Stakeholder Comments

2012/2013 Transmission Planning Process

Presentations from December 11 and 12 meetings

Submitted by	Company	Date Submitted
Karen Shea Garry Chinn Rabiindra Kiran	Southern California Edison	January 14, 2013

SCE appreciates the opportunity to submit these technical comments on the December 11 and 12 CAISO stakeholder meetings.

Policy Driven Planning Base Cases & Study Assumptions - Yi Zhang Presentation

Page 9 Commercial Interest Portfolio

While SCE understands these values to be fixed, SCE would like to point out that the values in certain zones appear to be understated based on actual resources interconnected and/or executed Generator Interconnection Agreements. Perhaps the table excludes relatively new resources, which have already been interconnected as of the end of 2011 and is only accounting for resources that were not yet interconnected? SCE recommends a table be created that reflects relatively new megawatts already interconnected and to have such table updated annually to reflect the amount of new resources interconnected since 2010. Please note, however, that if this were to happen, there would be a lag given the actual commercial interest activity. An example is the Tehachapi Area which reflects 1988 MW of wind but as of 12/31/2012, a total of 2010 MW of wind would have already been installed with more wind megawatts scheduled to be placed into service during 2013 and 2014.

We also observe that updates are needed for total generation for Riverside East, which is indicated, in this presentation, to be 1,506 MW. As of the date of these comments, the total megawatts for executed Large Generator Interconnection Agreements (LGIA's) is 2,550 MW, and the total for executed PPA's is 1,650 MW. We note that the CEC and CPUC's December 9th presentation appears to reduce the total to 964 MW. SCE requests of the CAISO to clarify the reason as to why this number is so low. Based on the cluster studies, the Riverside area can interconnect and deliver up to 4,000 MW of renewable generation without any additional transmission lines.

Also, the total generation for Eldorado area indicated in this presentation is 750 MW. However, the Eldorado area has been omitted in the CPUC's presentation from December 19th, and SCE requests clarification on this from the CAISO.

As exemplified above, there is an understatement of megawatts in certain zones and an overstatement in others. SCE looks forward to participating in the upcoming efforts to redefine appropriate RPS portfolios based on real data available.

Alternatives Considered to the Coolwater-Lugo Project: AV Clearview Transmission Project – Luba Kravchuck Presentation

In the presentation PDF on page 47, the CAISO comments that the "AV Clearview Transmission Project" has been previously suggested as a potential alternative in previous transmission planning cycles". A previous version of this project was considered by the CAISO in the 2010/2011 Transmission Plan.[1] In this report on p. 444 the CAISO said:

> ***Overall Assessment***
> *The cost of this project is estimated at about $900 million with annual carrying charges estimated at $135 million. The annual carrying charges were approximated to be 15% of the total capital cost of the project. The marginal benefits are not material relative to the annual carrying costs of the project. The project is also not policy-driven since it is not needed in order to meet 33% RPS goals based on application of the tariff section 24.4.6.6. In particular, the project is not identified as needed in the ISO's hybrid portfolio. The ISO has therefore concluded that this project is not needed.* (CAISO 2010/11 Transmission Plan).

Studies for alternatives to SCE's Coolwater-Lugo Transmission Project should be better coordinated to ensure proposals that cannot be implemented are not evaluated. For example, the baseline option for the AV Clearview Transmission Project involves two 230 kV connections to the Windhub Substation. This option is infeasible without further expansion of the 230 kV switchrack at Windhub due to substation design and unavailable positions. Currently, all positions at Windhub have been assigned to support a generation tie-line, 500/230 kV transformer bank, or 230/66 kV transformer bank. Further expansion of the substation is physically impossible without tearing out wind turbines that have already been installed or without eliminating turbines that will be installed all around the Windhub Substation. Such a conclusion would have been known early in the process if better coordination were implemented from the onset of the evaluation. In any case, the base line option should be eliminated from further consideration for the reasons stated above, leaving the expanded option as the option for which all cost comparisons should be based.

The AV Clearview Project presentation suggests more work is necessary before concluding that the project does not fit as an alternative to the Coolwater-Lugo 230 kV (aka SCE South of Kramer Project) project. Based on the above discussion, and based on the fact that the expanded case will be more expansive than the base line case, this project should be dismissed from further consideration as an alternative to the Coolwater-Lugo Project. Furthermore, alternatives considered should ensure all aspects of the Coolwater-Lugo Project are properly addressed. As an example, the Coolwater-Lugo Project has additional objectives beyond improving South of Kramer transfer capability. These additional project objectives include: to facilitate interconnection of new resources in the Lucerne Valley area and to facilitate future load serving in the Apple Valley area. As presented, the AV Clearview Project baseline and expanded options do not satisfy these project objectives. This indicates that the AV Clearview Project is not a suitable alternative to the Coolwater-Lugo Project. Additional scope would have to be added to the AV Clearview Project in order to consider it an appropriate alternative. For these reasons, the project as is should be dismissed as an alternative, and as such, the CAISO should conclude that this alternative should not go forward.

SCE Policy Driven Powerflow and Stability Results - Sanjay Patil Presentation

SCE notes that the North of Lugo area policy-driven Inyo PS mitigation should be removed as this is already identified and required for queued generation projects. The upgrade is already included in an LGIA originally filed unexecuted before FERC. The issues that resulted in filing the LGIA unexecuted have been resolved, resulting in an Effective LGIA which includes the Inyo PS mitigation as part of the required scope. Consequently, this upgrade should be removed from policy-driven and instead labeled as a GIP-related mitigation.

[1] http://www.caiso.com/Documents/Board-approvedISO2010-2011TransmissionPlan.pdf

North of Lugo area policy-driven SVD at Inyokern may necessitate Inyokern Substation rebuild as the substation configuration may not allow for the installation of an SVD. Consequently, a detailed evaluation of the substation will need to be undertaken to evaluate feasibility and appropriate cost for such SVD.

Path 42 SPS does not monitor loading on the Julian Hinds-Eagle Mountain or SCE-MWD tie at Julian Hinds for loss of Devers-Mirage No.1 and No.2 230 kV transmission lines. Consequently, it is inappropriate to assume that the IID SPS would address this problem unless monitoring is installed on these MWD facilities so that the SPS can be intelligent and trip resources when required.

Tables state in multiple pages of the presentation, that “SPS to trip new renewables in Ivanpah Area was proposed in previously conducted GIP studies.” This statement should be modified to read “SPS to trip generation interconnecting in the Ivanpah Area is being implemented as these new renewable resources are interconnected consistent with identified GIP study requirements.” The rationale for this modification is that the upgrade should not be listed as a policy-driven upgrade but rather as a GIP-related upgrade.

The results suggest the AV Clearview Project is an alternative to the Coolwater-Lugo 230 kV mitigation. This is factually incorrect since the AV Clearview Project, as presented in the material, would create an overload on the underlying 115 kV non-CAISO lines from Edwards to Kramer. As such, it is inappropriate to make such a representation when ALL issues are not properly mitigated. In addition, one of SCE’s South of Kramer (SOK) project objectives is to also facilitate interconnection of new resources in the Lucerne Valley area which the AV Clearview Project does not allow. SCE recommends removing the “or AV Clearview Project” as mitigation from the table shown on multiple pages of the Policy Driven Planning Deliverability Assessment Results – SCE Area Presentation.

The North of Lugo Delivery Assessment results identifies an overload on the Coolwater-Dunn Siding loop 115 kV No.1 transmission line. There is no such line in existence so it appears an arbitrary collector substation was modeled with arbitrary megawatts reflected on such collector substation. To date, there is no active queued generation resource seeking interconnection to the 115 kV line that runs from the Coolwater 115 kV switchrack to the Ivanpah Substation. SCE would like to better understand location of assumed collector substation and amount of assumed resource connected in this area. In addition, SCE requests the CAISO provide information on the basis for such assumptions given the fact that there is no commercial interest in this area as evidenced by the lack of projects in the generation interconnection queue. Without better details it is unclear how the recommendation can be supported as an appropriate policy-driven upgrade.

The table on slide 9 (slide 35 of the PDF file) shows non-CAISO upgrades. The table should remove the loss of a Windhub A-Bank as such outage is non-CAISO jurisdictional. Also, the use of an SPS should be reflected as a GIP-related upgrade and not as a policy-driven upgrade; this item should be removed altogether since the facility is not CAISO jurisdictional.

Also, this same table defines loss of Inyo-Cottonwood 230 kV in multiple pages and suggests an SPS for Control Area generation projects as mitigation. The Inyo-Cottonwood 230 kV line is a transmission line owned by LADWP. It is unclear how the CAISO intends to expand an SPS to include loss of transmission outside of CAISO jurisdiction. Since the expansion would involve facilities outside of CAISO Control, it is unclear how the CAISO can recommend such an upgrade under the Policy Driven classification.

<u>Page 33 Thermal Overloads (Peak)</u>

On page 33 Thermal Overloads (peak), CAISO suggested that IID SPS would mitigate overload on Julian Hinds – Eagle Mountain under the loss of Devers-Mirage No.1 and 2 220kV transmission lines. Current IID SPS design will NOT be sufficient to mitigate this overload under this contingency. Therefore, tripping generation in IID will need further review to mitigate this overload. Also, according to Intertie Planning, mitigation to this overload is NOT covered in the on-going IID SPS design scope.

33% RPS Sensitivity Case Assessment Modeling a High Out of State Import Scenario - Yi Zhang Presentation

Page 125 (online) Potential Mitigations East of Eldorado

The need to consider potential mitigations east of Eldorado is driven by the addition of 3,000 MW of renewable generation production at Eldorado relative to the base case. The simulation results found that the case diverged for the loss of 3,000 MW at Eldorado with a note that divergence is mainly caused by voltage stability in the Northwest To address this concern, Option 1 proposed by the CAISO is for a new 500 kV line from Eldorado-Rancho Vista along with the use of series capacitors.

As part of QC4 Phase I, which considered a similar scenario of 3,000 MW being added at Eldorado, SCE had proposed a third line from Eldorado to Lugo 500 kV line via Pisgah and new 500 kV lines from Pisgah to Rancho Vista and Pisgah to Serrano. In addition, to mitigate post-transient voltage issues caused strictly by the 3,000 MW injection at Eldorado, the CAISO had proposed the 2nd 500 kV line from Grizzly 500 kV substation in Northwest to the Tracy substation in PG&E via Captain Jack and 400 MVAR's of dynamic reactive support on WECC's Path 26. Based on the QC4 studies, SCE feels that the Eldorado-Rancho Vista 500 kV line as the only major upgrade to accommodate the 3,000 MW injection at Eldorado may not be sufficient to address all reliability needs, perhaps due to the use of over-simplified assumptions, and requests further clarifications from the CAISO.

As an alternative to building the Eldorado-Rancho Vista 500 kV line (Option 2), the CAISO is proposing to convert the Mead-Adelanto 500 V line to DC which seems odd, since the Mead-Adelanto 500 kV line is a non-CAISO facility. SCE would also appreciate the CAISO providing an explanation for this approach.

Economic Planning Studies – Preliminary Results – Xiaobo Wang Presentation

Preliminary Study on Delany-Colorado River Project – Operation Year 2017

SCE has the following questions and request for clarification related to the preliminary economic assessment, which apparently finds the Delany-Colorado River 500 kV line to be economic:

- What are the natural gas and GHG prices used in the study?
- What types of resources are being dispatched in Arizona for California? Fossil, renewables, or some combination?
- What portion of the CAISO resource portfolio is being reduced to offset the economic resources from Arizona? If it is in PG&E or SDG&E, are grid expansions on SCE's system needed to accommodate this? If expansions are needed in SCE's system, the costs must be considered and added for the transmission that was built to accommodate the existing resource.
- Please provide clarification on what resources will be used and turned off. Knowing the assumptions for generation that is being turned off is equally as significant as the generation being turned on in Arizona.
- Are the calculated benefits over a 30 year period?
- Are the cost and benefit values in NPV dollars?
- If the study assumes importing renewables into CA, do these renewables meet SB-1X criteria?

SCE Recommendations on Policy Driven Deliverability Assessment SCE Results

- Inyo phase-shift transformer should be removed as a policy-driven upgrade and instead be shown as a GIP upgrade.
- AV Clearview Project should be removed as mitigation for reasons stated above.

- Coolwater-Dunn Siding should be removed as mitigation since there are no active interconnection requests for new projects in the Dunn Siding area.

- All SPS to trip generation should be addressed within the GIP studies as reliability upgrades needed to interconnect new generation resources. Consequently, SPS should be removed as a policy-driven upgrade since it can only be defined with a specific generation project and is therefore not a barrier to meeting 33% RPS.

- Pahrump is not an SCE facility; it is a VEA facility. The presentation should be updated to reflect VEA issues separate from SCE issues.

- Table shown on Slide 11 states that Tehachapi (230 kV) zone is not deliverable due to loss of Eldorado-Lugo 500 kV and Lugo-Mohave 500 kV transmission lines. Tehachapi is located west of the line outage in a different area (northern) which does not contribute incremental flow to joint-owned Lugo-Victorville 500 kV transmission line. Consequently, this zone should be removed from this outage.