STATE OF CALIFORNIA

Energy Resources Conservation And Development Commission

In the Matter of:

Application for Certification for the Chula Vista Energy Upgrade Project Docket No. 07-AFC-4



FINAL STAFF ASSESSMENT ADDENDUM CHULA VISTA ENERGY UPGRADE PROJECT

Energy Commission staff published the Final Staff Assessment (FSA) for the Chula Vista Energy Upgrade Project (CVEUP) on August 28, 2008. On September 12, 2008, the applicant, MMC Chula Vista, LLC, provided Prehearing conference statements, including comments on the FSA, were received from the applicant, MMC Chula Vista, LLC, the City of Chula Vista, and the Environmental Health Coalition on September 16, 2008 and September 17, 2008. The following is the resulting staff response to the applicant and intervener's submitted suggestions and review of the FSA documents. The primary format for these responses is underline/strikethrough format, so that appropriate comparisons can be made.

AIR QUALITY

Supplemental Testimony of William Walters and Matthew S. Layton

Staff is proposing to correct the numbering on four tables and one figure. In addition, staff is proposing to correct a referencing error in the text concerning Condition of Certification **AQ-SC6**. Condition of Certification **AQ-SC6** is referred to as Condition of Certification **AQ-SC7** on pages 4.1-40 and 4.1-41of the **AIR QUALITY** section. The reference to Condition of Certification **AQ-SC7** on page 4.1-43 is correct. There are no proposed changes to factual information provided in the technical area.

The numbering of the following four tables and one figure should be corrected:

- Change Table 26 on page 4.1-48 to Table 27
- Change Table 27 on page 4.1-49 to Table 28
- Change Table 21 on page 4.1-53 to Table 29
- Change Table 22 on page 4.1-54 to Table 30
- Change Figure 1 on page 4.1-55 to Figure 6

Pages 4.1-40 and 4.1-41, Staff Proposed Mitigation

Staff Proposed Mitigation

Staff is proposing Condition of Certification **AQ-SC7** <u>AQ-SC6</u> to formalize the applicant's NOx, PM10, VOC, and SOx offset proposal. Staff evaluated the applicant's assumption for likely maximum annual operation, 1,000 hours or a capacity factor of 11.4 percent, and found data to support using a reduced capacity factor in this general range given the historical capacity factors and the worst-case forecast capacity factors for SDG&E service area peaker facilities. The historical capacity factors, for peaker power plants built after the year 2000, found in a review of the Energy Commission's Quarterly Fuel and Energy Reporting data and available SDAPCD 2005 and 2006 data (Moore 2008) show generation or hour-based capacity factors that have not exceeded 8.4 percent for any single facility. The historical capacity factor data reviewed is provided in **AIR QUALITY Table 24**.

		QFER Ge	eneration Bas	sed Capacit	y Factor	
Facility Name	2002	2003	2004	2005	2006	2007
Calpeak Border	7.77%	2.71%	2.28%	1.86%	1.43%	8.39%
Calpeak Enterprise	7.53%	2.18%	2.35%	1.55%	1.24%	5.76%
Larkspur	1.18%	4.01%	4.74%	3.85%	2.89%	6.00%
	SDAPCD Hours of Operation Capacity Factor					
Facility Name	2002	2003	2004	2005	2006	2007
Calpeak Border				2.29%	1.72%	
Calpeak Enterprise				1.91%	1.49%	
Calpeak El Cajon				2.64%	2.26%	
Miramar Energy Facility				1.69%	1.84%	
Larkspur				4.41%	3.51%	

AIR QUALITY Table 24 Historical Capacity Factors for Comparable SDG&E Service Area Peaker Facilities

Source: Energy Commission QFER data; Moore 2008

The most comparable facility to the CVEUP is Larkspur as it is also comprised of two LM6000 gas turbines.

Staff also reviewed the worst-case SDG&E service area peaker capacity factors forecast in the Scenario Analysis of California's Electricity System performed for the *2007 Integrated Energy Policy Report* (CEC 2007). The worst-case generation based capacity factors for the existing and named peakers for 2009 to 2020 range from 5.7 - 10.5 percent. It is important to note that the generation based capacity factors could be lower than emission based capacity factors due to higher proportional emissions during reduced load conditions and start/shut-down periods. Using these historic and forecast capacity factor data sources and considerations regarding emissions versus generation or hourly operation capacity factors, staff has determined that a 13.7 percent annual capacity factor, or 1,200 hours of operation, would provide a reasonable safety margin for the determination of CEQA emission mitigation requirements for this project. This is similar to, but somewhat higher than, 1,000 hours proposed by the applicant.

Staff also reviewed the applicant's emission calculations and revised them using staff's recommended capacity factor basis and assumed worst-case conditions that assumed that the maximum annual 1,200 operating hours were comprised of 1,000 hours of normal operations (500 of which use inlet fogging), 100 hours of cold start operation, and 100 hours of warm start operation. Additionally, the long-term worst-case fuel sulfur basis for the Chula Vista Power Plant and the CVEUP were standardized to 0.25 grains/100 scf. Using these assumptions, staff calculated the annual emission rates and incremental emission increase for the project, to be used in Condition of Certification **AQ-SC7** <u>AQ-SC6</u>, which are shown in **AIR QUALITY Table 25**.

AIR QUALITY Table 25 Staff's CVEUP Incremental Annual Emissions (CEQA Mitigation Basis)

		Pollutant	(tons/yea	r)
Emission Source	NOx	VOC	SOx	PM10/2.5
CVEUP Expected Maximum Annual Emissions, tons/year	7.35	1.43	0.40	3.60
Chula Vista Power Plant Emissions Baseline, tons/year	1.3	0.07	0.05	0.5
Incremental Emissions Increase, tons/year	6.05	1.36	0.35	3.10

Source: Staff calculations and CH2MHill 2008a, DR 2 and 3.

The total incremental emissions value recommended in **AQ-SC7** <u>AQ-SC6</u> is 10.86 tons, which is 2.11 tons greater than the applicant's estimate of 8.75 tons (see **AIR QUALITY Table 18**). Staff also believes that the mitigation fee basis should be tied to ARB's latest Carl Moyer Program Guideline¹ cost effectiveness cap value. The draft ARB 2008 cost effectiveness cap value is \$16,000 per ton (ARB 2008d). Therefore, with the applicant's proposed 20 percent administration fee to find local emission reduction projects, the total Carl Moyer Program mitigation fee would total \$208,512 to offset the 10.86 tons of incremental emissions, which is slightly less than the \$210,000 fee total proposed by the applicant. <u>AQ-SC7 AQ-SC6</u> is written to allow flexibility should the final cost effectiveness cap value change from the draft value. Additionally, <u>AQ-SC7 AQ-SC6</u> has also been designed to allow other public agency administered emission mitigation fee programs or traditional emission reduction credits (ERCs) from the District bank to be used to meet the emission mitigation requirement of the condition.

In addition to the emission reduction mitigation measure **AQ-SC7** <u>AQ-SC6</u> recommended by staff and agreed to by the applicant; the applicant has agreed to provide the City of Chula Vista with an additional \$210,000 in mitigation funds (COCV 2008c). These mitigation funds would be used for energy efficiency and related improvements to local homes and business, and are intended to directly benefit the residents potentially most affected by the proposed project. Staff does not formally recommend or oppose this agreement, which staff considers to be separate from the official CEQA process, as this agreement is not considered necessary under staff's CEQA findings and this agreement does not change staff's conclusion that the project would have less than significant impacts with incorporation of staff's recommended mitigation measures.

ALTERNATIVES ANALYSIS

Supplemental Testimony of Christopher Meyer

Staff offers the following corrections and updates to the Alternatives Analysis Section of the FSA. Changes and deletions are indicated by striking through the deleted portions of text and underlining the substituted language or new text. These changes reflect the comments from the applicant and interveners in writing and at the September 18, 2008 Prehearing Conference.

CHANGE IN CALIFORNIA CODE OF REGULATIONS 25305(C)

The U.S. Fish and Wildlife Service announced on September 9, 2003 that the listing of mountain plover was unwarranted because threats were not as severe as earlier believed (USFWS 2003e). The following pages require changes to reflect the change in state regulations.

Page 6-12, Conservation and Demand Side Management

CONSERVATION AND DEMAND SIDE MANAGEMENT

One alternative to meeting California's electricity demand with new generation is to reduce that demand for electricity. Such "demand side" measures include programs that increase energy efficiency, reduce electricity use, or shift electricity use away from "peak" hours of demand.

In California there is a considerable array of demand side programs. At the federal level, the Department of Energy adopts national standards for appliance efficiency and building standards to reduce the use of energy in federal buildings and at military bases.

At the state level, the Energy Commission adopts comprehensive energy efficiency standards for most buildings, appliance standards for specific items not subject to federal appliance standards, and load management standards. The Energy Commission also provides grants for energy efficiency development through the Public Interest Energy Research (PIER) program.

The California Public Utilities Commission, along with the Energy Commission, oversees investor-owned utility demand side management programs financed by the utilities and its ratepayers. At the local level, many municipal utilities administer demand side management and energy conservation programs. These include subsidies for the replacement of older appliances through rebates, building weatherization programs, and peak load management programs. In addition, several local governments have adopted building standards which exceed the state standards for building efficiency, or have by ordinance set retrofit energy efficiency requirements for older buildings. New buildings may combine the need for heat and power through a single fuel source or a common source may supply heating and/or heating and cooling to a number of adjacent buildings, increasing overall efficiency.

Even with this great variety of federal, state, and local demand side management programs, the state's electricity use is still increasing as a result of population growth and business expansion. Current demand side programs are not sufficient to satisfy future electricity needs, nor is it likely that even much more aggressive demand side programs could accomplish this at the economic and population growth rates of the last ten years.

Although it is likely that federal, state, and local demand side programs will receive even greater emphasis in the future, both new generation and new transmission facilities will be needed in the immediate future and beyond in order to maintain adequate supplies.

Furthermore, Public Resources Code Section 25305(c) states that conservation, load management, or other demand reducing measures reasonably expected to occur shall be explicitly examined in the Energy Commission's energy forecasts and shall not be considered as alternatives to a proposed facility during the siting process. The forecast that addresses this issue is the Energy Commission's *Integrated Energy Policy Report*. Thus, conservation and demand-side management is not included in this analysis.

Page 6-25, Response to Agency and Public Comments, Response 13

Response: Public Resources Code Section 25305(c) states that conservation Conservation, load management, or other demand reducing measures reasonably expected to occur shall be are explicitly examined in the Energy Commission's energy forecasts and shall not be are not considered as reliable alternatives to a proposed facility during the siting process. The forecast that addresses this issue is the Energy Commission's Integrated Energy Policy Report. Thus, conservation and demand-side management is not included in this analysis. Although the Energy Commission staff recognizes that energy efficiency, demand response, and renewable energy are higher priorities, many of these, including non-thermal renewable energy sources, are outside the regulatory authority of the Energy Commission. In addition, many of these higher priority alternatives are speculative, future projected projects, or projects that have not been submitted to the appropriate agency/jurisdiction for review and approval.

FACILITY DESIGN

Supplemental Testimony of Steve Baker

The following changes and clarifications are made in response to a change in the project description and the applicant's and City of Chula Vista comments submitted to the Energy Commission on September 12, 2008 and September 17, 2008. The project description was changed to reflect the applicant's removal of the black start generator. In response to concerns raised during the public workshops and by the applicant and the City of Chula Vista, staff is proposing the addition of Condition of Certification GEN-9 to address the removal of the existing Chula Vista Power Plant.

Pages 5.1-7 and 5.1-8, Conditions of Certification

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, master drawing, and master specifications lists. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

<u>Verification:</u> At least 60 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawing, and master specifications lists of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **FACILITY DESIGN Table 2**, below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

FACILITY DESIGN Table 2 Major Structures and Equipment List

Equipment/System		
Combustion Turbine (CT) Foundation and Connections	2	
CT Generator Foundation and Connections		
SCR Catalyst System Structure Foundation and Connections	2	
SCR Exhaust Stack Foundation and Connections	2	
Tempering Air Fans (Blowers) Foundation and Connections	2	
CEMS Station Foundation and Connections	2	
CT Auxiliary Skid Foundation and Connections	2	
CT Fire Protection System Foundation and Connections	2	
SPRINT/Spray Mist Cooler Skid Foundation and Connections	2	
NOx Water Injection Skid Foundation and Connections		
CT Inlet Air Fogger System Foundation and Connections		
Ammonia Delivery Skid Foundation and Connections	2	

Equipment/System		
GT Lube Oil Fin Fan Cooler Foundation and Connections	2	
Natural Gas Fuel Filter Foundation and Connections		
Air Compressor Skid Foundation and Connection		
Step-Up Transformer Foundation and Connections	1	
Auxiliary Transformer Foundation and Connections	1	
480V Transformer Foundation and Connections	1	
Electrical/ Control Building Foundation and Connections	1	
Wastewater Drainage Sump System Foundation and Connections	1	
Demineralized Water Storage Tank Foundation and Connections		
Demineralized Water Forwarding Pumps Foundation and Connections	1	
Demineralized Water Trailer Foundations and Connections		
Fuel Gas Compressors Foundation and Connections	3	
Fuel Gas Recycle Cooler Foundation and Connections		
Oil/Water Separator Foundation and Connections		
Black Start Diesel Generator Foundation and Connections		

Page 5.1-14, Conditions of Certification

GEN-9 After the CVEUP has been declared a commercially operating facility; the project owner shall dismantle and remove the existing 44.5-MW Chula Vista Power Plant, including associated pollution control equipment, foundations, and piping. The project owner shall prepare a removal plan and schedule prior to the start of dismantling.

Verification: Within 180 days following start of commercial operation of the CVEUP, the project owner shall commence removal of the existing facility. At least 30 days prior to the start of dismantling, the project owner shall provide the CPM and the City of Chula Vista a removal plan and schedule for review. The project owner shall notify the CPM and the City of Chula Vista within 5 days after dismantling has commenced and within 5 days after removal has been completed.

SOCIOECONOMICS

Supplemental Testimony of Jacob Hawkins

The following changes and clarifications are made in response to a change in the project description and the applicant's and City of Chula Vista comments submitted to the Energy Commission on September 12, 2008 and September 17, 2008. The project description was changed to reflect the applicant's removal of the black start generator. In response to concerns raised during the public workshops and by the applicant and the City of Chula Vista, staff is proposing the addition of Condition of Certification GEN-9 to address the removal of the existing Chula Vista Power Plant.

Page 4.8-6, Fiscal and Non-Fiscal Effects

Fiscal and Non-Fiscal Effects

Some fiscal (having to do with public treasury) impacts of the CVEUP include:

- Property tax revenue for San Diego County Proposition 13 Tax of \$855,420 \$800,000, distributed as follows:
 - \$226,570 to the county Housing set-aside \$160,000
 - o Chula Vista Elementary School District \$88,000
 - <u>Sweetwater Union High School District \$57,000</u>
 - Southwestern College \$15,000
 - o County of San Diego \$68,000
 - o County Office of Education \$8,000
 - o County Administration \$6,000
 - \$157,800 to the City of Chula Vista
 - o \$471,050 to the Chula Vista Redevelopment Agency \$398,000
- Construction total (state and local) sales tax of \$139,500
- Operation total (state and local) sales tax of \$23,250
- School impact fee of \$344

Because the parcel was annexed to the City of Chula Vista by the County of San Diego under a revenue sharing agreement, more tax money would go to the County than would under normal circumstances. Beginning in 2015, the City would begin receiving approximately \$34,000 based on AB1290 Pass-through Formulas.

Additionally, the City of Chula Vista imposes a Utility Users' Tax (CV Municipal Code Chapter 3.44) based on the consumption of electricity, gas and telephone services. According to CV Municipal Code Chapter 3.44.030, there is imposed a tax upon the use of intrastate telephone communication services in the city at a rate of five percent of the charges made for such services. Similar taxes for electricity and gas services are also imposed under CV Municipal Code Chapters 3.44.040 and 3.44.050. Electricity usage would be taxed at a rate established by the imposition of the factor of .00300 for each kilowatt of such energy used. According to these Code Chapters, however, all electricity and gas used by public utilities, such as the proposed facility, in the conduct of its business shall be excluded from this tax. Gas usage would be taxed at a rate established by the imposition of therm of energy used. Therefore, the CVEUP would need to pay five percent of its telecommunications

charges in payment of the Utility Users' Tax. <u>Consequently, the CVEUP would remit</u> such tax to the appropriate franchise natural gas, electricity, and telecommunication service provider in accordance with the City's Municipal Code. Additionally, the Applicant has agreed that in the event that the Utility Users' Tax is determined to be invalidly imposed or collected, the Applicant would comply with any and all modifications to the City's Municipal Code or franchise agreement to cure such invalidity so as to continue the payment of equivalent value or consideration to the City through the term of the CVEUP's operation.

Non-fiscal (private sector) impacts include:

- Total capital costs of \$80 million.
- Construction eight month payroll of \$8.9 million; annual operations payroll of \$112,000.
- Approximately \$14.5 million to be spent on construction materials and supplies and \$1.25 million for operation and maintenance supplies.

Page 4.8-10 and 11, Response to Agency and Public Comments

Comment 1: City of Chula Vista (6/13/08). The City of Chula Vista imposes a Utility Users' Tax (CV Municipal Code Chapter 3.44) based on the consumption of utility services such as electricity, gas and telephone. The tax is instrumental in generating revenue for vital municipal services such as public safety (police and fire) and public infrastructure (storm drains and streets). City staff strongly encourages the California Energy Commission to require the project applicant as a Condition of Certification to commit to pay all applicable local taxes and fees including the Utility Users' Tax. This will ensure that the proposed project is truly complying with all local "laws, ordinances, regulations, and standards" as required by the Commission's project review and certification process.

Response: As the Applicant is expected to comply with all local LORS, including payment of all applicable annual local taxes, Staff does not feel sufficient need to specify the payment of the Utility Users' Tax as a Condition of Certification that the Applicant pay all applicable local taxes and fees. However, as the applicant's AFC did not specifically address the payment of Utility Users' Tax, a discussion of this tax has been added to Fiscal and Non-Fiscal Effects section above and a Condition of Certification of Certification with payment of the Utility Users' Tax has been proposed below.

Page 4.8-22, Conclusions

CONCLUSIONS

Estimated gross public benefits from the CVEUP include increases in property and sales taxes, employment, and income for San Diego County, the City of Chula Vista, and the Chula Vista Redevelopment Agency. For example, there are estimated to be an average of 100 direct project-related construction jobs for eight months of construction.

The CVEUP is estimated to have total capital costs of \$80 million. The CVEUP construction payroll is estimated at \$8.9 million for eight months and the operational payroll is \$112,000 annually. Property taxes are estimated at \$855,424 \$800,000 for the first year (2009) for a project life of 30 years. The estimated total annual sales tax during construction is \$14.5 million for materials and supplies. The estimated total annual sales tax during operation of the plant is \$1.25 million for materials and supplies. Additionally, a one-time school impact fee of \$344 would be generated.

Staff concludes that construction and operation of the CVEUP would not cause a significant direct or cumulative adverse socioeconomic impact on the study area's housing, schools, law enforcement, emergency services, hospitals, and parks and recreational facilities. Hence, there are no socioeconomic environmental justice issues related to this project.

Page 4.8-23, Socioeconomics Table 3

Estimated Project Capital Cost	\$80 Million
Estimate of Locally Purchased Materials	
Construction	\$14.5 million
Operation (Operation &	\$1.25 million
Maintenance)	
Estimated Annual Property Taxes	\$855.424
Low and Moderate Housing Set-	<u>\$160,000</u>
Aside	
Redevelopment Agency Tax	<u>\$398,000</u>
Increment	
City of Chula Vista	<u>\$34,000 (after 2015)</u>
Chula Vista Elementary School	<u>\$88,000</u>
<u> </u>	
Sweetwater Union High School	<u>\$57,000</u>
<u> </u>	
Southwestern College	<u>\$15,000</u>
San Diego County	<u>\$68,000</u>
County Office of Education	<u>\$8,000</u>
Other/Administrative Fee	<u>\$6,000</u>
Estimated School Impact Fees	\$344
Estimated Employment	
Construction (average)	100 average jobs per month (total of 633)
Operation	2
Estimated Payroll	
Construction	\$8.9 million (estimated)
Operation	\$112,000 annually (estimated)
Estimated Total Sales Taxes (Total:	
Combined State, County and local)	

SOCIOECONOMICS Table 3 Data and Information

Construction	\$139,000
Operation	\$23,250 annually
Existing Unemployment Rates	4% (San Diego County)
Percent Minority Population (6 mile radius)	73.41%
Percent Poverty Population (6 mile radius)	14.12%
Percent Minority Population (1 mile radius)	81.13%
Percent Poverty Population (1 mile radius)	13.34%

Page 4.8-23, Conditions of Certification

SOCIO-2 The project owner shall pay the City of Chula Vista's utility users' tax ("UUT") in accordance with the City of Chula Vista Municipal Code.

Verification: The project owner shall submit documentation of the biannual payments of the UUT in each Annual Compliance Report to the Compliance Project Manager.

CHULA VISTA ENERGY UPGRADE PROJECT PREPARATION TEAM

Page 8-1, Add resume and declaration of Matthew S. Layton for Air Quality.

MATTHEW S. LAYTON

Experience Summary

Twenty-one years experience in the electric power generation field, including regulatory compliance and modification; research and development; licensing of nuclear, coal-fired, and combined cycle power plants; and engineering and policy analysis of regulatory issues.

Education

B.S., Applied Mechanics, University of California, San Diego.

Registered Professional Engineer - Mechanical, California.

Experience

1987-present – Senior Mechanical Engineer, Siting, Transmission and Environmental Protection Division, California Energy Commission. Review and evaluate power plant proposals, identify issues and resolutions; coordinate with other agencies; and prepare testimony, in the areas of:

- Air quality resources and potential impacts, and mitigation measures; and
- Dry and hybrid cooling towers.

Prepared Commission demonstration project process; contributed to the Energy Technology Status, Energy Development, and Electricity Reports; Project Manager for demonstration projects; evaluated demonstration test plans, procedures, data and reports; disseminated test results; and managed research and development contracts.

1983-1986 -- Control Systems Engineer, Bechtel Power Corporation. Managed a multidisciplined effort to environmentally qualify client's safety related nuclear plant equipment. Performed analyses, calculations and reviews against vendor test reports, NRC guidelines and plant normal and postulated accident conditions. Initiated purchase orders for testing and formulated test objectives and test plans. Developed and implemented plant equipment maintenance and surveillance program based on test results, vendor recommendations and industry operating experiences. Trained client in environmental qualification engineering analysis and equipment maintenance program. Prepared client for NRC audits and presentation.

1981-1983 -- Engineer, GA Technologies, Inc. Supervised design and procurement of full-scale test assembly used to evaluate design changes to operating reactor graphite core assembly. Conducted experiment to determine the relationship of graphite oxidation rate to water concentration, temperature, and helium pressure. Environmentally qualified essential and safety related nuclear power plant equipment to comply with NRC guidelines.

DECLARATION OF MATTHEW S. LAYTON

I, MATTHEW S. LAYTON declare as follows:

- 1. I am presently employed by the California Energy Commission in the **ENVIROMENTAL OFFICE** of the Siting, Transmission and Environmental Protection Division as a SENIOR MECHANICAL ENGINEER.
- 2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
- 3. I helped prepare the staff testimony on greenhouse gases in the AIR QUALITY section for the CHULA VISTA ENERGY UPGRADE PROJECT Final Staff Assessment on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
- 4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
- 5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 29 Sep 08

Signed: _____ the Jay to

At Sacramento, California