



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

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Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider
Program Refinements, and Establish Annual
Local Procurement Obligations.

Rulemaking 09-10-032
(Filed October 29, 2009)

**MOTION OF THE CALIFORNIA INDEPENDENT
SYSTEM OPERATOR CORPORATION FOR
EXPANSION OF THE PHASE 2 SCOPE TO INCLUDE A PROPOSAL FOR
PROCUREMENT OF NON-GENERIC CAPACITY THROUGH THE
RESOURCE ADEQUACY PROGRAM**

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November 30, 2010

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The California Independent System Operator Corporation (ISO), in accordance with Rule 45 of the Rules of Practice and Procedure, hereby submits the following motion to the California Public Utilities Commission (Commission). As further described herein, the Motion contains the following elements:

(1) A request that the Commission expand the scope and modify the procedural schedule of the Phase 2 Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge Determining the Scope, Schedule, and Need for Hearing in this Proceeding issued on November 3, 2010, to allow for consideration of an ISO proposal in the Commission workshop process to include resource operational characteristics, such as regulation and ramping “load following” capability, into the Commission’s month-ahead resource adequacy procurement requirements.

(2) A description of the ISO’s non-generic capacity procurement (NGCP) proposal that would be considered through the proposed procedural schedule, which consists of: (a) advisory information provided by the ISO by May 1st on an annual basis that includes an inventory of the operational characteristics of the existing resource fleet – notably start-up times, energy ramp rates in time-frames needed for load-following, and regulation-certified capacity and ramp rates – as well as an evaluation of the expected

operational requirements based on the most recent load forecasts and simulated wind and solar production profiles for the resource adequacy showing compliance year; and (b) an assessment by the ISO conducted each November of each year whether the generation and non-generation resources identified in the year-ahead resource adequacy showings submitted by November for the subsequent resource adequacy compliance year meet the expected operational requirements identified by the ISO. The ISO further proposes that the Commission direct jurisdictional load serving entities (LSEs) to then (a) conduct their year-ahead procurement considering the inventory and operational requirement information provided by the ISO by May, and (b) conduct their month-ahead resource adequacy procurements consistent with the results of the ISO's November assessment of residual operational needs.

(3) A request that the Commission extend the current year-ahead resource adequacy showing from a summer months only showing to a full year (12 months) showing to facilitate a more meaningful November assessment of the resource adequacy fleet.

These modifications to the resource adequacy program will help ensure that the resource adequacy fleet will have sufficient operational flexibility to allow the ISO to continue to integrate increasing volumes of variable energy resources and comply with all applicable reliability criteria as the state of California progresses towards the 33 percent Renewable Portfolio Standard (RPS) by 2020. Furthermore, the ISO's proposed procedural schedule allows for a Commission-decision by June 2011, thereby ensuring that these additional requirements are put in place for the 2012 compliance year and thereafter.

I. BACKGROUND

Since its beginning, the resource adequacy program developed by the Commission has provided local and system resource adequacy procurement obligations for its jurisdictional LSEs for a 12-month compliance period (*i.e.*, the calendar year), but has not thus far considered nor included any obligations to procure resources with specific operational characteristics. The Commission's program includes year-ahead

local resource adequacy requirements and month-ahead obligations for each compliance year. (D. 06-06-064 and D.10-06-036, respectively).

Jurisdictional LSEs must submit preliminary local resource adequacy requirement compliance filings each September in which LSEs must demonstrate whether they have procured any unit that is listed on the Net Qualifying Capacity list for a specific compliance year (NQC List) as being located in a Local Capacity Area (LCA).¹ Subsequently, each November LSEs are required to make year-ahead system and local resource adequacy requirement compliance filings that demonstrate compliance with the year-ahead system resource adequacy obligations for the compliance year, which consist of 90% of the total system requirement (i.e., load *plus* planning reserves) for the five summer months of May through September of the applicable compliance year. LSEs are also required in the November filings to meet 100% of their local resource adequacy requirements for all 12 months of the applicable compliance year.

In addition, for each month of a compliance year, LSEs are required to continue making month-ahead forecasts and month-ahead system resource adequacy requirements showings that track load migration and demonstrate compliance with 100% of an LSE's system resource adequacy requirement. LSEs must further demonstrate that they have procured sufficient capacity to meet incremental local resource adequacy obligations as adjusted by the local resource adequacy true-up process in the month-ahead resource adequacy compliance filings. Through the local resource adequacy true-up process, LSEs are required to make two local resource adequacy true-up filings that track compliance with adjusted incremental local resource adequacy obligations in the compliance year, one on June 1 and the other on August 1. (D.10-06-036)

In both the year-ahead and month-ahead showings, LSEs are not required to procure capacity with specific operational characteristics. As such, the characteristics of the resource adequacy fleet available to the ISO during the compliance period may or may not meet the required operational flexibility dictated by system conditions, load variability, and more and more generation variability presented by the increased presence of variable energy resources such as wind and solar resources. Although the ISO may

¹ This showing must include non-local area resources to help minimize the ISO's need to renew certain existing reliability must run contracts.

procure such additional capacity when needed through its capacity procurement and reliability must run mechanisms, the ISO believes it would be both preferable and feasible to incorporate operational requirements into the Commission's resource adequacy program. The ISO believes that there will be substantial uncertainty in future energy and ancillary service revenues for thermal generation as renewable production increases, and hence the resource adequacy program should also seek to ensure that resources with needed operational capabilities are procured in order to enhance reliability under the significantly changed circumstances that the ISO will face as the system operator and to minimize the likelihood of procurement through backstop capacity mechanisms.

II. MOTION TO EXPAND THE SCOPE AND MODIFY THE PROCEDURAL SCHEDULE OF THE PHASE 2 SCOPING MEMO

The ISO files this Motion to expand the scope and modify the procedural schedule of the Phase 2 Scoping Memo issued by the ALJ in the above captioned proceeding on November 3, 2010. The expansion of the scope and modification of the procedural schedule as provided below would allow for the review of the ISO's NGCP proposal discussed below in part III, and the expansion of the showing requirements discussed below in part IV. The proposed procedural schedule provides an opportunity for the ISO to provide additional information regarding its NGCP proposal and an opportunity for discussion of this proposal in a workshop in January 2011. The workshop would include a discussion of the methodology the ISO would use its November assessment regarding the regulation and intra-hour flexibility of the generation resources and the potential need for additional procurement of specific resource characteristics, as discussed below in part III.

The ISO's proposed procedural schedule allows for the ISO's submission, by March 2011, of a final proposal for this methodology, along with an opportunity for parties to this proceeding to submit comments on the proposal by April 2011 and reply comments by May 2011. Furthermore, the ISO's proposed procedural schedule allows for an Administrative Law Judge (ALJ) proposed decision on the ISO's final NGCP proposal in May 2011, at the same time that the ALJ is already scheduled to issue its

decision on the Phase 2 issues. Comments and reply comments to the ALJ's proposed decision would follow the same schedule already established for the Phase 2 issues, with a final decision by the Commission on the NGCP proposal at the scheduled time for the Phase 2 issues.

This procedural schedule will provide the ability for the implementation of the proposed NGCP requirements in time for LSEs' month-ahead system resource adequacy requirements procurement for the 2012 compliance year and beyond.

Date	Events	Non-Generic Capacity Procurement (NGCP) Proposed Procedural Schedule
October 29, 2009	OIR issued by Commission.	
By November 30, 2010	Ruling issuing Energy Division resource adequacy proposal.	ISO submits motion to expand scope to include NGCP requirements.
November 30, 2010	Parties file proposals on Phase 2 issues.	
November 2010 -January 2011	Energy Division will schedule one or more workshops in this timeframe.	
January 2011	LCR base cases submitted to ISO by participating transmission owners.	Workshop to discuss ISO proposal for NGCP requirements at Commission.
January 2011	ISO publishes LCR base cases.	
January 2011	Stakeholders submit comments on LCR base cases to ISO.	
January 14, 2011	Parties file comments based on Phase 2 workshop issues, except for LCR study issues. Deadline for requesting evidentiary hearing.	
January 31, 2011	Parties file reply comments based on Phase 2 workshop issues, except for LCR study issues.	
March 2011	ISO publishes preliminary LCR study results and solicits operating procedures.	ISO files proposal for NGCP annual study methodology with Commission.
March 2011 2010	Year in Review Resource	

	Adequacy Report issued by Energy Division.	
April 2011	ISO publishes draft 2010 LCR report.	Comments on NCGP methodology submitted to the Commission by parties.
April 2011	Stakeholder comments on draft LCR report submitted to ISO.	ISO publishes additional inventory tables and study results based on 2010 resource adequacy fleet.
May 2011	ISO publishes final 2010 LCR Report.	ISO reply comments submitted to Commission.
May 6, 2011	Comments on final 2010 LCR Report filed with Commission.	
May 1, 2011		ISO submits additional study of expected operational requirements.
May 13, 2011	Reply comments on final 2010 LCR Report filed with Commission.	
May 2011	Proposed decision issued by ALJ.	Proposed decision on the ISO proposal issued by ALJ.
June 2011	Comments on proposed decision filed with Commission.	Comments on proposed decision filed with Commission.
June 2011	Reply comments on proposed decision filed with Commission.	Reply comments on proposed decision filed with Commission.
June, 2011	Final Decision on Phase 1 issues issued by Commission.	Final Decision on NCGP process issued by Commission.
November 2011		ISO submits to the Commission inventory tables and study results based on year-ahead system resource adequacy showings for 2012

III. NON-GENERIC CAPACITY PROCUREMENT PROPOSAL.

The ISO proposes that the Commission incorporate in its resource adequacy program a requirement that jurisdictional LSEs: (1) make their year-ahead resource adequacy procurement considering the inventory and operational requirement information provided by the ISO by May each year; and (2) make their month-ahead

resource adequacy procurement consistent with identified needs for non-generic capacity established by the ISO through the following process. First, by May of each year, the ISO would prepare an inventory of the existing resource operational characteristics capability as well as an evaluation of the expected operational requirements based on the procurement from the prior compliance year. As shown in the ISO's study of operational requirements under 20% RPS, these requirements are calculated by month, season and time-of-day. The ISO encounters some of its greatest need for more operational flexibility outside the peak months when there are fewer resources under resource adequacy contract. The proposed inventory and evaluation would be provided in time to inform jurisdictional LSE procurement, and there would be a requirement that the LSEs consider these results in their procurement. That would provide LSEs with the first opportunity to procure resources that are most needed to ensure reliability, thereby serving to minimize the need for the ISO to rely on its backstop capacity procurement authority. Second, each year in November, right after the LSEs submit their year-ahead showings, the ISO would conduct an assessment of the year-ahead resource adequacy showings to identify and quantify any needs for additional resource adequacy capacity with specific operational characteristics. Based on this assessment, the Commission would then require jurisdictional LSEs to conduct their month-ahead procurement consistent with the types of capacity identified by the ISO in its November assessment.

(1) May Inventory and Evaluation of Expected Operational Requirements.

On an annual basis, in time to inform jurisdictional LSE procurement for the coming resource adequacy compliance year, the ISO would produce an inventory of the operational characteristics of the current year's resource adequacy fleet as well as resources that did not obtain resource adequacy contracts. In sum, these resources are known as the existing fleet. The inventory tables would provide an assessment of the capabilities of the prior year's year-ahead system resource adequacy showings. The ISO would also include an evaluation of its expected operational requirements, which would be based on a statistical simulation to determine intra-hour operational requirements. This type of statistical analysis is presented in the ISO's 20% RPS study of operational

requirements. These inventory tables and evaluation of expected operational requirements would be produced annually in May in time to inform LSEs in their year-ahead resource adequacy procurement activities. The ISO proposes that the Commission include in the resource adequacy program a requirement that the LSEs year-ahead procurement then be made taking into consideration this information.

Tables 1 through 3 below illustrate the tables the ISO would produce each year to demonstrate the operational characteristics of the existing fleet. In these tables the ISO has grouped the characteristics of capacity according to whether or not it was procured for resource adequacy in the 2010 resource adequacy procurement process. The information provided in these tables can be organized to provide further insight into operational capabilities of particular plants (*i.e.*, by local capacity requirement area, or by resource vintage).

Table 1: Inventory of Ramping Capacity

Resource Status/Type		Ramp-Rate Range (MW/min)						Total	
2010 RA Status	Gen-Type	<0.5	[0.5, 1)	[1, 5)	[5, 10)	[10, 20)	>=20	Grand Total	
Not RA 2010	Combined Cycle			291	597			888	
	Dynamic				495	1,746	969	3,209	
	Gas Turbine	27	68	198	1,004	145	75	1,516	
	Hydro	26	38	140	157	284	405	1,051	
	Other	2	3	3	15		4	27	
	Solar PV	6		39	5			50	
	Pump/Storage					440		440	
	Pump			381				381	
	Recovery	31	2	3				35	
	Steam Turbine	8		612	84			704	
	Wind			17	46		426	489	
	Total Not RA		99	111	1,684	2,842	2,175	2,253	9,163
	RA-2010	Combined Cycle			5,194	4,033	3,617		12,844
Dynamic					57		1,410	1,467	
Gas Turbine		6		857	3,630	1,457	478	6,428	
Hydro		73	119	287	978	1,643	3,266	6,366	
Other		3	1	11	1,619			1,633	
Pump/Storage							1,418	1,418	
Pump					726	840		1,566	
Recovery		30	15	113	13			171	
Steam Turbine		349	709	9,258	6,314	1,576	1,510	19,716	
Wind					1,143		663	1,807	
Total RA		461	844	15,720	18,513	9,132	8,746	53,416	
Grand Total		559	954	17,405	21,356	11,307	10,998	62,579	
% of Capacity RA		82%	88%	90%	87%	81%	80%	85%	

Table 2: Inventory of Regulation Capacity

Resource Status/Type		Ramp-Rate Range (MW/min)				Total
2010 RA Status	Gen-Type	[1, 5)	[5, 10)	[10, 20)	>=20	Grand Total
Not RA 2010	Dynamic				775	775
	Hydro			243		243
	Other				4	4
	Steam Turbine	230				230
Total Not RA		230		243	779	1,252
RA-2010	Combined Cycle	719	2,063	2,171	347	5,300
	Gas Turbing	20	20	159		199
	Hydro	319	1,020	648	1,880	3,867
	Pump/Storage				969	969
	Steam Turbine	2,528	3,699	500	1,060	7,787
Total RA		3,586	6,802	3,478	4,256	18,122
Grand Total		3,816	6,802	3,721	5,035	19,374
% of Capacity RA		94%	100%	93%	85%	94%

Table 3: Inventory of Start-Up Capacity

Resource Status/Type		Start-up Time (Minutes)					Total
RA Status	Gen Type	<10	[10, 120)	[120, 300)	[300, 10800)	unknown	Grand Total
Not RA -2010	Combined Cycle		148	8	732		888
	Dynamic	719			2,240	250	3,209
	Gas Turbine	418	703	105		290	1,516
	Hydro	467	127	431		25	1,051
	Other	1	0	3		23	27
	Pump/Storage	814					814
	Pump	381					381
	Recovery	19	3	9		4	35
	Steam Turbine	75		183	417	28	704
Total Non-RA		2,893	982	739	3,389	620	8,624
RA-2010	Combined Cycle		26	3,707	9,111		12,844
	Dynamic	635			775	57	1,467
	Gas Turbine	1,820	2,600	401		1,607	6,428
	Hydro	4,893	1,260	55		156	6,366
	Other	351	294	374		614	1,633
	Pump/Storage	1,418					1,418
	Pump	1,296				270	1,566
	Recovery	28	32	105		6	171
Steam Turbine	2,504	161	206	16,455	389	19,716	
Total RA		12,946	4,373	4,850	26,342	3,098	51,609
Grand Total		15,840	5,355	5,589	29,731	3,718	60,233
% of Capacity RA		82%	82%	87%	89%	83%	86%

In addition, in the upcoming months, the ISO will be analyzing the existing fleet further to determine what additional operational characteristics are needed for 2012 based

on various assumptions of grid conditions and fleet characteristics. For example, the ISO intends to run an additional sensitivity based on its 20 percent RPS 2012 Study² with a resource fleet that is limited to only those resources that were included in the 2010 year-ahead system resource adequacy requirements showing. Subsequently, the ISO will run an additional study assuming that the balance of the resource adequacy requirements showings (*i.e.*, the month-ahead showings to meet 100% of the planning reserve margin requirement) provides only inflexible capacity, and will assess the adequacy of the resulting RA fleet.

To assist the Commission and participants in their evaluation of the NGCP proposal, the ISO will submit to the Commission by May 2011, in accordance with the procedural schedule proposed above, the results of the additional studies the ISO will be conducting based on the 2010 compliance year procurement. These results will enable the parties and the Commission to evaluate the feasibility and effectiveness of the ISO's proposal in this motion and alternative approaches that may be offered in the course of the proceeding.

(2) ISO November Operational Characteristics Assessment.

As discussed above, the year-ahead system resource adequacy requirements showing is made by jurisdictional LSEs in November for the upcoming compliance year. Each year in November, right after LSEs file with the Commission their year-ahead system resource adequacy requirements showings, the ISO would assess whether the year-ahead resource adequacy showings effectively meet the operating requirements reported in item (1) above, and would identify and quantify any additional procurement needs. More specifically, the annual study methodology would consist of a production simulation to evaluate year-ahead resource adequacy showings as follows:

- A dynamic optimization model will simulate system least-cost commitment and dispatch of the procured resource adequacy resources to meet load, ancillary services and other requirements in an hourly time-step;
- The model will use the regulation and load following capacity requirements developed in the earlier needs assessment to reflect intra-hour operational needs;

² <http://www.caiso.com/23bb/23bbc01d7bd0.html>

- The analysis will calculate the following items by hour and season, using only the resources included in the year-ahead resource adequacy showings: production cost-based energy prices, emissions, energy and ancillary services provided by units, violations of system constraints and – most importantly for establishing additional month-ahead resource adequacy procurement requirements – additional resource capabilities required to eliminate those violations.
- Because the production simulation will be run with, at most, 90% of the resource adequacy requirement, the capacity gap between 90% and the full 100% resource adequacy requirements will first be filled with inflexible capacity to determine whether there any flexibility violations exist. In the event violations occur, incremental levels of flexible capacity will be added during the simulation process to determine a level of additional flexibility needed to resolve the violations.

The results of this assessment would be filed with the Commission by the middle of December and will identify the needed additional flexibility beyond what is provided by the year-ahead showing each year along with a catalog of specific flexibility and operating characteristics needed in what locations.

(3) Commission direction to its Jurisdictional LSEs.

There are at least three possible outcomes associated with the November assessment. Based on the assessment, LSE procurement will show: (a) sufficient operational flexibility based on the 90% year-ahead system capacity showings for the compliance year, (b) insufficient operational flexibility based on the showings in (a) alone, but it is expected that there will be sufficient operational flexibility with acquisition of the additional 10% of generic capacity not required in the 90% year-ahead system capacity filings, or (c) insufficient operational flexibility not solved by (a) or (b) and which will require the securing additional operationally flexible capacity with certain characteristics. The ISO proposes that the Commission then require that jurisdictional LSEs perform their month-ahead resource adequacy procurement consistent with these results.

IV. REQUEST THAT THE COMMISSION EXPAND THE YEAR-AHEAD RESOURCE ADEQUACY SHOWINGS FROM FIVE MONTHS TO THE FULL YEAR.

In addition, one further modification to the current resource adequacy requirements is needed to make the proposed operational assessment of the year-ahead resource adequacy showings as realistic as possible. Under the Commission's current resource adequacy program, LSEs are required to make a year-ahead system and local resource adequacy requirement compliance filing for the applicable compliance year that demonstrates compliance with the year-ahead *system* resource adequacy obligation, which is *90% of the total load plus planning reserves only for the five summer months of May through September* of the applicable compliance year. In order to provide a more robust assessment of needed operational characteristics the ISO proposes that the Commission extend the current requirement of *the five summer months of May through September* to the *full 12 months* of the compliance year. Requiring resource adequacy showings for the additional months is crucial because the ISO has found that the flexibility of the existing fleet is significantly diminished during the shoulder months when many resources are scheduled for outages. This problem needs to be addressed, particularly as variable energy resources begin to comprise a larger percentage of the generation fleet.

V. CONCLUSION

The ISO respectfully requests that the Commission expand the Phase 2 Scope to include the additional procedural schedule for consideration of the ISO's proposal for the inclusion of a non-generic capacity procurement requirement process as described above. The ISO further requests that the Commission expand the five months showings to a full year's showing for the year-ahead procurement to support the evaluations and assessments of needed non-generic capacity. The ISO's proposal may be considered in a timely manner to incorporate the requirements for the 2012 compliance year, thereby facilitating the procurement of needed flexibility in the resource adequacy fleet.

These additional procurement requirements will further assist in the integration of additional variable resources scheduled to enter the California market over time.

Respectfully submitted,
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November 30, 2010

CERTIFICATE OF SERVICE

I hereby certify that on November 30, 2010, I served, by electronic and United States mail, a copy of the foregoing California Independent System Operator Corporation Reply Comments on Proposed Decision to each party in Docket No. R.09-10-032.

Executed on November 30, 2010
at Folsom, California

/s/ Anna M. Pascuzzo //

Anna M. Pascuzzo
An Employee of the California
Independent System Operator