

Parking Lot Issues from CRR Educational Classes and Stakeholder Meetings

No.	Issues from the February 17-19, 2004 CRR Classes	Status, Resolution Process, and Key Dates
1	White paper on development of interface constraints that are translated/derived from non-interface formulated operating constraints (e.g., SCIT, which takes into account generation inertia). The CAISO needs to work with the MPs and specifically the PTOs on how we will translate/derive these interface constraints.	The ISO is in the process of developing a white paper on this issue. This white paper is expected to be completed on or about July 9, 2004. The ISO will work with Market Participants and the PTOs on how these interface constraints will be developed.
2	Bilateral contracts: how MPs can deal with these contracts concerning congestion and losses. This includes the use of Trading Hubs.	The ISO has an ongoing stakeholder process to address LMP settlements of bilateral contracts. The objective of this process is to develop market rules governing the market settlement of bilateral contracts via an Inter-SC trade mechanism. The ISO provided a white paper on this issue on March 9, 2004, received stakeholder comments, provided a supplemental document on June 1, 2004. In its June 17, 2004 Order on MD02, FERC instituted a section 206 proceeding before an administrative law judge to address this issue and directed the ALJ to report her/his findings to the Commission no later than September 17, 2004. The CAISO will be participating in this proceeding in the coming months.
3	Technical reference information: We need to provide a list of references for the material (e.g., LMPs and CRRs) that was presented in the presentations.	During the CRR classes, several participants asked for technical references on transmission rights. For the CRR system we are reviewing the various methodologies available and not following one specific model exactly. Listed below are some of the references that can assist in further understanding of the concepts associated with transmission rights: 1) http://ksghome.harvard.edu/~.whogan.cbg.Ksg/ - web site for Bill Hogan 2) Wood and Woolenberg – Power Generation Operation and Control – text 3) http://www.jhu.edu/~dogee/people/faculty/hobbs/IEEE_JETRA_ONeill_June_2002b.pdf
4	Shift factors in the AC FNM and in the DC FNM. One MP	The ISO has explained in detail, during CRR educational training and during stakeholder meetings, why a DC model should be used for the CRR allocation and auction under

	wanted to see how the shift factors would change from being calculated in an AC FNM and being calculated in a DC FNM.	MD02. Due to this fact, plus the extensive focus on CRR Study 2 tasks and limited resources, this proposal to have the ISO determine how shift factors would be different if using an AC FNM is viewed as having a lower priority. However, time permitting, the ISO will work to complete this request.
5	Shift factor data to MPs. Some market participants would like the set of shift factors for the FNMs that we will use.	For CRR Study #1, the ISO made the network model available under a non-disclosure agreement. The shift factors can be derived from this model information. For CRR Study #2, the ISO is looking to use a network model that will be made available to all WECC participants via the WECC site. From this network model it is possible to calculate all shift factors on the system.
6	Marginal and average losses: some MPs are concerned about the use of marginal loss pricing instead of average pricing. They also wanted more understanding about self-scheduling of losses.	FERC approved the use of marginal losses in its June 17, 2004 order on MD02, reaffirming the position it had stated in its October 28, 2003 guidance order. With regard to the issue of self-provision of losses, the June 17, 2004 order directed the ISO to address this issue in our MD02 Tariff filing. We will therefore incorporate this issue in the continuing stakeholder process on MD02 issues to be conducted over the next few months.
7	Use of the term “curtailment”: Some MPs thought that the use of the term “Curtailment” in the context of CRRs was misleading since it has an inference to the Forward or Real-time markets.	The work “reduction” should be used in referring to the adjustment of the MW control variables in the optimization/SFT for the CRR allocation process.
8	CRR Revenue payment: Is it best to use the CRR allocation factors or the forward market final allocation factors to derive the LMPs used in the CRR revenue calculation for settlements?	For CRR Study #2, the ISO has agreed to look at both alternatives to provide stakeholders with the results under both scenarios.
9	CRR Hedge types: Should the CAISO allocate CRR Options knowing that there will be fewer MW available but knowing these are not	In general, the use of CRR obligations provides for a more efficient use of the capacity on the transmission system since obligations, unlike options, create counter-flow. This counter-flow can result in a significantly higher number of CRRs clearing during the simultaneous feasibility analysis.

	liabilities for MPs, or allocate CRR Obligations knowing that there will be more MW available but knowing these may be liabilities for MPs.	For CRR Study #1, we did a sensitivity analysis reflecting all CRR requests as Options and we will also be doing a scenario for CRR Study #2 in which all requests are also taken as Options.
10	CRR revenue and Day ahead scheduling: Some MPs stated that in order to get a CRR revenue payment you would need to schedule your energy (consistent with the CRR) in the Day-ahead market.	There seems to be some confusion between two different issues here. (1) The settlement of CRRs for any given hour is calculated based on the CRR holder's total holdings of CRRs and the DA prices. This calculation is not affected by how the CRR holder actually schedules in the DA or uses the ISO grid. In fact, the CRR holder may not schedule at all, and may not even be a SC. (2) A slightly different question, however, is whether the CRR revenue payment will be the right amount of money to offset the CRR holder's congestion charges. The answer to this question is that IF the CRR holder's final DA schedule for a given hour exactly matches its CRR holdings (with respect to scheduling locations as well as MW quantities), then the revenue from CRRs will exactly equal and offset the DA congestion charges associated with that schedule. The last statement must be qualified, however, by the assumption that CRRs are "revenue adequate" for that hour. Revenue adequacy may not occur in a given hour if the transfer capacities of some grid facilities are reduced relative to their capacities as modeled in the CRR allocation and auction process, for example due to a line out of service. In such cases there could be insufficient congestion revenues collected by the ISO to fully compensate all CRRs. The CRR balancing account is intended as a device to make up such shortfalls, so that on average over the course of the year any reduction in value of CRRs is kept to a minimum.
11	CRR allocation to generators: Some generator owners feel they will not be fairly treated since they will not be allocated CRRs at the same time as load and because of that they will not be able to get sufficient CRRs.	This issue is being addressed in the Bilateral contracts stakeholder process. One possible option is to have the generator and LSE agree to a delivery location in which case the load can request CRRs from a specific source to the LAP. In addition, generator owners may purchase CRRs in the auction as well.
12	City-Gate metering for Load Aggregation Points: There was a question from Riverside (which is connected to the ISO grid at the Vista bus in SCE's	The question was not captured clearly. The ISO invites Riverside to contact Scott Jercich at (916) 608-5987 and restate the question.

	territory) about how to handle the situation where they have a City-Gate meter. This is really no different than how the ISO proposes to handle a MSS. Both generator and load should be scheduled on a gross basis. However, for Riverside, they are not priced like an MSS (being that they are not a MSS). Their generation and load will be priced separately.	
13	LDFs and PTOs: The allocation factors for the Standard Load Aggregation points will be based on LDFs. The CAISO needs to derive a set of allocation factors for the long-term allocation as well as the monthly allocation, with on and off-peak taken into consideration. The LDFs will be based on the load within the base cases. The MPs are interested if the PTOs will do anything different or make additional efforts in providing better estimates of load at individual buses within the base. This also holds for the Forward Market.	<p>At this time, the CAISO is not expecting the PTOs to provide any additional information concerning LDFs. It is anticipating that at the implementation of Full Network Model, LMP and CRR, the CAISO will have had its EMS based state estimator working for some time. This program will be able to estimate the load at each bus (i.e., especially for those loads that do not have direct revenue quality metering). The CAISO will create an LDF library to store these results. The LDFs used for CRR allocation/auction will be based on the LDFs from this library.</p> <p>For CRR Study 2, the CAISO will use LDFs from available seasonal base cases.</p>
	Issues from the Mar 16-18, 2004 CRR Classes	
1	Use of an AC (Alternating Current) FNM instead of a DC	For a response to this and other questions posed about AC versus DC, please refer to the

	(Direct Current) FNM in the CRR Allocation process: The participants noted that an AC FNM was used in the Integrated Forward Market and in the Real-time market, so why is this same model not being used in the CRR Allocation process?	document at the following website: http://www.caiso.com/docs/2004/04/26/200404261707587407.pdf
2	Calculation of Upper Bound: By using a CRR term of one year and basing the upper bound of CRR MW on historical peak load (i.e., minimum of the 12 monthly peak values over the historical reference period – this then uses non-coincidental peaks) is the Allocation process limiting Market participants with what they really need for certain months? Should the lengths of the terms more coincide with the periods of different load peaks?	For purposes of CRR Study #2 we will be looking at 12 individual HRP peaks and calculating the Upper Bound based on each month's peak. For the LT CRRs we will allocate 12 months at one time and have 12 monthly ST CRRs based on forecasted peak information. The 12 monthly peak data will provide maximum flexibility in requesting LT CRRs but it might be determined that we don't need 12 monthly peaks but maybe 4 quarterly peaks which accurately reflect the load variations throughout the year. The study data should help us evaluate this process.
3	Validation of Source and Sink location, Source MW amount and total Sink MW amount: The participants need a better understanding of how the CAISO will determine the Source and Sink location, Source MW amount.	For the purposes of CRR Study 2 the ISO intends to apply the principles stated in the Mary 26, 2004 document, "Strawman CRR Request Guidelines and Validation Rules for CRR Study 2," specifically items 2-5 on page 3. Within these guidelines, parties will have flexibility to request source locations that they prefer, in conjunction with the 4-level priority scheme discussed in the meetings. Sink location will need to be consistent with how the party's load will be scheduled and settled in the ISO markets, i.e., at the actual location or at the Load Aggregation Point.
	Issues from the March 22, 2004 Stakeholder Meeting	
1	CRR Study program: some	The ISO agrees with this point. CRR Study 2 has been designed such that long-term

	CRR studies may need to be run in series, rather than parallel so that if errors are detected then can easily be changed before other studies are completed.	CRR allocations will be run first, possibly followed by a simulated auction of long-term CRRs and then a short-term allocation of CRRs possibly followed by a simulated auction of short-term CRRs. After each of the individual allocation and auction steps, the ISO plans to review results in order to detect errors. This will allow the ISO to repeat steps, if errors are detected, before getting too far with the Study.
2	Source/Sink Location Allocation Rules: The CAISO Department of Market Analysis (DMA) needs to prepare and release a draft document of CRR allocation rules on Source/Sink location and MW validations soon as possible to facilitate the CRR allocation rules process.	See response to earlier question on this issue.
3	Incentive for requesting CRRs from the ties versus internal generation: is the ISO providing the right incentives?	The ISO recognizes that parties may have incentives to request the most valuable CRRs, regardless of how they actually use the grid to serve their load. The ISO cannot eliminate these incentives. Rather, we have proposed CRR request guidelines and validation rules that will utilize such criteria as historical use of the inter-ties and resource ownership as a basis for determining allowable requests. The rules discussed to date apply to the CRR requests to be used in CRR Study 2. The stakeholder process over the coming months will be the venue for developing rules that will actually apply when we implement LMP.
4	Discuss proposals for CRR study scenarios: the CAISO is requesting from Market Participants a set of different scenarios to study for CRR Study 2.	This process has been going on for several months. The ISO and CRR Stakeholders will be finalizing the CRR Study 2 scenarios shortly.
5	Pricing of load: What prices do the loads receive if they are Participating Loads (i.e., have a Participating Load Agreement (PLA) with the CAISO) and have submitted bids in the Forward Market,	The ISO proposes to accommodate load reduction by Participating Loads in the forward markets by using a dual representation of the PL. First the PL must self-schedule its load quantity (i.e., as a price taker quantity with no associated price); this load would be scheduled and settled at the Load Aggregation Point. Second, the PL would submit bids to sell energy in the market at the actual location of the PL, and the ISO market would evaluate these bids alongside the supply bids of other generators. Energy supply bids from a PL that are accepted in the market would be settled at the locational price (LMP).

	the load aggregation price or a locational price? Does this pricing scheme depend upon the portion of the load that is reduced in the Forward Market?	
	Issues from the May 4-6, 2004 CRR Classes	
1	Constraints/Nomograms: How to handle certain constraints/nomograms that implicitly give unfair advantage to certain generators or certain sets of generators?	More information is required to adequately address this concern.
2	Reference bus: What bus will be the reference bus in the IFM for calculating LMP's? What criteria is being used to determine this bus?	<p>The selection of the reference bus does not affect the LMPs. However, the selection of the reference bus does affect the decomposition of LMPs (into a reference component, a congestion component and a loss component.) A participation factor based load-flow formulation will be used in calculating the LMP components. The participation factors are employed to adjust all generators and/or loads to compensate for the load-flow mismatches. The participation factors for loads can be based on historical load distribution patterns. The participation factors for generators can be based on historical patterns, bid cost and/or loss penalty factors. The details have not been fully developed at present time.</p> <p>For technical background information on participation factor load flow formulation, see "System incremental cost calculations using the participation factor load flow formulation" authored by Jerome Meisel, published on IEEE Transactions on Power Systems, Vol. 8, No. 1, February 1993.</p>
3	Converted Rights: Will Converted Rights receive a scheduling priority in the IFM and real-time for schedules over the transmission that was turned over to the CAISO?	Converted Rights will not receive a scheduling priority in the IFM or in real-time for schedules over the transmission system that was turned over to the CAISO. Only transmission ownership rights will have scheduling priority in the IFM.
	Inaccurate Load Forecast:	Forecasts can fall on either side of actual load. By having monthly allocations the

4	<p>The upper bound for short-term CRRs (e.g., monthly term CRRs) will be based on a load forecast for that short-term period. If that load forecast is inaccurate (e.g., low) causing the upper bound to be low, it would limit the amount of CRR MW that can be requested. Suppose that the actual load during that month is higher and that it would all be scheduled in the Day-ahead market. The LSE may not have enough CRRs to hedge against congestion in this instance because the Load MW is larger than the total CRR MW (due to the limitation of the upper bound). What is the CAISO planning to do in this situation?</p>	<p>impact of any inaccuracies will be relatively short term. Since the amount of CRRs allocated will be for the entire month those hours during the month that were unusual and not picked up by the LSE's forecast could be offset by those hours when their load was below their CRR allocation. It is the intent of the ISO that we allocate CRRs in a quantity that will provide a hedge over the entire year so that the CRR revenues and charges will come close to offsetting each other.</p>
5	<p>Marginal Losses: The CAISO is planning to put the over-collection due to marginal losses from both the Day-ahead and Hour-ahead markets into the CRR Balancing Account. The CAISO should place this over-collection into the neutrality account.</p>	<p>The ISO's reasons for using the CRR Balancing Account for this purpose were described in its various filings on MD02. See, in particular, our July 22, 2003 MD02 Filing and our Reply to Comments on September 17, 2003. In the June 17, 2004 order on MD02 FERC found this approach to be reasonable.</p>