CALIFORNIA ISO
LOCAL CAPACITY TECHNICAL ANALYSIS
OVERVIEW OF STUDY REPORT AND REVISED RESULTS
July 26, 2005

Comments

General:

Local and Sub Area requirements (LAR) should also be forecast for future years. Transmission studies go out annually for each year for the next 1-5 years, and also provide a snapshot of year 10. These studies consider future transmission upgrades that should affect local requirements. Therefore, this LAR study should incorporate as much as possible known transmission information to forecast LARs. The information currently presented does not give LSEs any indication of how long to contract with what would likely be more expensive units in local areas, and which could possess market power. Each LSE needs this information so that it doesn't agree to a longer, more expensive contract than necessary (e.g., a 10 year contract with a potentially expensive unit in a local area subject to a constraint that would be solved in 3 years). Therefore, the CAISO should update its study to address a 10 year horizon

The local capacity technical analysis would benefit from inclusion of a map that delineates the local areas.

Page 1

The study report states the following on page 1: “The current RMR Criteria is basically a subset of the Grid Planning Standards that includes only single contingencies (NERC Category B). The criteria for this study expand the subset of contingencies to include simultaneous and overlapping double contingencies (NERC Category C). In addition, the current RMR criteria require an assessment of the system with 1 in 5 summer peak load level, while this study assumes a 1 in 10 summer peak load level.”

While the contingencies studied are listed in the NERC/WECC Planning Standards, the ISO would mitigate any potential problems resulting from these contingencies with procurement of local resources. In so doing the ISO ignored the obvious mitigation allowed in the Planning

Standards, including the ISO's own standards. The ISO Grid Planning Standards state: "Involuntary load interruptions are an acceptable consequence in planning for ISO Planning Standard Category C and D disturbances (multiple contingencies with the exception of the combined outage of a single generator and a single transmission line), unless the ISO Board decides that the capital project alternative is clearly cost effective (after considering all the costs and benefits)."

The study report provides an explanatory example: "As an example, under this Local Capacity Area analysis the CAISO must operate the grid with an ability to recover from overlapping contingencies in which a major facility is lost from service, the system is then readjusted, and then another major facility (N-1 or common mode N-2) is lost from service....These are the actual conditions under which the CAISO must plan and operate the CAISO Controlled grid."

This is true for operations, but not for planning. In operations, if one outage has occurred, the control area may take any number of operating actions, including interrupting load, to have the ability to recover from the next outage. But nowhere in the WECC, NERC or CAISO standards is there any requirement to procure or install major transmission or generation facilities to provide such operating capability. In fact, the Planning Standards specifically give the operators the authority to interrupt load and other means to maintain system security.[1] Before this "requirement" for infrastructure development/ procurement can be enforced, the CAISO Tariff requires it to be formally adopted as a planning standard by the CAISO Board.

The Local Resource Adequacy Requirement started out as part of a planning exercise to determine which resource can be counted toward meeting demand. The CAISO should not turn this into a requirement to procure resources to meet operating requirements and to protect against contingencies that are beyond the planning standards. If this planning exercise to count resources is required to incorporate operating requirements, the resource margin used should be

[1] Footnote d, Table 1 of NERC/WECC Planning Standards states, "d) Depending on system design and expected system impacts, the controlled interruption of electric supply to customers (load shedding), the planned removal from service of certain generators, and/or the curtailment of contracted firm (non-recallable reserved) electric power transfers may be necessary to maintain the overall security of the interconnected transmission systems".

an operating margin of 7%, rather than a planning margin of 15%-17%.

Page 3:

The report states the following on page 3: “It is possible that the flexibility in LSE procurement may result in a set of resources that meets the MW obligation, but does not fully ensure the CAISO’s ability to respond to all contingencies. Therefore, the CAISO expects to develop a Local Area Reliability Contract (“LARC”) where the CAISO may enter into a contract in a limited or “backstop” role to ensure the reliable operation of the CAISO Controlled Grid within the redesigned market and Resource Adequacy paradigm.”

The CAISO process must identify all of the needs for local area reliability. If the CAISO formally determines that the amount of the local area resources needs to be increased, the way to satisfy that need is through LSE procurement. The CAISO should not be able to put forth a low-ball estimate of the local reliability need that the LSEs would use for resource procurement and then go out on its own and use LARCs to contract for more generation to protect against more and more low probability events. As stated above, RA procurement should not be intended to respond to “all contingencies” - only those identified through established planning criteria and approved by the Commission to address through RA.

Page 8:

C – Loss of two or more elements

ISO Grid Planning Criteria allow planned load interruption for Category C outages except for those specific outages for which the CAISO Board has ruled that performance requirements of a different category apply. Therefore, except for those specific outages designated by the Board, the Locational Capacity Criteria should not include Category C outages unless all other operational measures, including load interruption, are infeasible. In addition, manual operations procedures should be acceptable to correct potential thermal overloads. Nowhere in NERC/WECC/CAISO Planning Standards is there any requirement

that all operating measures and load interruption be accomplished through automatic action.

D – Extreme event – loss of two or more elements
Any B1-4 system readjusted (Common Mode) L-2
All other extreme combinations D1-14.

Locational Capacity Criteria: Evaluate for risks and consequence, per NERC standards. No voltage collapse or dynamic instability allowed.

ISO Grid Planning Criteria: Evaluate for risks and consequence, per NERC standards.

These proposed Locational Capacity Criteria are more stringent than the ISO Grid Planning Criteria because they do not allow voltage collapse or dynamic instability for Category D outages. The ISO Tariff does not allow the CAISO to adopt planning criteria (i.e., that require major system infrastructure investments) more stringent than the ISO Grid Planning Criteria and the grandfathered local area reliability criteria of the PTO.

Page 9:

The tables on this page also should list the MWs that are required to meet all applicable grid planning standards. The MWs in the Local Capacity Requirements (LCR) column should not exceed the MWs that are required to meet the grid planning standards.

Table V lists total local requirements, but then also lists local with the exclusion of Muni & QF. PG&E sees no reason for the removal Muni & QF generation for Local RA purposes. The local capacity need expressed in total should be published and any attached list should include all units that can satisfy that need. Each LSE is responsible for meeting their share of the identified requirement, and should be able to use any resources they have procured or own to fulfill their respective share.

Table V would be more useful if it contained all area requirements - as listed, it doesn't identify sub-areas. If there are sub-area requirements the CAISO should update the table for a clear listing of total requirements.

Page 10:

An overlapping outage of the Fulton-Ignacio 230 kV line #1 and the Fulton-Lakeville 230 kV line #1 is a Category C disturbance, for which load interruption is allowed. This outage should not be used to establish LCR unless load interruption is not feasible.

Page 11:

An overlapping outage of the Vaca-Dixon-Lakeville 230 kV line #1 and the Crockett-Sobrante 230 kV line #1 is a Category D disturbance and should not be used to establish local capacity requirements.

An overlapping outage of the Poe-Rio Oso 230 kV line #1 and the Colgate – Rio Oso 230 kV line #1 is a Category C disturbance, for which load interruption is allowed, and so is an overlapping outage of the Cresta-Rio Oso 230 kV line #1 and the Colgate – Rio Oso 230 kV line #1. These outages should not be used to establish LCR unless load interruption is not feasible.

Page 12:

An overlapping outage of the Tesla-Tracy 115 kV line and the Tesla-Schulte 115 kV line #1 is a Category C disturbance, for which load interruption is allowed. This outage should not be used to establish LCR unless load interruption is not feasible.

Page 13:

An overlapping outage of the Tesla-Metcalf 500 kV line with the Tesla-Newark #1 230 kV line is a Category D disturbance and should not be used to establish LCR.

Page 15:

An overlapping outage of the Wilson – Atwater 115 kV #1 and #2 lines is a Category C disturbance, for which load interruption is allowed. This outage should not be used to establish LCR unless load interruption is not feasible.

Page 16:

An overlapping outage of Kern PP 230/115 kV transformer Bank 5 and the Kern PP – Kern Front 115 kV line is a Category C disturbance, for which load interruption is

allowed. This outage should not be used to establish LCR unless load interruption is not feasible.

An overlapping outage of the Wheeler Ridge – San Bernard 70 kV line and the Wheeler Ridge – Tejon 70 kV line is a Category D disturbance and should not be used to establish local capacity requirements.

Attachment

The CAISO's List of Generating Units by Local Capacity Area (the attachment) should include the MW ratings of deliverable capacity for those units to avoid confusion and assist LSEs in their local procurement activities.

The following are Units include in the LARS list but not the Local RAR list:

Valero, 49 MW, Bay Area
Pico CC 1-3, 147 MW total, Greater Bay Area
Vaca Dixon, 49 MW, Vaca Dixon and Greater Bay Area
Wolfskill EC, 49 MW, Vaca Dixon and Greater Bay Area
Agrico Peaker, 21 MW, Fresno
Agrico CT, 46.5 MW, Fresno
Alta 1-2, 2 MW, Sierra
Wise 2, 3 MW, Sierra
Angels, 1 MW, Stockton and Greater Bay Area
Murphys, 5 MW, Stockton and Greater Bay Area
Phoenix, 2 MW, Stockton and Greater Bay Area
Lodi CT, 25.6 MW, Stockton
Lodi STIG, 51.2 MW, Stockton
New Hogan PH 1-2, 3 MW, Stockton
Pardee 1-3, 28.2 MW, Stockton
West Point, 16 MW, Stockton

Please explain the reason that these units were included in the LARS study but not the Local RAR study.