

DRAFT LANGUAGE: BPM for Congestion Revenue Rights

7.2.3 Load Migration & Adjustments to Load Data

During the annual CRR Allocation process when an LSE submits its historical Demand, if Load has migrated to or from the LSE prior to submitting this historical Demand data, then there will be an adjustment made to reflect this migrated Load in the LSE's historical Demand data (See CAISO Tariff § 36.8.5). Prior to MRTU start-up the CAISO will follow the process outlined below and make a one-time adjustment to reflect load migration from April 1, 2006 through MRTU Go-Live. After this one-time adjustment the CAISO will make monthly adjustments due to Load migration, as noted in section 7.2.3.1 below.

Load migration from an LSE's portfolio reduces the Priority Nomination Process (PNP) Eligible Quantities for that LSE and has a corresponding increase for the Load receiving LSE. The reduction in PNP Eligible Quantities is applied as a constant percentage to all CRRs allocated to that LSE in the prior annual CRR Allocation.

The migration of Load is reflected as a decrease to one LSE's historical Demand level and a corresponding increase for the receiving LSE taking the Demand. During the time period prior to the next annual CRR Allocation the migrated Load is reflected in the monthly forecasted Demand data that will be submitted by the LSE acquiring the migrated Load.

7.2.3.1 Monthly Adjustments for Load Migration

The monthly forecasted Demand data will account for any Load migration for the monthly CRR Allocation. To track load migration the CAISO will be receiving data regarding the movement of customers between LSEs from the Utility Distribution Company (UDC) or other entity that provides distribution service to the customer to provide information on migration of customers between LSEs directly to the CAISO, as part of the Direct Access enrollment process.

Information provided by the UDC will include, at a minimum:

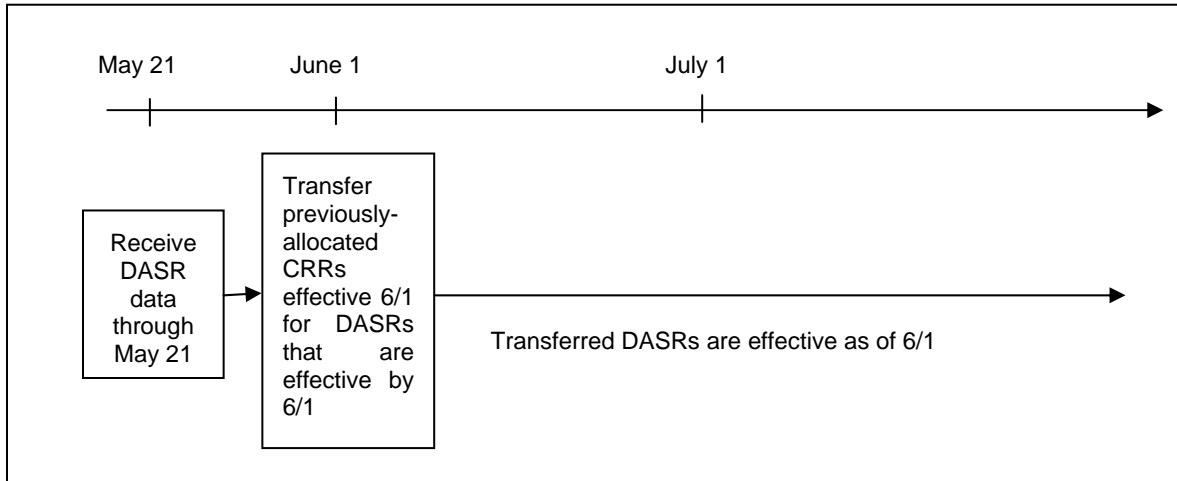
- Customer ID information,
- Original and new LSE,
- Time Stamp
- Direct Access Service Request (DASR) ID
- Customer class

- Effective start date of transfer, and
- Most recent 12 months of billing data.

The required data are available through the DASR process that already exists when end-use customers in the UDCs' areas switch LSEs. The full DASR process is an interactive exchange between LSEs and the UDCs, in which LSEs request the switch of customers to their service, or return customers to default bundled service. Once the switch of a customer between LSEs is confirmed, the customer's billing history is exchanged. The CAISO will use the UDCs Service Delivery Point identifier as the definition of what constitutes a customer. This is typically the level at which metering of the customer takes place and is consistent with the level at which the DASR process occur. The CAISO has defined with each of the UDCs, in whose areas Direct Access transfers occur, the logistical details of the information exchange. Transfers of customers between LSEs may also occur through other mechanisms (e.g., changes in UDC boundaries or an LSE going out of business), but such changes should be far less frequent than transfers of Direct Access customers. These other types of changes would be handled through administrative mechanisms, with the associated transfers of CRRs performed following the same principles that are described herein. For this purpose, the involved parties should contact the CAISO before the migration process is run to define the specifics of the mechanism that will be used to quantify the amount of load transfer.

The CAISO will receive this information on an ongoing daily basis, but will perform the calculations for CRR allocation purposes on a monthly basis, beginning approximately on the 21st of each month in preparation for the next monthly CRR allocation and auction. CRR transfers will be made effective on the first of the month for load migration that is effective by the first of the same month. This step will be performed prior to determining each LSE's eligibility for monthly CRR Allocation. The CAISO will calculate for each LSE its net load transfer quantity between itself and each other LSE during the previous 30 days, for purposes of determining the required transfers of CRRs.

This process is illustrated in the following diagram, using CRR transfers effective on June 1 as an example:



Given this timeline, any transaction that is approved by the UDCs by the time the records are submitted will be processed. If a transaction is subsequently cancelled, UDCs will notify the CAISO and the CAISO will adjust the CRR transfers to effectively discard the transaction. Also, the CAISO will make adjustments to avoid double-counting of any record updates previously processed.

The CAISO will release the specific calendar for submission deadlines of data for load migration prior to MRTU start-up. This is to accommodate the dates (such as holidays) of the specific month when the load migration process run.

For end-use customers of any size, the UDCs will determine a standard number of kW per customer in each customer class based on an average of N peak hours (determined

by CAISO) for the Default LAP in which the UDC is located.¹ The following classes are going to be used in the process to reflect load migration:

MW Tier	Class Type	Label
MW<1	Residential	Residential
MW <0.02	Commercial I	Small_com
0.02<= MW <0.5	Commercial II	Med_com
0.5 <=MW <1	Industrial	Industrial
MW<1	Agricultural	Agricultural
1<= MW <1.5	Large	Large1_15
1.5<=MW<2	Large	Large15_2
2<=MW<3	Large	Large2_3
3 <=MW< 5	Large	Large3_5
5<=MW<8	Large	Large5_8
8<=MW<13	Large	Large8_13
13<=MW<18	Large	Large13_18
18<=MW<24	Large	Large18_24
24<=MW<30	Large	Large24_30
30<=MW<40	Large	Large30_40
40<=MW<50	Large	Large40_50

¹ More than one hour of load must be averaged for this purpose, since Seasonal CRR Eligible Quantities for each LSE are determined at the 99.5th percentile of the LSE's load duration curve instead of at its peak. Considering a large UDC area as a whole, suppose that its peak load for the summer on-peak period is 22,000 MW, and that the sum of LSEs' Seasonal CRR Eligible Quantities is 20,000 (based on the 99.5th percentile methodology). The peak load in this illustrative case is 10% more than the total Seasonal CRR Eligible Quantity. If the MW per customer value that is used to calculate CRR transfers were based on the UDC's peak load instead of a value that corresponds to the 99.5th percentile, the amount of CRRs being transferred would be 10% more than the proportional amount of the LSEs' Seasonal CRR Eligible Quantities.

An additional benefit to using multiple hours is that this process helps to avoid anomalous data that could affect single hours.

50<=MW<60	Large	Large50_60
60<=MW<70	Large	Large60_70
70<=MW<80	Large	Large70_80
80<=MW	Large	Large80_UP

A customer should be put into the corresponding class based on the customer's peak load over the prior last 12 months. KW/customer rates will be computed for each season and TOU within each UDC based on historical load data from the previous calendar year. The CAISO will convert the kW/customer rates for each class, season and TOU into corresponding MW/customer rates. By receiving the 12 months of billing history that is transferred between LSEs as part of the Direct Access enrollment process, the CAISO will have the ability to validate the UDCs' calculations of the standard kW per customer rates.

7.2.3.2 Calculation of Required CRR Transfers

The net load gained by LSE-2 from LSE-1 will be tracked separately from the net load lost by LSE-2 to a different LSE-3 during the same month, using the formulas described below. This avoids needing to attribute load transfers between LSE-1 and LSE-3 when there were actually no transfers directly between these LSEs.

The general method of calculation treats the set of Seasonal and Long Term CRRs that resulted from each annual allocation process as a separate portfolio, and adjusts the portfolio as follows:

Step 1:

Base of allocated CRRs held the by load-losing LSE =

(CRRs originally allocated to the load-losing LSE through CAISO allocation processes)

+ (New CRRs allocated to the load-losing LSE through previous months' load migration transfers)

- (Counter flow CRRs assigned to the load-losing LSE through previous months' load migration transfers)

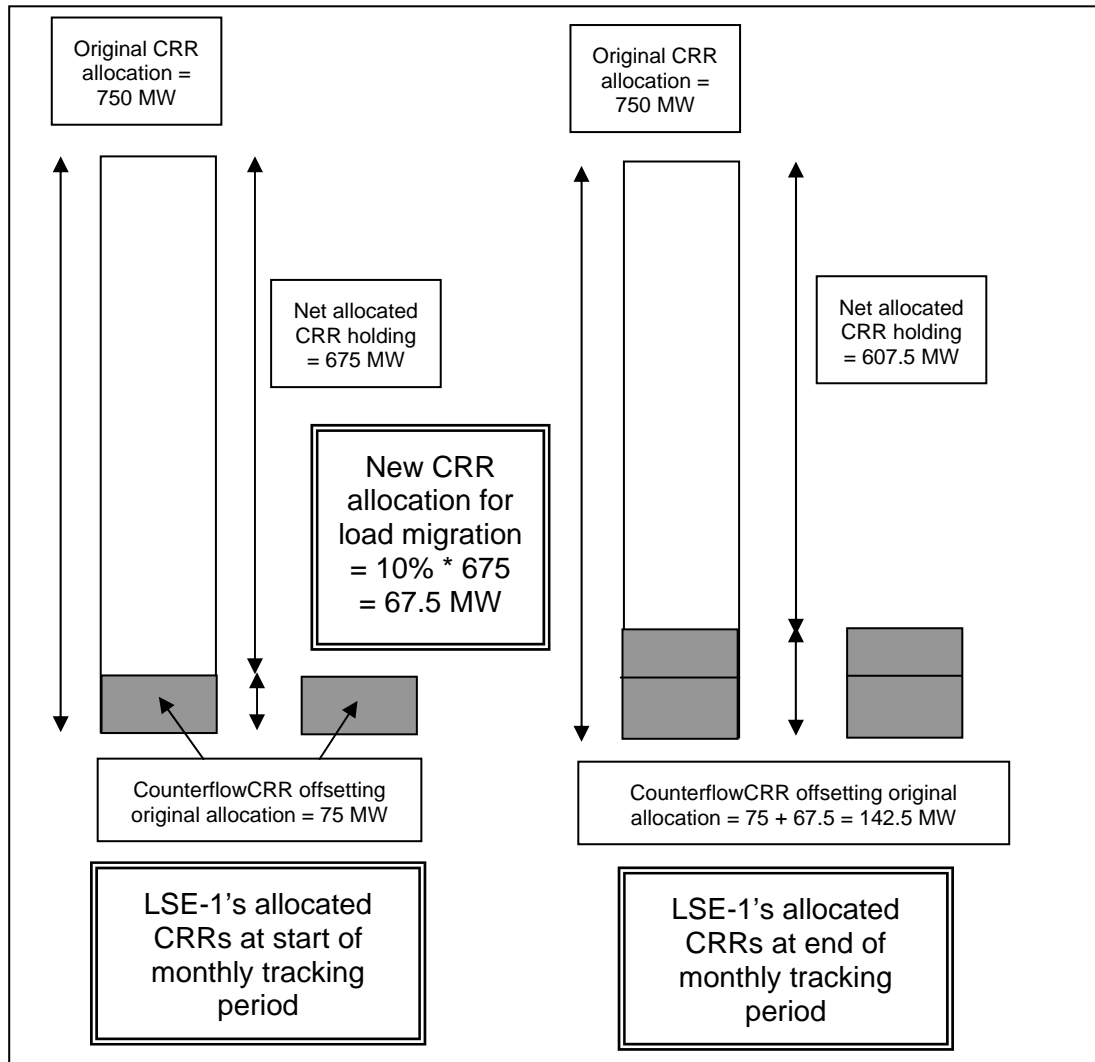
An LSE may have CRRs in different UDC territories, but only those sinking at a UDC's location where the migrated load is place will be considered in the corresponding transfer.



The calculation of (Base of allocated CRRs held by the load-losing LSE) is computed for each source to sink combination in the load-losing LSE's portfolio of allocated CRRs, by season/TOU and expiration date. Only CRRs with the same path can be netted. An important point is that the resulting number for computing the subsequent CRR transfer is the total allocated CRR value for each source to sink combination, including netting of counter flow CRRs, and that CRR transfers are not computed for each of the individual allocated CRRs that are combined to get the total.

Example: LSE-1 was allocated 750 MW of CRRs from PNode A to LAP-1 in the original annual CRR Allocation process. LSE-1 previously lost 10% of its load, and thus was awarded 75 MW of counter flow CRRs from LAP-1 to PNode A. It has not gained load from other LSEs.

Its net holding of allocated CRRs is $750 - 75 = 675$ MW. It is now losing another 10% of its load, and this time its transfer to load-gaining LSEs will be $10\% * 675 \text{ MW} = 67.5 \text{ MW}$ (not 75 MW of its original allocation and 7.5 MW of the counter flow CRR). Its net holding of allocated CRRs at the end of the monthly tracking period is $675 - 67.5 = 607.5$ MW.



Step 2:

Within each process to reflect load migration, the net number of customers being transferred between each pair of LSEs in each customer class is counted for each LSE as the algebraic sum of number of customers lost and gained to each other LSE. The corresponding load transfer between each pair of LSEs, for each customer class, TOU and season is:

$$(\text{Net number of customers migrated between two LSEs}) \times (\text{Average MW/customer}).$$

Although the number of customers that migrates in each class between each pair of LSEs is constant in the whole process, the load transfer will be different for each season

and TOU because a different MW/customer rate is applicable to each TOU and season.

Afterwards, the LSEs' net load transfer is calculated as the algebraic sum of load lost and load gained to each other LSE. If the net load transfer represents a gain of load, then no further computation is carried out for such an LSE because the CRRs to be gained by this LSE will be defined by the load-losing counter-part. The quantity of CRRs to be transferred is based on the amount of load the load-losing LSE has as a whole.

Example: Some LSEs are switching customers in several customer classes. The following table calculates the load transfer between each pair of LSEs during a monthly tracking period in each customer class. Consider the information refers to the same sink, TOU and season. The average kW per customer for each season and TOU will be supplied by the UDCs, and the CAISO would count the net number of customers being transferred between each pair of LSEs in each customer class and then compute the corresponding load transfer.

Customer Class	Net number of customer transferred	MW/customer rate	Load Migration (MW)	Old LSE	New LSE
Residential	200	.005	1	1	2
Residential	600	.005	3	1	3
Small Commercial	500	0.010	5	2	4
Small Commercial	450	0.010	4.5	4	3
Medium Commercial	5	0.2	1	1	2
Medium Commercial	35	0.2	7	2	3
Agricultural	5	0.8	4	3	1
Industrial	4	0.85	3.4	3	2
Large8_13	1	8	8	1	3

The tracking of the net load transfer by pair of LSEs is summarized in the following matrix (lost load is positive and gained load is negative, the load-losing LSEs are given in rows and the load-gaining LSEs are given in columns):

	LSE1	LSE2	LSE3	LSE4
LSE1	-----	1+1=2	3+8-4=7	0
LSE2	-1-1=-2	-----	7-3.4=3.6	5=5
LSE3	-3-8+4=-7	-7+3.4=-3.6	-----	-4.5=-4.5
LSE4	0	-5=-5	4.5=4.5	-----

Hence, the net load transfer per load-losing LSE is:

Load-losing LSE	Quantity	Load-gaining LSE
LSE1 loses	2 MW	to LSE2
	7 MW	to LSE3
LSE2 loses	3.6 MW	to LSE3
	5 MW	to LSE4
LSE4 loses	4.5 MW	to LSE3

Likewise, the load-losing LSEs' current load for each LSE, customer class, TOU and season, is:

(Current number of customers in the corresponding class for the load-losing LSE)(Average MW/customer).*

The LSEs' net current load is the sum of the load from all its customer classes. For each process, UDCs will provide to the CAISO the LSEs' number of customers in each customer class existing as of the end of the previous month.

Step 3:

Percentage of CRRs to transfer from the load-losing LSE to load-gaining LSE =
(Load-losing LSE's net load transferred to the load-gaining LSE during the month)
/ (Load-losing LSE's net current load)

The Percentage of CRRs to transfer from the load-losing LSE to the load-gaining LSE is in general different for each season and TOU because the MW/customer rates used in the computation are defined by season and TOU as well. The term (Load-losing LSE's net current load) is based on all customers from all classes who are served by the load-losing LSE at the time of the previous monthly CRR allocation, regardless of whether these were new or pre-existing customers.²

Step 4:

CRRs allocated to load-gaining LSE =
(Base of allocated CRRs held by load-losing LSE)
* (Percentage of CRRs to transfer from the load-losing LSE to the load-gaining LSE)

This calculation has been illustrated in the example for Step 1.

Step 5:

Counter flow CRRs allocated to the load-losing LSE =
-1 * (CRRs allocated to the load-gaining LSE)
(i.e., equal amount of MW in the opposite direction)

² New customers who were not previously served by any LSE, and closing of customer accounts that are not transfers to other LSEs, are tracked through updates to the number of customers who are served, and are not tracked as load migration between LSEs. Instances where a customer moves within a UDC service area are the closing of one account and the opening of another account, and are not tracked as load migration between LSEs.