

**Appeal of Business Practice Manual Change--PRR 854 for Demand Response
Resources by the Staff of the California Public Utilities Commission**

Submitted by	Company	Date Submitted
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The Staff of the California Public Utilities Commission (CPUC Staff) appeals the proposed revision to the CAISO’s Business Practice Manual (BPM), “PRR 854.” This footnote addresses the ability of the CAISO to respond to a contingency in 30 minutes, and relates to §40.1.1 *et seq*, in the CAISO tariff, which specifies:

The Local Capacity Technical Study will determine the minimum amount of Local Capacity Area Resources needed to address the Contingencies identified in Section 40.3.1.2. In performing the Local Capacity Technical Study, the CAISO will apply those methods for resolving Contingencies considered appropriate for the performance level that corresponds to a particular studied Contingency, as provided in NERC Reliability Standards TPL-001-0, TPL-002-0, TPL-003-0, and TPL-004-0, as augmented by CAISO Reliability Criteria in accordance with the Transmission Control Agreement and Section 24.2.1. The CAISO Reliability Criteria shall include:

(1) Time Allowed for Manual Readjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. This time should not be more than thirty (30) minutes.

The new BPM footnote language (v3_120115) states, in part:

Local capacity resources can meet this [30 minute] requirement by either (1) responding with sufficient speed, allowing the operator the necessary time to assess and redispatch resources to effectively reposition the system within 30 minutes after the first contingency, or (2) have sufficient energy available for frequent dispatch on a pre-contingency basis to ensure the operator can meet minimum online commitment constraints or reposition the system within 30 minutes.

. . . [W]hen evaluating resources that satisfy the requirements of the CAISO Local Capacity Technical Study, the CAISO assumes that local capacity resources need

to be available in no longer than 20 minutes so the CAISO and demand response providers have a reasonable opportunity to perform their respective and necessary tasks and enable the CAISO to reposition the system within the 30 minutes in accordance with applicable reliability criteria. . .

CPUC Staff did not previously comment on the proposed BPM change affecting Demand Response (DR) resources that currently count for local Resource Adequacy (RA) capacity requirements. We hoped that this issue could be resolved through direct conversations with CAISO Staff. While those conversations have been fruitful in better understanding the issue, we remain concerned about real ratepayer impacts, as well as process- and policy-related implications of the proposed BPM change. We agree with the nearly unanimous stakeholder comment that it was inappropriate for CAISO to develop a BPM change that is in direct conflict with a recent CPUC decision. Furthermore, we agree with the nearly unanimous stakeholder comment that if the CAISO did not intend to defer to the CPUC's well-established jurisdiction on RA rules for local resources, then the proper process is to initiate a CAISO stakeholder process or included the issue in an existing stakeholder process to ensure transparency and a sufficient opportunity for stakeholder engagement. Finally, it has come to light that this change has already resulted in CAISO changing counting conventions for RA resources in local areas, potentially resulting in either backstop procurement or additional LSE procurement to mitigate "deficiencies" identified by CAISO due to its discounting of DR capacity.

CAISO's stated reason for this proposed BPM change is related to meeting NERC Reliability standards TOP-001,-004 and -007. CAISO explains in their response to comments document:

[T]o meet these reliability standards, resources must either be operating pre-contingency or be able to respond rapidly post-contingency so that the system repositioning can occur in accordance with the applicable standards. Any use-limited resources that cannot be dispatched with sufficient frequency (sufficient total number of hours and daily hours of availability) to meet these needs pre-contingency must instead be able to respond quickly enough to support repositioning the system post-contingency. Existing supply-side demand

response programs do not provide sufficient capabilities to pre-dispatch in anticipation of the first contingency. . .

Specifically, we share the confusion expressed by other stakeholders that the reliability concern that CAISO asserts is necessary to address in the BPM never came up in any of the last five years' Local Capacity Requirements (LCR) "Technical Assessment" study processes and corresponding stakeholder initiatives. The path toward integrating DR into CAISO's markets has been a long one, and there has been ample time to address what CAISO now states is a necessary and existing component of the LCR technical assessment. In fact, this issue is currently included in the scope of the CPUC's RA proceeding. The CPUC reviewed this issue for the 2016 RA compliance year and decided to defer the matter until a later phase of the proceeding (D.15-06-063).

In the initial "comments and responses" document, CAISO states: "[t]he CAISO believes an assessment about how supply demand response can serve as a local capacity resource must be conducted collaboratively, as opposed to solely by the CAISO, so that any agreed-to approach is fully supported and embedded in the IOUs' planning and operations functions." CPUC Staff fully agree with this statement, and therefore, a collaborative process cannot take place through a BPM change process and should be done through a CPUC OIR (e.g., the RA proceeding) in coordination with a CAISO stakeholder initiative, such as next year's LCR Study.

CAISO's Response to Stakeholder Comments on the proposed BPM Change

In its response to Stakeholder Comments CAISO made the following statements:

- The CAISO's Business Practice Manuals do not change a local regulatory authority's resource adequacy rules.
- The updated business practice manual does not alter how resource adequacy resources must operate.
- Resources that are shown on a supply plan as local resource adequacy capacity that require post-contingency dispatch because of their very energy-limited nature must fully respond to a CAISO dispatch instruction within 20 minutes to be included in as a local capacity area resource.

- CAISO’s primary interest is how supply resource attributes are reflected in the CAISO’s Masterfile so that the resource can be optimized and operated.
 - The amount of potential local capacity shown on a supply plan would be the amount of capacity deliverable in 20 minutes per the resource’s registered ramp rates.

CPUC Staff appeals this change for the following reasons:

1. The proposed BPM change undermines (circumvents?) the CPUC’s RA program and could result in significant ratepayer cost if the CAISO orders local backstop procurement under the CPM.
2. A resource’s ability to respond to a contingency event is not a critical component of being designated as an RA resource.
3. The proposed change unnecessarily discriminates against demand response resources. Holding preferred resources, such as DR, to this higher standard undermines California’s preferred resource policy and the “loading order.”
4. Leaving the BPM as-is for DR resources in local areas will not detrimentally affect reliability, but will constrict DR program design and participation at a time in which the CPUC is working to grow the DR market.

Background on Resource Adequacy and Local Requirements

State law, as captured in the Public Utilities Code, directs the CPUC to establish RA requirements “in consultation with” the CAISO (Pub. Utils. Code, Sec. 380(b)). As provided in Section 345.5, the CAISO must conduct its operations consistent with state law by including existing resources, such as demand response, in the CAISO’s markets. Thus, under state law the CPUC, rather than the CAISO, has authority to create and modify RA requirements. Further, the FERC has clarified that under federal law the CAISO should not create Resource Adequacy requirements beyond those set by the state or other applicable Local Regulatory Authority:

[W]e recognize the states' historical role in ensuring resource adequacy. . . . we can fulfill our jurisdictional responsibilities while also respecting the states' traditional role. . . . We note that the default . . . RA requirements are triggered only when state and Local Regulatory Authorities have failed to act in order to ensure resource adequacy. . . . Moreover, we have no reason to believe that these entities will fail to act and that the default requirements will be triggered. FERC Order Conditionally Accepting the CALIFORNIA INDEPENDENT SYSTEM OPERATOR’S ELECTRIC TARIFF FILING TO REFLECT MARKET REDESIGN AND TECHNOLOGY UPGRADE issued on September 21, 2006 at ¶1116-1118.

The CPUC has adopted an overall protocol for valuing RA resources, known as the Net Qualifying Capacity (NQC) methodology. In D.09-06-028, the CPUC directed that the Qualifying Capacity (QC) of DR resources be based on the Load Impact Protocols (LIPs) adopted by D.08-04-050. The monthly QC of a DR resource is the average expected (*ex ante*) load impact measured over certain measurement hours. The measurement hours for DR resources are as follows:

RA Compliance Year	Hours				
2011	Hour Ending (HE) 15 to HE 18 (2:00 p.m. to 6:00 p.m.)				
2012 and beyond, except for programs that have a different, fixed operational period set by CPUC decision.	<table border="0"> <tr> <td data-bbox="578 766 1003 835">Jan–Mar, Nov and Dec:</td> <td data-bbox="1010 766 1430 835">HE 17 to HE 21 (4:00 p.m. - 9:00 p.m.)</td> </tr> <tr> <td data-bbox="578 844 1003 934">Apr–Oct:</td> <td data-bbox="1010 844 1430 934">HE 14 to HE 18 (1:00 p.m. - 6:00 p.m.)</td> </tr> </table>	Jan–Mar, Nov and Dec:	HE 17 to HE 21 (4:00 p.m. - 9:00 p.m.)	Apr–Oct:	HE 14 to HE 18 (1:00 p.m. - 6:00 p.m.)
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All DR programs that meet the CPUC’s criteria are given a Local RA capacity value or “credit.” For DR programs to receive local RA capacity credit, the load impact must be broken down by Local Capacity Areas. DR programs are procured by CPUC-jurisdictional LSEs based on existing RA criteria, and therefore, there is an expectation that these programs can be used by these LSEs to meet 2016 local RA requirements. This procurement has already occurred at ratepayer expense.

One component of QC values is deliverability, as determined by a deliverability study conducted by the CAISO. Dispatch and outage contingency scenarios are studied as one part of the deliverability analysis. According to CPUC RA decisions, this is the only way that contingencies factor into a resource’s QC value. (Qualifying Capacity Methodology Manual—Appendix B to D.09-06-0282).

The CAISO currently does not specify monthly local requirements, but rather sets an annual Local RA requirement that is then evenly spread across the months. CPUC Staff has

repeatedly requested that the CAISO consider setting monthly, or seasonal local RA requirements, because this measurement would be effective in guaranteeing reliability during peak load months, e.g., July, August and September. CAISO currently sets flexible requirements on a monthly basis, and this may also be a more accurate way to set requirements for local. (For more discussion see CPUC Staff comments in the Reliability Services 2 Initiative).

CPUC Staff’s Reasons for Appealing this BPM Change:

1. The proposed BPM change is in direct conflict with the CPUC’s RA program and has created potential for additional ratepayer costs.

CAISO has stated that they are not changing Local RA rules. In fact, the BPM change alters the value of RA resources that have been procured by CPUC-jurisdictional LSEs, and creates the potential for CAISO to conduct backstop procurement (using the CPM) for local RA, even when the CPUC LSEs are not under-procured for RA, based on the CPUC’s RA rules. In fact, CAISO issued a Market Notice on November 18th, 2015, “Review of Final 2016 Resource Adequacy Compliance Filings and Determination of Deficiency” notifying the LSEs of deficiencies in specific local areas. This notice specified that if the LSEs did not “mitigate” the deficiency with additional procurement, the CAISO would utilize their Capacity Procurement Mechanism (CPM) authority and backstop for these newly identified “deficiencies.” If CAISO uses the CPM, or if the LSEs procure additional capacity, this represents a *real and significant ratepayer impact* of this BPM change. It is our understanding that these “deficiencies” are a direct result of CAISO discounting DR capacity in local areas.

The CPUC considered this same issue of 20 minute response times in a recent decision and decided not to change the Local RA requirement for DR or the QC methodology for DR (D.15-06-063). Therefore, in essence the proposed BPM change memorializes the CAISO’s contention regarding how the CAISO views the requirements to qualify as a “local RA resource” and not have their capacity value discounted by CAISO in conflict with the CPUC’s determination in D.15-06-013.

The CPUC is bound to guaranteeing due process when making decisions that affect the utilities it regulates and the impacts of potential decisions upon ratepayers. The CPUC is also bound to consider and weigh the potential ratepayer benefits of a rule or policy change with the potential ratepayer costs. As such, the CPUC considered the issue of changing, for RA compliance year 2016, the local RA requirements for resources to consider whether they can meet a “first contingency” in an open, public forum. The CPUC issued a Ruling in December 2014 asking parties whether present RA eligibility requirements for DR are appropriate, and/or whether the NQC methodology for DR resources should be changed. Calpine was the only party that asked the CPUC to consider changes to the RA requirements for DR resources and made three proposals to that effect. Two parties (including the CAISO) supported Calpine’s proposal, in part. A record was developed in the proceeding on this topic. (Refer to docket for R.14-10-010).

After considering the record on the topic, the Commission concluded: “Demand Response programs need time to respond to RA rule changes. Given that the Commission is currently evaluating the 2016 Load Impacts for 2016 RA DR values, the current programs, receiving local credit, will have been given no time to respond to this rule change. Given the lag in DR program response time as well as the current market participation uncertainties, *we cannot adopt a 20- minute local dispatch requirement for 2016*” (emphasis added). (D.15-06-063 at 35). The decision also said that the issue should be re-evaluated and considered for future (beyond 2016) compliance years and that this would be taken up in “track three” of the RA proceeding in 2016. Therefore, CAISO’s action appears to ignore or circumvent CPUC decisions.

2. A resource's ability to respond to a contingency event does not affect its capacity value, based on existing rules. Prior CPUC decisions reflect that fast-response DR should be relied upon in local areas.

The CPUC has considered the specific issue of resources' ability to respond to contingencies in multiple proceedings. A resource is given RA capacity value based on its Net Qualifying Capacity using a methodology developed by the CPUC and agreed upon by the CAISO (as discussed above). Qualifying Capacity is generally based upon a resource's ability to meet peak loads, and specifically, load impacts during the peak hours of the year. One component of QC values is deliverability, as determined by a deliverability study conducted by the CAISO. Dispatch and outage contingency scenarios are studied as one part of the deliverability analysis. According to CPUC decisions, this is the only way that contingencies factor into a resource's QC value (Qualifying Capacity Methodology Manual—Appendix B to D.09-06-0282).

The June RA decision (D.15-06-063) considered a proposal from Calpine to change the NQC calculations for DR, and specifically, which hours of the year (measurement hours) should be used for NQC calculations. The CPUC concluded that there was insufficient record developed to consider this proposal, as it would have required additional study results. Therefore, the fact that the current NQC methodology for DR resources has not changed is further reason why the CAISO's proposed BPM change, which would detrimentally affect the RA value of DR resources, is inappropriate.

Furthermore, in Track 4 of the 2012 LTPP proceeding, the record indicates that all parties, including CAISO, concluded that "fast-responding" DR resources *should be* included in the modeling of resources available to respond to a contingency event. That decision, D.14-03-004 discusses the issue of "fast responding" DR resources at length, *and defined them as DR that can respond in 30 minutes*. This track was focused on local reliability in Southern California and ordered procurement of local area resources for the LA Basin. Furthermore, the decision, in

“Finding of Facts” number 45 makes no mention of the 20 minute response time CAISO now alleges is necessary to respond to a first contingency. In fact, the record of the proceeding clearly establishes that DR with potential to be activated in 30 minutes or less after a contingency event should be counted as “addressing the first contingency to prepare for the second contingency.” This implies that such DR offsets local capacity requirements.

The record also indicated CAISO acknowledgement that additional demand response resources with more notice may be able to respond within 30 minutes should a first contingency event occur. For example, demand response customers may have provisions which, when they are alerted in advance of a potential need for these resources to activate (such as a very hot weather forecast), require such resources to be activated within 30 minute when called (D.14-03-004). This means that applying such a 20 or 30 minute “real” to DR would unnecessarily underestimate the MWs of DR in any given local area that could actually be relied upon if CAISO implemented minor changes to resource scheduling for DR. Therefore, the 2012 LTPP Track 4 would have been an appropriate venue for a public record to be developed on the 20 minute response time issue, but this did not occur and therefore is not reflected in the decision.

CPUC Staff acknowledges that a footnote in the 2014 LTPP “Assumptions and Scenarios” ruling mentions the 20 minute DR response time by saying that DR resources “*may need to respond in 20 minutes*” to deal with a contingency event, but we contend that this does not represent a matter of settled policy. (Refer to docket for R.13-12-010).

3. The proposed change unnecessarily discriminates against Demand Response resources. Holding preferred resources, such as DR, to this higher standard undermines California’s preferred resource policy and the “loading order”

It is unnecessary and unfair to hold DR resources to a higher standard than conventional and renewable resources with regard to local RA requirements. There are two components that contribute to how a resource can respond to a contingency event: the resource’s response time and ramping speed. While the CAISO implies that ramping speed is a consideration, in fact this

proposed rule is only about response time. DR resources are some of the fastest “ramping” because they face no physical constraints, as do almost every conventional resource. The ramping capability of DR was not considered by CAISO.

In fact, many conventional resources cannot respond within 20 minutes to a local contingency, unless they were already running, and CAISO is not proposing to change the local RA value for those resources. CPUC Staff has heard CAISO state that conventional resources are “pre-dispatched” to prepare for contingencies, but this process is not described in the proposed BPM change or otherwise contextualized, so it cannot be considered in our analysis. To the extent this policy affects grid operations, there are GHG implications that should be considered. If conventional fossil units are being pre-dispatched and operated at minimum loads to meet a local contingency, then more GHGs are emitted than would otherwise be the case when DR resources satisfy the contingency. Unfortunately the BPM change process does not allow for a policy discussion regarding how the change affects the overall system operation or a discussion of competing policy priorities, which is why we have requested that this issue be deferred for a CAISO stakeholder initiative and CPUC proceeding.

Based on dispatch times in the CAISO Masterfile, in comparison to the NQC list, for the LA Basin – 73% of conventional resources have response times greater than 20 minutes, and 70% have response times greater than 30 minutes. Similarly for the San Diego/Imperial Valley local area, 79% of conventional resources have response times greater than 20 minutes, and the same number cannot respond in 30 minutes. In practice, this means that unless these resources are already fully on-line to their Pmin, and unless they can ramp to the needed capacity in 20 minutes, they would not meet the proposed standard. Physical ramping constraints would further confound these resources’ ability to reach their full local RA capacity value within 20 minutes. If a DR resource is dispatched in the Day Ahead this is similar to a conventional

resource being “warm” so that it can respond to a contingency event, and yet, there is no physical ramping constraint to DR resources, which makes them potentially preferable to conventional resources in a contingency. Similarly, renewable resources do not have “perfect” deliverability because they are inherently variable, and CAISO is not proposing to change their local RA value through a specific dispatch requirement. Therefore, DR resources are equally able to respond to a contingency event as many RA resources, and CAISO should not discount them from local RA. Holding preferred resources, such as DR, to this higher standard undermines California’s preferred resource policy and the “loading order” because (a) it discounts the ability of these resources to serve as local capacity. and (b) it presumes that, in order to be effective, this specific preferred resource must behave like an idealized conventional generator. DR does not behave as an idealized generator, nor does the lion’s share of the conventional resources currently on-line and serving local reliability needs.

4. Reliability will not be impacted by leaving the BPM unaltered

CPUC Staff agrees that maintaining reliability by ensuring that sufficient resources in a local area can respond to a contingency event is a shared goal of both the CPUC and the CAISO, however, we disagree that this BPM change is necessary to achieve reliability. It is our understanding that no other ISO has implemented a 20 minute response time in response to the NERC standards.

The NERC Standards that CAISO uses to justify this BPM do not necessitate resource-specific response times.

The North American Electric Reliability Corporation (NERC) requirements TOP-001, TOP-004-2 and TOP-007 are consistent in every jurisdiction – they require ISOs to be prepared for balancing the system within 30 minutes after a contingency event. TOP-004-2 requirement 4 states: “[i]f a Transmission Operator enters an unknown operating state (i.e. any state for which

valid operating limits have not been determined), it will be considered to be in an emergency and shall restore operations to respect proven reliable power system limits within 30 minutes.” Generally, the CPUC and CAISO plan the system around a “Category C” contingency event, which covers “System Performance Following Loss of Two or More Bulk Electric System Elements” (TPL-003-0), commonly referred to as an “N-1-1” event. This means that an ISO must look at the overall system in a local area and ensure that they will be able to recover from a contingency within 30 minutes. It does not require that every resource within the area be able to respond within 30 minutes; only that *sufficient resources* can respond during a contingency event. Furthermore, the NERC standards do not require that *every* local resource be able to respond within 30 minutes to a “first contingency” to help balance the system. In fact, in many instances there is significant time elapsed between a first contingency and a second contingency, and so there *is* sufficient time to notify any resources that potentially cannot respond within 30 minutes that they may be needed to balance the system before a second contingency. In effect, they could be “pre-dispatched” in this way.

CAISO has stated that this BPM change reflects an existing practice in how it conducts LCR studies and assesses resource sufficiency. However, it is impossible for stakeholders to analyze this statement as there has, up to this point, been no transparency around this factor in LCR studies, because it was simply never discussed in those studies. In contrast, CAISO’s 2012 Southern California reliability LCR study actually specified a 30 minute response time. The result is that opaque technical study assumptions are turning into de facto requirements, and we find this to be inappropriate.

Pre-dispatching DR resources whose response times are close to 30 minutes, or even longer than 30 minutes, could be a reasonable solution, and could be implemented by CAISO, but this option and its implications for a use-limited resource needs to be fully vetted in a stakeholder initiative. CPUC staff welcomes the opportunity to work with the CAISO and

stakeholders to review these contingency response practices, with the goal of maximizing the value of DR resources and minimizing GHG emissions.

More transparency is needed regarding CAISO's resource dispatch and "pre-dispatch" operating rules.

Within the BPM change process, many stakeholders asked for clarification on the CAISO's existing practice for pre-dispatching resources (such as CCGTs) so that they can respond within 30 minutes to a contingency event. There is clearly a lack of transparency around these operating procedures, and therefore it is impossible to evaluate how DR and other preferred resources can comparably be "pre-dispatched" to be available.

Contingency events generally are likely to occur on peak load days, when DR resources will already be dispatched –therefore DR will be supporting reliability during critical periods in local areas. Also, given the CAISO process for optimizing and scheduling resources in the day ahead, resources that are on a supply plan for an RA month will be notified a week in advance that they may be dispatched on any given day. This occurs through the CAISO's week-ahead market optimization. Therefore, in the same way that a conventional resource would prepare for dispatch, a DR resource can "prepare" for the need to potentially respond to a contingency.

Similarly, it is in fact a DR program (the Base Interruptible Program) that has been shown to be the most effective at mitigating contingencies. For the 2012 LTPP "Track 4" decision, D.14-03-004, which focused on capacity procurement for Southern California: the CAISO based its long-term LCR study on a 1-in-10 year annual peak load and a Category C Contingency and the CPUC determined that it was reasonable to plan for a loss of two major transmission resources. This decision also considered the importance of load shedding to mitigate such a contingency, and found that it was one of the *most effective* means of dealing with such an event (compared with relying upon generating capacity), and one with much fewer ratepayer costs than potentially procuring additional capacity to meet a Category C contingency

(D.14-03-004 at 40). In fact, load shedding has been proven to be an effective tool and has been used to mitigate n-1 contingency events within 30 minutes.

Procuring additional capacity, whether through the CPM or through the CPUC's RA program, is an outcome that could result from the CAISO's BPM change proposal. CPUC Staff find this outcome to be unnecessary from a resource adequacy perspective, and undesirable, from both GHG emissions and ratepayer impact perspectives.

Conclusion

In Conclusion, CPUC Staff requests that CAISO remove this footnote from the proposed BPM changes and instead address the issue both through the CPUC's RA proceeding, and the next CAISO LCR study initiative. This will allow the appropriate time and setting for CAISO to explain why it has concluded that this change is necessary for ensuring local reliability, and will give stakeholders a chance to review this reasoning and request alternatives or improvements. This will also provide the CPUC an opportunity to consider the issue comprehensively in the RA proceeding, with sufficient time to alter requirements in advance of an RA compliance cycle and ensure that backstop procurement would not be necessary.