California ISO

Reliability Demand Response Resource

Minimum on time

Issue Paper/Draft Final Proposal

December 4, 2023

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1. Executive Summary

A June CPUC resource adequacy (RA) decision clarified the CAISO should be allowed to use a reliability demand response resource upon declaration of an Energy Emergency Alert (EEA) Watch.[1] This clarification allows the CAISO to enable bids for the resources into the market before an EEA 1. Enabling bids allows the real-time market to optimize the use of reliability demand response resources (RDRRs) on their operational characteristics and economic bids.

Following the CPUC decision, stakeholders expressed concern regarding increased chances of economic dispatch and potential attrition of customers from their retail programs, resulting in reduced RDRR capacity. Stakeholders have also expressed that in order for the CAISO to effectively optimize the dispatch of RDRR, resources' physical operating characteristics should be accurately reflected.

To mitigate these risks, stakeholders have requested that the CAISO allow RDRRs to reflect minimum on times greater than one hour, to more accurately reflect RDRR run times in CAISO's market optimization and dispatch.

In response, a narrowly scoped policy initiative titled "RDRR minimum on time" is being undertaken to make a change to the current requirement for an RDRR minimum run time value,[2] to be less than or equal to one hour. Section 4.13.5.3 of the CAISO tariff establishes the dispatch parameters for RDRRs including the requirement that "each reliability demand response resource … have a minimum run time of no more than one hour."

Through this initiative, we will develop a requirement that will more effectively reflect an RDRR's operational minimum on time (MOT) while maintaining its ability to perform as a Short Start Unit.[3] This will ensure that the real-time market optimization horizon can consider both the amount of time it takes for the resource to reach its maximum load curtailment (start-up) along with its minimum on time.

This initiative is being undertaken to:

[1] CPUC Decision (D.) 23-06-029, June 29, 2023, p.96: "To provide consistency between the Commission's established principle for RDRR and CAISO's dispatch practices, the Commission clarifies that CAISO should be allowed to use RDRR, as an RA resource, for economic or exceptional dispatch upon the declaration of a day-of EEA Watch (or when a day-ahead EEA Watch persists in the day-of)."

[2] The RDRR parameter to establish the minimum time the resource must run (demand curtail) when dispatched is defined in the Masterfile as its minimum on time and is therefore the naming convention that will be utilized for the initiative and clarified in the draft tariff language.

[3] Short Start Unit is defined in the CAISO Tariff as "a Generating Unit that has a cycle time less than or equal to 255 minutes (Start-Up Time plus Minimum Run Time is less than or equal to 255 minutes and can be fully optimized with respect to this cycle time)."

1. Provide operational benefit by more accurately reflecting RDRRs' minimum on time in the markets during stressed conditions;
2. Maintain the preferred operational dispatch order of RDRRs directed by the CPUC allowing CAISO "…to use RDRR, as an RA resource, for economic or exceptional dispatch upon the declaration of a day-of [Energy Emergency Alert ("EEA")] Watch (or when a day-ahead EEA Watch persists in the day of)"[4]; and
3. Mitigate concerns with continued participation in the retail programs integrated as RDRRs and retain demand reduction capacity they provide.

2. Stakeholder Engagement Plan

Date	Milestone
December 4	**Publish consolidated Issue/Draft Final Proposal paper with proposed tariff amendment included**
December 18	**Comments due on combined Issue Paper/Draft Final Proposal including drafted tariff amendment**
December 20	**Stakeholder call**
January	**Stakeholder call in response to comments if needed (TBD)**
February 3	**CAISO Board and WEIM Governing Body approval request**
March	**Upon approval, file tariff amendment with FERC**

3. Background

On June 24, 2010, in D.10-06-034 the CPUC approved a multi-party settlement in its demand response proceeding (R.07-01-041) that required investor-owned utilities to transition their CPUC-approved retail reliability emergency-triggered demand response programs into a CAISO

[4] CPUC decision D.23-06-029 document link, at p. 96

reliability demand response product.[5] The settlement specified the minimum operating and technical requirements for retail emergency-triggered demand response resources.

To fulfill the terms of the CPUC settlement, the CAISO developed the reliability demand response resource product.[6] The policy design was compatible with, and enabled integration of, the California investor owned utilities' retail emergency-triggered demand response programs existing at that time, including their:

- Base Interruptible Program, or BIP
- A/C Cycling program
- Agriculture and Interruptible Pumping program

In addition to accommodating the integration of utility retail programs, the policy was designed to enable integration of any Demand Response Provider (DRP) large-single or aggregated demand response program to offer load curtailment economically in the day-ahead market, to offer load curtailment in the real-time market, and to respond to a reliability event under the terms and conditions of the RDRR policy.

Qualifications established in the policy included a set of dispatch parameters that had to be met including the resource being "capable of delivering reliability energy in real-time, reaching its full curtailment in no longer than 40-minutes"[7], and requiring that "the length of dispatch (aka the Sustained Response Period) of a [RDRR] may be up to four (4) hours per event and a [RDRR] cannot have minimum run time of greater than one (1) hour.[8] "

On October 26, 2010, the CAISO Board of Governors approved authorization of the RDRR product. In its August 19, 2013 final FERC RDRR compliance filing[9], the CAISOs proposed tariff section 4.13.5.3 included the dispatch parameters set forth by the RDRR policy including

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[5] *Decision Adopting Settlement Agreement on Phase 3 Issues Pertaining to Emergency Triggered Demand Response Programs,* June 25, 2010, available at: http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/119815.pdf.

[6] Reliability Demand Response Product (RDRP) policy initiative webpage, https://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=515d61b9-02d2-48be-9d27-5e80125d29a3

[7] RDRP revised straw proposal at page 5 paragraph 3, https://www.caiso.com/Documents/RevisedDraftFinalProposalVersion2-ReliabilityDemandResponseProduct.pdf

[8] RDRP revised straw proposal at page 6 paragraph 2, https://www.caiso.com/Documents/RevisedDraftFinalProposalVersion2-ReliabilityDemandResponseProduct.pdf

[9] *Cal. Indep. Sys. Operator Corp.,* 146 FERC ¶ 61,233 (2014). https://www.caiso.com/Documents/Aug19_2013Compliance-ReliabilityDemandResponseResourceER13-2192-000.pdf

limiting their minimum run time to that of "no more than one (1) hour". This language was accepted by FERC in March of 2014 remaining in effect to date.

The 2014 implementation of RDRR policy provided CAISO operators the ability to either enable RDRR bids for optimal market dispatch within the real-time market or to manually "force" a response through an Exceptional Dispatch. The initial RDRR design only accommodated bid enablement into the Real-Time Dispatch (RTD) process, with an advisory horizon extending approximately sixty-five minutes. Only considering these resources in RTD required them to have a more restrictive startup and minimum run time. However, when combined, an RDRR maximum 40-minute startup time and a minimum run [on] time no greater than one-hour could still extend beyond the optimization horizon, potentially limiting its effective market dispatch.

In its 2021 Summer Readiness initiative, the CAISO proposed and obtained FERC approval to "dispatch RDRRs in real-time pre-dispatch (RTPD) so they can be optimally dispatched within a longer horizon, up to 255 minutes in the Short-Term Unit Commitment (STUC) process. Ensuring that the optimization horizon at a minimum captures the RDRR startup and maximum minimum run times will increase the efficiency of the market dispatch."[10] Enablement of RDRR bids in RTPD changed how the market could optimize and commit these resources in real-time consistent with the dispatch parameters set by the existing policy and allowed RDRRs to set the market clearing price in the fifteen-minute market. This enhancement became effective June 1, 2021.

4. Proposal

The CAISO proposes removing the current restriction for an RDRR to have a minimum run time of no more than one (1) hour. Now that RDRRs are enabled into RTPD, there is flexibility as to what the resources' minimum on time could be within limits.

The RDRR minimum on time in combination with its start-up time must be optimized within a real-time market (RTM) process Time Horizon. The RTM applications that have Unit Commitment capabilities can commit resources optimally within their Time Horizon, however, because their Time Horizon is short, only Short Start Units can be committed. A Short Start Unit was defined as one that can be committed in the RTM Short-Term Unit Commitment (STUC) process.

The STUC runs once at the beginning of each hour and looks ahead eighteen 15-minute intervals, i.e., a Time Horizon of four hours and 30 minutes (i.e., 270 minutes).[11] However, only 255 minutes are available to perform the unit commitment process. Therefore, a Short Start Unit must have a Start-Up Time plus Minimum Run Time less than or equal to 255 minutes.

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[10] March 19, 2021 Final Report at page 33, paragraph 3 https://www.caiso.com/InitiativeDocuments/FinalProposal-MarketEnhancements-Summer2021Readiness.pdf

[11] See Business Practice Manual for Market Operations, Section 7.3.3

To ensure that an RDRR is committable in the RTM STUC process, it must also align with the definition established for a Short Start Unit. The CAISO proposes that a RDRR have a minimum on time that combined with its Start-Up Time does not exceed 255 minutes.

5. Proposed Tariff Change

The CAISO proposes to modify CAISO tariff Section 4.13.5.3 to remove the RDRR current minimum run time restriction and establish a combined Start-Up Time plus minimum on time requirement aligned with those for Short Start Units. The proposed tariff modifications are shown in yellow below:

> **4.13.5.3 Dispatch Parameters for RDRRs**
>
> Each Reliability Demand Response Resource shall be capable of reaching its maximum Load curtailment within forty (40) minutes after it receives a Dispatch Instruction, and shall be capable of providing Demand Response Services for at least four (4) consecutive hours per Demand Response Event. Each Reliability Demand Response Resource shall have a combined Start-Up Time and minimum on time less than or equal to ~~of no more than one (1) hour~~ 255 minutes.

The CAISO proposes to request that this tariff modification become effective by summer 2024.

6. WEIM Governing Body Role

This initiative proposes a change to an established policy element of RDRR: removing the current 1 hour restricted minimum on time requirement. CAISO staff believes that the WEIM Governing Body has joint authority with the Board of Governors over this change.

The Board and the WEIM Governing Body have joint authority over any proposal to change or establish any CAISO tariff rule(s) that would apply to the WEIM Entity balancing authority areas, EIM Entities, or other market participants within the WEIM Entity balancing authority areas, in their capacity as participants in WEIM. This scope excludes from joint authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the CAISO-controlled grid. Charter for EIM Governance § 2.2.1. The tariff amendment needed to implement changes to the RDRR minimum on time requirement would be “applicable to EIM Entity balancing authority areas, EIM Entities, or other market participants within EIM Entity balancing authority areas, in their capacity as participants in EIM.” WEIM balancing authority areas may use the RDRR model assuming they have approval from their local regulatory authority and meet the requirements of RDRR participation. Accordingly, the proposed changes to the RDRR model fall within the scope of joint authority.

This proposed classification reflects the current state of the initiative and is not expected to change as the stakeholder process moves ahead. However, stakeholders are encouraged to submit a response to this proposed classification as described above in their written comments, particularly if they have concerns or questions.

7. Next Steps

The CAISO will discuss this issue paper and draft final proposal in addition to the proposed tariff amendment with stakeholders during a conference call on December 20, 2023. Stakeholders are asked to submit written comments to this paper and its proposals by December 18, 2023 to initiativecomments@caiso.com.