Replacement Requirement for Scheduled Generation Outages

Revised ISO Straw Proposal

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Prepared by: Market and Infrastructure Policy
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California Independent System Operator
Replacement requirement for scheduled generation outages

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1.0 Introduction

In D.11-06-022, the California Public Utilities Commission (CPUC) decided that, starting with the 2013 Resource Adequacy (RA) year, the CPUC would no longer apply a replacement rule requiring its jurisdictional load serving entities (LSEs) to provide replacement RA capacity under certain circumstances when RA resources were on planned outages. The ISO is initiating this stakeholder process to develop changes to its outage management and resource adequacy procedures to address the elimination of the CPUC’s RA replacement rule.

This Revised Straw Proposal is based on the Issue Paper and Initial Straw Proposal that the ISO posted on March 6, 2012. It incorporates the discussion at the stakeholder workshop held on March 13, 2012, and comments received from stakeholders. This paper first describes the revisions made to the proposal and then addresses some of the major comments from stakeholders.

2.0 Revisions to Second Straw Proposal

After reading parties’ comments, the ISO is proposing revisions to its original straw proposal. These revisions are designed to address concerns raised by stakeholders and improve the proposal.

2.1 ISO is no longer proposing to allocate CPM backstop procurement costs to generators on outage

In the initial Straw Proposal, the ISO included an element that when an RA generator took an outage which the ISO had rejected as a planned outage, and failed to provide substitute capacity, the ISO might use backstop authority to replace the RA capacity. If this occurred, the costs of the capacity would be allocated to the generator. Several stakeholders noted that the current availability penalties under the standard capacity product already provided sufficient incentives for RA resources to provide substitute capacity. It was also noted that under the existing CPM rules, to replace outages for a few days, the acquired capacity would be given a 30 or 60 day contract, thus the costs for this replacement capacity could be excessive.

In response to stakeholder comments, the ISO has decided that this is an unnecessary complication and removed this provision from the proposal. The ISO agrees that the SCP availability penalties will provide sufficient incentives for generators to provide substitute capacity. Further, the existing CPM for exceptional dispatch gives the ISO the authority to procure capacity if the ISO determines it is needed for reliability. This will ensure that when units are on forced outage it doesn’t affect the reliability of the grid. The costs of the CPM are allocated to all load in the TAC area. After consideration, the ISO has determined that this is appropriate because the RA capacity levels are designed to account for units on forced outages. The RA capacity, ensured in the outage management system approval of RA planned outages, should be sufficient to cover units on forced outages. If the ISO must backstop capacity to supplement the amount of RA capacity provided, then these costs are system level costs that

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1 June 23, 2011; [http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/138375.PDF](http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/138375.PDF)
are not appropriately allocated to a specific RA resource, but should be allocated to all customers, since it was the overall amount of RA which was deficient, not a specific resource.

2.2 Allowances for short, planned maintenance outages

Both during the stakeholder meeting and in comments, several stakeholders described the need for some generators to take short maintenance outages every month. While doing this during off-peak periods would not impact their availability calculations under SCP, the generators would prefer to have the ISO be aware of and approve these outages. The stakeholders pointed out that it is better to have these short maintenance outages occur at off-peak times, even if they would drop the level or RA to below the 115%, since it is unlikely that the monthly peaks would occur during those periods. Also, being allowed to take these short maintenance outages would help the generators avoid forced outages during peak periods.

The ISO understands the parties’ contentions, but also notes several concerns that must be addressed. First, it is possible for peak demand periods to occur on weekends. Second, the impact of such an outage might depend on other factors, such as other generators scheduling outages (including other short maintenance outages), or transmission outages.

To help resolve this concern, the ISO proposes two revisions to the original straw proposal. The first is that for short term planned outages which would only occur in off-peak periods, the ISO would not insist that the resource adequacy level remain above 115% of the monthly peak; instead, for these short-term outages the ISO will determine if there are any factors, such as other units or transmission on outage, that might create a reliability issue, and in the absence of any reliability concerns would approve the outage. For long start units the outage would have to be ended with sufficient time for the unit to be available for the next peak period. Further, if such an approved outage must be extended, the extended time would be treated as a forced outage.

The ISO also proposes creating a new program, the “Short Notice Generation Opportunity Forced Outage Waiver.” Under this program, generators who need to take an outage for maintenance reasons with less than the notice required for a planned outage may request the ISO to consider granting a waiver of the forced outage status. To qualify for waiver the outage must be less than 12 hours and during non-peak hours. If the existing system conditions allow, the ISO would identify a window for the outage during the next 72 hours during which the outage could be taken and the designation of the outage as a forced outage would be waived. If the generator accepts the suggested timing, the outage would not be classified as a forced outage, but would be identified as a planned outage, even though notice was less than 72 hours. If the outage extends beyond the time approved by the ISO, the outage would then be a forced outage. The approval of these requests for waivers of forced outage status will be based on the ISO assessment of the expected impact on the reliability of the system. This new program is designed to provide generators an incentive to work with the ISO to schedule even short term required outages so the ISO is better able to manage reliability and lessen the likelihood of forced outages occurring during peak periods.

As with all outages today, either of these types of planned outages could be cancelled by the ISO if conditions change and the units are needed for reliability reasons. Should this occur, as is explained in Section 3.2 below, the same rules that apply today to planned outages cancelled for reliability reasons would apply.
2.3 Planned outages for Local Resources

The ISO recognizes that the replacement requirement for scheduled generation outages must include an accommodation for planned maintenance outages for local capacity resource adequacy resources. The local resource adequacy situation is akin to the situation in the eastern ISOs which have an annual resource adequacy commitment from generators. The situation is accentuated in some local areas because there is no replacement generation within the local area.

The ISO has had considerable internal discussions on this issue. The result of these discussions is that the ISO does not feel that it is advisable to create specific levels of local resources which must be maintained for any period other than what is required in the annual showings.

The ISO proposes the following method for how requests for planned outages for local RA resources will be approved. First, local resource adequacy generation would be able to take advantage of the short term generation outages discusses above and the forced outage waiver request. This would allow these generators to take short maintenance outages, even in summer months, by working with the ISO to schedule them in off-peak periods when conditions allow. Longer outages which require more notice would have to be scheduled in non-peak months. The ISO will work with generators to find times when the generators can take their outages without impacting on the expected reliability of the local area. As with all outages, the ISO would retain the right to cancel the planned outage if conditions turn out different than expected and reliability would be threatened if the unit took the outage. As is currently the case, the ISO will deal with these requests on a first come first served basis. The ISO will work with all generators in a local reliability area to ensure that every local generator is allowed to take reasonable maintenance outages each year to keep their machine reliable. If enough local generation exists and the generator desires, they may provide replacement capacity and thus increase their ability to schedule a planned outage when they desire.

The ISO has modified its proposal for local capacity areas to be a continuation of what we are doing now in approving outages for resources in these areas.

3.0 ISO Responses to Stakeholder Comments

In addition to the comments addressed through revisions to the straw proposal, the ISO considered numerous other comments from stakeholders. While the ISO has not modified the straw proposal to address every one of these comments, the ISO does want to address the comments and explain how the straw proposal either already addresses the issue, or why the ISO is not revising the straw proposal. In some instances the comments can be addressed by clarifying the ISO’s proposal. In other instances parties’ comments are in opposition and the ISO has determined that the straw proposal sufficiently balances these opposing comments.

3.1 Initial advisory outage approval, with final approval for planned outages after monthly RA showings creates uncertainty

Numerous parties expressed concern that under the ISO proposal, they would not know if an outage could be taken as a planned outage until after the monthly RA showings had been received and processed. They indicate that they often submit their requests for outages
months, or years, in advance and that they have to schedule many resources to make the outage happen.

The ISO notes that this change in timing of the approval of a request for a planned outage is only applicable to resources which are being counted for resource adequacy during the month. The proposed change would have no impact on a unit which requests an outage during a month when it is not providing RA capacity. This is simply because the non-resource adequacy unit does not impact the amount of resource adequacy resources when it is on outage, so if the unit goes on an outage it will not reduce the level or resource adequacy resources below the 115% of monthly demand level. When a resource is an RA resource it has accepted additional requirements, such as the must-offer requirement. The ISO considers an additional part of the resource adequacy requirements to be that planned outages can’t be approved unless there is sufficient resource adequacy capacity available to ISO to ensure the reliability of the grid during the month. The proposal uses the 115% level of resource adequacy resources as a measure of this reliability.

The ISO can’t approve planned outages for resource adequacy resources until it knows what resource adequacy capacity will be available during the month. This doesn’t occur until after the monthly showings. If the resource adequacy generator wants to be certain before the month-ahead RA showings are submitted that it can take its planned outage without incurring penalties it should plan on providing substitute capacity, or as SDG&E points out in comments, “If the generator does not wish to accept this responsibility because it has already been approved for a planned outage, it would just not sell its RA capacity for that month.”

The ISO proposal identifies RA capacity as one of the reliability measures for approval or denial of outage requests. Requests for planned outages from non-RA resources which don’t impact reliability under current standards, and since the unit is not an RA unit won’t reduce the level or RA resources, will be considered planned outages. Requests for planned outages from RA resources which don’t impact reliability under current standards and don’t reduce RA capacity to insufficient levels will also be approved as planned outages. However, requests for planned outages from RA resources which would reduce RA capacity below appropriate levels would be rejected. If these outages must be taken, they would be considered an unplanned (aka, forced) outages, and would impact the RA resources availability under the SCP, unless the generator supplies substitute capacity.

3.2 After approval of a planned outage, if the ISO cancels the outage it can create significant costs for the generator

Several parties expressed concerns that the ISO might reject an outage that was previously approved as a planned outage for an RA resource. These parties indicate that this can make planning for the outages difficult and can result in significant costs.

The ISO’s main concern is with the reliability of the electric grid. Under the current tariff and BPM provisions, the ISO has the responsibility to cancel planned outages for reliability reasons. This proposal does not change this current practice. After an outage as been approved as a planned outage following the monthly RA showings, it will only be cancelled for reliability reasons. If an RA unit has a forced outage, the approved planned outage of other RA units won’t be cancelled unless it threatens the reliability of the grid. The ISO is not proposing any changes to this policy, including any rules about potential compensation to generators whose
outages are cancelled. To the degree that outages must be cancelled, the ISO would use the principle of last accepted would be the first cancelled. This is just a version of the first come first serve principle that is already used in outage management.

### 3.3 Suppliers (or Load) are better able to provide replacement capacity

Numerous parties commented that they were not in a position to provide replacement capacity and that any obligation for replacement should rest on the other party in the RA contracts. In the initial straw proposal the ISO indicated that it felt this was a contract issue that should be decided between the parties to the contracts. The comments have not changed the ISO position, and indeed seem to support the position.

Unlike the characterization by many parties that the ISO straw proposal requires load to replace RA capacity if the outage is known before the monthly RA, the straw proposal establishes the principle that resources shown in the RA showing are expected to be available during the month. An LSE would not expect to receive energy from a generator during a planned outage of that generator and likewise should not plan on having the generator count for RA capacity if it will not be available. Additionally, as the ISO straw proposal described, the determination of which party is in a better position to provide replacement capacity depends on the parties involved. AReM agrees with this even while arguing that the responsibility for replacement capacity should reside only with generation: “While these statements may be true for the investor-owned utilities, which own or control vast quantities of RA resources, it is most assuredly not true for electric service providers (ESPs).” IEP suggests that “As a practical matter, many generators are not well positioned to procure replacement capacity.” As the ISO described in initial straw proposal, while it might make contracting easier if this responsibility was assigned only one way, the efficiency of having the involved parties decide would be lost.

Parties seem to be confused about who knows, or controls, when outages are taken. AReM believes generators have all the information: “By contrast, the LSE -- unless it owns or controls the resource -- has no knowledge of the condition of the resource nor access to any public information on planned outages for its RA resources.” However, according to JP Morgan the situation may be reversed: "For example, current RA contracts allow LSE’s to approve planned outages. Especially considering the potential penalties/incentives under the ISO proposal, LSE’s are unlikely to give up this authority."

The ISO’s proposal allows parties to the contracts to determine the best method of providing replacement capacity.

### 3.4 Need to grandfather existing contracts

Many entities providing comments requested that the ISO consider grandfathering their existing contracts which did not contemplate changes in the replacement rule and outage management. These parties argue that the changes in the rules will cause shifts in costs or new costs which were not contemplated when the contracts were signed. While the ISO understands these concerns, the ISO doesn’t believe that grandfathering the existing contracts of some market participants benefits the overall electric marketplace in California or market participants in general. The ISO’s responsibility is to ensure that the market design is efficient and just and reasonable. Market participants (1) are expected to realize that market changes and other tariff changes are to be expected, and may be necessary, particularly with the significant changes in grid topography that will be occurring in the next several years, and (2)
should ensure that their contracts contain provisions that address potential market design changes, as opposed to assuming a static ISO market paradigm that will never change. To the extent that market participants need relief from their contractual obligations, the appropriate forum for that is a Section 206 filing at FERC to reform the contract, not a generic tariff amendment proceeding where the terms and conditions of specific contracts are not before us. Also, the ISO is reluctant to upset contractual arrangements that were entered into by willing sellers and buyers, particularly when there is no consensus on the proper approach to be taken or parties do not face redundant charges for the same action (or inaction), once pursuant to the tariff and once pursuant to the contract.

This proposal is not being driven the ISO, but by changes external to the ISO. As discussed in the straw proposal, changes in California electric market, such as technology changes, the 33% RPS, and the retirement of once through cooling generation is making resource adequacy a much more important issue. At the same time as this is occurring and the ISO is proposing changes to the existing resource adequacy programs to address these issues, the CPUC has decided that its Replacement Rule, which helps ensure resource adequacy capacity is available to the ISO, should be eliminated and the ISO should take on this responsibility. As a result, changes to the replacement rule and outage management are required.

Market participants have known that changes to the RA replacement rules were coming. The CPUC decision eliminating the replacement rule was issued almost a year ago, and the discussions on this issue have been ongoing for several years. Market participants have had substantial notice that the existing replacement rules were going to change.

Allowing some entities to grandfather their existing contracts to avoid imposing costs on the parties to the contract isn’t fair to the other ISO market participant who would be expected to pick up additional costs the grandfathering imposes on the system. Grandfathered contracts which would not be subject to the ISO’s replacement rule and outage management rules could lead to shortages of capacity if the contracts allow generators to take outages without regard to how much RA capacity is available. This might result in the need for the ISO to use its authority under CPM to replace the capacity. These costs would be billed to other market participants. Thus, entities which didn’t have grandfathered contracts because they were aware of the impending changes and adjusted their contracting to accommodate the needed market design changes would be required to pay costs incurred for those entities which chose not to respond to the impending changes. While the ISO does not believe that grandfathering of existing contracts is warranted in this situation, the ISO does want to assist market participants in adapting to the required market design changes. For example, if contracts for resource adequacy capacity are unit-contingent contracts with the buyer acting as the scheduling coordinator (this may apply, for example, to QF contracts) the ISO market structure would allow the parties to agree that the buyer is the party which has the replacement requirement for planned outages. Any penalties under the availability calculation would accrue to the scheduling coordinator, i.e. the buyer. Stakeholders are requested to suggest other potential accommodations in ISO procedures that would help facilitate adjustment to the new rules.
3.5 There is no need to do anything

Several parties questioned the need for the ISO to do anything in response to the CPUC’s elimination of the replacement rule, or requested the ISO delay implementation of its program for year. The ISO believes neither of those options is viable. The CPUC’s replacement rule will be eliminated starting January 1, 2013. Allowing the Replacement Rule to expire without a substitute mechanism will impose additional costs on the market participants to the extent that the ISO has to rely on its exceptional dispatch and CPM authority to backstop resource adequacy capacity that is unavailable due to planned outages. Further, as once-through-cooling units retire over the next decade, just as the need for flexible resources is increasing, the ISO expects that resource adequacy resources will become more important for ensuring the reliability of the grid. We can’t wait until the potential reduced reserve level begins to cause problems before implementing the needed changes to ensure that the resource adequacy program provides the resources needed to maintain grid reliability.

3.6 Move initial monthly showing to 90 days

Several parties, including the Energy Division of the California Public Utilities Commission, objected to moving the initial monthly showing to 90 days before the month. The ISO understands the issues, but in order to validate the LSE RA showings against planned generation outages and then determine which outages are approved and which require substitution will take more time than the current schedule provides. The ISO also wants to ensure that LSEs have sufficient time to cure any potential deficiencies that might be discovered during the validation process. A process which does not provide sufficient opportunity for LSEs to cure deficiencies will result in the increased likelihood of exceptional dispatch and subsequent CPM designations, raising costs. The ISO requests that if parties don’t believe it is possible to move the showings to 90 days before the month, they suggest and justify a shorter time that would allow the ISO more time for validation than the current 30 days.

4.0 Background

4.1 Resource Adequacy

Resource Adequacy (RA) was instituted in California after the Energy Crisis to help ensure that sufficient resources would be available to meet the expected peak demand. Its structure requires a unique cooperation between the ISO and local regulatory authorities, including the California Public Utilities Commission. The program has changed since its inception, but the basics have so far remained unchanged: it is currently a one year forward and monthly demonstration that Load Serving Entities (LSEs) have sufficient capacity to meet their expected demand peak plus a planning reserve margin.

The RA program consists of an annual showing and monthly showings. The annual showing is submitted by LSEs in October for the following year. LSEs are required to meet two main requirements. First, they are required to show they have procured 90% of their need for the 5 summer months of the following year. Additionally, if their load is located in any of the Local Capacity Regions which the ISO has defined, they must demonstrate 100% of their need for local capacity for the entire year. The local capacity showings can also count towards the system level. The annual showing is preliminary and the LSEs can change their resources when they get to the monthly showings.
Then, monthly showings are made approximately 1 month before the operating month and must demonstrate the full amount of the capacity requirement for the month (i.e., 115% of the expected peak load for the month). The Local Regulatory Authority determines if the RA showing is sufficient to meet the RA requirements. If an LSE is deficient in its resource adequacy capacity in the monthly showings and fails to cure this deficiency, the ISO may use its Capacity Procurement Mechanism to procure the needed capacity and allocate the costs to the deficient LSE.

In the current CPUC RA proceeding, the ISO has proposed modifying the RA program to include three flexible capacity procurement requirements: 1) maximum ramping, 2) load following, and 3) regulation. In addition, the ISO has proposed to extend the annual showing for system requirements to include all twelve months. This paper will address sufficiency of RA in terms of meeting reliability requirements. To the degree that the ongoing RA proceeding ultimately adds the flexible capacity requirements to the existing 115% (system) and 100% (local capacity) reliability requirements for RA, references to RA Reliability Requirements will eventually be meant to include all of these.

4.2 CPUC’s Existing RA Replacement Rule

In D.06-07-031, the CPUC adopted the replacement rule that requires each jurisdictional load serving entity to meet its RA requirement with RA capacity that is available and not on an extended scheduled maintenance outage during a compliance month. The current replacement rule specifies the CPUC’s rule for determining the impact of scheduled outages to assess whether an LSE has procured sufficient RA capacity to meet its monthly RA obligations. Under this existing replacement rule, scheduled outages have been recognized as an impact to reliable operations and required replacement by the LSE. The rule states that a resource cannot be counted as monthly RA capacity if scheduled outages of the resource exceed the levels defined in the replacement rule. Under the current rule, an LSE that has contracted with a resource subject to such an outage then has an obligation to procure replacement RA capacity. The CPUC then informs the LSE that its RA showing is deficient if the planned outage exceeds the thresholds, and therefore a deficiency exists. The LSE is given until the final showing to cure the deficiency, or it will be “backstopped” by the ISO using the ISO’s Capacity Procurement Mechanism (CPM).

In the CPUC’s June 2011 decision (D.11-06-022), the CPUC eliminated the Replacement Rule starting with the 2013 RA year. The Commission stated “We direct Energy Division to work with the CAISO and stakeholders to develop an alternate to the LSE replacement rule which can be implemented by the start of the 2013 RA compliance year.” In the decision the CPUC rejected both a proposal to add a Planned Outage Adder proposed by SCE and an Energy Division Proposal that the “LSE replace” provision be eliminated once the FERC approves a supplier-based replacement rule.

4.3 ISO’s Current Outage Management Procedures

Currently, the ISO accepts or rejects requested each planned outage based on whether the outage presents a reliability risk when all possible generation that may avert that risk are also considered. The ISO currently cannot reject planned outages or extensions to those outages by generators on the basis that they would reduce the level of RA generation below

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2July 20, 2006; [http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/138375.PDF](http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/138375.PDF)
appropriate levels. Through the 2012 RA year the risks in this regard to the ISO has been mitigated (but not eliminated) by the CPUC rule which requires the generator’s LSEs to provide replacement RA capacity due to planned outages of their RA units according to the rule. Currently, the ISO cross-validates the supply plans of generators and the corresponding RA plans of LSEs, and provides this information to the CPUC along with information on planned outages. The CPUC determines if its jurisdictional entities are RA sufficient, and orders them to cure any deficiencies. The CPUC has eliminated this LSE Replacement Rule starting with the 2013 RA year.

The ISO currently manages outages based on the fleet of available resources without regard for RA capacity. However, a continuing tenet of the RA program is that RA requirements secure the appropriate amount of capacity to support reliability. Absent a replacement rule to address planned outages, a change in the outage management process to consider RA reliability requirements is fundamental to maintaining the appropriate level of capacity. However, relying exclusively on managing outages to a RA reliability requirement may too severely reduce outage opportunities for needed maintenance (adversely impacting longer term reliability), and may preclude opportunities to economically replace the RA resource to allow maintenance and preserve reliability.

4.4 Previous Stakeholder Process

During several recent RA proceedings, CPUC jurisdictional some load serving entities suggested that the Commission consider eliminating the replacement rule from its RA requirements. Elimination of the replacement rule would relieve these load serving entities of the obligation to procure additional RA capacity to meet their RA requirement for months where some of their RA capacity is unavailable due to a scheduled maintenance outage. The parties that supported eliminating the rule primarily argue that it limits the tradability of RA capacity as a standard capacity product by imposing an obligation on the individual load serving entity to replace RA capacity on scheduled outage.

In 2010, before the CPUC decision to remove its replacement rule on LSEs, the ISO started a stakeholder process to consider implementing a replacement rule at the ISO, rather than through the CPUC. Numerous proposals were examined, which would have imposed a replacement rule on generators, rather than on the LSEs as the CPUC does. The initiative was suspended because there was not broad support among the stakeholders for any of the proposed options. Generators indicated that they, unlike the LSEs which were the focus of the CPUC replacement rule, did not have portfolios of generation from which they could find replacement capacity and that the costs would be prohibitive. The generators also argued that at least some RA capacity is procured annually – local capacity for example – and often the LSEs procure the RA capacity annually since the generators need to recover costs for the entire year, not just a few months. They further argued that, given such annual RA procurement, in non-peak months there will be sufficient RA capacity available so that some of that capacity could be on planned outages while the remaining available capacity provides the RA reliability requirement. If this were true, requiring automatic replacement of capacity would result in over-procurement of RA resources. However, if planned outages created a situation where RA Reliability Requirements were not met, such outages could not be allowed without a provision for some replacement or substitute capacity.
5.0 RA Outage Management Principles

The ISO offers the following general RA and outage management principles. Discussion on the alternative process to the LSE replacement rule (including any potential tariff changes) can be more focused and effective by using these principles to evaluate alternative proposals by how well they address the principles.

5.1 Resource Adequacy

Principles of the RA program:

- The RA program has established Reliability Requirements (i.e., currently including capacity at 115% of demand for system and 100% of demand for local) on a forward (i.e., monthly or annual) planning basis.
  - The Planning Reserve Margin (PRM) of 15% above demand is designed to ensure sufficient resources are available to meet peak demand during the planning period, taking into account three additional factors. First, is the need to maintain operating reserves as required by NERC and WECC Reliability Standards. Second, is to allow for some level of forecast error in the demand forecast. Third, is recognition that at any point in the planning time horizon, some units are likely to be on forced outage (i.e., beyond the immediate recovery period covered by Operating Reserves). The PRM is not designed to accommodate planned outages.
- The RA program, through the annual and monthly showings to meet the RA reliability requirements, are designed to ensure that the ISO can reliably operate the grid while meeting the load obligations of the LSEs.
  - The ISO must have sufficiency with regard to RA reliability requirements and therefore should not enter a month with RA deficiencies.
- If an RA unit is on outage and this reduces the amount of capacity below the RA reliability requirements, it doesn’t matter if the outage is forced or planned, the reliability of the grid might be compromised.
  - The ISO must have the authority to backstop capacity to cure continuing deficiencies in RA reliability requirements to ensure the reliability of the grid. This backstop should include both monthly backstopping of deficiencies in the RA showings, and procuring resources within the month to replace RA capacity on outages.
- Replacement or substitution of RA capacity, by either the LSE or generator, should be allowed.

5.2 Outage Management

Principles of reliable outage management:

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3 The CPUC has adopted a planning reserve margin of 115-117%, and the ISO tariff (section 40.2.2.1) adopts 115% for those LSEs whose “Local Regulatory Authority or federal agency has not established a Reserve Margin(s)”. Local Regulatory Authorities and federal agencies may adopt their own Reserve Margins for use in the annual and monthly RA showings.
- Units should be allowed to take planned outages as long as system reliability is not compromised.
- RA units should be allowed to go on planned outages as long as RA reliability requirements are not impinged on
  - If a requested planned outage by a unit providing RA capacity during the month would result in not meeting the RA reliability requirements, the outage cannot be accommodated as a planned outage.
  - If a generator requests a planned outage and is told it can’t be accommodated because RA reliability requirements would not be met, but takes the outage anyway, it should be considered a forced outage.
- In considering requested planned outages, the principle of first come first served should continue to be followed in determining which units would cause a potential insufficiency in RA reliability requirements.
- The ISO must be able to backstop sufficient capacity to ensure reliability, and costs should be, if possible, allocated to the party causing the insufficiency being backstopped.

6.0 Issues with the Existing CPUC Replacement Rule

The existing RA replacement rule, especially in combination with certain ISO rules and procedures, creates incorrect incentives for RA resources in scheduling and/or replacing resources on planned outages. Many of these issues arise because, for RA resources, forced outages are factored into the unit’s availability calculation under Standard Capacity Product (SCP) and may result in penalties or diminished amounts of RA capacity in the future, while planned outages are excluded from the calculations. This combined with the ISO’s current outage management procedures often result in strange outcomes. An issue that has plagued implementation of the replacement rule is the rules application regarding the amount of time and the selection of days to allow outages. The concept was that during about 25% (summer) and 50% (winter) of the time outages could be taken without serious impact to reliability. This was translated in the rule to 50% of the days. Additionally problematic was that the concept of planning RA for the peak of the month (i.e., peak week) offered opportunities during the non-peak portions of the month for some outages to occur without impinging on reliability. However, the existing CPUC rule allows 50% of days irrespective of the peak of the month, meaning that the outages would be allowed (i.e., without replacement) possibly during the very time the resource is needed most.

One example of such an incorrect incentive can occur if a unit needs a three-week maintenance outage. The current CPUC Replacement Rule would force the LSE owning or contracting with this resource to replace this unit with other RA capacity if the maintenance outage were scheduled all in one month. However, if the outage is scheduled across two months, starting in one month and finishing in the other, it could be under the thresholds for replacement in each month. By doing so, there is no requirement for replacement capacity in either month, and the outage doesn’t affect the unit’s availability calculation in either month, even though the unit is unavailable to provide RA capacity for a total of three weeks during the two months.

Another example is that a three-week planned outage scheduled several months in advance would require the LSE to replace the RA capacity under the CPUC’s RA replacement
rule, however, if the same outage is scheduled five days before the month in which it occurs it would not trigger any replacement. The determination of RA capacity for LSE will have already been done, and assuming that the outage doesn’t cause any reliability issues it would be approved as a planned outage by the ISO. A unit could actually be out for the entire month on a planned outage and still count for RA capacity. Further, it could receive payments for its availability, since its availability calculation would not be reduced for any outage.

The current ISO rules require that planned outages be noticed to the ISO at least three days before the outage. One implication of this is that forced outage status often doesn’t exceed three days, even if the unit is out for several weeks. This is because when a unit is forced out and realizes that it will take two weeks to come back on line, it will request a planned outage for the last eleven days, and current rules often do not allow the rejection of that planned status for the outage unless there are resulting reliability issues considering all available generation. During the three days of forced outage the unit would be required to find substitute RA capacity or have its availability calculation impacted by the outage, however, once the outage is converted to a planned outage there is no more need to substitute RA capacity and there is no impact on the unit’s availability calculation.

The implication of these examples is that the outage allowances of the replacement rule prevent the RA program from meeting the criteria for which it was designed. Instead of ensuring that the ISO has sufficient RA resources to ensure 115% of system peak for the month and local reliability, the current RA program and ISO outage rules allow units to count for RA capacity even when they are not available (nor ever expected to be available). More concerning is that this aspect of the rule fails to impose any incentives on the LSEs and generators to rely on RA capacity that is expected to be available. Worse, it may encourage the opposite.

Indeed, since a unit on planned outage can never see its availability calculation diminished by a forced outage, it may be better financially to be on a planned outage. Absent some replacement requirement or alternative incentive, some gaming opportunities may also exist relative to RA capacity contracted at lower price that is expected to be on outage with the expectation that a cost shift will occur to other LSEs or generators. At the same time the LSE and/or generator are failing to see any financial consequences from the failure to actually supply RA capacity, their actions may be causing costs to be imposed on other entities. Federal reliability requirements do not allow the ISO to let the reliability of the system be compromised, and if there is insufficient generation provided through the RA program, the ISO will use its backstop authority to procure capacity through its CPM, the costs of which will be allocated, at least partially, to others. The backstop method is recognized to be the least cost-effective approach for securing RA capacity that should have been secured in advance and expected to be genuinely available when needed.

7.0 ISO RA Outage Management Proposal

In designing an RA outage management program, the desire of the ISO is not simply to replicate the existing CPUC Replacement Rule. While the existing rule does help ensure RA capacity is available, as explained in the last section there are numerous perverse incentive issues under the current system. More importantly, the current approach may fail to provide the ISO with the needed capacity for reliable operation of the grid. The goal of the ISO in this RA Outage Management Proposal is to create a just and reasonable, resource adequacy and outage
management program that ensures sufficient capacity to reliably operate the grid and meet the load obligations of the LSEs while minimizing ISO procurement of capacity through its backstop mechanisms.

The ISO recognizes that special consideration must be given to the structure of RA. RA requires the cooperation of LSEs, suppliers, and the local regulatory authorities, which includes the CPUC. The ISO relationship is with the scheduling coordinators for the LSEs; the LSEs are under the regulation of their local regulatory agencies, which determine resource adequacy.

The premise of the RA Outage Management Program is that the ISO will manage outages to ensure the RA reliability requirements are met. Planned outages for RA resources will not be allowed if they would decrease the level of RA capacity below RA reliability requirements.

This proposal differs from both the existing CPUC Replacement Rule, and previously proposed ISO replacement rules in that it doesn’t impose the obligation for replacement entirely on LSEs (like the CPUC rule) or generators (like previous ISO proposals). Instead, this proposal is offered out of recognition that a reasonable application of responsibility for assuring RA capacity sufficiency depends on the timing of the planned outage request. If a supplier knows that a resource is planned to be on an outage it should not offer that capacity as RA capacity when it expects it be unavailable. Similarly, an LSE that includes a unit that will be on planned outage when it submits its RA showing for the month should not be considered sufficient in its showing. However, once the RA showings for the month have been finalized, and determined to sufficiently meet RA reliability requirements, the risk to RA sufficiency caused by subsequent outages should rest with the generator. It should be recognized that the fact that a generator has a pre-planned outage for a resource that is being counted in an LSE RA showing does not necessarily equate to an insufficiency in meeting overall RA Reliability requirements. To the degree there is an excess of RA created through meeting local requirements or by the lumpy nature of some RA procurements, RA reliability requirements may still be met. Only when RA reliability requirements are not met would any LSE or generator be advised to cure an RA insufficiency. Additionally, to the degree that RA reliability requirements are known to be jeopardized by a planned outage request, that request would be denied by the ISO.

The ISO is proposing to work with generators so that if they request a planned outage and it can be accommodated without reducing RA capacity below RA reliability requirements, it will be accepted as a planned outage. If, however, the requested outage would reduce RA capacity below the RA reliability requirements, the planned outage would be denied. In keeping with established and long-standing practice, if the unit then still takes the outage, it would be counted as a forced outage. As a forced outage, the generator would still have the opportunity to provide appropriate substitute RA capacity. This will establish a clear set of rules for RA units and contribute to a unified standard capacity definition. In the event substitute capacity was not provided, the ISO may procure backstop capacity as necessary to meet or maintain reliability.

If the planned outage is scheduled before the LSEs’ month-ahead showing, the LSE should know that the unit will be unavailable during the month, and the LSE should not include the unit in the RA showing. In such cases, the ISO proposes to let the LSE and the local regulatory authority know that its RA showing was deficient because one or more of the
resources included in the showing will be on a planned outage and would thus cause RA to be insufficient for the month.

In the CPUC proceedings leading up to the elimination of the Replacement Rule, LSEs argued that to create a standard capacity product the replacement obligation should fall only on the generators. Generators argue that the LSE is often in a better position to secure replacement capacity. The ISO prefers to leave the decision of which party is responsible for providing replacement RA capacity prior to the month-ahead showings to the market place. The structure we are proposing does put the responsibility on the generators after the LSE RA showings have been made, since the generators have the responsibility at that point to provide the RA capacity. However, before the LSE showing the responsibility should be part of the negotiations between the generators and the LSEs. In this manner the market can determine the least expensive method for providing replacement capacity. Various parties argue that it would be easier for the other party to provide the replacement capacity, but this structure will let the market decide which is most cost-effective, without mandating a specific solution and without precluding the most efficient economic outcome. If, as the generators argue, LSEs have a portfolio of resources and can easily substitute another resource from this portfolio, then the difference in prices for capacity with or without replacement capacity supplied by the generator would be so great that the LSEs would procure the capacity without the replacement and provide it themselves. If generators can most cheaply provide the replacement capacity then LSEs will chose to procure the capacity with replacement. By leaving this to the market to decide it will likely be the case that which entity can more cheaply provide the replacement capacity actually depends on the specific LSE and supplier being considered. Ultimately, if the deficiency remains uncured, the ISO should be in a position to assure reliable operation of the grid while meeting the load obligations of the LSEs by backstopping the RA procurement as needed to meet RA Reliability Requirements. It is recognized this represents the least cost-effective approach, and therefore should be minimized by providing an adequate opportunity for other affected parties to cure the deficiency. The cost allocation for the backstop procurement is posed to be applied to the deficient LSE if the deficiency is identified at the monthly showing and to all load in the TAC area if the deficiency results from an unplanned outage (forced outage) which is requested after the monthly showings.

7.1 ISO Proposal – Replacement Requirement for Scheduled Generation Outages

The basic structure that the ISO is proposing is:

1. The ISO would use the annual year-ahead RA showings to indicate to LSEs any generation that is part of their showing and which is scheduled for planned outages during the time it is listed as RA capacity alerting LSE for the potential need to cure.
2. The ISO requests that the initial monthly RA showings be moved to 90 days before the month, to allow time for the analysis of planned outages, and to enable adequate time for any deficiencies to be cured before the ISO enters into backstop capacity procurement.
3. As part of the cross-validation of supply and RA plan, the ISO will analyze the planned outages scheduled for RA resources. Outages which would result in an insufficient amount of RA capacity for the month will be indicated as creating a deficiency for LSEs relying on that generation. The deficit would be communicated to the LRA and LSEs. If the deficiency was not cured by the final RA submission data (i.e., 10 days prior to...
operating month), the ISO would use its RA CPM to procure replacement capacity and allocate the costs to the LSE which was deficient.

4. Requests for planned outages for RA units received after the submission of initial RA monthly showings will be considered using the same rules. If the outage would violate these conditions the generator would be told the outage was not allowed as a planned outage for RA. If the generator takes the outage, it would be treated as a forced outage. As a forced outage, the outage would impact the availability calculation in SCP unless the generator provides substitute capacity. The ISO may backstop the capacity through exceptional dispatch CPM if it is required for reliability. The costs for this backstop are allocated to load in the TAC area.

5. According to long-standing practice, the ISO will evaluate requests for planned outages in the order in which they are received. Outages will be initially approved based on annual advisory showings. Requests for planned outages already submitted will be used in evaluating annual RA showings. These initial outage approvals are only advisory for RA generation. After the initial monthly RA showings, the ISO will evaluate all previously scheduled outages and determine which can be accommodated without reducing RA resources for the month below RA reliability requirements. Each subsequent request will be done assuming that previous requests which have been approved are taken. Non-RA generation outage requests will be considered approved after the initial approval.

6. The criteria for determining if a requested planned RA unit outage can be accommodated are:
   - Would the outage reduce the system RA resources to less than 115%?
   - If the unit is a local resource, would the outage reduce the local resources to less than required for the month?
     - In general, the ISO will work with local RA generation to schedule maintenance outages during non-summer months and non-peak periods
   - Would the outage reduce any RA reliability requirements to unacceptable levels? (Refer to section 5.1.1, below, regarding flexible capacity.)
   - For short term planned outages which would only occur in off peak periods the ISO would not insist that the resource adequacy level remain above 115%; instead, for these short-term outages the ISO will determine if there are any factors, such as other units or transmission on outage, that might create a reliability issue, and in the absence of any reliability concerns would approve the outage.

7. As in current practice, all approvals for planned outages are subject to change due to changes in systems conditions. Unanticipated transmission outages or forced generation outages may require the ISO to restrict any planned outages to maintain reliability. The ISO retains this right in order to ensure reliability of the grid.
   - This provision is the same as currently in place, and any rules about compensation for cancelled planned outage remain the same.
   - An approved outage for an RA resource would not be cancelled due to another RA resource going on forced outage, unless the second forced outage caused reliability to drop to levels where it was necessary to cancel planned outage under the current rules.

8. “Short Notice Generation Opportunity Forced Outage Waiver”
Generators requesting an outage with less than the 72 hours notice required for a planned outage may request the ISO to consider granting a waiver of the forced outage status.

- The outage must be less than 12 hours and during non-peak hours.
- If system conditions allow, the ISO would identify a window for the outage during the next 72 hours during which the outage could be taken and the designation of the outage as a forced outage would be waived.
- If the generator accepts the suggested timing, the outage would not be classified as a forced outage, but would be identified as a planned outage, even though notice was less than 72 hours.
  - If the outage extends beyond the time approved by the ISO, the outage would then be a forced outage.
- The approval of these requests for waivers of forced outage status will be based on the ISO assessment of the expected impact on the reliability of the system.

9. Transmission Outages:

- All analysis of requested planned outages for generation units will be done accounting for any scheduled transmission outages.
- Requests for planned transmission outages will similarly be evaluated by examining the RA capacity available, and if the transmission outage would result in RA capacity levels below the RA reliability requirements, the planned outage would be denied unless the PTO makes arrangements for sufficient capacity to ensure RA reliability requirements are met.

7.1.1 ISO Proposed Flexibility Requirements for RA

The CPUC RA decision for 2013 will determine which of the ISO’s proposed Flexibility Requirements will be included as part of the total RA reliability requirements for the 2013 RA year. The ISO envisions that approval of planned outages would be based on meeting and maintaining the Flexibility Requirements. For 2013, the ISO has requested that the CPUC approve the Flexible Capacity categories in its proposal and adopt only targets for flexible requirements which are not procurement requirements. The ISO is proposing that actual procurement requirements be adopted for 2014. Thus, for the RA Outage Management, unless the ISO notices a dramatic issue with flexible capacity, the inclusion of the flexible requirements in the RA Outage Management process will be delayed until 2014. This will provide time for all parties to become familiar with both the RA Outage Management Process and the RA Flexible Requirements before the complications are incorporated into both programs. More information on how the Flexible Capacity requirements will be calculated and measured can be found in the ISO documents in the CPUC’s 2013 RA proceeding and in the ISO’s Flexible Capacity Procurement Stakeholder Process.

7.2 The ISO’s Proposal Assures Sufficient RA Capacity for Reliability

The ISO’s proposal is designed to ensure that the RA capacity supplied is sufficient to allow the ISO to reliably operate the grid and meet the load obligations of the LSEs. The proposal ensures that LSEs and generators who are providing RA capacity to the ISO appropriately shoulder the costs of ensuring that sufficient RA capacity actually is available to the ISO during the month. If an RA capacity deficiency exists and results in a reliability issue, the ISO would be compelled to use its backstop procurement mechanism, most likely CPM, to procure the necessary resources to ensure the reliability of the grid. Because the cost of such CPM procurement is currently allocated to all LSEs in the area where the capacity is required,
this can result in an unfair distribution of costs. All LSEs in the area are forced to pay a share of the costs of the backstop procurement, even if their RA capacity was fully procured and actually available.

Similarly, the requirements on generation ensure just and reasonable treatment of all RA generation. Without the ISO’s proposed mechanism, generators can collect payments for capacity from their contracts with LSEs whether or not they are available, and LSEs would have no incentive to ensure that their capacity actually shows up. Indeed, a generator which goes on planned outage for either a day or more than an entire month, absent the ISO’s proposal, may represent a deficiency in RA capacity without any obligation to be cured.

Further, as explained above, the ISO believes that the structure we are proposing, with LSEs expected to include only generation in their RA shows that are expected to be available and suppliers having the responsibility to replace after the RA showings, allows for the most efficient substitution of capacity. The marketplace for capacity will allow LSEs and suppliers to have the substitute capacity provided by the party which can most cheaply provide it. This structure even accommodates situations where the various parties have different costs. For example, some LSEs may have a large portfolio of resources and easily be able to substitute for a unit on outage, while other LSEs may not have such a portfolio and will look to the supplier to provide the substitute capacity to ensure they meet their RA requirements. Insisting on the replacement requirement being assigned to only suppliers or LSEs would sacrifice this efficiency.

The ISO’s RA replacement rule proposal is superior to the current rules in many ways. The existing rule is based only on the length of the planned outage and does not address whether the capacity is actually necessary to ensure sufficient RA resources for the month. Under the current CPUC replacement rule some outages would not require replacement even though they cause a shortage or RA capacity and potentially require the ISO to use its backstop procurement authority, while other outages would require replacement even though there are sufficient resources available to ensure RA requirement levels. The ISO’s proposal will examine each proposed outage to determine its impact on the level or RA resources, and will only require replacement of the RA capacity when the planned outage would reduce RA levels below those considered sufficient.

7.3 The ISO’s Proposal Resolves Issues from the Existing Replacement Rule

A large benefit from the ISO’s RA Outage Management Proposal is that it will eliminate many of the incorrect incentives that exist under the current CPUC Replacement Rule regime. Most of this improvement is due to the change in how planned outages are accepted. The ISO’s proposal institutes an improved analysis before approving planned outages from RA units; the ISO would accept them as an RA planned outage only if they didn’t reduce the level of RA capacity below the RA reliability requirements.

The ISO’s proposal will remove any incentive to not schedule a planned outage until after RA showings have been made for the month. Currently, if the outage is scheduled after the date that RA showings are made, even if the unit schedules an outage for the entire month it will still count for RA capacity and as a planned outage would not impact the unit’s availability calculation. Under the ISO proposal, waiting until after the RA showing increases the likelihood that the unit would not be able to be accommodated as a planned outage without reducing RA capacity below the required levels. Under such a situation the generator’s request for a
scheduled outage would be rejected and the outage, if taken, would be treated as a forced outage. This would impact the availability calculation. Because of the first-come first-served method of approving outages, those units who submit their outage requests earlier will be more likely to be able to be accommodated without reducing RA capacity too far.

Similarly, there will no longer be a potential benefit to scheduling an outage across months. Since each outage will be evaluated as to how it impacts RA capacity for each month, scheduling across months will no longer automatically make a planned outage not require replacement.

8.0 Next Steps

The ISO is proposing an aggressive schedule in order to allow us to file required tariff changes at FERC to be effective January 1, 2013.

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<th>Date</th>
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<td>April 18</td>
<td>Revised straw proposal posted</td>
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<tr>
<td>April 24</td>
<td>Stakeholder conference call</td>
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<tr>
<td>May 2</td>
<td>Comments due on revised straw proposal **</td>
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<td>May 17</td>
<td>Draft final proposal posted</td>
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<td>July 12-13, 2012</td>
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** Please submit comments to OutageReplacement@caiso.com