

**BEFORE THE PUBLIC UTILITIES COMMISSION OF
THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Promote Policy
And Program Coordination and Integration in
Electric Utility Resource Planning

Rulemaking 04-04-003

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR
CORPORATION ON MODIFICATION TO THE INTERIM RESOURCE
ADEQUACY REQUIREMENTS (RAR) DECISION (D.) 04-10-035**

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Dated: February 18, 2005

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The California Independent System Operator Corporation (“CAISO”) respectfully submits these opening comments in response to the Assigned Commissioner’s Ruling Providing for Comments and Replies on Modification to the Interim Resource Adequacy Requirements (RAR) Decision (D.) 04-10-035, issued on February 8, 2005 (“ACR”).

I. INTRODUCTION AND SUMMARY

The ACR requests that parties comment on whether, and how, D.04-10-035 (“Decision”) should be modified to clarify the forward commitment obligation load serving entities (“LSEs”) must satisfy to fulfill their resource adequacy requirement or RAR. In particular, the ACR acknowledges that Section 3.1 of the Decision contains inconsistent passages that alternatively suggest RAR resources 1) must be acquired to meet load plus the planning reserve margin *for every hour of every month of the year* or 2) a more limited obligation in which RAR resources must be procured *only for those hours of each month that an LSE’s loads are equal to or greater than 90% of the monthly peak*.

While the ACR recognizes the fundamental discrepancy within the Decision, it summarily rejects any legitimate uncertainty regarding the respective merits of the two

approaches by accepting a forward obligation that encompasses all hours of the year.¹ (ACR at 7.) In this regard, the ACR notes “Staff’s intent was to develop a reserve requirement that both (1) ensured that resources necessary to serve load would be available when needed, and (2) complemented the ISO market design,” by replacing the Federal Energy Regulatory Commission (“FERC”) imposed “must offer” requirement on suppliers. (ACR at 4.) Measured against these objectives, the ACR properly concludes the “more limited reading” of the Decision “is inconsistent with CAISO market design” and “does not appear to meet [staff’s] goals.” (*Id.*)

The soundness of the ACR’s conclusion is, in large part, not in dispute among the workshop participants. It is accepted, for example, that local area capacity requirements should be fully procured by LSEs in the year-ahead time frame and that such resources must be subject to a must-offer obligation in all hours.² The CAISO believes that a more comprehensive all hours availability obligation, which accommodates RAR resources that require special treatment due to special operating limitations, better comports with the RAR’s fundamental objectives and long-term paradigm. These objectives, as noted by the ACR, focus on system reliability by seeking to ensure that resources are available when and where needed to serve all CAISO load in a manner that conforms to the CAISO’s anticipated market redesign. Availability, in turn,

¹ The CAISO bears some responsibility for the confusion reflected in the Decision. In its opening comments on the Draft Decision, the CAISO stated, among other things, “because the object of resource adequacy is to ensure reliable system operation, the LSE’s obligation is based on the duration that the system load is within 90% of the system coincident monthly peak.” Notwithstanding its potential complicity, the CAISO rejects the implication of this statement. Fatal flaws in the resource adequacy design must be addressed and, as recognized by the ACR, the limited temporal obligation when applied to the RAR availability obligation is such a fatal flaw.

² The need for fully procured, year ahead and all hours obligation on local capacity requirements can be readily supported by reference to CAISO reliability-must-run (“RMR”) and FERC must-offer waiver denial data. Current existing RMR contracts provide the CAISO to the right to dispatch RMR units to relieve local reliability needs, including voltage support, and intra-zonal congestion. Data from 2003 demonstrate that many RMR units were dispatched for RMR purposes for thousands of hours. (See, www.caiso.com/docs/2004/02/23/2004022310231623931.xls.) Simply put, grid conditions that necessitate CAISO dispatch of RMR units occur at virtually all times throughout the year. As California moves to attempt to replace RMR contracts with RAR contracts, similar dispatch rights must be carried forward to sustain grid reliability. RMR was not intended, and is insufficient, to address all local reliability needs under all system conditions. This can be demonstrated by the fact that the CAISO denied FERC must offer waivers in all but 5 days of 2004 to address both local reliability needs as defined in the CAISO’s Controlled Grid Local Capacity Technical Study.”

encompasses the notion of financial viability of suppliers and the commitment of such suppliers to the California market. The ACR envisions realization of these objectives by implementing a capacity-based RAR that provides suppliers a mechanism to supplement energy/operating reserve market revenues and in return imposes an obligation on that capacity to participate in the CAISO markets. Thus, the central question for clarification raised by the ACR can properly be framed as how the “all hours” RAR, with its concomitant obligation to make resources available to the CAISO, should be extended beyond local capacity resources to include all RAR resources.

With regard to this issue, the ACR suggests two alternatives for establishing the level of mega-Watt (“MW”) quantity under an LSE obligation to “serve load and cover RPM for all hours of the year”: (1) reserves constant at level of peak load for the month or (2) reserves constant at level of annual peak. (ACR at 7.) In addition to these potential solutions, the CAISO also offers a third alternative that establishes a separate summer and winter peak obligation. The CAISO believes that either a seasonal or monthly determination of the RAR level properly balances the interests of costs and reliability. Moreover, the CAISO also addresses the appropriate use of the “top 10% hours” analysis, which involves determining the eligibility or qualification of energy or use limited resources.

II. AN ALL HOURS MUST-OFFER OBLIGATION SHOULD AND CAN EXTEND TO ALL RAR RESOURCES

A. An All Hours Must-Offer Is the Only Appropriate Replacement for the FERC Must-Offer Obligation

The Decision at § 3.8.2 recognized that “[i]t is pointless to create a body of resource adequacy requirements that create contractual obligations for generators to serve load, and then not require generators to do so.” Consequently, the Commission imposed a sequence of requirements on RAR resources that they “first be scheduled by the LSE, then [] bid into Day-ahead markets if not scheduled, and then be subject to [residual unit commitment] if the bid is not accepted.” (*Id.*) The ACR further emphasized that by adopting the RAR availability

obligation the intention was “to satisfy CAISO needs as a replacement for the current Federal Energy Regulator Commission (FERC)-ordered ‘must offer’ requirements.” Indeed, without a satisfactory replacement for the current FERC must offer obligation at the time of the CAISO’s market redesign (“MRTU”) goes into effect, the CAISO may be forced to supplement the State resource adequacy requirements by filing with FERC for interim relief in the form of the much less desirable “flexible offer obligation.” FERC has stated:

If the CAISO determines that the resource adequacy requirements placed upon LSEs *at the time its proposal goes into effect* are insufficient to meet its operational needs, the CAISO should revise its proposal to incorporate the flexible offer obligation on an interim basis. This flexible offer obligation will replace the existing Commission must-offer obligation. If, on the other hand, the CAISO determines that the resource adequacy requirements that exist *at the time its proposal goes into effect* are sufficient to meet its operational needs, the CAISO may choose not to implement the flexible offer obligation and resource adequacy requirements and obligations will serve to replace the existing Commission must-offer obligation.³

FERC has clearly given the CAISO the discretion to determine at the time MRTU goes live whether to rely completely on the RAR or augment the RAR by implementing the flexible offer obligation. The determinant is whether the RAR meets the CAISO’s operational needs. In this regard it is important to recognize that the flexible-offer obligation is not an adequate mechanism from the perspective of either the performance of the MRTU market design or the requirements of reliable real-time grid operation. The MRTU market design has been developed as the comprehensive remedy for the flaws in the CAISO’s original market design, which deliberately precluded the CAISO from optimizing forward unit commitment and energy scheduling and from fully managing congestion in the day-ahead market, and has chronically resulted in infeasible day-ahead schedules as well as forward uncertainty about the resources that would be available for real-time balancing. The MRTU design fixes these problems, but in order to realize its benefits fully the CAISO needs full day-ahead visibility over the resources that are

available to serve load the next day as well as the ability to optimize the commitment and scheduling of these resources in the day-ahead market.⁴ The reason why the flexible-offer obligation is inadequate is because it imposes only a real-time obligation on a limited set of resources, and does not require them to participate in the day-ahead market. As a result, if the CAISO has to rely on the flexible-offer obligation it must perform the day-ahead market optimization based on extensive assumptions about the real-time participation and bidding behavior of the flexible-offer resources, which will reduce the efficiency and effectiveness of the redesigned markets.

That being said, the CAISO believes it would not be prudent at this time to dismiss definitively any possibility that the flexible-offer obligation might be helpful in the interim if the RAR must-offer obligation is not sufficient when the MRTU market design takes effect. Therefore the ACR's goal to expedite clarification of the RAR obligation facilitates the CAISO's own deliberations on whether any flexible offer type obligation is necessary and to include such obligation as part of the CAISO's final proposed market redesign. Some parties have suggested that a RAR must offer obligation need not extend to all RAR resources, but rather that a must offer obligation confined to locational capacity may be sufficient for the CAISO. The CAISO responds that a must offer obligation restricted solely to local capacity resources not provide the CAISO with the full day-ahead visibility and optimization capability described above and would likely compel the CAISO to consider exercising the discretion granted by FERC.⁵

³ *California Independent System Operator Corporation*, 107 FERC ¶ 61,274 (2004) at ¶¶ 27 and 28 [emphasis added]; See also *California Independent System Operator Corporation*, 108 FERC ¶ 61,254 (2004) at ¶ 10.

⁴ The CAISO points out that its ability to optimize the day-ahead market is not absolute, and that the MRTU design includes important provisions that were developed through the CAISO's stakeholder process – specifically the self-scheduling capability and the procedures for managing use-limited resources – to enable load-serving entities to manage their resource portfolios effectively to serve their loads without compromising the objectives and benefits of the redesigned MRTU markets. The RAR must-offer obligations the CAISO is advocating here are fully consistent with these other provisions of the MRTU design.

⁵ The FERC orders are somewhat perplexing in that they provide for the sunseting of the flexible offer obligation on the earlier of January 1, 2008, or the full implementation date of the CPUC resource adequacy requirement. (*Id.* at ¶ 28.) Under the circumstances now in which the RAR is to be implemented prior to MRTU,

The CAISO believes an availability obligation limited to local capacity obligations conflicts with the objectives of the RAR, the ACR’s long-term vision of a capacity-based RAR, as well as MRTU. The local capacity requirements, determined by the CAISO’s “Controlled Grid Local Capacity Technical Study,” are intended to provide the basis for identifying the *minimum* capacity requirements expressed in MW that are necessary to procure in each identified local area for the CAISO to provide reliable operation of the CAISO Controlled Grid. Although the study methodology subsumes the criteria for designating units as reliability-must-run (“RMR”) and will account for many of the contingencies and operating conditions that presently account for must-offer waiver denials that address “local” reliability issues, the quantity of MW identified for a particular local region will nevertheless be a fraction of system needs. For example, it is anticipated that the local capacity requirements for the Los Angeles basin may be in the range of 6000 MW, whereas SCE’s system peak load is approximately 21,000 MW. The very concept of securing capacity involves payment for the “reservation” of physical generating capability. As such, without a broadly applicable availability obligation, there is an implicit rejection of a capacity-based requirement for the remaining 15,000 MW. It follows, therefore, that a limited must-offer obligation covering less than system level load violates a fundamental tenet of resource adequacy, which is to ensure that sufficient physical resources are dedicated to serve California load.

On any given day the CAISO cannot know with precision the exact set of system conditions that are likely to exist. Therefore, in light of that uncertainty, a control area operator must have access to a broad set and mix of resources. One reason generally accepted and established reliability requirements require that control area operators procure a set amount of *operating* reserves is to have sufficient reserves on-hand in order to address unforeseen system

the CAISO does not believe that FERC has precluded the CAISO’s ability to assess its operational needs and would permit it to implement a superior must offer obligation to maintain system reliability.

conditions, such as the loss of a major transmission line or generating unit. The need for *planning* reserves is similar – to ensure that on any given day a sufficient set of resources exist from which to procure operating reserves and otherwise ensure that sufficient capacity is on line to serve the next day’s load. To somehow limit, be it in quantity or temporally, the operator’s access to a full set of resources is misguided and risky.

In summary, the question of the all-hours must-offer must be viewed from the recognition that RAR and CAISO market redesign are complementary components of a single structure. Within that structure, the CAISO’s role is to maintain reliable grid operation in the most efficient manner possible, and to provide for open access to the transmission grid through the mechanism of spot markets. The role of the RAR in the combined structure is to ensure that adequate supply resources are available on a daily basis to serve load in all areas of the grid in a cost effective manner within an acceptable level of risk of any real-time insufficiency. The key to the success of these complementary roles is to recognize that the individual LSE’s view is focused on its own load-serving obligations and not on the needs of the grid, whereas the CAISO’s view is focused on the entire control area including the interconnections with neighboring control areas. Thus, the CAISO is the entity responsible, on a day-to-day basis, 24-hours per day, for maintaining this control-area-wide view and scheduling supply resources and transmission in an optimal fashion. To the extent that RAR provide resources whose hours of availability are predetermined based on decisions made between the resource supplier and the LSE, the CAISO’s performance of its role is thereby encumbered with arrangements that were made from the narrower LSE perspective of serving its own load, without consideration of the larger perspective. The success of the combined RAR-MRTU effort therefore depends on an all-hours must-offer obligation (with appropriate accommodation for use-limited resources), which will enable the CAISO to use the RAR resources optimally to serve load reliably in each local area and across the entire control area.

B. The CAISO Can Accommodate an All Hours Must Offer Obligation

In light of the ACR's appropriate clarification that the RAR must offer obligation should encompass all hours, the CAISO acknowledges the need to consider that some RAR resource will require special treatment due to special operating limitations. As noted, the fundamental objective of a well-defined resource adequacy program is to plan for and procure adequate capacity to meet the forecasted peak load requirement plus a planning reserve margin. While this effort will obtain an appropriate quantity of capacity, such a set of resources will not provide their greatest value unless made available to the system operator to optimize their commitment, scheduling and dispatch. In the role of system dispatcher, the CAISO optimizes the resources provided based upon the current and expected system conditions. The logic of the day-ahead combined Integrated Forward Market (IFM) and Residual Unit Commitment (RUC) process is to enable the CAISO to commit and schedule RAR and other offered resources to operate during the hours of the next day when they are expected to be most valuable. Recognizing that certain resources may have periods in which they physically are unable to operate or have legitimate use limitations that prevent their full capacity from being available for all hours of every day, the MRTU design incorporates provisions and procedures to utilize such resources optimally while respecting their use limitations, thus enabling these resources to comply fully with their must-offer obligations. In other words, the MRTU design has anticipated and provided for the need to accommodate use-limitations of certain types resources within the all-hours must-offer obligation, and therefore these elements are not in conflict.⁶ It should be noted that this discussion on how to accommodate the differing use limitations that may apply to RA resources

⁶ As a general matter, it is important to remember that the larger RAR and, more specifically, the proposed Must-Offer Obligation is a capacity-based requirement. Thus the essence of the obligation is to ensure that all available *capacity* is offered, i.e., scheduled or bid, to the CAISO. Resources can satisfy the obligation by bidding into the CAISO's ancillary services markets. In addition, under the CAISO's existing and proposed market designs, entities can bid ancillary services as "contingency-only" indicating a preference that the resource not be dispatched for energy unless there is a contingency condition. Such an approach will provide LSEs a further opportunity to self-manage their energy-limited resources.

is premised on the assumption that such resources have satisfied the RAR counting protocols and have some qualifying capacity that is available for meeting LSE RAR obligations.

The CAISO believes the most efficient method to optimize the mix of RA resources is for all qualifying capacity to have an obligation to offer into the CAISO markets 24 hours a day for the months in which it is counted towards an LSE's RAR obligation. When the CAISO optimizes the available set of RA resources, it will do so in the day ahead timeframe for the following 24 hour operational period⁷. In considering how this task will be performed, it is helpful to identify three possible conditions that a particular resource may exhibit. First, the resource may run for any hour without any restriction (other than operational parameters such as minimum run times, minimum down times, etc.). Second, the resource may run any hour of the day, but has an energy limitation (i.e., maximum MWh production) for the 24-hour scheduling period, or has a maximum number of hours it can run. Third, a resource is committed to run to meet an LSE's energy needs and provides the CAISO with a day-ahead self-schedule to indicate its intended output for each hour of the next day.

In the first of these conditions, the CAISO does not envision any optimization difficulties as long as the resource continues to offer its capacity in all hours. In the second of these conditions, the CAISO has already filed with FERC its thoughts about how this type of resource would be handled in its MRTU Conceptual Design. Briefly, this design contemplates that an energy limited resource would provide the CAISO with a maximum amount of energy it can produce in the 24 hour period or the maximum number of hours it can run, and the CAISO would optimize the available energy or run hours for use in the hours of the day in which it is valuable. In the third condition, the self-scheduled resource may have some hours scheduled, but

⁷ Short start time units (units with start-up plus minimum run time less than 4.5 hours) that are not self-committed day-ahead generally will be committed within the operating day rather than in the day-ahead process. Thus the day-ahead bids for such a resource may not be taken in the day-ahead IFM and also not taken in the day-

not the remaining hours of the day, and even in the hours in which it is scheduled it may not have its full RA capacity scheduled. In this instance, the must offer obligation would require the resource to offer bids to the CAISO for the unscheduled capacity, unless the self-schedule represents the resource's entire capability for the next day based on a legitimate use limitation. In the case of the use-limited resource, self-scheduling represents an acceptable alternative to offering to the CAISO the maximum amount of energy or the maximum run hours and allowing the CAISO to optimize its use over the next day. Clearly, it is essential to eliminate any ambiguity with regard to the operating capabilities of an energy or use limited resource because such uncertainty may cause operational difficulties if the CAISO were to optimize the system dispatch with a resource that is unable to operate when required.

To summarize, all RA resources must have an obligation to offer their qualifying capacity to the CAISO for system dispatch for all 24 hours of each day. It should be assumed that all RA qualified resources are required to be available during the peak periods of the operating day because the RA obligation is for peak capacity. Yet, it is clear that some RA resources will have legitimate use limitations on the amount of energy or operating hours that are available. The CAISO dispatch protocols will manage the available capacity so that resource adequacy units that have limitations are committed and dispatched during those hours when they are most needed, i.e., during the most valuable hours. Thus, it would be appropriate to establish a special case definition for any such RA resources so an LSE can provide evidence as to the resource limitation and communicate such evidence to the CAISO for its use in resource optimal dispatch. In developing such a special class of RA resources, the CAISO is committed to working with LSEs to understand the unique limitations and incorporate them into the daily optimization in an effective manner. During the first few years of the CPUC RA program, including both pre- and

ahead RUC. In such cases the resource's must-offer obligation will apply to the combined Hour Ahead Scheduling Process (HASP) and Real Time market for each hour of the next day.

post-MRTU periods, this will likely be a combination of automated actions and manual adjustments to the daily dispatch. However, the ISO is anticipating subsequent phases of MRTU software to be introduced. Therefore, the ISO is committed to developing a full set of automated actions to accommodate limitations in RA resources as the ISO's MRTU and the CPUC's resource adequacy policies are fully implemented.

III. THE CAISO FAVORS A SEASONAL OR MONTHLY APPROACH TO SETTING THE CAPACITY REQUIREMENT

With LSEs responsible to acquire resources to serve load and cover the planning reserve margin for all hours of the year, the ACR asks whether that level should be set at the annual peak or vary based on each monthly peak. Under the Commission's currently adopted counting protocols, maintaining the RAR constant at the level of the summer peak imposes unnecessary costs on LSEs and, in fact, may be impossible to satisfy. The CAISO interprets the Decision as adopting counting protocols that preclude resources on planned outages from counting towards meeting a LSE's RAR for the time period during which the unit is inoperable. At any one time during the California's "non-summer months,"⁸ there may be up to 10,000 MW of capacity offline for maintenance. If so, attempting to procure capacity sufficient to cover California's coincident summer peak during other portions of the year may be both impractical to achieve and, even if practical, would impose significant costs unjustified by any reliability benefit. Therefore, to address this deficiency, and noting that the ACR's desire for constructive alternatives to address the issue, the CAISO respectfully suggests a third alternative based on two seasonal peaks of "summer months" and "non-summer months" should also be considered. The respective merits of the alternatives may be evaluated on cost to load, effectiveness in promoting investment to maintain and expand necessary infrastructure, reliability, and

⁸ The Commission has defined the summer months to include May thru September.

administrative efficiency. Based on these factors, the CAISO believes either a seasonal or monthly approach would be acceptable.

A. The Monthly Obligation Is Likely to Be the Most Cost Effective Option

The ACR correctly notes that for a system to maintain resources sufficient to reliability serve peak load without involuntary curtailments, those resources needed to meet peak load must remain financially viable. Such revenue adequacy involves an acceptable return on fixed costs. Typically, a supplier will look to all potential revenue streams, including long-term contract capacity payments and ancillary services and energy market revenues, to achieve the necessary cost recovery. What this highlights is the potential importance of opportunity costs in the anticipated price of capacity products. It is important to note here that under the hybrid market structure right now anticipated in California – the Commission determines RAR/ CAISO facilitates reliable, reasonably priced spot markets – the CAISO anticipates that suppliers will cover their going-forward fixed costs through RA contracts and that any supplemental revenues earned through the CAISO’s markets will provide further – but not necessarily required – contributions to a supplier’s fixed costs.

For example, assume a system with a 100 MW summer peak and 15 units with 10 MW of capacity (by assuming 15 units, the ability of a single supplier to exercise market power is reduced). If the fixed cost of each unit is \$2/MW annually, each unit will attempt to negotiate its full recovery for the term of the reservation obligation in the capacity contract. Thus, whether the capacity period is a year, seasonal or monthly, the supplier will attempt to recover the same amount through the capacity payment. However, the supplier may or may not be able to negotiate the full amount. To the extent the annual fixed costs do not set a floor, and the capacity obligation is annual, the supplier will be limited to an assessment of any infra-marginal returns obtained through that single system’s energy and ancillary services markets.

Now assume a winter seasonal peak of 80 MW, thus reducing the number of units by 2 that the LSE must secure during the winter. As noted, the two units needed only for summer will still attempt to collect their fixed costs over the period of their contract, but the units now have the opportunity during the winter to sell to other interconnected electric systems. That represents an opportunity to generate contributions to covering fixed costs through bilateral exports outside the CAISO control area that may exceed any infra-marginal rents that they could have earned solely by participating in the CAISO's spot market. Accordingly, the cost of the capacity product may be reduced by shifting a portion of the fixed cost recovery to sales of energy or ancillary services from a second system, i.e., outside the CAISO, during a period when not needed to meet RAR in the first system. This analysis holds, but with greater force, for a monthly obligation.

While economic theory holds that maximizing a supplier's revenue opportunities generally will result in lowering the potential cost of capacity products, other practical considerations affect the magnitude of any expected savings. On the one hand, the seasonal diversity prevalent in the WECC provides a possible opportunity for units that are extraneous to California's needs during the winter to profitably sell to the Pacific Northwest during that period, which is typically a time hydro-electric resources have very limited water and recharge. On the other hand, many such units as well other resources will be shut-down for much needed maintenance during California's off-peak season and unavailable to participate in neighboring markets. Similarly, some surplus units may have expended their limited energy or emission credits to meet California's summer peak operating needs. Even if they have not done so, the expectation that their practical MW/hr capacity would be expended during the summer would have reasonably led the supplier to fully price its fixed costs in the peak-season capacity contract. Finally, some such units are likely to be extremely inefficient and unlikely to earn infra-marginal rents in the Pacific Northwest even if given the opportunity. Given these considerations, recent

California off-peak season exports have only totaled approximately 2,000 – 3,000 MW, while approximately 10,000 MWs are shut-down for scheduled maintenance or received Must Offer Waivers from the CAISO (if on waiver, the unit is assumed not profitable in the export markets). Whether some or all of these exports would be precluded under a seasonal obligation is difficult to quantify. Nevertheless, it can be expected that the monthly obligation will maximize this supplier opportunity and result in marginally lower costs.

Moreover, with respect to units that do not intend to participate in other markets or realistically in the California market during the winter, the requirement that they be ready to perform because of the application of a must offer obligation may impose on these units some additional variable costs. A supplier may attempt to recover these costs, such as those resulting from changes in personnel and fuel arrangements, through participation in the ancillary services markets. However, to the extent those suppliers are not competitive during those market conditions, the supplier may seek to recover these costs through the capacity payment.⁹

In summary, the cost to procure capacity should tend to converge under the monthly and seasonal options. However, maximizing the potential flexibility of suppliers under the monthly approach as well as minimizing the potential operational inefficiencies by more closely matching the planning reserve margin to expected load levels is likely to yield some level of cost savings.

B. Seasonal Results in Greater Reliability

The expected marginal increase in costs associated with the seasonal approach is not without value. It purchases additional reliability insurance for California. By definition under the seasonal approach, in the months where the peak is not projected to occur, the planning reserve margin will be greater than 15-17%. This increase in planning reserve margin can

⁹ The CAISO will attempt to minimize these potential costs through the mechanisms discussed in Sec. II.B above.

manage uncertainties related to forecast error, unexpected forced outages, unexpected demand growth.

C. Administrative Efficiency

The CAISO does not believe either the monthly or seasonal approach is per se administratively superior to the other. The central issue on administrative efficiency involves whether under the monthly requirement, the monthly forecasts will be refreshed or will be held constant based on the results of the CEC's year-ahead forecast efforts. The adoption of a seasonal approach would likely preclude the opportunity for forecast updating. The approach ultimately selected should accommodate LSE procurement practices, potential load migration, and the acknowledgment of the inherent inaccuracies long-term forecasts. In this regard, a stable approach provides the benefit of having clear and stable obligations for LSEs to base their procurement activities and suppliers to price their available capacity.

D. Affect on Infrastructure Investment

One of the goals of the RAR is to encourage needed infrastructure by providing a more predictable revenue stream than can generally be obtained from energy markets alone and by providing a signal for long-term investment needs. Neither the monthly or seasonal approach is likely to be dramatically superior in this regard. In the near term, until capacity prices become more predictable and transparent through the maturation of capacity products or a more formalized capacity market, LSEs are unlikely to enter into long-term capacity transactions. Overtime, the stability of the RAR obligation should encourage investment and LSEs to create a portfolio of capacity resources of differing terms that match their anticipated capacity needs. Again, assuming suppliers will attempt to recover their full going forward annual fixed costs during the term of any length capacity arrangement, the seasonal or monthly should provide similar outcomes.

IV. PROPER APPLICATION OF TOP 10% HOURS METHODOLOGY TO ENERGY AND USE LIMITED RESOURCES

Notwithstanding the ACR's proper dismissal of the "top 10% of the hourly load duration curve" analysis as the full scope of the temporal characteristics of the RAR, the CAISO seeks to clarify the appropriate application of this top 10% approach. The approach constitutes a necessary parameter for qualifying capacity from energy or use limited resources and should remain part of the RAR. This is necessary because over-reliance on capacity from energy or use limited resources that cannot actually produce energy to meet the system load, as reflected in a system load duration curve, jeopardizes the goal of RAR to ensure that sufficient resources exist to actually serve load. For example, a system (without import capacity) that needed 10,000 MW hrs over a month could not be reliably served by energy limited resources that had 1000 MW of capacity, but could only run for 9 hours – 1000 MW/hrs would go unserved (1000MW x 9 HRs = 9,000MW-HRs). However, the RAR counting rules should not conflict with prudent planning practices, prevent the CAISO from obtaining access to the full production capacity energy or use limited resources or diminish the value of such resources to their owners.

The Decision at section 5.2 properly reports and adopts the outcome of phase 1 workshops regarding treatment of energy limited resources:

The Workshop Report describes a consensus that energy-limited resources should not be eligible to provide qualifying capacity unless they meet a minimum level of performance. Two requirements were proposed. First, a unit must be able to operate for four (4) hours per day for three consecutive days. In addition, the unit must be able to run a minimum aggregate number of hours per month based on the number of hours that loads in the control area exceed 90% of peak demand in that month. The Workshop Report provides CAISO's estimates of such hours for each month based on data from 1998 through 2003. In their comments on the workshop report, the overwhelming majority of parties support this consensus.

However, the requirement was adopted only for summer months. Some parties have argued that this top10% of the hours should not be applied to the non-summer months. The CAISO disagrees. The CAISO believes the top 10% hour approach is appropriate for year-round

application. Utilizing such a counting method year-round will ensure a consistent level of reliability during each operating month. During non-summer months, the need for peaking resources significantly declines because the shape of the load duration curve becomes much more flat. As a result, it is possible that the number of hours in which the load exceeds the 90% of peak level could grow from 60 hours in August to 200 hours in March, for example.

However, this significant increase in the hours is consistent with the system need in two notable ways. First, the peak load during the non-summer months (approx. 36,000 MWs) is significantly less than the summer months (approx. 45,000MWs), which has resulted in development of an appropriate mix of peaking resources. These peaking resources typically use most or all of their run-time capabilities during the summer months and are not available during the non-summer months in any significant amounts. Yet, the baseload and intermediate portions of the fleet are either on-line or available and their longer run times are an appropriate match for the non-summer needs. Second, the number of hours is not arbitrary – it represents the time period in which that particular amount of capacity is needed to meet load requirements. If this peak energy need it is not covered by capacity that can operate individually or be combined to operate for the longer period of hours, then there is significant risk that insufficient capacity will be made available to the CAISO to meet the peak load plus a planning reserve margin of 15%. The CAISO believes the same counting mechanism can, and should, be utilized in the non-summer months in a manner consistent with that approved for the summer months.

The CAISO offers the following example to clarify how the counting and reporting mechanism might work. Based on a system load duration curve, the CAISO determines the number hours that each LSE must use for the month of August to be 60 hours using the top 10% hours approach. An LSE has a total RAR (load plus 15% PRM) of 100 MW in the month of August. The LSE submits a RA plan revealing that 90% of its obligation will be met from non-energy limited resources and 10% from energy or use limited resources. Again, it is reasonably


assumed that the use of energy limited resources will be optimized by satisfying the LSE's peak needs. Under this example, the LSE would be required to procure a combination of energy or use limited resources that can provide a minimum of 600 MW-Hrs (60hrs x 10MWs=600MWhrs). Thus, a hydro-electric resource that can provide 100MW for 6 hours during the month of August would be acceptable. Alternatively, a 50MW combustion turbine (CT) that can only run for 6 hours would only meet one half (300MWhrs) of the requirement. Therefore, the CT must be augmented by another equally capable unit or differing types of resources such as a hydro-electric facility with at least 300 MWhrs of expected energy in the month of August. Under the foregoing example, if the non-summer month's top 10% hours obligation was 200 hours, the same hydro-electric resource would have to run for 20 hours.

V. CONCLUSION

For the reasons set forth above, the CAISO believes that the Commission should clarify that the intent of the Decision was to impose on LSEs an RAR ensures units are made available to the CAISO in all hours of the month based on either a monthly or seasonal peak load obligation. In addition, the CAISO requests that the Commission clarify the application of the top 10% hours methodology as set forth above and extend its application to all months of the year.

Dated: February 18, 2005

Respectfully Submitted:

By: 
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CERTIFICATE OF SERVICE

I hereby certify that I have served, by electronic mail, a copy of the foregoing Comments of the California Independent System Operator Corporation on Modification to the Interim Resource Adequacy Requirements (RAR) Decision (D.) 04-10-035 to each party in Docket No. R.04-04-003.

Executed on February 18, 2005, at Folsom, California.



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