

**CALIFORNIA ENERGY COMMISSION**1516 NINTH STREET  
SACRAMENTO, CA 95814-5512

March 3, 2000

**To: Interested Parties in the Metcalf Energy Center Licensing Proceedings**

Energy Commission staff has conducted several publicly noticed workshops on issues of interest to the public in the Metcalf Energy Center proceedings. On October 27, 1999, a biological resource workshop was convened to discuss nitrogen deposition impacts on surrounding habitats, Tulare Hill management plan, and Fisher Creek riparian corridor. A summary of the workshop is attached.

On January 31, 2000, an electrical transmission system workshop was convened to discuss the transmission system impacts, alternative project locations, and transmission system modeling. A list of 31 questions was provided with the workshop notice. Many of the questions were discussed at the workshop. Attached are draft answers to these questions. A more detailed explanation of the transmission system in relation to the Metcalf Energy Center will be included in the Preliminary Staff Assessment.

If you have any questions, please call me at (916) 654-4074.

Sincerely,

Paul Richins, Jr.  
Energy Commission Project Manager

Enclosure

cc: MEC POS List  
Laurel Prevetti

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**METCALF ENERGY CENTER  
BIOLOGICAL RESOURCES WORKSHOP SUMMARY  
October 27, 1999**

The California Energy Commission held a public workshop on Biological Resource issues associated with the Metcalf Energy Center (MEC) at the Coyote Grange Hall on October 27, 1999. Specific issues discussed were the impact analysis of nitrogen (NO<sub>x</sub>) emissions on surrounding serpentine soil habitats, a management plan for Tulare Hill, and a biotic assessment of the Fisher Creek corridor. The purpose of the workshop was to solicit comments on these documents from interested parties. The workshop was chaired by Paul Richins, Energy Commission Project Manager, and discussions were lead by Linda Spiegel, Energy Commission staff biologist, and Debra Crowe, Calpine biologist. The following provides a summary of the workshop.

**Nitrogen Impacts on Surrounding Habitats**

The MEC site is located in a valley surrounded by rare and sensitive serpentine soils. Nitrogen oxide emissions deposited on surrounding serpentine soils are of concern due to the limited amounts of nitrogen naturally occurring in these soils, the adaptive nature of serpentine endemics, and the potential for increased growth of exotic grasses that may threaten the existence of these endemics. Serpentine soils in the Bay Area support 19 endemic species. Many of these only occur near the project site and are now listed, including the Santa Clara Valley dudleya, or are important host plant species for listed species or federal species of concern including the Bay checkerspot butterfly and the Opler's longhorn moth.

Albert Cox of Calpine presented the results of the report *Impact Analysis for Metcalf Energy Center NO<sub>x</sub> Emissions, Santa Clara County, California*. The report assumed wet deposition accounted for 50% of the total NO<sub>x</sub> deposition, ambient nitrogen deposition at 4 kg/ ha-yr, that impacts of NO<sub>x</sub> deposition would occur within a 2-mile radius of the MEC, and a total deposition rate of more than 5 kg/ ha-yr would be necessary before impacting sensitive plant species. The report concluded that the highest and worse-case deposition rate in the vicinity of the MEC would be 1.8 kg/ ha-yr (a 45% increase in ambient levels), the total deposition rate in the area would likely be lower than 5 kg/ ha-yr, and that only a fraction of the nitrogen added to the soil would be available for plants.

CEC staff questioned how the study documented a worse-case analysis of 5.8 kg /ha-yr but concluded that the total deposition rate would actually be lower than 5 kg/ ha-yr, which is the threshold for impact to plant species. CEC staff also questioned why the ambient NO<sub>x</sub> levels used in the analysis were from monitors located in Davis, California instead of from monitors located closer to the site. Mr. Cox stated that these were the closest monitors that had available data and that the worse-case analysis was improbable.

Dr. Weiss from the Center for Conservation Biology has done extensive research on nitrogen deposition impacts to serpentine soils in the area and expressed several concerns with the study. Dr. Weiss stated that ambient levels in the south San Jose

area were actually 10 – 15 kg/ha-yr, that 80% of the deposition would be dry, that dry deposition is directly absorbed into the soils and by plants, that current levels were already high enough to transform serpentine soils and affect plant composition, and that NO<sub>x</sub> deposition levels predicted by operation of MEC would represent a 20 % increase in ambient levels.

Dr. Weiss also reviewed the isopleth graphs provided in the study and concluded that a high deposition would occur at the ridge tops east of the MEC site, which is of critical concern to the long-term persistence of the bay checkerspot butterfly. He stated that the air shed in this area was very complex and required further study to accurately assess the situation. Dr. Weiss pointed out that the conversion of NO to NO<sub>2</sub> took a few minutes and that NO<sub>2</sub> is rapidly absorbed by plants but less rapidly absorbed by soil. The conversion of NO<sub>2</sub> to HNO<sub>3</sub> took ten minutes to an hour and that HNO<sub>3</sub> was more rapidly absorbed by soil. Therefore, uptake of nitrogen by plants would occur near the plant site, but absorption by soils would also be a problem some distance from the plant. It was also pointed out that the 118 tons of ammonia emitted from the cooling towers were not factored into the total MEC nitrogen deposition rate. Dr. Weiss concluded that the incremental increase in nitrogen deposition from MEC would be detrimental on an already stressed ecosystem.

USFWS representative, Cecilia Brown, and Energy Commission staff requested the study be redone to reflect the true ambient conditions, use 80% dry deposition, factor in the ammonia deposition, and assess impacts to listed species. Brown reiterated that the listed species found there were very restricted in their range and impacts to serpentine soils were of great concern. Calpine agreed to revisit the study with this new information.

### **Tulare Hill Management Plan**

Debra Crowe of Calpine presented the *Draft Management Plan for Tulare Hill* and requested comments and suggestions. Tulare Hill, a serpentine outcrop formation that supports the Santa Clara Valley dudleya and several bay checkerspot host plant species, is directly adjacent to the MEC site. Tulare Hill is currently zoned A-20 (Agriculture, 20-acre minimum) and is divided into four primary parcels. Calpine controls 116 acres via a sale/purchase option and is proposing to manage this area to maintain current levels of plant inhabitation and wildlife use as a mitigation measure. The area is currently grazed by cattle. Crowe described how the 116-acres would be managed and pointed out that problems with managing the area exist due to multiple landowners and the lack of fencing between properties.

The management plan calls for a change in the current grazing practice of 1cow/ 3 acres to 1cow/ 10 acres, as this prescription would emulate practices currently employed at nearby Kirby Canyon landfill property under a Conservation Agreement with USFWS, City of San Jose, and others to promote serpentine endemics. The management plan includes a program to monitor the 116-acre portion of Tulare Hill for any changes to existing population levels. Specific monitoring criteria and remedial actions were still under review.

Dr. Weiss pointed out that knowledge of benefits of prescribing 1 cow/ 10 acres to serpentine soils is unknown and that this could result in under grazing, and therefore, result in the promotion of grass cover. Cows prefer grasses to forbs and in the lack of proper control, nonnative grasses can out compete native forbs. Dr. Weiss also pointed out that managing Tulare Hill alone would not benefit bay checkerspot butterflies in the long term. The population of bay checkerspot butterfly on Tulare Hill is dependent on the health of populations on the nearby ridge tops to the east. Tulare Hill populations are more subject to short-term population losses (from drought for example) and are reliant upon the larger population sink located in the eastern hilltops to be sustainable. If in fact the MEC project causes population declines to the eastern ridge tops by NOx emissions, the preservation of Tulare Hill alone is futile.

Staff and USFWS also pointed out that the logistics of ensuring a certain grazing prescription on a portion of land unfenced and subject to other grazing prescriptions is very problematic.

### **Site Visit**

Calpine arranged to take all workshop participants to the MEC site to view the plant site, Tulare Hill, and Fisher Creek. Calpine representatives were available to answer any questions. Most of the participants attended.

### **Fisher Creek Riparian Corridor**

Debra Crowe of Calpine presented the *Draft Riparian Corridor Biotic Assessment for the Metcalf Energy Center* and requested comments and suggestions. The MEC site is directly adjacent, about 50-feet, to Fisher Creek. The City of San Jose has a Riparian Corridor Policy that requires a 100-ft setback from riparian corridors including Fisher Creek. The policy identifies incompatible land uses, exception qualifications for certain land uses and requires a Biotic Assessment to qualify for such an exception. The Biotic Assessment must include an argument for an exception and a means for enhancing the riparian corridor.

Calpine's Riparian Corridor Plan describes the resources present along the creek as minimal, provided management and enhancement measures, and a tree planting plan. The conclusion of the plan was that the restoration prescribed would greatly enhance the existing situation, which is a disturbed riparian habitat receiving continual abuse by overgrazing of cattle. Calpine argued that the circumstances warranting a reprieve from the setback were that the site was adjacent to a small lower order tributary whose riparian influence does not extend to 100 feet and that implementation of the project includes measures which protect and enhance the riparian value of the corridor more than could the 100-ft set back. The report also outlined how the MEC project could warrant consideration of an exception by demonstrating six exemplary circumstances:

- There is no reasonable alternative that reduces the encroachment.
- The reduced setback will not significantly reduce or adversely impact the riparian corridor.
- Uses are not fundamentally incompatible with riparian habitats.

- There is no evidence of stream bank erosion or previous attempts to stabilize the stream banks that could be negatively affected by the proposed development.
- The granting of the exception will not be detrimental or injurious to adjacent and/or downstream properties.
- A qualified biologist, stream hydrologist and /or other appropriate professional has confirmed in writing the above conditions as well as a program to achieve riparian habitat objectives.

Representatives from the Santa Clara Valley Water District (SCVWD) expressed concern with any riparian habitat enhancements that could effect flood control. They stated that a detailed hydrological evaluation was needed before they could produce detailed comments. The current conditions are highly susceptible to flooding. They want an evaluation of increasing the existing levee system versus raising the plant site location. In addition, they would want to review the tree planting prescription and requested that trees planted not have extensive root systems and that source stock be from the local watershed. They are concerned that the riparian enhancement measures will distract from the capacity and flow of floodwaters.

Brad Brown of the City of San Jose Parks and Recreation Neighborhood Department stated that the area was designated for trails and equestrian use. However, the side of Fisher creek that would be used for these trails was unknown. Janice Moore of the City of San Jose stated that the City usually defers to the SCVMD for flood protection and that she would like to see improvements to the Fisher Creek corridor.

USFWS representative, Cecilia Brown, stated that the removal of cattle from the riparian area was an improvement, she views a public trail and increased recreational use a problem due to increased access, increased littering, and increase in the potential for urban-related predators such as skunks and raccoons to the red-legged frog. She also views Fisher Creek as a potential migration and dispersal corridor for red-legged frog. Cecilia Brown also noted that a Nation wide Permit 7 was needed to construct the storm water discharge outfall into Fisher Creek. This requirement could provide Calpine with the federal nexus (Army Corps of Engineers) it needs to consult under Section 7 of the Endangered Species Act, rather than have to go through Section 10 which is a much longer process.

City of San Jose representative Laurel Proveti stated that the city does not see the MEC project as a compatible land use under the Riparian Corridor Study and that the project does not qualify for an exemption. She views this as a serious problem that will affect the outcome of necessary rezoning. She also felt that the project has not dealt with lighting, glare and noise affects to wildlife.

CEC staff urged Calpine to meet with representatives of the city to resolve these issues. Calpine felt that they perhaps have not made a convincing argument and agreed to meet with the City of San Jose to discuss these matters.

## CALIFORNIA ENERGY COMMISSION

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**Metcalf Energy Center  
Transmission System Engineering  
Questions and Answers, Workshop January 31, 2000**

1. Please identify the major transmission lines that supply power to the South Bay Area. Please include lines that supply power to the Metcalf, Newark, and San Mateo substations. Please include lines from Moraga, Contra Costa, and Tesla substations, and from Pittsburg and Moss Landing power plants.

The PG&E Metcalf substation is connected to the following PG&E high voltage lines: the 500 kV Metcalf-Tesla and Metcalf-Moss Landing lines; the two Metcalf-Newark and two Metcalf-Moss Landing 230 kV lines; and the four Metcalf-Monte Vista 230 kV lines. Lower voltage connections to Metcalf include: two 115 kV lines each from Metcalf to El Patio, Edenvale, Newark and Evergreen; and one 115 kV line each from Metcalf to Morgan Hill, Green Valley and the Coyote Pumping Plant. PG&E's transmission corridor is located adjacent to the north boundary of the Metcalf energy Center (MEC). The MEC will connect to the nearest Metcalf-Monte Vista #4 line.

In addition to its 230 kV connections to Metcalf, PG&E's Newark substation is connected to the 230 kV system through circuits, that includes lines to San Mateo, Castro Valley, Contra Costa, and Tesla. Among Newark's lower voltage lines are 115 kV connections to Fremont, Ames, Dixon, Lockheed, and Milpitas. In addition to the lines to Newark and Metcalf, San Mateo substation's 230 kV and 115 kV connections include Ravenswood, Contra Costa, Laguna, and Bay Meadows. Lines carrying power into the area from the Pittsburg Substation include the Pittsburg 230 kV lines to Tesla, Moraga and San Ramon.

Under typical conditions, power flows into the San Jose area from power sources located to the north and south of San Jose. This power is delivered to the area via the above mentioned 500 kV and 230 kV lines. The power then flows to lower voltage circuits that serve the load through substations that connect the 500 kV to the 230 kV system, and the 230 kV system to lower voltages. These substations include Metcalf, Newark, and San Mateo.

2. Are any of these lines overloaded/congested now or projected to be overloaded/congested in the next five years? If so, please identify them.

The system is designed and operated to ensure that no facilities become overloaded under normal operating conditions<sup>1</sup>. Under reliability requirements of the Cal-ISO, the transmission system must be analyzed with one or more lines out of service. Operators of the transmission system must follow the design and operational requirements for system reliability established by the

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<sup>1</sup> Under normal (or steady state) conditions all generation that is planned to operate is operating, no lines are overloaded and all loads are being served.

California Independent System Operator (Cal-ISO). PG&E is required to complete an annual assessment of the reliability of the transmission system in the San Jose area and provides this report to the Cal-ISO. The assessment identifies lines that are close to becoming overloaded and proposes system improvements to avoid the overloads before they occur. With the planned system improvements, no lines are expected to be overloaded/congested now or expected to be overloaded/congested in the next five years.

3. Please describe any electrical benefits that the proposed project would provide to the residents of the cities of a) San Jose, b) Morgan Hill, and c) Santa Clara.

The MEC will mitigate overloading of the Metcalf 500/230 kV transformer. This mitigation may delay or avoid the need for PG&E to install a new 500/230 kV transformer at Metcalf substation. A new 500/230 transformer at Metcalf would likely cost about \$20,000,000. Whether or not the MEC is located at the Metcalf site, the cost of the transformer may be passed on to the ratepayers of PG&E, which include the residents of San Jose, Morgan Hill, and Santa Clara. In addition, the Preliminary Staff Assessment (PSA) will identify whether there are additional benefits attributable to the MEC.

4. How much power would the proposed project supply to the Metcalf substation?

The Detailed Facilities Study (completed by PG&E) demonstrates that the power supplied to the Metcalf substation by the project via the MEC- Metcalf line is 365.0 MW for the peak case and 425.8 MW for the off peak case.

5. How much power would the proposed project supply to the Monte Vista substation?

The Detailed Facilities Study (completed by PG&E) demonstrates that the power supplied to the Monte Vista substation by the project via the MEC-Monte Vista line is 232.7 MW for the peak case, and 172.4 MW for the off peak case.

6. How much power would the proposed project distribute to the South San Jose area?

The Detailed Facilities Study demonstrates that the power supplied to the South San Jose area through Monte Vista and Metcalf substation by the project via the MEC- Metcalf and MEC Monte Vista lines is 597.7 MW for the peak case and 598.2 MW for the off peak case.

7. What customers would the proposed project serve?

If approved and built, the MEC will provide electricity in the south bay area.

8. Will building Metcalf in South San Jose eliminate or lessen the potential for brownouts in the South San Jose Area?

Brownouts are an indication of reliability issues. Reliable electric service to consumers in San Jose is the responsibility of the Utility Distribution Company (PG&E), and the Cal-ISO. The Cal-ISO reliability criteria apply whether or not the MEC is built at the Metcalf site; therefore, South San Jose can expect to receive reliable electricity in the future whether or not the MEC is built here.

9. If Metcalf is not built here, will South San Jose receive reliable electricity in the future?

Reliable electric service to consumers in San Jose is the responsibility of the Utility Distribution Company (PG&E), and the Cal-ISO. The Cal-ISO reliability criteria apply whether or not the MEC is built here; therefore, South San Jose can expect to receive reliable electricity in the future whether or not the MEC is built here. Measures are required by the California Energy Commission, the Cal-ISO, and other regulatory agencies to ensure that the MEC will not have a negative impact on reliability in the area.

10. The applicant provided initial modeling of the transmission system effects of the proposed project. Did the modeling include all of the recent projects that had been proposed to the Energy Commission at the time of the Metcalf AFC filing? These include Sutter, Pittsburg, La Paloma, Delta, Sunrise, Elk Hills, and Three Mountain.

The models employed by PG&E to study the transmission effects of the MEC have been reviewed and found acceptable by the Cal-ISO and CEC staff. The Detailed Facility Studies and Supplemental Studies completed by PG&E have been reviewed and accepted by the Energy Commission staff and the Cal-ISO staff. The studies demonstrate that projects located at Sunrise, Elk Hills, La Paloma, Sutter, and Three Mountain are electrically remote and therefore have no significant impact on the analysis and do not need to be specifically modeled to determine MEC impacts. The technically appropriate model for study of electric system effects due to the MEC comprise light loads in the area with generation levels at MEC and Moss Landing high, and generation levels at Pittsburg and Contra Costa low. As a result, the new Pittsburg Plant generation is modeled as zero electrical output for the MEC studies.

11. The applicant and PG&E are making changes to the modeling in response to comments from the Cal-ISO.

- a. Have we received the results?

The results of the Detailed Facilities Studies have been received and are being assessed by the Cal-ISO and the Energy Commission staff.

- b. If so, do they include all of the projects referred to in Question 10, as well as Moss Landing? What, if any, important changes does the inclusion of Moss Landing cause?

These studies rely on similar generation system models as the studies described in the response to Question 10. New generation at Moss Landing is not specifically modeled. However, studies for the Moss Landing interconnection indicate that increasing the generation at Moss Landing can be expected to increase power flow on the 230 kV system. The effect of new generation at Moss Landing on the MEC is not required to be studied by the Cal-ISO for assessment of the MEC electric system effects, since the MEC is in the queue for development before the new generation at Moss Landing. The effect of new generation at Moss Landing will be the subject of study for the Moss Landing Detailed Facilities Study.

- c. If not, do we expect them to include all of the projects referred to in Question 10, as well as Moss Landing?

All projects have been appropriately modeled in the various detailed facility studies submitted to the Cal-ISO and Energy Commission staff. Study of the effect of new generation at Moss Landing on the MEC is not required by the Cal-ISO for assessment of the MEC electric system effects, since the MEC is in the queue for development before the new generation at Moss Landing. However, the Moss Landing detailed facility study will include the MEC in the studies for assessment of the electric system effects of new generation at Moss Landing. See also the response to Question 10 above.

12. In comments on the Energy Commission staff's proposed approach for alternative site analysis, Cal-ISO staff indicated that the project's objective of serving the South Bay could be achieved by supplying power to any of a total of five substations. In addition to Metcalf, they are Monte Vista, Newark, Ravenswood, and San Mateo. (Cal-ISO staff also stated that Metcalf might be slightly better than Monte Vista.) Please describe any system benefits that are unique to the Metcalf location vs. interconnection at the other four substations listed.

Locations listed above (Newark, Ravenswood and San Mateo) with the exception of Monte Vista are not likely to help reduce overload of the Metcalf 500/230 kV transformers. See also the response to Question 3.

13. If the Metcalf location would provide a greater degree of a particular benefit than interconnection at one of the other four substations, please estimate how much greater the benefit would be (quantify if feasible).

See the response to Question 3.

14. Please evaluate the importance of any unique or greater benefits due to the Metcalf location.

See the response to Question 3.

15. Energy Commission staff has not identified any potential sites that could feasibly connect to the Monte Vista, Ravenswood, or San Mateo substations. However, staff has identified sites that could connect to the Newark-Metcalf 230kV transmission lines, and some of those sites could connect to the Newark substation. Please provide a quantified evaluation of the advantages and disadvantages of connecting to the Newark substation compared to the proposed project.

The Cal-ISO has performed a draft analysis that indicates that a reconductor of the Newark- Metcalf 230 kV lines may be required for sites closest to Newark that interconnect at the Newark-Metcalf 230 kV lines. More studies are being conducted by staff to better understand the advantages and disadvantages of interconnecting at the Newark substation and Los Esteros substation. The results of this study will be included in the Preliminary Staff Assessment.

16. If the project connected directly to the Newark substation, how much power would it provide (indirectly) to the Metcalf substation?

As stated in the response to Question 15, more studies are being conducted by Energy Commission staff to better understand the advantages and disadvantages of interconnecting at Newark substation. The results of this study will be made available in the Preliminary Staff Assessment.

17. In response to Energy Commission staff's statement that it appears to be feasible for a project at an alternative site to connect into one of a number of 230 kV transmission lines, Cal-ISO staff stated that Metcalf - Monte Vista 3 or 4 would probably be the only lines that could be interconnected to without causing either transmission reinforcements or congestion impacts.

- a. Please specify the capacity and existing load of the Newark – Metcalf 230 kV lines.

The lines are rated at 328 MVA each. The Detailed Facilities Study (completed by PG&E) demonstrates the power flow on the lines (without MEC in service) is 147.5 MW each for the peak case and 78.9 MW each for the off peak case.

- b. Please provide an estimate of the transmission reinforcements that would be required to connect the plant to the Newark - Metcalf 230kV lines, and an estimate of the cost of those reinforcements.

As stated in the response to Question 15, more studies are being conducted by Commission staff to better understand the advantages and disadvantages of interconnecting at Newark substation, as well as connections to the Newark-Metcalf Lines. The results of this study will be made available in the Preliminary Staff Assessment.

18. If the project were to be located at an alternative site and connected to the Newark - Metcalf 230 kV lines, how much power would it supply to the Metcalf substation? How much power would it supply to the Newark substation?

See response to 15.

19. The applicant has considered siting a power plant adjacent to PG&E's proposed Los Esteros substation in northern San Jose. Assuming that PG&E builds the substation, please compare the advantages and disadvantages of placing the proposed project at Los Esteros substation instead of at the proposed location.

See the response to Question 20.

20. How much electrical power would a 600 MW plant at Los Esteros supply to the Metcalf substation, presumably via the Newark substation?

As stated in the response to Question 15, above, more studies are being conducted by Commission staff to better understand the advantages and disadvantages of interconnecting at Newark substation. The study will include connecting the project from a proposed site to the Los Esteros substation. The results of this study will be made available in the Preliminary Staff Assessment.

21. How much electrical power would a 600 MW plant provide to the South San Jose area?

See the response to Question 15 and 20.

22. What customers would a 600 MW plant serve?

See the response to Question 7, above.

23. The applicant stated that to disperse plants throughout the Bay Area, potential MEC sites at the southern edge of San Jose, and further south along the U.S. 101 corridor, were considered. This implies either building a new 230 kV transmission line from one of those sites to Metcalf, or connecting to the existing Moss Landing - Metcalf 230 kV lines.

- a. Please provide a quantified evaluation of the advantages and disadvantages of connecting to the Moss Landing - Metcalf 230 kV lines compared to the proposed project.

Connection to the Moss Landing – Metcalf 230 kV lines of an additional 600 MW of generation such as the MEC to the lines can be expected to increase line loading. Overloads of the Moss Landing – Metcalf 230 kV lines that might occur due to the addition of the Moss Landing Expansion Project would not be attributed to the MEC. Study of the effect of new generation at Moss Landing on the MEC is not required by the Cal-ISO for assessment of the MEC electric system effects, since the MEC is in the queue for development before the new generation at Moss Landing. See also the response to Question 11.

- b. Please estimate the cost of any reinforcements required for connection to the Moss Landing – Metcalf 230 kV lines.

Reconductoring of the transmission line could cost about \$500,000 per mile. It is not known at this time whether more right of way is needed, or if the existing towers could be used for a reconductor project. Also it is likely that new 230 kV lines would be required to make the connection from the project site to the transmission corridor. Given the extensive facilities that are likely to be required staff considers such a connection infeasible.

24. If the project were to be located at an alternative site and connected to the Moss Landing Metcalf 230 kV lines, how much power would it supply to the Metcalf substation?

For a site closer to Metcalf, much of the power might be expected to flow toward Metcalf. The further the site is located from Metcalf (towards Moss Landing) the more the power would tend to flow toward Moss Landing, then on the on the 500 kV transmission system toward Metcalf. This would increase loading on the 500/230 kV transformer at Metcalf. See also the response to Question 3.

25. Members of the public have asked why the project could not be placed at Gilroy. The applicant has stated in a data response that such a location is not desirable. Please evaluate the feasibility of a site near Gilroy from a transmission line system perspective.

The transmission system in the Gilroy area is inadequate for a 600 MW power plant. Approximately 10 miles of 230 kV Double Circuit Tower Line (DCTL) are required to get from Gilroy Energy to the Metcalf - Moss Landing 230 kV lines. A new switching station could be required in the middle of the Metcalf - Moss Landing 230 kV lines to create an interconnection for the plant to the transmission system. Given the extensive facilities that are likely required staff considers a Gilroy site infeasible.

26. Could system benefits similar to those that the proposed project would provide be achieved if the project were sited at a location remote from the Bay Area? Please specifically address the following locations:

a. In western Kern County?

No. Western Kern County is electrically remote and therefore a resource sited in western Kern County would have no significant impact on the Bay area.

b. In the S. Joaquin Valley, utilizing the 230 kV Tesla - Newark lines?

No. The San Joaquin Valley is electrically remote and therefore a resource sited in the San Joaquin Valley would have no significant impact on the Bay area.

c. In the S. Joaquin Valley, utilizing the 500 kV Tesla - Metcalf line?

No. The San Joaquin Valley is electrically remote and therefore a resource sited in the San Joaquin Valley would have no significant impact on the Bay area. A 500 kV connection is not appropriate for this size generating station due to cost and reliability issues.

d. In Alameda or Contra Costa County, utilizing the Contra Costa – Newark 230 kV lines?

It is highly unlikely without significant new or reconductored facilities.

e. South of Metcalf, using the 500 kV Moss Landing – Metcalf line?

No. A 500 kV connection is not appropriate for this size generating station due to cost and reliability issues.

27. Please describe any system upgrades that would be required if the project were to be built at these locations.

Specific upgrades cannot be identified, however any interconnection at these locations that was not electrically close to Metcalf on the 230 kV system would likely require a 500/230 kV transformer at the Metcalf substation at a cost of \$20,000,000. A new 500/230 transformer at Metcalf would likely cost about \$20,000,000. The cost of the transformer may be passed on to the ratepayers of PG&E,

28. Please estimate the cost of any such upgrades.

Please refer to the response to Question 27, above.

29. Do bottlenecks/congestion exist in the 115kV system in the South Bay Area? If so, please describe them.

Please see the response to Question 2 above.

30. What benefits would the proposed project provide to the 115 kV system?

No benefits would be expected.

31. Would interconnection to the Monte Vista, Newark, Ravenswood, Los Esteros or San Mateo substation provide similar benefits to the 115 kV system?

As stated in the response to Question 15, above, more studies are being conducted by Energy Commission staff to better understand the advantages and disadvantages of sites that have been identified as potentially interconnecting at Newark substation. The study will include connecting the project to the Los Esteros substation. The results of this study will be made available in the Preliminary Staff Assessment. Feasible sites have not been identified that might connect to Monte Vista, Ravenswood, or San Mateo and are not the subjects of additional transmission analysis at this time.