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Re: California Energy Commission (Energy Commission)
Docket No. 09-IEP-10: Written Workshop Comments of
Southern California Edison Company (SCE) on the Need
for Emission Reduction Credits

To Whom It May Concern:

Southern California Edison (SCE) appreciates the opportunity to provide comments on the Workshop on the Potential Need for Emission Reduction Credits in the South Coast Air Quality Management District (SCAQMD). SCE's comments are in four areas; 1) workshop presentations, 2) need for ERC's, 3) current legislation, and 4) SCE's perspective on future generation. SCE's responses to the questions in the workshop notice are attached.

Since the court decision in the Natural Resources Defense Council (NRDC) vs. SCAQMD case, there has been a moratorium on issuing emission reduction credits (ERCs) for stationary source power plants. This in essence has prevented SCE from acquiring any new in-basin generation for its portfolio to meet future needs or to replace any retirements that may occur in the future. At this time several contracts, previously signed with SCE, are on hold waiting resolution of this licensing limitation. Sufficient ERCs are not currently available on the open market, and whatever little quantity may be available is prohibitively expensive. For example, recent transactions have occurred at prices close to \$350,000/lb/day.¹ In addition, the State Water Resources Control Board (SWRCB) has issued a policy which could lead to the significant reduction in production from, or shutdown off, plants using Once-Through Cooling (OTC) technology. In SCE's service territory, the OTC plants not only provide a significant amount of in-basin capacity but also provide operational and grid support which allows higher ratings on the transmission system that is used to bring power into the LA Basin. Even new renewables could be viewed as imports if such resources are located outside the major transmission substations surrounding the LA Basin. The SWRCB and the California Independent System Operator (CAISO), the California Public Utilities Commission (CPUC), and the Energy Commission (together known as the Joint Agencies) have developed a proposal

¹ September 24th Workshop presentation by Mohsen Nazemi of SCAQMD

for elimination of the OTC plants which includes a timeline for plant retirements or compliance with the SWRCB water restrictions.

Without lifting the moratorium on issuing emission reduction credits, phasing out existing OTC facilities will be extremely problematic and will most likely lead to significant operational difficulties for the CAISO and will make importing any power, renewable or other power, more difficult in the future. However, if the moratorium is lifted, issuing ERCs will allow replacement of the OTC plants with newer fossil fuel generation technology. The new generators will provide the ancillary services necessary to integrate additional renewable power. Without allowing the entrance of the new generators in the near term, implementation of the state's preferred higher renewable standards goals will be very difficult, and maintaining grid reliability may be impossible.

Comments on Workshop Presentations

From SCE's perspective, it is difficult to draw any firm conclusions from the study **"Assessing Los Angeles Basin Reliability Given Environmental Constraints"** presented by Richard McCann of Aspen Environmental Group and Cory Welch of Summit Blue. As identified by the presenter, the study had the following limitations:

- 1) It uses 2007 data which may not be representative of the future (Slide 11)
- 2) It has many significant caveats (slide 12)
- 3) It needs additional data to enhance or finalize the analysis (slide 33)

The study lacked the necessary focus on the grid operational requirements needed to maintain system reliability. The quantity and location of new and existing capacity is critical to reliable operation of the grid. For a more accurate alternative to the analysis performed for the study, a more detailed transmission planning and grid operability analysis is necessary. Finally, the study contained speculative new resource additions and some assumptions that were inconsistent with the SWRCB Draft Policy.

Current Need for ERCs in LA Basin

PM₁₀ credits or offsets are needed to bring on new generation in the LA Basin. The units in the charts below represent approximately 1,800 MW of capacity which have signed contracts with SCE but are unable to operate without additional credits.

PPA Power Plant	2015 PM10(lb/day) C.F(%)	2018 PM10(lb/day) C.F(%)	2020 PM10(lb/day) C.F(%)
El Segundo	47 5.09	76 8.23	69 7.41
CPV sentinel	236 15.78	307 20.64	273 18.54
EMG Walnut	118 13.58	169 19.65	147 17.24
Change in PM ₁₀ Emissions (IN-OUT)	402	556	490
SCE System PM ₁₀ Equivalent Offsets	482	668	588

According to SCE’s analysis, the subject units will have an expected annual total PM₁₀ output of 556 lb/day. The SCAQMD requires an additional 20% margin or a total of 668 lb/day emission reduction credits. This is significantly less than the almost 2,000 lb/day that the generators would need to get to obtain full operability licenses from the SCAQMD. Therefore, some flexibility in licensing rules needs to be investigated in order to meet grid operability and reliability concerns if higher levels of renewables are going to be integrated on the grid.

Legislation

Two bills, SB 827 and AB 1318, are currently awaiting the Governor’s signature. If signed, they will help alleviate some of the issues around the credits and make them available for use for essential public services and, at this point, the CPV Sentinel project and will allow use of credits to partially cover the needed credits for the El Segundo repowering project. If signed by the Governor, these bills take effect on January 1, 2010.

- SB 827 – allows for use of credits from orphan shut downs of small sources and issue credits to sources that are exempt under Rule 1304, this would supply 60% of the needed credits for the re-power of El Segundo. SCE has actively supported this bill.
- AB 1318 – will affect the CPV Sentinel plant by allowing the South Coast Air Quality Management District to transfer credits from the District’s internal account allowing the Sentinel power plant to access credits in this account up to specified amounts.

For a long-term solution to the PM10 credit issue, SCE recommends the Energy Commission encourage flexibility and creativity when working with SCAQMD.

SCE’s Perspective on the Need For Future Generation

According to the Staff Presentation² in 2020 the SP-26 Supply Demand Balance (p.12) demonstrates a need of approximately 7,000 MW³s of capacity. Currently there is no plan for fulfilling that future need requirement while meeting system reliability requirements. In order to develop such plans it will require many additional studies. Several issues must be taken into account simultaneously such as:

1. Once-through Cooling (OTC) plant retirements
2. Reduced import capabilities due to lost inertia from OTC plant retirements
3. Grid operations including stability
4. Implementation of higher Renewable Portfolio Standards (RPS) from 20% - 33%
5. Meeting the additional ancillary service requirements needed for renewable integration (ramping, load following, spinning reserve, etc.)
6. Optimum utilization of renewables in the future and expansion of the transmission system to accommodate these renewables
7. The completion of approved and/or planned transmission projects
8. Meeting Local Area Reliability (LAR) requirements in the LA Basin
9. Meeting all future Resource Adequacy Requirements

SCE recommends that stakeholders start a process of working collaboratively to perform the necessary studies in order to better determine how much generation capacity would need to be added in the SCAQMD jurisdictional areas to meet grid reliability and operational needs in the future. The solution must be developed on a holistic basis in order to meet state policy goals and to ensure system reliability. Developing firm plans for additions/ retirements require completing planning studies in the following areas:

- Resource Planning – analysis to determine methods to meet long-term needs for customer demand, planning reserves, and Local Capacity Requirements (LCR)
- Transmission – analysis to determine that the transmission system does not violate North American Electric Reliability Corporation (NERC) or Western Electricity Coordinating Council (WECC) operating criteria
- Grid Operability – a CAISO study of grid operability and the need for ancillary services

² September 24th Workshop Presentation by David Vidaver

³ Staff Presentation refers to the amount of net imports as 10,100 MWs. When OTC plants are retired that value will be potentially lowered due to the loss of in basin inertia. Without studies the exact amount of reduction is impossible to accurately estimate but it could be in the thousands of Megawatts.

SCE would welcome the opportunity to collaborate with Staff in planning for these studies. If you have any questions or need additional information about these written comments, please contact me at 916-441-2369.

Very truly yours,

/s/Manuel Alvarez
Manuel Alvarez

Questions from Workshop Notice

1. What is the current and near-term supply-demand balance in both Southern California and the transmission-constrained areas within SCAQMD jurisdiction?

Response:

SCE does not assess current and near-term supply-demand balance for the SCAQMD area. SCE assesses the supply-demand balance for the SCE planning area or our bundled customers.

- Are reserves sufficient to ensure reliability?

Response:

Currently there are sufficient reserves to meet CPUC long term planning reserve targets. Retirement of units using ocean water in once-through cooling (OTC) will impact these reserves if no other generation were constructed.

- What are the implications of air emission credit issues for power plants currently under development?

Response:

SCE has signed long-term power purchase agreements with three projects, namely, CPV Sentinel, NRG El Segundo and EME Walnut Creek. Lack of air emission credits and litigation has prevented these projects from getting their Permits to Construct. The legislature enacted a measure, AB 1318 (V. Manuel Perez, D) that, if signed into law, would direct the South Coast Air Quality Management District (SCQAMD) to release offsets from its internal account sufficient to permit the CPV Sentinel facility. [A bill dealing with EME Walnut in a similar fashion remains on the Senate Floor.][DPD: Is this still an accurate statement?] Offsets within the SCAQMD remain largely unavailable.

2. While the current impasse of air credits focuses on PM-10, there are plans to create a separate and distinct particulate matter less than 2.5 microns in size (PM-2.5) standard, which would likely be the focus of emission compliance issues for power plants. How will California Air Resources Board (CARB) and the district address changes in their permitting processes if a separate PM-2.5 standard is put in place? When should such a change be considered likely to occur? Are there other criteria pollutants that are significant to power plant licensing that the energy agencies should be aware of over the next 10 years or so?

Response:

Air quality designations became effective on April 5, 2005 for 39 areas (with a total population of 90 million) that were not attaining the 1997 PM_{2.5} standards. By April 5, 2008, each State having a nonattainment area had to submit to EPA an attainment demonstration and adopted regulations ensuring that the area will attain the standards as expeditiously as practicable, but no later than 2015.⁴ The main precursor gases associated with fine particle formation are SO₂, NO_x,

⁴ <http://www.epa.gov/fedrgstr/EPA-AIR/2007/April/Day-25/a6347.pdf>

volatile organic compounds (VOC), and ammonia. States must evaluate PM2.5 precursors for nonattainment program issues in PM2.5 implementation plans, including issues such as RACT, RACM, and reasonable further progress. This discussion in the final rule is linked to precursor policies for the implementation of the new source review program, the transportation conformity program, the general conformity program, and the regional haze program. All of these programs take effect prior to approval of State Implementation Plans (SIP) for attaining the PM2.5 NAAQS. In the case of NSR, the program applies on the effective date of the nonattainment area designation.⁵

On October 3, 2008, EPA issued findings declaring failure of certain states to have filed complete PM2.5 SIPs. California, among other states, was found by EPA to have submitted an incomplete PM2.5 SIP. SCE understands that one of the incomplete aspects of the SCAQMD's portion of the CA PM2.5 SIP is the adoption of an amended New Source Review rule governing issuance and use of PM2.5 offset credits. We do not have an estimate of the time when SCAQMD completes adoption of the PM2.5 portion of their NSR Rule. The SCAQMD included a PM2.5 plan within its 2007 submitted Air Quality Management Plan, however, additional planning and rulemaking remains to implement such a PM2.5 plan. The SCAQMD states that its required attainment date for PM2.5 is year 2015.

3. [What are current conditions in the PM-10 credit market and the status and impact of litigation that has restricted the availability of PM-10 offsets from SCAQMD accounts?](#)

Response:

Regarding the status of PM10 offset availability on the open market, the response is simple: The 3 PPA facilities require ~ 2000 lbs/day (1,998) of PM10 offsets. The total availability of PM10 banked offsets in the latest SCAQMD report on their website is: 810 lbs/day ERCs, owned by 123 companies.

Two issues appear to be clear:

(a) The total bank of marketable, certified and banked PM10 ERC offsets of 810 lbs/day falls far short of the 2,000 lbs/day required by just the 3 PPA NewGen Power Plant facilities; and,

(b) the over 120 owners of these credits by and large own small quantities each, and likely have plans for their NSR use in the future -- they would unlikely be willing to sell all their holdings, even if they were enough for permitting the 3 PPA power plants.

⁵ Federal Register/Vol. 72, No. 79/Wednesday, April 25, 2007/Rules and Regulations; pp. 20589-20590

- What are the likely timelines for action by the air district given the passage or rejection of proposed legislation?

Response:

[DPD: I do not any reason why we should respond to this question. I suggest we simply say that this question needs to be answered by SCAQMD.]

4. What are the potential PM-10 ERC needs in the California ISO portion of the Los Angeles Basin during the next five to ten years?

Response:

SCE has no information in regard to how many ERCs will be needed by all future potential generating entities in the next 10 years. However, since none are presently available on the market and only limited internal offsets under special legislation may be available, it is safe to conclude there will be a dramatic shortfall. Long-term growth rates have been around 1.2%/year, which is equivalent to one large combined cycle facility every other year. Increases in renewable generation capacity may meet some of this load growth, but renewable generation is typically intermittent in nature and requires some dispatchable generation "back up" to maintain system operability

- How much in-basin gas-fired capacity is likely to be needed to meet local reliability needs?

Response:

Through studies, the CAISO determines the amount of generation capacity (MW) is needed to meet local reliability requirements. The CAISO study does not determine the amount of gas-fired generation needed to meet local reliability needs. The amount of generation (gas or non-gas fired) needed to meet local reliability requirements will depend upon the CAISO determination of local reliability needs, retirements of existing plants, load growth, and other factors relating to distributed generation and transmission grid enhancements.

- How often is it likely to be dispatched and what are the implications of its operating profile for ERC needs?

Response:

SCE normally makes forecasts of unit operation under a predetermined set of future expected conditions. SCE cannot however forecast the expected dispatch of generation based on unforeseen events and does not normally use multiple stochastic variables simultaneously to forecast operations in the future.

8. PM-10 ERC needs for given amounts of generation capacity can be reduced by limiting the maximum monthly fuel throughput along with output of resources needed primarily for reserves. In the course of applying for air permits, what considerations enter into developer/utility proposals for limits on hourly and monthly and annual emissions? For monthly and annual emissions, can these limits be reduced without disadvantaging projects

in competing for utility contracts or reducing contributions to resource adequacy requirements? If so, what, if any mechanism would be needed to handle force majeure events that threatened reliability?

Response:

If a power plant accepts permit conditions that restrict its hours of operation, this may affect its ability to qualify as a capacity resource. CPUC Decisions 04-10-035 and D. 05-10-042 adopted the following two-part counting rule for energy-limited resources (applicable for environmentally limited resources like those being discussed at the IEPR workshop on emissions limits):

In order for a unit to be eligible to count for RA in a given month (Jan-Dec), the unit must be able to operate for four (4) hours per day for three consecutive days in that month; and for summer months only (May-Sep), in addition, the unit must be able to run a minimum aggregate number of hours per month based on the number of hours that loads in the control area exceed 90% of peak demand in that month.

As part of the workshop process, the CAISO used data from 1998-2003 to calculate the number of hours in each summer month that load was greater than 90% of the monthly peak. The range they calculated was from 30 hours (for May) to 60 hours (for August).

In addition to the RA counting rule for individual energy-limited generators, the CPUC has placed limits on the total quantity of energy-limited resources LSEs can use to meet their overall RA requirements. The CPUC has established "Maximum Cumulative Contributions" (MCC) or "buckets" for four resource categories:

Category or Bucket	Minimum Hours of Availability in Month	Maximum Cumulative Contribution of Total RA Portfolio (%)
1	<ul style="list-style-type: none"> Greater than or equal to minimum run hours to qualify for RA for summer months 	13.3%
2	<ul style="list-style-type: none"> 160 hours 	18.8%
3	<ul style="list-style-type: none"> 384 hours 	30.1%
4	<ul style="list-style-type: none"> Unrestricted 	100.0%

Thus, for a project to fully count towards a LSE's resource adequacy, it would have to meet the counting criteria for individual energy-limited resources and also, not cause the LSE to exceed its MCC buckets.

In SCE's experience, developers generally do not propose stringent limits on their operations when applying for a Permit to Construct, because such limits (a) potentially reduce the unit's profit potential and thus reduce its appeal to the bankers and investors who would finance the project, (b) reduce the operating flexibility and thus reduce its appeal to buyers such as SCE as well as to the

system operator, e.g., CAISO, and (b) since the limits become part of their operating permits, it would require the unit to undergo a New Source Review if the unit wants to operate differently in the future. SCAQMD's current approach looks at monthly emissions, and thus requires that limits be accepted on operation on a monthly basis, compared to annual limits which may be more palatable to developers, investors, utilities and the CAISO.

SCE's valuation and selection process will likely rank an energy-limited project lower compared to a project that does not have such limits. However, SCE's valuation and selection process also takes into account many factors such as local capacity requirements, ability of the resource to provide ancillary services, and locational prices. Thus, it is possible for an energy-limited resource in the LA basin to prevail over a similar unconstrained unit that is not located in the same geographical area and cannot provide the services that are necessary for grid reliability in the LA basin.

If a unit that has reached its permit-based maximum energy limit is required to prevent rolling blackouts or similar system emergencies, it would be greatly desirable to let that unit operate even if it implies exceeding its permit conditions. For example, SCAQMD and CAISO may be able to develop a process whereby if the CAISO has declared certain emergency conditions, then the CAISO would be able to instruct the energy-limited unit to operate without violating its permit conditions even if the unit has reached its maximum energy limit.