GALATI | BLEK LLP

Plaza Towers
555 Capitol Avenue Suite 600
Sacramento CA 95814
Tel • 916.441.6575
Fax • 916.441.6553

January 28, 2009

DOCKET
07-AFC-9
DATE JAN 28 2009
RECD. JAN 28 2009

Ms. Angela Hockaday
California Energy Commission
Docket Unit
1516 Ninth Street
Sacramento, CA 95814-5512

Subject:
APPLICATION FOR THE CANYON POWER PLANT
DOCKET NO. 07-AFC-09

Dear Ms. Hockaday:

Enclosed for filing with the California Energy Commission are one (1) original and twelve (12) copies of the following documents, for the Canyon Power Plant Docket No.07-AFC-09:

1. ECM Technology White Paper
2. Letter dated December 16, 2008 to SCAQMD
   Subject: Changes to the Canyon Power Plant Annual Emissions and Dispersion Modeling
3. Letter dated on January 6, 2009 to SCAQMD
   Subject: Change in the Fuel Use and Sox/PM10 Emission Factors Used During Commissioning for the Canyon Power Plant (Facility I.D. 153992)
4. Letter dated on January 23, 2009 to California Energy Commission
5. Letter dated on July 2, 2008
   Subject: May 8, 2008 Letter Regarding the AFC for Canyon Power Plant Project in Anaheim, CA.

Sincerely,

Scott Galati
Counsel to Canyon Power Plant

URS

December 16, 2008

Vicky Lee
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar CA 91765-4178

Subject: Changes to the Canyon Power Plant Annual Emissions and Dispersion Modeling

Dear Ms. Lee,

The City of Anaheim has acquired adequate ERCs to cover an increased annual operating schedule, thus the annual emissions from the four turbines and the cooling tower rose. The annual emissions were calculated assuming 1,080 hours of normal turbine operation and 240 startups and 240 shutdowns per turbine. AERMOD was run for the pollutants with annual averaging times (PM_{10}, NO_2 and SO_2) with these new emissions. The new emissions and model results are presented in the revised Appendix E to the PTC, which included in this package. A CD containing the revised model files is also included in this package.

The increase in annual emissions also affected the HRA modeling, thus the HARP analyses were re-conducted to predict the new cancer risk and chronic non-cancer health index. Since the short-term emission rates did not change the acute non-cancer health index did not change. The new TAC emissions and HRA model results are presented in the revised Appendix E to the PTC. The revised HARP model files are also included in the modeling CD included in this package.

Please do not hesitate to contact me or John Lague, with questions or concerns regarding any aspect of this revision, so that we can promptly make available the information you need to complete your evaluation.

Sincerely,

Julie Mitchell
Senior Air Quality Scientist

cc: Suzanne Wilson, City of Anaheim
John Lague, URS Corporation

URS Corporation
1615 Murray Canyon Road
Suite 1000
San Diego, CA 92108
Tel: 619.294.9400
Fax: 619.293.7920

Revised Appendix E
Project Stack Parameters and Emission Rates Used in Criteria Pollutant and Health Risk Modeling and Model Results Tables

December 2008

Modeled Emission Rates/Stack Parameters during Normal Operation (Data for Individual Turbine)

Parameter	Individual Turbine
Stack Diameter, ft	11.7
Stack Height, ft	86
Stack Temp, deg F	838.67
Exhaust Flow, acfm	590,179
Stack Velocity, ft/s	91.96

Pollutant	Averaging	Per-Turbine Emissions (g/s)	Notes
NO_x	1-hour	0.501 (3.98 lb/hour)	No startup, normal operations
	Annual	~~0.055~~0.099	Non-commissioning year
CO	1-hour	~~0.791~~0.534	No startup, normal operations
	8-hour	0.534~~0.57~~	No startup, normal operations
SO_x	1-hour	0.171	No startup; 1.0 gr/100 SCF fuel sulfur content
	3-hour	0.171	1.0 gr/100 SCF fuel sulfur content
	24-hour	0.171	1.0 gr/100 SCF fuel sulfur content
	Annual	~~0.0032~~0.0058	Non-commissioning year; 0.25 gr/100 SCF fuel sulfur content for normal operations
PM_{10}	24-hour	0.378	Emissions less during startup than normal operations
	Annual	~~0.0287~~0.051~~687~~	Non-commissioning year

1 hour all pollutants: Based on maximum normal full load operation,

~~8-hour CO: Modeling for this pollutant and averaging time will be based on full 1.2 hour start/purge/restart scenario (see startup emission table at end of this Appendix) and then 6.8 hours of normal full-load operation. This results in a maximum 8-hour average emission rate, i.e., higher than with more of the period filled with normal full-load operations.~~

3-hour SO_2: Based on full load normal operation for three hours and natural gas fuel sulfur content of 1.0 gr/100 SCF

24-hour SO_2 and PM_{10} Based on maximum full load normal operation and natural gas fuel sulfur content of 1.0 gr/100 SCF

Annual all pollutants: Based on ~~129~~ 240 35-minute startups, ~~129~~ 240 10-minute shutdowns and ~~602~~ 1080 hours of max full load operation. Did not use trip/restart scenario for startups because ~~129~~ 240 cycles is sufficient to cover the Maximum expected number of such events. Natural gas sulfur content of 0.25 gr/100 SCF used for normal operations for annual emission calculation.

~~Correction for one-hour CO made on 0926-08~~

Modeled Emission Rates/Stack Parameters During Startup (Data for Individual Turbine)

Parameter	Turbine
Stack Diameter, ft	11.7
Stack Height, ft	86
Stack Temp, deg F	783
Exhaust Flow, acfm	505,554
Stack Velocity, ft/s	78.37

Data from table of minute by minute startup data

Pollutant	Averaging Time	Per-Turbine Emissions (g/s)	Note
NO_x	1-hour	1.798 (14.27 lb/hr)	Includes 35-minute startup, turbine trip, 5 minute purge and first 20 minutes of restart
CO	1-hour	0.791(6.28 lb/hour)	Includes 35-minute startup, turbine trip, 5 minute purge and first 20 minutes of restart
	8-hour	0.57 (4.49 lb/hour)	1.2 hour start/purge/restart scenario plus 6.8 hours of normal operations~~See normal 8 hour CO scenario above~~

1-hour NO_x and CO: Based on full startup (35 minutes) followed by 5-minute purge and then first 20 minutes of restart. Note that the 1-hour NO_x emission rate in this table is the peak hourly emission rate among all turbine operating scenarios and the applicant requests that this be the basis for any permit condition limiting hourly NO_x emissions.

8-hour CO: Modeling for this pollutant and averaging time will be based on full 1.2 hour start/purge/restart scenario (see startup emission table at end of this Appendix) and then 6.8 hours of normal full-load operation. This results in a maximum 8-hour average emission rate, i.e., higher than with more of the period filled with normal full-load operations.

Modeled Emission Rates/Stack Parameters During Commissioning (Data for Individual Turbine)

Parameter	Turbine - Base Load Test	Turbine - First Fire Test
Stack Diameter, ft	11.7	11.7
Stack Height, ft	86	86
Stack Temp, deg F	843	694
Exhaust Flow, acfm	580,274	199,268
Stack Velocity, ft/s	90.42	31.05

Pollutant	Averaging Time	Turbine - Base Load Test	Turbine - First Fire Test
		Emissions (g/s)	Emissions (g/s)
NO_x	1-hour	5.371	1.047 (Did model despite lower emission rate because much lower stack exhaust velocity)
CO	1-hour	2.146 (Not modeled because clearly not worst case)	4.315
	8-hour	2.146 (Not modeled because clearly not worst case)	4.315

Modeled Emission Rates/Stack Parameters for HRA
(Data for Individual Turbine)

Parameter	Turbine
Stack Diameter, ft	11.7
Stack Height, ft	86
Stack Temp, deg F	838.67
Exhaust Flow, acfm	590,179
Stack Velocity, ft/s	91.96

Toxic Air Contaminant Emissions from Each Turbine

Max Fuel Flow (HHV) **480.6** **MMBtu/hr**

Maximum annual hours of operation **~~698.75~~1260** **hr/yr**

Pollutant	CAS	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMcf)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Ammonia *	7664417			max TBACT level	3.64	4.59E+03~~2.54E+03~~
1,3-Butadiene	106990	4.30E-07		AP-42	2.07E-04	2.60E-01~~1.44E-01~~
Acetaldehyde	75070	4.00E-05		AP-42	1.92E-02	2.42E+01~~1.34E+01~~
Acrolein	107028	3.62E-06		AP-42	1.74E-03	2.19E+00~~1.22E+00~~
Benzene	71432	3.26E-06		AP-42	1.57E-03	1.97E+00~~1.09E+00~~
Ethylbenzene	100414	3.20E-05		AP-42	1.54E-02	1.94E+01~~1.07E+01~~
Formaldehyde	50000	3.60E-04		AP-42	1.73E-01	2.18E+02~~1.21E+02~~
Propylene Oxide	75569	2.90E-05		AP-42	1.39E-02	1.76E+01~~9.74E+00~~
Toluene	108883	1.30E-04		AP-42	6.25E-02	7.87E+01~~4.37E+01~~
Xylenes	1330207	6.40E-05		AP-42	3.08E-02	3.88E+01~~2.15E+01~~
PAH						
Benzo(a)anthracene	56553	2.23E-08	2.26E-05	CATEF mean	1.07E-05	1.35E-02~~7.50E-03~~
Benzo(a)pyrene	50328	1.37E-08	1.39E-05	CATEF mean	6.60E-06	1.32E-01~~1.32E-01~~
Benzo(b)fluoranthene	205992	1.12E-08	1.13E-05	CATEF mean	5.37E-06	6.76E-03~~3.75E-03~~
Benzo(k)fluoranthene	207089	1.09E-08	1.10E-05	CATEF mean	5.22E-06	6.58E-03~~3.65E-03~~
Chrysene	218019	2.49E-08	2.52E-05	CATEF mean	1.20E-05	1.51E-02~~8.36E-03~~
Dibenz(a,h)anthracene	53703	2.32E-08	2.35E-05	CATEF mean	1.12E-05	1.41E-02~~7.80E-03~~

Indeno(1,2,3-cd)pyrene	193395	2.32E-08	2.35E-05	CATEF mean	1.12E-05	1.41E-02~~7.80E-03~~
Naphthalene	91203	1.64E-06	1.66E-03	CATEF mean	7.88E-04	9.93E-01~~5.51E-01~~
Total PAHs (other than naphthalene)					6.22E-05	2.02E-01~~1.71E-01~~

~~698.75~~1,260 operating hours in annual emission calculation includes ~~602~~ 1,080 hours of normal operations plus ~~129~~ 240 startups (35-minute events) and ~~129~~ 240 shutdowns (10-minute events)

Cooling Tower Stack Parameters

Parameter	Value	Units	Notes
Fan diameter:	13	Feet	7 blades each fan
Exhaust flow	230,750	ACFM per each fan	
Exhaust flow	3,800,961	Pounds/hr total for 4 fans	
Exhaust temp	87.7	DB deg F	
Circulating water rate	7,740	gpm for all 4 units	
	3,870,000	pph	
Cycles	10		
TDS	922	ppm after cycling maximum GWRS	
Drift	0.0010%	% of circulating water	
Exhaust stream solids	0.0357	Pounds/hr	

Note: Conditions are for design day of 89 F DB, 36% RH
Annual cooling tower emissions based conservatively on assumed operation for ~~2,795~~5,040 hours per year (i.e., 4 x ~~698,75~~1,260)

Emission Rates for Cooling Tower

Toxic Air Contaminant	CAS	TAC Concentration in water[1]		Emissions per cell		Total tower emissions	
		ug/liter	lb/(1000 gallon)	lb/hr	lb/yr	lb/hr	lb/yr
Antimony **	7440360	0.6	0.000005	5.81E-08	2.93E-04~~1.61E-04~~	2.33E-07	1.17E-03~~6 50E-~~
Arsenic	7440382	4.8	0.000040	4.65E-07	2.34E-03~~1.29E-03~~	1.86E-06	9.37E-03~~5 20E-~~
Beryllium	7440417	0.1	0.000001	9.69E-09	4.88E-05~~2.69E-05~~	3.88E-08	1.95E-04~~1 08E-~~
Cadmium	7440439	0.1	0.000001	9.69E-09	4.88E-05~~2.69E-05~~	3.88E-08	1.95E-04~~1 08E-~~
Chlorine	7782505	9300	0.077603	9.01E-04	4.54E+00~~2.50E+00~~	3.60E-03	1.82E+01~~1 01E+~~
Chromium	18540299	1.1	0.000009	1.07E-07	5.37E-04~~2.96E-04~~	4.26E-07	2.15E-03~~1 19E-~~
Cobalt **	7440484	2.2	0.000018	2.13E-07	1.07E-03~~5.91E-04~~	8.53E-07	4.30E-03~~2 38E-~~
Copper *	7440508	28	0.000234	2.71E-06	1.37E-02~~7.53E-03~~	1.09E-05	5.47E-02~~3 03E-~~
Cyanide	57125	46	0.000384	4.46E-06	2.25E-02~~1.24E-02~~	1.78E-05	8.98E-02~~4 98E-~~
Fluoride *	1101	30	0.000250	2.91E-06	1.46E-02~~8.07E-03~~	1.16E-05	5.86E-02~~3 25E-~~
Lead	7439921	1.6	0.000013	1.55E-07	7.81E-04~~4.30E-04~~	6.20E-07	3.12E-03~~1 73E-~~
Manganese	7439965	9.2	0.000077	8.91E-07	4.49E-03~~2.47E-03~~	3.57E-06	1.80E-02~~9 96E-~~
Mercury	7439976	0.05	0.000000	4.84E-09	2.44E-05~~1.34E-05~~	1.94E-08	9.77E-05~~5 42E-~~
Nickel	7440020	0.1	0.000001	9.69E-09	4.88E-05~~2.69E-05~~	3.88E-08	1.95E-04~~1 08E-~~
Selenium	7782492	16	0.000134	1.55E-06	7.81E-03~~4.30E-03~~	6.20E-06	3.12E-02~~1 73E-~~
Silica *	7631869	970	0.008094	9.40E-05	4.74E-01~~2.61E-01~~	3.76E-04	1.89E+00~~1 05E+~~
Sulfate *	9960	2550	0.021278	2.47E-04	1.25E+00~~6.86E-01~~	9.88E-04	4.98E+00~~2 76E+~~
~~Zinc *~~	~~7440666~~	~~5~~	~~0.000042~~	~~4.84E-07~~	~~1.34E-03~~	~~1.94E-06~~	~~5.42E-03~~

Note:
1. The maximum concentration for each TAC as determined from water samples collected from the water for use with the cooling tower.

* not a CAA112 HAP

** not a TAC for HRA purposes

Diesel IC Engine Stack Parameters

Parameter	Value
Flow Rate (acfm)	5,647
Exhaust Temp (degrees F)	949.8
Stack Diameter (feet)	0.833 (10 inches)
Stack height (feet)	20 (12 ft building + 8 ft stack)
fuel rate (gal/hr)	53.5
diesel Sulfur content (ppm)	15
diesel density (lb/gal)	7.1
stack height (m)	6.096
exhaust temp (K)	783.04
exit velocity (m/s)	52.59
stack diameter (m)	0.254

IC Engine Emissions

Pollutant	Diesel Engine Emission Rate (lbs/hr)	Diesel Engine Emission (lbs per 38-minute test)[1]	Diesel Engine Emissions (lb/year) [2]
Diesel Particulate (PM_{10})	0.0496	0.031	9.91

Note:
[1]. If necessary, the applicant will accept a condition limiting the duration of maintenance tests for this engine to 38 minutes per test.
[2]. Annual emissions based on 200 total hours/year engine operation

Model Results – Normal Operation (Impacts due to Individual CTGs and all four CTGs combined)

Pollutant	Averag-ing Period	Maximum Predicted Concentration ($\mu g/m^3$)					Back-ground Concen-tration ($\mu g/m^3$)	Most Stringent Air Quality Standard ($\mu g/m^3$) [1]	Significant Change in Air Quality Concen-tration ($\mu g/m^3$) [2]	Comply (Yes /No)
		CTG 1	CTG 2	CTG 3	CTG 4	All 4 CTGs				
NO_2	1-hour[2]	1.87	1.87	1.86	1.88	6.69	229.1	339	20	Yes
	Annual	0.016	0.016	0.016	0.016	~~0.040~~ 0.064	46.7	57	1	Yes
CO	1-hour	1.99	1.99	1.98	2.00	7.12	8,510	23,000	1,100	Yes
	8-hour	1.41	1.42	1.42	1.41	5.30	4,544	10,000	500	Yes
SO_2	1-hour	0.64	0.64	0.63	0.64	2.28	81.2	655	n/a	Yes
	3-hour	0.48	0.49	0.49	0.49	1.81	52	1,300	n/a	Yes
	24-hour	0.21	0.21	0.21	0.21	0.82	21	105	n/a	Yes
	Annual	0.001	0.001	0.001	0.001	0.~~002~~ 004	5.3	80	n/a	Yes
PM_{10}	24-hour	0.47	0.47	0.47	0.47	1.81	104	50	2.5	Yes
	Annual	0.~~005~~ 009	0.~~005~~ 009	0.~~005~~ 009	0.~~005~~ 009	0.~~020~~ 34	33.9	20	1	Yes
$PM_{2.5}$	24-hour	0.47	0.47	0.47	0.47	1.81	58.9	35	n/a	Yes
	Annual	0.~~005~~	0.~~005~~	0.~~005~~	0.~~005~~	0.~~020~~	19	15	n/a	Yes

		009	009	009	009	34				

Notes:

1 In February 2007, the CARB approved new, more stringent CAAQS for NO2. The new standards, which became effective on 20 March 2008, are 339 µg/m³ (1-hour) and 57 µg/m³ (annual).

2 From South Coast Air Quality Management District Rule 1303 Table A-2.

Model Results – Normal Operation (Impacts due to all Project Sources)

Pollutant	Averaging Period	Maximum Predicted Impact (ug/m³)	Background Concentration (ug/m³)	Total Concentration (ug/m³)
NO_2	1-hour	107.388	229.1	336.49
	Annual	0.4036	46.7	47.101
CO	1-hour	77.369	8,510	8587.37
	8-hour	6.362	4,544	4550.36
SO_2	1-hour	2.280	81.2	83.48
	3-hour	1.813	52	53.81
	24-hour	0.819	21	21.82
	Annual	0.002004	5.3	5.30
PM_{10}	24-hour	1.833	104	105.83
	Annual	0.022039	33.9	33.924
$PM_{2.5}$	24-hour	1.833	58.9	60.73
	Annual	0.022039	19	19.0204

Model Results – Startup (Impacts due to Individual CTGs) CO 1 & 8 hr changes

Pollutant	Averaging Period	Maximum Predicted Concentration (µg/m³)					Background Concentration (µg/m³)	Most Stringent Air Quality Standard (µg/m³) [1]	Significant Change in Air Quality Concentration (µg/m³) [2]	Comply (Yes /No)
		CTG 1	CTG 2	CTG 3	CTG 4	All 4 CTGs				
NO_2	1-hour	7.80	7.87	7.85	7.77	27.57	229.1	339	20	Yes
CO	1-hour	2.95	2.95	2.93	2.95	10.53	8,510	23,000	1,100	Yes
	8-hour	1.51	1.51	1.51	1.51	5.65	4,544	10,000	500	Yes

Model Results – Startup (Turbines)

Pollutant	Averaging Period	Maximum Predicted Impact (ug/m³)	Background Concentration (ug/m³)	Total Concentration (ug/m³)
NO_2	1-hour	27.565	229.1	256.67
CO	1-hour	10.534	8,510	8520.53
	8-hour	5.653	4,544	4549.65

Model Results – Commissioning – All Four Turbines

Pollutant	Averaging Period	Maximum Predicted Impact (ug/m^3) All four turbines		Background Concentration (ug/m^3)	Total Concentration (ug/m^3) All four turbines	
		Baseload Test	First Fire Test		Baseload Test	First Fire Test
NO_2	1-hour	58.48	29.1	229.1	283.58	258.20
CO	1-hour	N/A	122.52	8,510	N/A	8,632.5
	8-hour	N/A	103.95	4,544	N/A	4,648.0

Model Results – Commissioning- Individual Turbines

				μ					
			μ					μ	μ
First Fire	CO	1 hour	123	35.66	35.2	35.65	35.67	8,510	8,546
		8 hour	104	28.58	29.19	31.87	31.63	4,544	4,576
	NO_2	1 hour	29.1	8.52	8.54	8.65	8.66	229.1	237.8
Base Load AVR	NO_2	1 hour	58.5	16.7	15.7	14.8	13.4	229.1	245.8

Model Results – HRA – All Sources (Modeling redone to include ~~698.75~~1,260 operating hours a year for each turbine)

Receptor Type	Risk Type	Maximum Risk	Year	HARP Receptor Number	Receptor Grid	NAD 83 UTM Easting (m)	NAD83 UTM Northing (m)	Description of Receptor (distance from fenceline)
PMI	Cancer	0.6315~~0.62200~~	1981	24976	E	420263	3746903	northern property boundary near east edge of site
	Chronic	0.0074~~0.00429~~	1981	24977	E	420287	3746910	northern property boundary near east edge of site
	Acute	0.0165~~0.01650~~	1981	14928	E	422572	3744781	grid approximately 3 km southeast
Sensitive	Cancer	0.1000~~0.09690~~	1981	25147	E	419563	3746289	resident3 ~700 m SW of fence
	Chronic	0.0014~~0.00078~~	1981	25146	E	420880	3746899	resident2 ~500 m E of fence
	Acute	0.0162~~0.01620~~	1981	25091	E	420384	3750118	Placentia Veterinary Clinic ~3.3km N

Maximum Impacts Summary due to the Total Project

Maximum Impacts and Locations of impact due to the Total Project

Receptor	Cancer Risk (per million)			
	MICR	UTM Easting (m)	UTM Northing (m)	Description of location of impact
Point of Maximum Impact	0.632~~0.622~~	420,263	3,746,903	northern property boundary near east edge of site
Residential/ Sensitive	0.100~~0.097~~	419,563	3,746,289	Resident about 700 m southwest of fence
Off-site worker/ Commercial	0.093~~0.0885~~	420,292	3,746,942	Woodridge Press
Receptor	**Chronic Hazard Index**			
	HIC	**UTM Easting (m)**	**UTM Northing (m)**	**Description of location of impact**
Point of Maximum Impact	0.0089~~0.0051~~	420,292	3,746,942	Woodridge Press
Residential/ Sensitive	0.0014~~0.0008~~	420,880	3,746,899	Resident about 500 m east of fence
Off-site worker/ Commercial	0.0089~~0.0051~~	420,292	3,746,942	Woodridge Press
Receptor	**Acute Hazard Index**			
	HIA	**UTM Easting (m)**	**UTM Northing (m)**	**Description of location of impact**
Point of Maximum Impact	0.0165	422,572	3,744,781	grid approximately 3 km southeast
Residential/ Sensitive	0.0162	420,384	3,750,118	Placentia Veterinary Clinic about 3.3km north
Off-site worker/ Commercial	0.0006	420,183	3,746,896	Euro Sport Accessories Inc

Maximum Residential and Commercial Impacts due to Each Emission Source

Cancer Risk (in 1 million)								
Source	Residential				Commercial			
	MICR	UTM Easting (m)	UTM Northing (m)	Description of location of impact	MICR	UTM Easting (m)	UTM Northing (m)	Description of location of impact
Gas Turbine No. 1	0.0052~~0.0045~~	422484	3749818	Harmony Home (~3.5 km NE)	2.94E-05~~2.51E-05~~	420292	3746942	Woodridge Press (~25m N of fence)
Gas Turbine No. 2	0.0053~~0.0046~~	422484	3749818	Harmony Home (~3.5 km NE)	2.91E-05~~2.49E-05~~	420183	3746896	Euro Sport Accessories Inc (~35m N of fence)
Gas Turbine No. 3	0.0053~~0.0046~~	422484	3749818	Harmony Home (~3.5 km NE)	2.82E-05~~2.41E-05~~	420374	3746808	Reel lumber service warehouse(15m E of fence)
Gas Turbine No. 4	0.0053~~0.0046~~	422484	3749818	Harmony Home (~3.5 km NE)	2.79E-05~~2.38E-05~~	420374	3746808	Reel lumber service warehouse(15m E of fence)
Black start Engine	0.0910	419925	3746623	Resident about 250 m west of fence	0.083	420292	3746942	Woodridge Press (~25m N of fence)
Cooling Tower	0.0065~~0.0036~~	420880	3746899	Resident about 500 m east of fence	0.011~~0.006~~	420292	3746942	Woodridge Press (~25m N of fence)
Total Project	0.1000~~0.0969~~	419563	3746289	Resident about 700 m southwest of fence	0.09318~~0.0885~~	420292	3746942	Woodridge Press (~25m N of fence)

Chronic Non-cancer Hazard Index								
Source	Residential				Commercial			
	HIC	UTM Easting (m)	UTM Northing (m)	Description of location of impact	HIC	UTM Easting (m)	UTM Northing (m)	Description of location of impact
Gas Turbine No. 1	0.0001	422484	3749818	Harmony Home (~3.5 km NE)	3.40E-06~~1.89E-06~~	420292	3746942	Woodridge Press (~25m N of fence)
Gas Turbine No. 2	0.0001	422484	3749818	Harmony Home (~3.5 km NE)	3.37E-06~~1.87E-06~~	420183	3746896	Euro Sport Accessories Inc (~35m N of fence)
Gas Turbine No. 3	0.0001	422484	3749818	Harmony Home (~3.5 km NE)	3.26E-06~~1.81E-06~~	420374~~420183~~	3746808~~3746896~~	Reel lumber service warehouse(15m E of fence)~~Euro Sport Accessories Inc (~35m N of fence)~~
Gas Turbine No. 4	0.0001	422484	3749818	Harmony Home (~3.5 km NE)	3.22E-06~~1.79E-06~~	420374	3746808	Reel lumber service warehouse(15m E of

								fence)
Black start Engine	0.0001	419925	3746623	Resident about 250 m west of fence	2.63E-04	420292	3746942	Woodridge Press (~25m N of fence)
Cooling Tower	0.0013~~0.0007~~	420880	3746899	Resident about 500 m east of fence	8.66E-03~~4.81E-03~~	420292	3746942	Woodridge Press (~25m N of fence)
Total Project	0.0014~~0.0008~~	420880	3746899	Resident about 500 m east of fence	0.00894~~0.0051~~	420292	3746942	Woodridge Press (~25m N of fence)

Acute Non-cancer Hazard Index

Source	Residential				Commercial			
	HIA	UTM Easting (m)	UTM Northing (m)	Description of location of impact	HIA	UTM Easting (m)	UTM Northing (m)	Description of location of impact
Gas Turbine No. 1	0.0040	420420	3750043	Atria Senior Living Group: Atria De Palma (~3km N)	7.02E-05	420344	3746992	Kraemer Auto Collision Center (~85m NE of fence)
Gas Turbine No. 2	0.0040	420420	3750043	Atria Senior Living Group: Atria De Palma (~3km N)	6.44E-05	420344	3746992	Kraemer Auto Collision Center (~85m NE of fence)
Gas Turbine No. 3	0.0040	420420	3750043	Atria Senior Living Group: Atria De Palma (~3km N)	5.94E-05	420344	3746992	Kraemer Auto Collision Center (~85m NE of fence)
Gas Turbine No. 4	0.0040	420420	3750043	Atria Senior Living Group: Atria De Palma (~3km N)	5.52E-05	420344	3746992	Kraemer Auto Collision Center (~85m NE of fence)
Black start Engine	0	NA	NA	NA	0	NA	NA	NA
Cooling Tower	0.0001	420186	3750043	Resident about 450 m south of fence	3.76E-04	420183	3746896	Euro Sport Accessories Inc (~35m N of fence)
Total Project	0.0161	420420	3750043	Atria Senior Living Group: Atria De Palma (~3km N)	0.00057	420183	3746896	Euro Sport Accessories Inc (~35m N of fence)

Note the CPP operates continuously and thus the default GLC and exposure assumptions were used to estimate the offsite worker cancer risk.

Maximum Impacts due to Turbines Only

Permit Unit	Cancer Risk (excess risk in 1 million)			Chronic Hazard Index			Acute Risk Hazard Index			Cancer burden
	MICR	UTM Easting (m)	UTM Northing (m)	HIC	UTM Easting (m)	UTM Northing (m)	HIA	UTM Easting (m)	UTM Northing (m)	(based on a 1 in 1 million risk)
Turbines 1-4	0.02~~10~~43	422268	3748871	0.0005~~3~~3	422268	3748871	0.0164	422572	3744781	0

Note: Impacts from receptors that are inside the property are not included, these are grid receptor numbers 12322 and 12444-5. East receptor packet is where all peak impacts occurred.

Note: Cancer burden based on a 1 in 1 million risk level. If the peak cancer risk is < 1 in a million then the cancer burden is 0.

Maximum Impacts due to Each Emission Source and locations of these impacts

Permit Unit	Cancer Risk (per million)				Cancer burden (based on a 1 in 1 million risk)
	MICR	UTM Easting (m)	UTM Northing (m)	Description of location of impact	
Turbine 1	0.0061~~0.0053~~	422268	3748871	grid ~2.7 km northeast	0
Turbine 2	0.0061~~0.0052~~	422268	3748871	grid ~2.9 km northeast	0
Turbine 3	0.0061~~0.0052~~	422268	3748871	grid ~2.9 km northeast	0
Turbine 4	0.0061~~0.0053~~	422268	3748871	grid ~2.9 km northeast	0
Cooling Tower	0.0365~~0.0203~~	420287	3746910	northern property boundary	0
Black Start Engine	0.6090	420263	3746903	northern property boundary	0

Permit Unit	Chronic Hazard Index			
	HIC	UTM Easting (m)	UTM Northing (m)	Description of location of impact
Turbine 1	0.0001	422268	3748871	grid ~2.7 km northeast
Turbine 2	0.0001	422268	3748871	grid ~2.7 km northeast
Turbine 3	0.0001	422268	3748871	grid ~2.7 km northeast
Turbine 4	0.0001	422268	3748871	grid ~2.7 km northeast
Cooling Tower	0.0070~~39~~	420287	3746910	northern property boundary
Black Start Engine	0.0004	420263	3746903	northern property boundary

Permit Unit	Acute Hazard Index			
	HIA	UTM Easting (m)	UTM Northing (m)	Description of location of impact
Turbine 1	0.0041	422672	3744681	grid ~3.1 km southeast
Turbine 2	0.0041	422572	3744781	grid ~3 km southeast
Turbine 3	0.0041	422572	3744781	grid ~3 km southeast
Turbine 4	0.0041	422519	3744925	grid ~2.8 km southeast
Cooling Tower	0.0004	420287	3746910	northern property boundary
Black Start Engine	NA	NA	NA	NA

Note: The following East package receptors are onsite, and thus the predicted risk is ignored at receptors 12322 and 12444-5.
Note: Only the east receptor package was examined since all of the peak impacts occurred there.
Note: Cancer burden based on a 1 in 1 million risk level. If the peak cancer risk is < 1 in a million then the cancer burden is 0.

Revised 72-Minute Sequence of Normal Startup and Emission Control with Turbine Trip and Restart

			Stack emissions per Turbine											
Time	CT	SCR	NOx		CO		ROG		PM10		SOx @ 0.25 gr		SOx @ 1 gr	
(min)	Δ time	Δ time	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total
0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	1		18.00	0.30	22	0.4	2.50	0.04	0.63	0.01	0.07	0.00	0.28	0.00
2			18.00	0.60	22	0.7	2.50	0.08	0.63	0.02	0.07	0.00	0.28	0.01
4			18.00	1.20	22	1.5	2.50	0.17	0.63	0.04	0.07	0.00	0.28	0.02
6	5		18.00	1.80	10.0	1.8	2.25	0.24	0.63	0.06	0.07	0.01	0.28	0.03
8	2		18.00	2.40	10.0	2.1	2.25	0.32	0.63	0.08	0.07	0.01	0.28	0.04
10			50.00	4.07	4.5	2.3	0.36	0.33	1.16	0.12	0.13	0.01	0.51	0.05
12		12	26.00	4.93	6.8	2.5	0.90	0.36	1.69	0.18	0.19	0.02	0.74	0.08
14			33.00	6.03	3.1	2.6	0.90	0.39	2.22	0.25	0.24	0.03	0.97	0.11
15		3	38.00	6.67	3.5	2.7	0.90	0.40	2.48	0.29	0.27	0.03	1.09	0.13
16			15.49	6.92	3.7	2.7	0.99	0.42	2.75	0.34	0.30	0.04	1.20	0.15
17	9		16.63	7.20	4.2	2.8	1.13	0.44	3.01	0.39	0.33	0.04	1.32	0.17
18			15.93	7.47	4.2	2.9	1.17	0.46	3.01	0.44	0.33	0.05	1.32	0.19
20			14.52	7.95	4.2	3.0	1.17	0.50	3.01	0.54	0.33	0.06	1.32	0.24
22			13.11	8.39	4.2	3.2	1.17	0.54	3.01	0.64	0.33	0.07	1.32	0.28
24			11.71	8.78	4.2	3.3	1.17	0.58	3.01	0.74	0.33	0.08	1.32	0.33
26			10.30	9.12	4.2	3.4	1.17	0.61	3.01	0.84	0.33	0.09	1.32	0.37
28			8.90	9.42	4.2	3.6	1.17	0.65	3.01	0.94	0.33	0.10	1.32	0.41
30			7.49	9.67	4.2	3.7	1.17	0.69	3.01	1.04	0.33	0.11	1.32	0.46
32			6.09	9.87	4.2	3.8	1.17	0.73	3.01	1.14	0.33	0.13	1.32	0.50
34			4.68	10.03	4.2	4.0	1.17	0.77	3.01	1.24	0.33	0.14	1.32	0.55
35		18	3.98	10.09	4.2	4.1	1.17	0.79	3.01	1.29	0.33	0.14	1.32	0.57
36			0.00	10.09	0	4.1	0.00	0.79	0.00	1.29	0.00	0.14	0.00	0.57
38			0.00	10.09	0	4.1	0.00	0.79	0.00	1.29	0.00	0.14	0.00	0.57
40	5		0.00	10.09	0	4.1	0.00	0.79	0.00	1.29	0.00	0.14	0.00	0.57
40	0		0.00	10.09	0	4.1	0.00	0.79	0.00	1.29	0.00	0.14	0.00	0.57
41	1	0	18.00	10.39	22	4.4	2.50	0.83	0.63	1.30	0.07	0.14	0.28	0.57
42			18.00	10.69	10.0	4.6	2.33	0.87	0.63	1.31	0.07	0.14	0.28	0.58
43		2	6.80	10.81	10.0	4.8	2.33	0.91	0.63	1.32	0.07	0.15	0.28	0.58
44			6.80	10.92	10.0	4.9	2.33	0.95	0.63	1.34	0.07	0.15	0.28	0.59
46	5		6.80	11.15	10.0	5.3	2.33	1.03	0.63	1.36	0.07	0.15	0.28	0.60

			Stack emissions per Turbine											
Time	CT	SCR	NOx		CO		ROG		PM10		SOx @ 0.25 gr		SOx @ 1 gr	
(min)	Δ time	Δ time	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total
48	2		6.80	11.37	10.0	5.6	2.33	1.10	0.63	1.38	0.07	0.15	0.28	0.60
50			18.90	12.00	2.2	5.7	0.45	1.12	1.16	1.42	0.13	0.16	0.51	0.62
52			9.83	12.33	3.3	5.8	0.90	1.15	1.69	1.47	0.19	0.16	0.74	0.65
54			12.47	12.75	3.1	5.9	0.90	1.18	2.22	1.55	0.24	0.17	0.97	0.68
56			15.49	13.26	3.7	6.0	0.99	1.21	2.75	1.64	0.30	0.18	1.20	0.72
57	9		16.63	13.54	4.2	6.1	1.13	1.23	3.01	1.69	0.33	0.19	1.32	0.74
58			15.78	13.80	4.2	6.1	1.17	1.25	3.01	1.74	0.33	0.19	1.32	0.76
60			**14.10**	**14.27**	**4.2**	**6.3**	**1.17**	**1.29**	**3.01**	**1.84**	**0.33**	**0.20**	**1.32**	**0.81**
72		15	**3.98**	**15.07**	**4.18**	**7.12**	**1.17**	**1.52**	**3.01**	**2.44**	**0.33**	**0.27**	**1.32**	**1.07**

Pollutant Emissions for a 10-Minute Shutdown Sequence for Individual Turbine

		Engine emissions (#/hr)			Stack emissions											
	(pps)				NOx		CO		VOC		PM10		SOx @ .25gr		SOx @ 1gr	
Time (min)	exh flow	NOx	CO	VOC	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total	(#/hr)	# total
0	300	44.00	19.00	1.30	3.98	0.00	4.24	0.00	1.17	0.00	3.01	0.00	0.33	0.00	1.32	0.02
1	273	36.00	13.00	1.10	6.53	0.11	2.86	0.05	0.99	0.02	2.52	0.04	0.28	0.00	1.11	0.04
2	246	29.00	15.00	0.90	5.26	0.20	3.30	0.10	0.81	0.03	2.03	0.08	0.22	0.01	0.89	0.06
3	214	23.00	11.00	0.70	4.17	0.27	2.42	0.14	0.63	0.04	1.58	0.10	0.17	0.01	0.69	0.07
4	175	16.00	7.10	0.50	2.90	0.31	1.56	0.17	0.45	0.05	1.14	0.12	0.13	0.01	0.50	0.08
5	124	35.00	14.00	2.50	6.35	0.42	3.08	0.22	2.25	0.09	0.63	0.13	0.07	0.01	0.28	0.08
6	124	18.00	22.00	2.50	3.27	0.47	4.84	0.30	2.25	0.12	0.63	0.14	0.07	0.02	0.28	0.08
7	124	18.00	22.00	2.50	3.27	0.53	4.84	0.38	2.25	0.16	0.63	0.15	0.07	0.02	0.28	0.09
8	124	18.00	22.00	2.50	3.27	0.58	4.84	0.46	2.25	0.20	0.63	0.16	0.07	0.02	0.28	0.09
9	124	18.00	22.00	2.50	3.27	0.64	4.84	0.54	2.25	0.24	0.63	0.17	0.07	0.02	0.28	0.10
10	**124**	**18.00**	**22.00**	**2.50**	**3.27**	**0.69**	**4.84**	**0.62**	**2.25**	**0.27**	**0.63**	**0.18**	**0.07**	**0.02**	**0.28**	**0.10**

OVERSIZE DOCUMENT

- Too Large to Scan
- No Digital Version Available
- The complete document can be found in the Dockets Unit.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION *For the CANYON POWER PLANT PROJECT*	**Docket No. 07-AFC-9** **PROOF OF SERVICE** (REVISED 7/31/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-9
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Southern California Public Power Authority (SCPPA)
c/o City of Anaheim
Public Utilities Department
Steve Sciortino, Project Manager
201 S. Anaheim Blvd, Suite 802
Anaheim, CA 92805
ssciortino@anaheim.net
swilson@anaheim.net

APPLICANT CONSULTANT

URS Corporation
Cindy Poire, Project Manager
130 Robin Hill Road, Suite 100
Santa Barbara, CA 93117
cindy_poire@urscorp.com

COUNSEL FOR APPLICANT

Scott Galati
Galati & Blek, LLP
555 Capitol Mall, Suite 600
Sacramento, CA95814
sgalati@gb-llp.com

INTERESTED AGENCIES

California ISO
P.O. Box 639014
Folsom, CA 95763-9014
e-recipient@caiso.com

INTERVENORS

ENERGY COMMISSION

Jeffrey D. Byron
Commissioner and Presiding Member
jbyron@energy.state.ca.us

Deborah Dyer
Staff Counsel
ddyer@energy.state.ca.us

Arthur Rosenfeld
Commissioner and Associate Member
arosenfe@energy.state.ca.us

Elena Miller
Public Adviser
publicadviser@energy.state.ca.us

Paul Kramer
Hearing Officer
Pkramer@energy.state.ca.us

Che McFarlin
Project Manager
cmcfarli@energy.state.ca.us

DECLARATION OF SERVICE

I, Ashley Y. Garner, declare that on January 28, 2009, I deposited copies of the attached **APPLICATION FOR THE CANYON POWER PLANT** in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Ashley Y. Garner