STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of: The Application for Certification for the CITY OF RIVERSIDE PUBLIC UTILITIES RIVERSIDE ENERGY RESOURCE CENTER	Docket No. 04-SPPE-1

TESTIMONY OF CAMILLE SEARS ON BEHALF OF THE CALIFORNIA UNIONS FOR RELIABLE ENERGY

August 13, 2004

TESTIMONY OF CAMILLE SEARS

I. THE AMBIENT AIR QUALITY IMPACTS FROM PROJECT CONSTRUCTION ACTIVITIES ARE SIGNIFICANT AND UNMITIGATED

A. Analysis Using The Same Emission Rates Used By The FIS Shows That Standards Will Be Exceeded

The California Energy Commission ("CEC") prepared an air quality impact analysis for onsite project construction PM10 emissions, which is described in the Final Initial Study. (FIS, Section 4-1). The air dispersion modeling used as the basis of the FIS has been slightly revised since the Draft Initial Study, in apparent response to earlier comments submitted by CURE. In particular, fugitive dust PM10 emission rates have been increased substantially, volume source configurations were revised, and a residential location much closer to the project site was included.

The FIS air quality analysis was prepared with the USEPA ISCST3 air dispersion model, with the input file RIVERSIDECEC04A.DAT used for assessing project construction PM10 impacts. CURE was provided with this file, and using the USEPA ISCST3 air dispersion model (v. 02035) with one year of Riverside meteorological data collected by SCAQMD (1981), we were able to recreate the air quality impacts identified in the FIS, Air Quality Table 19.

In response to CURE's July 26, 2004 Motion and Comments, the FIS analyzed PM10 concentrations at the closest 24-hour residence, located near the corner of Acorn Street and Jurupa Avenue. The FIS predicted that the 24-hour PM10 impacts from onsite project construction emissions would be 9.3 $\mu g/m^3$ at this location. (FIS, p. 4-36.). This is slightly less than the 24-hour PM10 construction significance threshold of 10.4 $\mu g/m^3$ set forth by the South Coast AQMD. (SCAQMD 6/03,[1] pp. 1-4, 1-5, 2-10.).

The FIS air quality analysis does not identify the actual coordinates of this residential location. I obtained that information from the ISCST3 input file, RIVERSIDECEC04A.DAT. This file indicates that the FIS modeled this residence at UTM zone 11 coordinates 458201.6, 3757614.4. This receptor location is 206.7 meters south of the

[1] South Coast Air Quality Management District (SCAQMD), Localized Significance Threshold Methodology, Attachment D, June 2003.

southern edge of the RERC property boundary, which has a northing coordinate of 3757821.1 meters.[2]

To verify the distance from RERC's southern property boundary to the residence, I analyzed the USGS digital orthographic quarter quadrangle ("DOQQ") aerial photo of the project site.[3] Using ArcView, I measured a distance of about 174 meters from the southern boundary of the RERC site to the house near the corner of Acorn Street and Jurupa Avenue. This places the actual location of the residence about 33 meters closer to the emission sources than does the FIS modeling analysis. This distance was also verified using the USGS topographic map (in Tiff format) with the same ArcView measuring function.

To correct this inaccurate modeling of the location of the residence, I remodeled this residence with UTM zone 11 coordinates 458201.6, 3757647.4 (33 meters north of the FIS-modeled location). I also revised the terrain elevation of this location to 752 feet above sea level (the FIS modeling used 760 feet). The corrected modeling calculated a 24-hour PM10 impact of 10.49 $\mu g/m^3$. This value slightly exceeds the SCAQMD localized significance threshold ("LST") of 10.4 $\mu g/m^3$. The actual and FIS-modeled residence locations are shown in Figure 1.

Figure 1 also displays the regions where construction 24-hour PM10 impacts exceed the California ambient air quality standard (CAAQS) of 50 $\mu g/m^3$ and the SCAQMD LST of 10.4 $\mu g/m^3$. The exposure region with annual-average PM10 concentrations exceeding 1.0 $\mu g/m^3$ (the significance level identified in SCAQMD Rule 1303) is shown in Figure 2. I prepared these figures using the USGS Riverside West NW DOQQ file as a basemap, and then overlaying the exposure isopleths with ArcView.

I modeled the same construction combustion, fugitive dust, and wind erosion PM10 emissions as those used in the FIS air quality modeling analysis. These emissions are presented in the table below.

[2] 3757821.1 – 3757614.4 = 206.7.
[3] Riverside West, NW; Source: http://data.geocomm.com/catalog/US/61069/sublist.html

	Modeled PM10 Emissions	Modeled PM10 Emissions
Source	(g/s)	(lb/hr)
Volume Source 1 – Combustion	1.982E-02	0.157
Volume Source 2 – Combustion	3.170E-02	0.252
Volume Source 3 – Combustion	1.585E-02	0.126
Volume Source 4 – Combustion	1.189E-02	0.094
Volume Source 5 – Fugitive dust	1.671E-01	1.326
Volume Source 6 – Fugitive dust	2.721E-01	2.159
Volume Source 7 – Fugitive dust	1.464E-01	1.162
Volume Source 8 – Fugitive dust	1.464E-01	1.162
	(g/s-m^2)	
Areapoly Source 9 – Wind erosion	4.200E-08	0.015

The FIS modeling used the following construction schedule:

Fall: Monday through Friday only; Hours 6:00 am through 6:00 pm
Winter: Monday through Friday only; Hours 7:00 am through 6:00 pm
Spring: Monday through Friday only; Hours 6:00 am through 6:00 pm
Summer: No construction activities modeled.

I used this same schedule to recreate the FIS modeling results; however, I note that these hours are inconsistent with the FIS-identified schedule of 7 am to 7 pm weekdays and 8 am to 5 pm on Saturdays. (FIS, p. 4-40).

The ISCST3 model input file I used (AQ4A.ISC, including meteorological, receptor, and source schedule data) is attached in electronic format (Ex. --: see file CUREMOD2.ZIP). The model output files are also included in this zip file.

The peak offsite (property boundary and beyond) PM10 concentrations from my analyses are listed below. The impacts include the contribution from construction combustion, fugitive dust, and wind erosion emissions. Since I used the same input data and model as the FIS analysis, these results are identical to those presented in the FIS. (FIS, Air Quality Table 19).

Pollutant	Averaging Period	Peak Modeled Concentration (μg/m3)	Background Concentration (μg/m3) [4]	Total Concentration (μg/m3)	CAAQS (μg/m3)	Easting Coordinate (m)	Northing Coordinate (m)
PM10	24-hr	70.44	164	234.4	50	458360	3757876
PM10	Annual	12.36	63.3	75.7	20	458360	3758876

In summary, according the modeling used in the FIS, correcting only the inaccurate coordinates for the nearest residence, PM10 impacts from construction at the nearest residence exceed the SCAQMD's significance threshold of 10.4 μg/m^3. The FIS modeling, displayed in Figures 1 and 2, also shows the area outside the fenceline where construction emissions from the project alone exceed the 24 hour California ambient air quality standard for PM10 of 50 μg/m^3, and the area outside the fenceline where construction emissions from the project alone exceed the Rule 1303 annual PM10 allowable change in concentration for nonattainment pollutants of 1 μg/m^3.

B. Analysis Using Corrected Fugitive Emission Rates Shows That Standards Will Be Exceeded

According to the testimony of Drs. Fox and Pless, the applicant underestimated construction emissions because it underestimated the silt content and volume of material that would be handled and it overestimated the dust control efficiencies and moisture contents. Thus, construction emissions were revised and presented for six separate cases. I modeled one of the revised emission scenarios, corresponding to a silt content of 21% and 120,000 lb/day of material handled. Other scenarios have much higher emissions than the one I analyzed. Thus, the impacts that I present below are not worst-case impacts.

I analyzed these revised emissions with the ISCST3 dispersion model to calculate the 24-hour and annual PM10 concentrations from RERC's onsite construction activities. The modeling approach I used is identical to that in the FIS air quality analysis, with the exception of revised fugitive dust and wind erosion emissions. The emissions I modeled are presented in the following table.

[4] FIS, Air Quality Table 19.

	Modeled PM10 Emissions	Modeled PM10 Emissions
Source	(g/s)	(lb/hr)
Volume Source 1 – Combustion	1.982E-02	0.157
Volume Source 2 – Combustion	3.170E-02	0.252
Volume Source 3 – Combustion	1.585E-02	0.126
Volume Source 4 – Combustion	1.189E-02	0.094
Volume Source 5 – Fugitive dust	3.008E-01	2.387
Volume Source 6 – Fugitive dust	4.898E-01	3.887
Volume Source 7 – Fugitive dust	2.365E-01	2.091
Volume Source 8 – Fugitive dust	2.365E-01	2.091
	(g/s-m^2)	
Areapoly Source 9 – Wind erosion	9.977E-09	0.004

The construction combustion emissions are identical to the values modeled in the FIS air quality impact analysis. The wind erosion emissions I modeled (0.004 pound per hour) are less than the FIS-modeled amounts (0.015 pound per hour).

I modeled these emissions using the ISCST3 model with input file AQ4B.ISC. This file, including associated meteorological, receptor, and source schedule data, is attached in electronic format (Ex. --: see file CUREMOD2.ZIP). The model output files are also included in this zip file.

The peak offsite (property boundary and beyond) PM10 concentrations from my revised analyses are listed below.

Pollutant	Averaging Period	Peak Modeled Concentration (µg/m^3)	Background Concentration (µg/m^3) [5]	Total Concentration (µg/m^3)	CAAQS (µg/m^3)	Easting Coordinate (m)	Northing Coordinate (m)
PM10	24-hr	121.41	164	285.4	50	458360	3757876
PM10	Annual	21.01	63.3	84.3	20	458360	3758876

My modeling analysis identifies that RERC's construction impacts alone exceed both the 24-hour and annual PM10 CAAQS. These impacts are significant with or without adding background air quality concentrations. The calculated 24-hour PM10 impact at the nearest residence (coordinates 458201.6, 3757647.4) is 17.89 µg/m^3. This value exceeds the SCAQMD LST of 10.4 µg/m^3. The annual-average PM10 impact at this residential location is 1.43 µg/m^3, which exceeds the SCAQMD Rule 1303 significance level of 1.0 µg/m^3.

[5] FIS, Air Quality Table 19.

Figure 3 displays the regions where construction 24-hour PM10 impacts exceed the CAAQS of 50 $\mu g/m^3$ and the SCAQMD LST of 10.4 $\mu g/m^3$. The exposure region with annual-average PM10 concentrations exceeding 1.0 $\mu g/m^3$ (the significance level identified in SCAQMD Rule 1303) is shown in Figure 4. I prepared these figures in the same manner as Figures 1 and 2.