Written comments with CAISO reply
Submitted after the
March 4 Stakeholder Meeting regarding the
Draft 2009 Local Capacity Requirement (LCR)
Results

COMMENTS OF THE

ALLIANCE FOR RETAIL ENERGY MARKETS (AReM)

ON THE PRELIMINARY LOCAL CAPACITY REQUIREMENTS (LCRs)

FOR 2009 PRESENTED ON MARCH 4, 2008

These comments address the power point presentations discussed with stakeholders at the March 4, 2008 meeting regarding the preliminary results for the 2009 LCRs.

2008 Compliance

At the March 4th meeting, there was brief discussion on 2008 compliance by load-serving entities (LSEs). The CAISO representatives stated that there were some "small" deficiencies in the "north" and the "south" and that they were in the process of determining whether any LSEs were non-compliant. AReM requests that the CAISO provide LSEs with a timetable describing when the evaluation will be completed and when LSEs will be notified whether additional Local RA procurement is required for 2008.

CAISO response: The CAISO is in the process of completing its analysis and will provide notification to LSEs of their compliance status in May 2008. Under Section 40.7 of Appendix CC of the CAISO Tariff, the CAISO must provide LSEs with an opportunity to submit revised Resource Adequacy Plans in response to any deficiency.

Long-Term LCR Study

In December 2007, the CAISO published a long-term LCR study that provided projections for 2010-2012. AReM has a number of questions about the results and how they should be

used by LSEs in planning for future procurement. AReM requests that time be set aside at the next meeting to discuss these topics.

CAISO response: The CAISO agrees to discuss the 2010-12 Long-term LCR at the end of the April 10, 2008 stakeholder meeting.

New Local Capacity Areas (LCAs)

The preliminary results of the 2009 LCR study show some areas of significant concern. For example, CAISO staff indicated that Sunrise Powerlink could create a new LCA. Also, this year the CAISO began studying four sub-areas within Big Creek. AReM requests that the CAISO identify the particular sub-areas or other regions within the CAISO Grid that could potentially evolve into a new LCA over the next five years.

CAISO response: CAISO's evaluation includes many thousands of overlapping contingencies and most of them could become binding one by one at lower and lower resource levels. The CAISO will publish the most stringent combination given that the pool of units chosen would be enough to satisfy the less stringent combinations. The CAISO may also choose to publish other important, but less severe contingencies, and their effectiveness factors if this would benefit overall LSE procurement. Some of these less stringent contingencies form their own sub-area for the simple reason that only a portion of the units in the area are effective in mitigating those problems. The CAISO is committed to refining the data available to stakeholders in order to benefit procurement and to provide higher transparency, as soon as it becomes available. Your request is addressed to the extent possible, based on current knowledge about future transmission and generation projects, in the Long-Term LCR Report part of the CAISO Transmission Planning Process.

Specific Local Capacity Areas

SDG&E – There was brief discussion at the March 4th meeting indicating that there were some potential transmission planning issues in San Diego regarding the South Bay retirement. Please explain these issues and what is being done to mitigate them and lower the projected LCR for this area.

CAISO response: The South Bay 69 kV area has been reevaluated based on the 30 minutes short-term rating available for the South Bay 138/69 kV transformer. This rating modification has resulted in a decrease in capacity requirements. In addition, there are numerous other approved transmission projects in this area scheduled to be energized between 2008 and 2010 that will allow South Bay to retire and thereby further reduce the local capacity requirements.

Greater Bay Area — The CAISO study assumes that a new generation facility and transmission upgrade will be in place by April 1, which may not be the case. What will be the increase to the LCR if they are not operational in time?

CAISO response: No increase.

Humboldt — If the Humboldt re-powering is not completed by January 2009, would the 2008 LCR apply for 2009?

CAISO response: The Humboldt re-powering is scheduled now for December 2009 completion. The 2009 LCR increases slightly from the 2008 LCR for the Humboldt Local Capacity Area due to load growth to be described in the LCR report.

North Coast/North Bay — This LCA shows a 24% increase in LCR since 2008. Please explain.

CAISO response: Last year PG&E submitted an operating procedure to mitigate the worst contingency found for the North Coast/North Bay area. The stakeholders and market

participants were informed and it was explained what that new operating procedure entailed. Subsequently, the CAISO found the next worst contingency to be as described in this years draft report. Because there was no time for another round of operating procedure submittals, the CAISO has slightly modified the one received from PG&E in order to mitigate the second worst contingency as well. As such, the final report included LCR needs based on the third worst contingency. In the interim, the CAISO has implemented both of those operating procedures. In the interest of transparency, the CAISO has published the draft 2009 LCR needs based on the same second worst contingency so that PG&E can resubmit the slightly modified (by the CAISO) and already implemented operating procedure so that it can be explained to stakeholders and market participants in an open forum. The North Coast/North Bay area LCR needs have been recalculated based on both of these new operating procedures and they will be described in the final 2009 LCR report. The final 2009 LCR needs are higher then the 2008 LCR needs for North Coast//North Bay due to load growth as described in the draft report.

Fresno – North-south flows on Path 15 appear to have a significant effect on the LCR for this area. Please provide a discussion of the ranges of flows considered and the resulting increases or decreases in LCR.

CAISO response: Based on historical data at the time of system peak and/or Fresno peak there is no consistent Path 15 flow. The CAISO became aware of the fact that Path 15 flows have a rather significant effect on the Fresno LCR during this last year. As such, the Path 15 flow chosen for the 2009 Fresno LCR base case assures the CAISO that if the LCR needs for Fresno are procured the CAISO can sustain any Path 15 flow during system and/or Fresno peak. This assumption has been implemented during this LCR study and it

will be included in the next release of the CAISO LCR Manual. This increase should have small, if any, influence on procurement since the showings for this area has been constantly higher than the minimum LCR need.

BAMx Comments on CAISO 2009 LCR

Draft Study Results

The following are comments offered by BAMx on the CAISO draft study results for the 2009 Local Capacity Requirements (LCR) presented at the March 4, 2008, stakeholder meeting. These comments are in reference to the study results presentation for the PG&E Area.

1. Please provide information on any (and all, if any) SPS or other load dropping schemes that have been assumed for these studies. Please also indicate whether any SPS or load dropping schemes assumed in the 2008 study were removed for the 2009 study resulting in a higher LCR for an area.

CAISO response: No SPS from the system was removed. The list of SPS across the entire system is extensive and most of the SPSs do not affect LCR because they are used to drop generation in areas of abundant resources not in LCR areas with limited resources.

2. Slide 13 of the Greater Bay Area (GBA) presentation indicates a new generator (East Shore Energy Center) was assumed for the GBA for 2009. Please indicate what assumptions you have made with respect to generation plants that have existing contracts for their output beyond the study period (2009 summer in this case). It seems appropriate, under a situation involving a significant contingency, to assume them online and to include them in the total needed, but clearly note that they are already available/earmarked to a specific LSE as they also satisfy the total need.

CAISO response: East Shore Energy Center will not be on-line by 6/1/2009 as such it was removed from the NQC table. For exact order of generation dispatch relative to their contractual arrangements please read the current LCR manual posted at: http://www.caiso.com/18a3/18a3d40d1d990.html.

3. Please indicate which generators were assumed to be available when setting the requirement for each Area and Sub Area. Please also indicate the effectiveness of each generator at relieving the reliability issue that sets the requirement.

CAISO response: All resources modeled in the base case were available. For an exact list of these resources by local area and sub-area as well as effectiveness factors information, please read the draft report to be posted April 3 at: http://www.caiso.com/1c44/1c44b8e0380a0.html.

4. Your GBA presentation at Slides 6 & 13 indicate that, with a re-rating of the Tesla Banks assumed for the study, the requirement was set based upon reactive margin. If reactive compensation was added, what would be the next event which would set the minimum generator requirement? What would be that requirement?

CAISO response: This issue will be evaluated during the system assessment during the next round of Long-term LCR studies performed as part of the CAISO Transmission Planning Process given that there is no approved project to install reactive support by 6/1/2009, as required by the assumption criteria applied in the LCR Study.

Thank you for the opportunity to provide comments on the CAISO presentation of its draft study results for the 2009 LCR process.

Southern California Edison

Comments to the CAISO 2009 LCR

Draft Study Results

In accordance with the California Independent System Operator's ("CAISO's") request at its Local Capacity Requirement ("LCR") stakeholder meeting held March 4, 2008, Southern California Edison Company ("SCE") hereby submits its comments on the preliminary 2009 LCR Study results presented by the CAISO at the March 4 meeting.

I. Introduction

SCE appreciates the opportunity to comment on the CAISO's March 4, 2008 presentations regarding its preliminary 2009 LCR Study results, so that the CAISO will have the benefit of stakeholder input on its LCR analysis prior to completion of the draft 2009 LCR Study (to be issued April 3, 2008). As discussed below, SCE's comments address three issues: (1) the CAISO's addition of "sub-area" findings in connection with its determination of 2009 LCR needs for the Big Creek/Ventura area; (2) the contingencies utilized to determine the 2009 LCR requirements for the L.A. Basin and Big Creek/Ventura areas; and (3) clarification of the impact of certain approved transmission facilities upon the LCR requirements for the Big Creek/Ventura area.

II. New Big Creek/Ventura Sub-Area Analysis

The CAISO's presentations indicate that a key new feature of the upcoming 2009 LCR Study that was not included in the 2008 LCR Study is explicit analysis of "sub-areas" within the Big Creek/Ventura LCR area. From a transmission planning standpoint, SCE appreciates the CAISO's efforts to clarify sub-area study findings within the Big

Creek/Ventura LCR area. Specifically, the CAISO's presentation indicates that it has examined the sub-areas of: Rector, Vestal, and Antelope. These results are consistent with SCE's understanding of operating conditions within the Big Creek/Ventura area transmission system. The efforts made by the CAISO to provide more technical information regarding LCR areas and sub-areas allows for greater transparency and understanding of the technical study results, and are consistent with the FERC Order No. 890 transmission planning process.

While SCE supports the effort to study sub-areas for technical transmission planning reasons, the LCR load pocket definitions/boundaries for which LSEs will have procurement requirements should not change in 2009. For this reason, SCE recommends that the CAISO present its Rector, Vestal, and Antelope sub-area determinations as "study findings" for the single Big Creek/Ventura LCR area, rather than as sub-area "requirements," as they were described in the March 4 presentations. SCE recommends the same treatment for the Barre sub-area within the L.A. Basin LCR area. This designation will capture the relevance of these sub-areas for planning purposes, while preventing undue confusion regarding procurement obligations. Importantly, it is not necessary or prudent for LSEs to have a local capacity procurement "requirement" in the Big Creek/Ventura sub-areas, or the L.A. Basin sub-area for that matter. CAISO Tariff Section 40.3.2c states that, for CPUC-jurisdictional LSEs, "the CAISO will allocate the Local Capacity Area Resource obligation based on an allocation methodology adopted by the CPUC." The CAISO acknowledged in its March 4 presentation, "Summary of Findings," that: (1) the CPUC has not previously enforced sub-area requirements as procurement obligations, and (2) the CAISO does not expect the CPUC to enforce sub-area requirements for the 2009 Local RA

program.[1] If the CPUC chooses to include a discussion of sub-area study findings as it develops the 2009 Local RA requirements for its jurisdictional LSEs, then in addition to the technical findings, potential procurement implications should also be discussed.

SCE recommends, therefore, that the CAISO's draft 2009 LCR Study clearly identify Local Area Capacity Requirements for the Big Creek/Ventura and L.A. Basin areas similar to the 2008 LCR Report, and document the sub-area analyses as study "findings."

CAISO response: The CAISO does not dictate procurement requirements. Rather the CAISO's LCR Study identifies reliability needs. As such, the need indicates a physical capacity requirement that the CAISO will use when validating overall procurement shown by all LSEs together and when evaluating the need for procurement of additional capacity to satisfy the Reliability Criteria. LSE procurement continues to be based on standards adopted by the CPUC or other appropriate local regulatory authority.

III. Contingency Criteria

A. L.A. Basin

The CAISO's March 4 presentations indicate that the L.A. Basin preliminary 2009 LCR requirements are 10,225 MW, based on the following contingency: loss of one SONGS unit followed by loss of the Palo Verde-Devers 500-kV line, with the constraint being the South of Lugo 6,400 MW operating rating.

As SCE has stated in response to previous LCR studies, procurement of generation in the L.A. Basin area is not the only "technically viable" mitigation option available for South of Lugo operating limit constraints, particularly driven by loss of the Palo Verde-

[1] "Local Capacity Requirements (LCR) for Year 2009, Summary of Findings," dated March 4, 2008, at 5.

Devers 500-kV line under high loading conditions. SCE is concerned with the inequity created by applying a contingency that includes the loss of the Palo Verde-Devers 500-kV line. Because this line is a regional bulk transmission tie-line for importing power into Southern California, the benefits of the line are shared throughout the CAISO control area in Southern California. But when the CAISO includes the line in the contingency that defines the L.A. Basin LCR requirements, the burden of mitigating the loss of this line is the made the sole responsibility of the customers of LSEs that are responsible for the L.A. Basin requirements. In short, such a contingency involves overload issues that are not L.A. Basin local area transmission problems, but rather regional problems.

CAISO response: The LCR Study methodology, addressed on several past occasions through the LSAG and CPUC workshops and decisions as well as CAISO stakeholder meetings, clearly describes the contingencies that can be taken in order to come up with the LCR need and include any transmission line; including interties consistent with NERC/WECC and CAISO standards. Furthermore, the methodology evaluates the actual contingencies that the CAISO must protect against during real-time operations.

In addition, the South of Lugo operating rating is not an appropriate limiting constraint for determination of L.A. Basin LCR requirements due to the regional nature of the South of Lugo path. In its November 2007 Rehearing Order regarding Amendment 60 to the CAISO's open access transmission tariff, FERC overturned a prior finding that the South of Lugo path should be treated as a local constraint and instead concluded that "South of Lugo should be categorized as a zonal constraint." FERC supported this conclusion by describing the South of Lugo path in the following manner:

> Its actual operational characteristics indicate that it provides regional reliability benefits that are more consistent with a zonal constraint. The record indicates that: (1) resolution of constraints on the South of Lugo path provide a regional benefit to Southern Cities' loads and Southern Cities contribute to constraints on the South of Lugo path; (2) South of Lugo is associated with multiple 500kV transmission paths; (3) loads and generation of SDG&E and other LSEs in SP-15 impact power flows over the South of Lugo path; and (4) ***South of Lugo has significant regional impacts on more than one PTO*** . . . . [CAISO Operating Procedure T-144] was also revised to indicate that, if the CAISO needs to curtail load in the event of a South of Lugo overload, then the CAISO should curtail not only SoCal Edison load, but also SP-15 load. ***These revisions indicate that South of Lugo has a regional impact that is more consistent with a zonal constraint.***[2]

Due to FERC's express rejection of the South of Lugo path as a local constraint and its determination of the regional nature of the path, it would be improper – and inequitable to the customers of the LSEs responsible for L.A. Basin LCR requirements – to utilize the path as a constraint for determining local area requirements for the L.A. Basin.

Thus, SCE requests that the CAISO determine the next limiting contingency for the L.A. Basin and assess LCR needs based on that contingency.

CAISO response: The CAISO disagrees with the approach suggested. Ignoring the constraint will not serve any purpose since the CAISO can not reliably operate the grid without sufficient units in LA Basin to mitigate this constraint.

[2] *Cal. Indep. Sys. Operator Corp.*, 121 FERC ¶ 61,193 (2007) (Order on Rehearing, issued November 20, 2007 in ER04-835-006, EL04-103-001, at 13-14) (emphasis added).

FERC made a cost allocation decision to the best of their abilities with the tools available under existing circumstances. Fact is:

1. The South of Lugo is not part of the zonal definition of SP 26
2. Resources located in the BC/Ventura (part of SP 26) as well as North of Lugo hurt the South of Lugo constraint

As such this is not a zonal constraint but a constraint within the zone more appropriately described as local.

3. Only LA Basin and San Diego loads and resources are effective and have an influence on the South of Lugo constraint

As such the reality is that as long as South of Lugo is the binding constraint there should really be only one local area La Basin/San Diego. With San Diego LCR needs being treated as sub-area needs just like Barre LCR need is. This however will potentially complicate procurement due to TAC area responsibilities and requirements. This LA Basin/San Diego LCR needs will be the total between the two (since in running LCR for LA Basin all units needed for San Diego have already considered on-line), therefore the total need would be 10,225 MW + 3,113 MW = 13,338 MW.

In order to prove that there is no inadequate responsibility to the customers in LA Basin (therefore SCE TAC) let us do a load share ratio analyses:

In 2009 the load in LA Basin is 19,836 MW and the load in San Diego is 5,052 MW therefore the MW need/MW of load is 0.515 for LA Basin and 0.616 for San Diego. As such the load in San Diego is still carrying a higher burden than the load in LA Basin due to their own constraints within SDG&E TAC.

CAISO believes that is much easier to do procurement by the existing TAC split then to combine the two together (with no inadequate responsibility to LA Basin customers). This can be discussed further during the CAISO stakeholder meetings or CPUC workshops.

B. Big Creek/Ventura

The "Category C" Big Creek/Ventura preliminary 2009 LCR requirement, as presented by the CAISO, is 3,116 MW, based on the following contingency: loss of the Lugo-Victorville 500 kV-line followed by loss of Sylmar-Pardee #1 or #2 230-kV line, with resulting overload of the remaining Sylmar-Pardee 230-kV line. SCE and the CAISO agreed in connection with the 2008 LCR Study that procurement of generation in the Big Creek/Ventura area is not the only "technically viable" mitigation option available for these Sylmar-Pardee overload constraints. SCE remains concerned with the inequity that will result from including loss of the Lugo-Victorville 500-kV line in the contingency defining Big Creek/Ventura area LCR needs. Just as in the case of the Palo Verde-Devers 500-kV line discussed above, the benefits of high power flows over the Lugo-Victorville line are shared throughout the CAISO control area. However, the customers of LSEs that are responsible for meeting the Big Creek/Ventura area LCR requirement are unfairly required to shoulder the entire burden of mitigating the loss of the Lugo-Victorville line under the CAISO's proposed approach to the LCR Study. This line loss would result in an overload problem that is a regional issue and not confined to the Big Creek/Ventura area. SCE therefore requests that the CAISO determine the next limiting contingency for the Big Creek/Ventura area and assess LCR needs based on that contingency.

The LCR Study methodology, addressed on several past occasions through the LSAG and CPUC workshops and decisions as well as CAISO stakeholder meetings, clearly describes the contingencies that can be taken in order to come up with the LCR need and include any transmission line; including interties consistent with NERC/WECC and CAISO standards. Furthermore, the methodology evaluates the actual contingencies that the CAISO must protect against during real-time operations.

Furthermore:

1. The constraint is considered local because only resources in Big Creek/Ventura area are effective in mitigating the constraint
2. The difference between the draft LCR needs for the N-1-1 contingency and the next worst G-1L-1 is not significant at approximately 76 MW (see draft 2009 LCR report or presentation for details).

In addition, SCE notes that the CAISO included 405 MW of California Department of Water Resources ("CDWR") pump load in the calculation of load to be served in the Big Creek/Ventura area, as part of the preliminary 2009 LCR Study findings. The CAISO should expressly indicate in the draft 2009 LCR Study any portions of load included in the various local areas that are attributable to CDWR pump load or any other entities that are not LSEs, to clarify the basis for the LCR need in each area.

CAISO response: CWDR is an LSE under the CAISO Tariff along with other entities that serve pump load and therefore are assigned their proportionate responsibility for LCR needs in a given TAC Area. The values for their pump load are clearly described in the CEC load forecast posted on the CEC web site:

http://www.energy.ca.gov/2007publications/CEC-200-2007-015/CEC-200-2007-015-SF2.PDF.

IV. Impacts of the CAISO's Approved 2008-09 Transmission Projects on the Big Creek/Ventura Area SCE has received the 2009 LCR base case from the CAISO. The base case models the Antelope-Pardee 230-kV line ("ATP Segment 1"), but does not model Antelope-Vincent upgrades ("ATP Segments 2 & 3"). It has very recently come to the attention of SCE Transmission Planning that updated ATP construction schedules in fact identify completion of ATP Segments 2 & 3 prior to (not after) summer 2009. This upgrade would change the 2009 LCR base case modeling of the transmission lines south of Antelope Substation. The change would result in an Antelope-Vincent 230-kV transmission line with 1240 MVA base-case capacity, which should be sufficient to mitigate Antelope-Vincent overloads upon Lugo-Vincent 500-kV N-2 outages. Therefore, SCE asks the CAISO to reconsider the Big Creek-Pardee-Antelope sub-area evaluation based on the most recent information regarding ATP Segments 2 and 3 construction schedules. SCE's Transmission Planning group will be happy to provide the CAISO with modeling information for updating the 2009 LCR base case to complete this study.

CAISO response: The CAISO will include these projects in the study and will work with SCE in order to get the correct models.

In addition, SCE's Energy Supply & Management personnel are unable to determine from the 2009 LCR base case the degree of impact that the following CAISO-approved (for 2008-2009) transmission facilities in the Big Creek/Ventura Area had upon the calculation of LCR needs for the area:

1. Antelope-Quartz Hill-Shuttle 66kV

2. Antelope-Quartz Hill & Antelope-Oasis-Palmdale-Quartz Hill 66kV

3. Replacement of Antelope 230/66kV, 3A transformer bank

4. Antelope 230 kV N-2 Special Protection System (SPS)

5. Antelope-Quartz Hill No. 2

6. Installation of 66kV, 28 MVAR capacitor bank at Antelope

SCE requests that the CAISO identify the impact of these facilities in the forthcoming draft 2009 LCR Study.

CAISO response: Projects 1, 2, 3, 4 and 6 were modeled. Project 5 was not. None of these projects 1-6 have an influence on the LCR needs because they have no effect on the most limiting elements or contingencies.

V. Conclusion

SCE requests that the CAISO modify its preliminary 2009 LCR Study findings and assumptions presented on March 4, 2008, in the manner described above, when preparing the draft 2009 LCR Study. SCE is ready and willing to provide any assistance or additional information the CAISO may need to implement these changes.

Transmission & Distribution Unit (TDBU) of SCE

Comments to the CAISO 2009 LCR

Draft Study Results

The Transmission & Distribution Unit (TDBU) of SCE has reviewed the draft 2009 LCR study results presented at the LCR Stakeholder Meeting on March 4, 2008. TDBU has the following specific comments regarding the draft 2009 LCR study results and possible operating procedures that can be considered for reduction of SCE area LCR totals.

LA Basin LCR Findings (Barre Sub-Area)

SCE asks CAISO to determine the Barre sub-area LCR reduction that would be realized if a SONGS-Santiago 230-kV N-2 load shed Special Protection System (SPS) is installed prior to summer 2009. SCE envisions that a load shed SPS might be able to shed Santiago Substation load upon SONGS-Santiago 230-kV N-2 outage conditions. It may be possible to implement such a SPS prior to summer 2009, although detailed engineering analysis to determine the feasibility, scope and cost has not yet been initiated. SCE notes that if such a load shed SPS turns out to be desirable, cost effective, and can be implemented prior to summer 2009, the SPS would reduce Barre sub-area LCR totals but have no impact on the LA Basin overall LCR totals.

CAISO response: Depending on the proposed amount of load and substations to be armed by the SPS, there could be different levels of decrease in LCR needs. For example, the existing 2009 LCR need of 4173 MW could decreased to 3343 MW in order to protect for thermal overload on the Barre-Ellis 230kV line following the same outage of Santiago-

S.Onfore 230kV N-2 contingency. The requirement may be further decreased if more load is armed for this contingency. However, the actual viability of the SPS and consistency with existing CAISO SPS Guidelines as well as the exact impact of the SPS on reducing LCR needs require further study once SCE develops a more refined and concrete SPS scheme for the most limiting contingency(s). In this regard, the CAISO considers operating solutions at this time in the LCR Study process, which include opening and closing of breakers and/or switches along with moving load to other substation. The design and evaluation of an SPS is likely incompatible with the schedule for LCR approval and, therefore, the SPS proposal by SCE should be developed for evaluation in the next Long-term LCR study to allow for potential incorporation into the 2010 LCR Study.

LA Basin LCR Area Findings

As discussed in SCE's Comments on the CAISO's 2009 LCR Study presentations, SCE believes that the South of Lugo operating rating is not an appropriate limiting constraint for the L.A. Basin, due to the path's regional nature. However, in the event the CAISO does continue to utilize South of Lugo for defining L.A. Basin LCR requirements, SCE notes that the South of Lugo 6400 MW operational limit includes a Special Protection System (SPS) that sheds a portion of LA Basin load under South of Lugo N-2 outage conditions. SCE asks CAISO to determine the LA Basin LCR reduction that would be realized if the South of Lugo operational limit is extended by expansion of the South of Lugo load shed SPS. For example, the existing SPS only sheds a portion of Chino Substation load under N-2 outages, and SCE envisions that it might be possible to expand the SPS to shed all of Chino Substation, in this case resulting in an approximately 300 MW of additional SPS load shed capability and 150 MW of additional South of Lugo

operational capacity (with exact values to be determined). It may be possible to modify the existing SPS prior to summer 2009, although detailed engineering analysis to determine the feasibility, scope and cost has not yet been initiated. SCE notes that if such a load shed SPS turns out to be desirable, cost effective, and can be implemented prior to summer 2009, there should be a resulting reduction in LA Basin LCR totals.

CAISO response: See response above. In addition, effectiveness factors for LA Basin in the draft report (or last year's report). One MW in South of Lugo path rating increase can reduce about 3-9 MW of LCR needs, depending on which units are needed to support other sub-area needs the decrease could be more or less significant. A better approximation would be about 4-4.5 MW and the final number will be influenced by other sub-area needs like Barre and El Nido.

PG&E Comments on the Draft

CAISO 2009 Local Capacity Technical Analysis

Introduction:

PG&E appreciates the CAISO's work on the draft LCR Analysis and looks forward to reviewing, and commenting on, the draft report when it is released (scheduled for April 10th). We're entering the third year of this process, which has shown marked progress with each year; however, opportunities for significant improvement remain. To further the CAISO's LCR process, PG&E provides general comments along with a recommended technical correction. PG&E submitted its operating solutions separately, on March 18th.

General Comments:

At a high level, some general themes worth repeating from the past are:

1) Reliability demands that LSEs make long-term commitments, as the CAISO has recognized in many forums; this CAISO study should support such commitments. Therefore, the study should include forecasts of local requirements for future years. The transmission planning process currently looks out over periods of up to 10 years; PG&E believes that future iterations of this report should include a similar horizon. PG&E commends the CAISO for its December 29th forecast of local requirements to 2012, but believes the horizon should be extended farther either in that future iterations of that report or in the transmission planning process. Although adjustments will need to be made as the operating horizon draws nearer, and it may be appropriate to include more than one scenario (e.g., a conservative

scenario including only CAISO-approved projects, and a more realistic projection including proposed projects), PG&E strongly believes that these projections will prove immensely valuable for the long-term investment decisions that must be made to ensure reliability into the future.

CAISO response: The CAISO believes it is appropriate to continue a sequential study approach with LCR needs for the upcoming Resource Adequacy Compliance Year and the longer-term horizon evaluated separately. This sequential approach facilitates the current CPUC one-year resource adequacy procurement and compliance requirements. Nevertheless, the CAISO is amenable to considering within the context of the Transmission Planning Process modifications that extend the horizon beyond the current 3-year period employed in the Long-term LCR Study.

This reporting cycle and the transmission planning process must be closely coordinated, and differences in assumptions and methodologies must be clearly explained and well understood by the CAISO and the PTOs. PG&E's transmission plan filed Jan 29, 2008 provided LCR forecasts for 2012 and 2017, as well as a point estimate of the 2009 requirement. However, since the CAISO's 2009 and 2012 requirements do not tie to the PG&E Transmission planning study for the same periods, LSEs may be reluctant to place faith in either the short or longer-term numbers. The local requirements, from the PG&E transmission planning process as compared to the CAISO's study results are[3]:

[3] PG&E's Estimates for the 2009 and 2012 Local Capacity Requirements (LCR) are found in *PG&E's 2007 Electric Transmission Local Capacity Requirement Assessment Study Report: Appendix 5*. The CAISO's 2009 LCR estimates are found in the CAISO "LCR for 2009 Summary of Findings", which was presented at

2009 LCR (MWs)				
	CAISO	PG&E	Difference	%
Humboldt	155	165	(10)	-6%
North Coast/North Bay	839	700	139	**20%**
Sierra	1,895	1977	(82)	-4%
Stockton	726	656	70	**11%**
Greater Bay	4,791	4934	(143)	-3%
Greater Fresno	2,692	2086	606	**29%**
Kern	424	362	62	**17%**
Subtotal, PG&E	11,522	10,880	642	6%

2012 LCR (MWs)				
	CAISO	PG&E	Difference	%
Humboldt	160	165	(5)	-3%
North Coast/North Bay	856	762	94	**12%**
Sierra	2,161	2466	(305)	-12%
Stockton	880	754	126	**17%**
Greater Bay	5,452	5513	(61)	-1%
Greater Fresno	2,244	2179	65	3%
Kern	499	414	85	**21%**
Subtotal, PG&E	12,252	12,253	(1)	0%

PG&E believes that if the CAISO study receives greater coordination / integration within the transmission planning process, all market participants would benefit. Such coordination was identified as a process improvement item in the August 8, 2007, workshop and subsequently memorialized in an ruling by Administrative Law Judge Wetzell.[4]

CAISO response: The CAISO agrees with the need for coordination, but notes that the more immediate need is to ensure that confusion among stakeholders is avoided by clearly describing differences in the inputs, assumptions, and methodology of the each study. Generally, there are three major inputs: load, generation and transmission. Here, for instance, the CAISO notes that the CAISO and PG&E studies use different

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the March 4th LCR stakeholder meeting. The CAISO's 2012 LCR estimates are found in the "2010-2012 Technical Capacity Analysis".

[4] ALJ Wetzell Ruling dated November 1, 2007, section 3.2, pg. 6 states "CAISO and PTOs should coordinate grid planning with LCR process."

transmission project assumptions. The CAISO only uses CAISO approved projects. PG&E uses all projects incorporated in its the planning process. The CAISO believes they are both right given the respective purposes of the two studies. The CAISO focuses on establishing LCR requirements using firm projects. PG&E appropriately demonstrates the value of new transmission projects by identifying the further potential reduction in LCR needs. Both result in healthy planning for any given area. In addition, the CAISO will continuously work on ensuring that the LCR Manual is comprehensive so that all stakeholders will be able fully understand the origin of CAISO results.

2) The study must produce logical and predictable results from year to year. Results that appear inconsistent are not easily and readily understood, or that are not accompanied with clear explanation that ties results to consistent principles, assumptions and methodologies do not give market participants faith in the integrity of the analysis, and as a result hamper the ability of LSEs to make effective long-term commitments to support local reliability. Perhaps even more importantly, if results swing wildly, clearly local reliability is either not being met – as indicated by one set of results -- or that an excessive level of procurement (and associated costs) is being demanded relative to the actual need – as indicated by the other. Neither option is acceptable.

To cite a specific example, the local requirements for the North Coast / North Bay region went from a requirement of 676 MWs to 839 MWs in one year, for an increase of 24%. The CAISO's presentation at the workshop, in noting changes since the 2008 study for this area, points only to a revised load forecast. Load growth in the range of

1-4% likely would be considered normal, but an increase to the requirement in the 24% range is not likely. Swings of any appreciable magnitude, but particularly those of such a great extent as this, must be accompanied by clear explanations that can be validated by the PTOs.

CAISO response: See the response on page 5 of this write-up.

Further examples of the unpredictability of requirements can be shown from the historic trends included in attachment 1.

Attachment 1, LCR History[5]

	Category C – LCR Needs (MW Required)				Change from Prior year		
	2009	2008	2007	2006	08-09	07-08	06-07
Humboldt	155	175	202	162	-11%	-13%	**25%**
NorthCoast/NorthBay	**839**	**676**	582	658	**24%**	**16%**	-12%
Sierra	1,895	2,092	2,161	1,770	-9%	-3%	**22%**
Stockton	726	786	589	440	-8%	**33%**	**34%**
Greater Bay	4,791	4,688	4,771	6,009	2%	-2%	-21%
Greater Fresno	2,692	2,382	2,219	2,837	**13%**	7%	-22%
Kern	424	486	786	797	-13%	-38%	-1%
Subtotal PG&E	11,522	11,285	11,310	12,673	2%	0%	-11%
LA Basin	10,225	10,130	8,843	8,127	1%	**15%**	9%
BC/Ventura	3,116	3,658	N/A	-	-15%		
San Diego	3,453	3,033	2,781	2,620	**14%**	**9%**	6%

Examples of large decreases are likely due to development of operating solutions or transmission enhancements, but the reasons that these large increases occurred, as highlighted in red/bold, have not historically been explained to stakeholders to any reasonable degree.

[5] The CAISO's LCR in this table are found in the documents located on the following CAISO web site: http://www.caiso.com/1c44/1c44b8e0380a0.html

CAISO response: The core question at every stakeholder meeting held by the CAISO on LCR needs is "Why did the numbers change?" Accordingly, the CAISO has always explained the difference in LCR needs. However, on a going forward basis, the CAISO will provide an improved narrative description for each area that details the source of any change.

For the current year, and going forward, PG&E believes the LCR reports should provide specific details supporting the need for any change to an LCR that is greater than 50 MWs or 4%.

3) Although the LCR study methodology was approved and adopted, it is apparent that a review of the inputs/assumptions to the study is necessary. The CPUC and CAISO worked with stakeholders to arrive at an agreed-upon LCR methodology at a fairly general level. However, more work needs to occur with stakeholders to identify the input assumptions used by that methodology, as those inputs clearly have a substantial effect on the outcomes, and thus on the resulting requirements. Varying assumptions between the years, with little explanation as to why a change in assumptions has occurred—particularly when those assumptions vary from those used by PTOs in the transmission planning process—undermine the credibility of the process and may create the unfortunate impression that the study is ends-oriented, rather than principled, consistent and reliable.

PG&E recommends that the CAISO work with PTOs to use assumptions consistent with the transmission planning process and supported by adequate review. In that way, when results are released, stakeholders will have more faith in the output.

In the current year, some impacts of changes in assumptions are:

- Previous CAISO studies for Fresno used a different flow assumption for Path 15. If the same Path 15 flow were assumed as in previous years, the LCR would be reduced by about 300 MW.
- Previous CAISO studies for the Greater San Francisco Bay Area used a different flow assumption for Path 26. If the same Path 26 flow were assumed as in previous years, the LCR would be reduced by 200 MW.
- The attached spreadsheet provides further examples of differences between the CAISO results and PG&E's results in the Greater San Francisco Bay Area

In cases where an assumption needs to be changed, such as these noted above, the report should justify why the changes were needed and whether the new assumption is more consistent with planning standards than what had been used previously or what is potentially still being used in the transmission planning process.

CAISO response: As noted above, on a going forward basis, the CAISO will include a write-up detailing the source of differences between LCR needs from one year to the other. The PTOs can also help ensuring transparency by providing a list of changes between the CAISO's previous year base cases and their new base cases.

4) The CAISO-approved the transmission planning process has not identified any reliability criteria violations in areas that the LCR study identified as "deficient." The LCR should be using criteria and assumptions consistent with the transmission planning process, and these divergent results should not occur. PG&E further believes that the term "deficient" is misleading and inappropriate: if, using consistent and criteria and methodologies, analysis suggests that there is a need for greater resources than the study assumed to be in existence for the period in question, that delta should be described as a "gap," which more accurately reflects the study results.

CAISO response: The LCR studies are integral part of the CAISO transmission planning process. Accordingly, the great majority of the deficient area and sub-area already have projects under development in order to address these needs as identified through the Transmission Planning Process.

Technical Corrections:

- The CAISO results for the Stagg sub area should be modified to account for under voltage load shedding (UVLS). The UVLS setpoints are presently being recalculated, and the UVLS will be armed for the relevant contingency this summer. The requirement for this area should therefore be updated.

CAISO response: This is not a technical correction. PG&E has not approached the CAISO regarding this matter or otherwise shared any studies, reports or calculations about UVLS setpoints at Stagg. The CAISO is willing to work with PG&E in order to accomplish this task. However, until data is shared there is nothing to report or incorporate into the LCR Study. The requirement can be decreased or eliminated

depending on the level of risk that PG&E wants to subject their customers to and studies can only be performed after the agreed upon UVLS setpoints are finalized.

Comments the CAISO should consider when drafting its report, scheduled for release on April 3 per the CAISO's presentation

1. The report should clearly provide all technical information required to assess the results (generally, this information should appear in appendices). The report should include, at a minimum:
    - A list of the transmission projects included in the CAISO analysis.

    CAISO response: The CAISO will include a list with all projects that impact LCR needs for the area of study in a detail write-up.
    - Information on the generation dispatch used to mitigate overloads for each limiting contingency

    CAISO response: The CAISO will NOT publish exact generation dispatch based on market sensitivity considerations. However, the CAISO publishes effectiveness factors and if an entity starts from the starting base case and follows the LCR Manual, then it should arrive at the same results.
2. The report should be transparent as to any: a) judgment calls involved in determining the LCR necessary to analyze and validate the study results, b) any changes in methodology or assumptions from the prior year's study; and c) full explanations for the choices made in judgment calls, methodologies and assumptions, as well as the likely changes in results that would be expected if alternate judgment calls, methodologies and/or assumptions were used.

- Some examples of where increased transparency is needed, based on last year's report, are:
    - How the CAISO counts generation units during L-1/G-1 contingency (i.e. counting the offline unit towards LCR).
    - How the CAISO counts partial generation units vs. whole units when calculating the local requirement. Counting only whole units would result in a total requirement that is higher than needed for the purpose counting generation for Local Resource Adequacy. The LCR requirement value should be the actual generation output required, not the installed capacity (or the Qualifying Capacity) of all units required to create that output.
    - The dispatch levels the CAISO assigns to deliverable units when running LCR studies, and the impact that varying dispatch levels would have on results.

CAISO response: These items will be described in the report and included in the LCR Manual in its next release. The CAISO always has and will count partial units unless the G-1, L-1 condition is binding, at which point the full capacity of this largest unit is added as a whole to the LCR need calculated by counting partial units. This methodology is required in order to assure that, if procured, the largest unit can be forced out and the remaining resources in the area can still satisfy the LCR criteria (basically protecting for the G-1, L-1 criteria).

Deliverability for all units is protected at their deliverable amount for the same contingencies as those used in the deliverability studies. No variations are therefore needed.

3. PG&E strongly recommends that the annual assessment and LCR base cases be fully aligned, to ease the burden on the CAISO and the PTOs as well as to make for more reliable, robust and consistent results. If this is done, the PTO can be of further service to reliability by being able to run sensitivity studies with projects in the 10-year plan and associated reduction plan projects.

CAISO response: The CAISO appreciates the suggestion and is committed to working with the PTOs to ensure that the Transmission Planning Process is as efficient as possible.