Initial Term: The Initial Term of the Agreement is eighteen (18) months from the RC Services Date.

1.1.4 NERC Definitions: Terms and expressions used in this Agreement will have the same meanings as those contained in the "NERC Glossary of Terms Used in Reliability Standards".

1.1.5 Person: Any individual, corporation, cooperative corporation, municipal corporation, quasi-municipal corporation, joint operating entity, limited liability company, mutual association, partnership, limited partnership, limited liability partnership, association, joint stock company, trust, unincorporated organization, government entity or political subdivision thereof (including a federal power marketing administration), or organization recognized as a legal entity by law in the United States, Mexico, or Canada, as applicable.

1.1.6 RC Services: The Reliability Coordinator services provided by the CAISO and described in Section X.X of the CAISO Tariff. RC Services do not include the supplemental services also offered under this Agreement, as described in Sections 2.2.1 and 2.2.2.

1.1.7 RC Services Date: The date upon which the CAISO becomes the Reliability Coordinator of record for an RC Customer and the RC Customer begins receiving RC Services from the CAISO.

1.2 Rules of Interpretation. The following rules of interpretation and conventions will apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and Section X.X of the CAISO Tariff, Section X.X of the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular will include the plural and vice versa;
- (c) the masculine will include the feminine and neutral and vice versa;
- (d) "includes" or "including" will mean "including without limitation";
- (e) references to a Section, Article or Schedule will mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

- (f) a reference to a given agreement or instrument will be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law will be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (i) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (j) the captions and headings in this Agreement are inserted solely to facilitate reference and will not have any bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II

GENERAL RESPONSIBILITIES OF THE PARTIES

- 2.1 Agreement.** This Agreement is subject to Section X.X of the CAISO Tariff, which is incorporated herein.
- 2.2 Description of CAISO Responsibilities.** The CAISO agrees to provide RC Services to the RC Customer, commencing on the RC Services Date, in accordance with Section X.X of the CAISO Tariff.
 - 2.2.1 Supplemental Services – Hosted Advanced Network Application (HANA).** The CAISO agrees to provide HANA services to the RC Customer at its request for an additional charge, as set forth in Section X.X of the CAISO Tariff. Each year, the RC Customer will notify the CAISO in writing by October 1 as to which HANA services it is electing to take for the following calendar year. If the RC Customer does not notify the CAISO by October 1, the CAISO will continue to provide the RC Customer with the same HANA services it is providing to the RC Customer during the then current year.
 - 2.2.2 Supplemental Services – Physical Security Review.** The CAISO agrees to provide physical security review services to the RC Customer at its request for an additional charge, as set forth in Section X.X of the CAISO Tariff, in accordance with applicable Reliability Standards (currently, NERC CIP-014).
- 2.3 Description of RC Customer Responsibilities.** The RC Customer agrees to comply with the provisions of Section X.X of the CAISO Tariff that are applicable to its NERC designated function. The RC Customer is either a (check the box that applies):

- (a) Balancing Authority (settled based on Net Energy for Load (NEL) of the BAA)
- (b) Generator Only Balancing Authority (settled based on Net Generation (NG) of the BAA)
- (c) Transmission Operator:
 - 1) Outside CAISO BAA with no load (settled based on fee)
 - 2) Outside CAISO BAA with load (settled based on Transmission Owner load or share of BAA NEL)
 - 3) Inside CAISO BAA with no load (settled based on fee)
 - 4) Inside CAISO BAA with load (settled based on share of CAISO BAA NEL)

2.4 Identification of Transmission Operators and Transmission Owners. Each RC Customer that is a Balancing Authority will provide the CAISO with a list of the Transmission Operators and corresponding Transmission Owners they are representing for RC Services in Schedule 1. If the RC Customer is a Transmission Operator, it will provide the CAISO with a list of the Transmission Owners they are representing for RC Services in Schedule 1. Any changes to Schedule 1 will not constitute an amendment to this Agreement.

ARTICLE III

TERM AND TERMINATION

3.1 Term. This Agreement will be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by FERC (“Effective Date”). The Agreement will remain in full force and effect for eighteen (18) months from the RC Services Date (“Initial Term”). Upon expiration of the Initial Term, this Agreement will automatically renew and will remain in full force and effect until terminated pursuant to Sections 3.2.1 or 3.2.2 of this Agreement.

3.2 Termination.

3.2.1 Termination by CAISO. In the event the RC Customer commits any material default under this Agreement, which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given written notice to the RC Customer of the default, the CAISO may terminate this Agreement upon thirty (30) days prior written notice of termination. Any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the RC

Customer that has arisen while that RC Customer was receiving services under this Agreement, and any provision of this Agreement necessary to give effect to such right or obligation, will survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must timely file a notice of termination with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default. This Agreement will terminate upon acceptance by FERC of such a notice of termination, or thirty (30) days after the date of the CAISO's notice of default if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by RC Customer. The RC Customer may terminate this Agreement, without penalty, by giving the CAISO not less than twelve (12) months advance written notice after the Initial Term. This notice will be given on or before April 1 of the current calendar year and such termination will become effective on April 1 of the following year. If the RC Customer gives the CAISO less than twelve (12) months' notice and is being billed directly for the RC Services in accordance with Section 5.2, the RC Customer will be charged an amount equal to the balance of the RC Service fees remaining on the twelve (12) month required notice period. Any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the RC Customer that has arisen while that RC Customer was receiving services under this Agreement, and any provision of this Agreement necessary to give effect to such right or obligation, will survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must timely file a notice of termination with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if the request to file a notice of termination is made after the preconditions for termination have been met. For entities subject to FERC jurisdiction, termination will be effective upon acceptance by FERC of notice of termination, or upon twelve (12) months if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.3 Transition Assistance. Except in the case of a CAISO termination for a default by the RC Customer, if the RC Customer requests in their notice of termination, the CAISO will reasonably assist the RC Customer to transition to another Reliability Coordinator prior to the effective date of the transition, including providing data and assistance, provided that the RC Customer will reimburse the CAISO for its reasonable costs for such assistance.

ARTICLE IV**PENALTIES AND SANCTIONS**

- 4.1 Allocation of Reliability Related Penalty Costs.** The CAISO will have the right to allocate reliability-related penalty costs assessed to the CAISO by FERC, NERC and/or WECC to the RC Customer in accordance with Section X.X of the CAISO Tariff.

ARTICLE V**BILLINGS AND SETTLEMENTS**

- 5.1 Data and Submission.** The RC Customer will be responsible for submitting its RC Services' settlements data and related information to the CAISO in accordance with Section X.X of the CAISO Tariff.
- 5.2 Invoice and Payment Process.** If the RC Customer is a Balancing Authority, or if it is a Transmission Operator who elects to be billed directly in exchange for the RC Services provided by this Agreement, said RC Customer will be invoiced for RC Services in accordance with Section X.X of the CAISO Tariff and will have the right to dispute the RC Services invoiced amount in accordance with Section X.X of the CAISO Tariff. If the RC Customer is a Transmission Operator and does not elect to be billed directly, the costs for its RC Services will be borne by its Balancing Authority. If the RC Customer is within the CAISO Balancing Authority Area, the Transmission Operator will be billed in accordance with Section X.X of the CAISO Tariff.

For billing purposes in accordance with this Section, the RC Customer represents that it is either a (check the box that applies):

- (a) **Balancing Authority**
- (b) **Transmission Operator (direct billing elected)**
- (c) **Transmission Operator (billed to Balancing Authority)**
- (d) **Transmission Operator within the CAISO BAA**
- 5.3 Payment Default.** The CAISO will have the right to recover unpaid RC Services invoiced amounts from the RC Customer pursuant to Section X.X of the CAISO Tariff. For RC Customers in the CAISO Balancing Authority Area, the CAISO will have the right to recover unpaid RC Services invoiced amounts from the RC Customer pursuant to Section X.X of the CAISO Tariff.

ARTICLE VI

CONFIDENTIALITY

- 6.1 Confidentiality.** Each Party's Confidential Information will be treated in accordance with Section 20 of the CAISO Tariff and any other applicable confidentiality or data sharing agreements in effect between the Parties.

ARTICLE VII

GOVERNING LAW

- 7.1 Governing Law and Forum.** This Agreement will be deemed to be a contract made under, and for all purposes will be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement will be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

ARTICLE VIII

LIABILITY

- 8.1 Liability.** Except as expressly provided in this Agreement, neither Party will be liable to the other Party under any circumstances, whether any claim is based in contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits, loss of earnings or revenue, loss of use, loss of contract or loss of goodwill, arising out of or in connection with this Agreement or the services performed in connection with this Agreement.
- 8.2 No Third Party Enforcement.** No third party will be entitled to enforce this Agreement against any Party hereto. This Agreement is made and entered into for the sole protection and legal benefit of the Parties. No other Person will be a direct or indirect legal beneficiary, or have any direct or indirect cause of action or claim in connection with, this Agreement. No other Person will be a third party beneficiary under this Agreement.
- 8.3 Recovery for Third Party Indemnity.** To the extent that the CAISO suffers any loss as a result of any third party claims arising out of the performance of this Agreement in violation of Section 8.2 herein, the CAISO will be entitled to seek recovery of such loss through Section 14 of the CAISO Tariff, except that any reference in Section 14 of the CAISO Tariff to Market Participants will be read as a references to the RC Customer and references to the CAISO Tariff will be read as references to this Agreement.

ARTICLE IX

DISPUTE RESOLUTION

- 9.1 Dispute Resolution.** The Parties will make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties must adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants will be read as a references to the RC Customer and references to the CAISO Tariff will be read as references to this Agreement.

ARTICLE X

MISCELLANEOUS

- 10.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 10.1.1 Information Exchange.** All information, including Confidential Information provided by any Party under this Agreement, is accurate to the extent of the providing Party's knowledge. The receiving Party receives the information "as is" and with the understanding that the information is accurate to the best of the providing Party's knowledge at the time of receipt.
- 10.2 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff will be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants will be read as a reference to the RC Customer and references to the CAISO Tariff will be read as references to this Agreement.
- 10.3 Consistency with Federal Laws and Regulations.** This Agreement incorporates by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 10.3.1 Federal Entity Contract Requirements.** The provisions of Schedule 2 hereto contain provisions applicable to certain contracts entered into with the federal government. The provisions of Schedule 2 are applicable to a Party that is a federal entity if and to the extent required by applicable law and if not otherwise exempted.
- 10.4 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent. Such consent will not be unreasonably withheld. Any such transfer or assignment will be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest

was an original Party to this Agreement.

- 10.5 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement will be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return e-mail if sent by e-mail, or (d) upon delivery if delivered by prepaid commercial courier service, and unless otherwise stated or agreed must be made to the representative of the other Party indicated in Schedule 3. A Party must update the information in Schedule 3 of this Agreement as information changes. Such changes will not constitute an amendment to this Agreement.
- 10.6 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, will not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement will not constitute or be deemed a waiver of such right.
- 10.7 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 10.8 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition will remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application will not be affected thereby, but will remain in force and effect and the Parties will be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 10.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval will not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein will be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the RC Customer will have the right to make a unilateral filing with FERC to modify this

Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party will have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement will limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

10.10 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which will be regarded as an original and all of which, taken together, will constitute one and the same Agreement. Each individual signing this Agreement certifies that the Party represented has duly authorized such individual to sign, bind, and obligate such Party.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[RC Customer]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

Transmission Operator / Transmission Owner Relationships

(Section 2.4)

The RC Customer represents the following Transmission Operators and corresponding Transmission Owners for RC Services:

Transmission Operator ("TOP")	Transmission Owner ("TO")

RC Services Date: _____

SCHEDULE 2

FEDERAL GOVERNMENT CONTRACT PROVISIONS

(Section 10.3.1)

This Schedule 2 contains provisions that are necessary for the United States of America, acting by and through the Western Area Power Administration (“Western”) and the Bonneville Power Administration (“Bonneville”) to enter into the Agreement.

1. Billing and Payment

Notwithstanding Section 5.2 of the body of the Agreement, the CAISO will submit monthly invoices to Bonneville and Western for Funded Services provided for the preceding month. The invoice will contain information specified in 5 C.F.R. § 1315.9(b). The amount of the monthly invoice will be 1/12 of the calendar-year amount calculated for Bonneville and Western, respectively, pursuant to Section X.X of the CAISO Tariff and sent to the persons designated by Bonneville and Western. Bonneville and Western may change the persons designated to receive the invoices at any time by written notice to the CAISO. Bonneville and Western will pay the monthly invoice within twenty calendar days after receipt of such invoice, and such payments will be in accordance with the Prompt Payment Act, 31 U.S.C. § 3900 et seq.

2. Contingent Upon Appropriations and Authorization

Where activities provided for in this Agreement extend beyond the current fiscal year, continued expenditures by Western are contingent upon Congress making the necessary appropriations required for the continued performance of Western’s obligations under the Agreement. In case such appropriation is not made, (i) Western will promptly give each of the other Parties written notice of such failure. (ii) Western will from and after the occurrence of any such failure no longer be a party to this Agreement, and (iii) the Parties hereby release Western from its contractual obligations and from all liability due to the failure of Congress to make such appropriation.

3. Covenant Against Contingent Fees

Each of the Parties warrants to each of the other Parties that no person or selling agency has been employed or retained by it to solicit or secure the Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by any Party for the purpose of securing business. For breach or violation of this warranty by any Party other than Western or Bonneville, Western and Bonneville will have the right to annul the contract with respect to Western and Bonneville without liability or in its discretion to deduct from the contract

price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

4. Contract Work Hours and Safety Standards

The Agreement, to the extent that it is of a character specified in Section 103 of the Contract Work Hours and Safety Standards Act (Act), 40 U.S.C. § 3701, as amended or supplemented, is subject to the provisions of the Act, 40 U.S.C. §§ 3701-3708, as amended or supplemented, and to regulations promulgated by the Secretary of Labor pursuant to the Act.

5. Equal Opportunity Employment Practices

Section 202 of Executive Order No. 11246, 30 Fed. Reg. 12319 (1965), as amended by Executive Order No. 12086, 43 Fed. Reg. 46501 (1978), as amended or supplemented, which provides, among other things, that the Parties will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin, is incorporated herein by reference the same as if the specific language had been written into the contract.

6. Use of Convict Labor

The Parties agree not to employ any person undergoing sentence of imprisonment in performing the Agreement except as provided by 18 U.S.C. § 3622(c), as amended or supplemented, and Executive Order No. 11755, 39 Fed. Reg. 779 (1973), as amended or supplemented.

SCHEDULE 3

NOTICES

(Section 10.5)

RC Customer

Name of Primary Representative:

Title:

Company:

Address:

City/State/Zip Code:

Email address:

Phone:

Name of Alternative Representative:

Title:

Company:

Address:

City/State/Zip Code:

Email address:

Phone:

CAISO

Name of Primary Representative: Regulatory Contracts
Title: N/A
Address: 250 Outcropping Way
City/State/Zip Code: Folsom, CA 95630
Email address: RegulatoryContracts@caiso.com
Phone: (916) 351-4400

Name of Alternative Representative: Christopher J. Sibley
Title: Manager, Regulatory Contracts
Address: 250 Outcropping Way
City/State/Zip Code: Folsom, CA 95630
Email address: csibley@caiso.com
Phone: (916) 608-7030