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June 6, 2013

Via E-Mail and Hand Delivery

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

<p>California Energy Commission DOCKETED 00-AFC-14C</p>
<p>TN 71160 JUN 06 2013</p>

Re: El Segundo Power Plant Project (00-AFC-14C)
Applicant's Letter dated June 5, 2013
to South Coast Air Quality Management District

Dear Sir/Madam:

On behalf of El Segundo Power Plant Project, enclosed please find for docketing Applicant's letter dated June 5, 2013 to South Coast Air Quality Management District.

Please don't hesitate to contact me if you have any questions regarding this filing.

Very truly yours,

John A. McKinsey

JAM:dh
Enclosure

June 5, 2013

Kenneth L. Coats
AQ Engineer II
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Subject: El Segundo Power Facility Modification Project
Facility ID #115663



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Dear Mr. Coats:

On behalf of El Segundo Energy Center LLC, Sierra Research is pleased to submit the Additional Impact Analysis for the El Segundo Power Facility Modification Project. This analysis is required by federal and District Prevention of Significant Deterioration (PSD) rules.

Background

District regulation 1703(a)(3)(E) incorporates the federal PSD requirement for an additional impact analysis into the District's rules. EPA guidance describes the level of effort appropriate for this analysis:

Although each applicant for a PSD permit must perform an additional impacts analysis, the depth of the analysis generally will depend on existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the source's impact area. It is important that the analysis fully document all sources of information, underlying assumptions, and any agreements made as a part of the analysis.¹

Each of the individual components of the additional impacts analysis is addressed below.

Growth Analysis

The PSD growth analysis is a projection of associated industrial, commercial, and residential source growth that will occur in the area due to the project, and an estimate of the air emissions generated by the growth.²

Because the project is a replacement project, replacing existing power generating capacity with new capacity with no net increase of in-basin power production, there is no

¹ EPA, *New Source Review Workshop Manual (Draft)*, 1990. p. D.1.

² EPA, *New Source Review Workshop Manual (Draft)*, 1990. p. D.3.

possibility of new growth in the area due to the project. Because there will be no new growth attributable to the project, there will be no associated air emissions.

Soil and Vegetation Impacts

The area impacted by the project is shown in the attached Figure 1.³ This area is heavily industrialized, and has no vegetation of commercial or recreational value. Minimal vegetation presently exists within the facility, since most of the facility is either paved, graveled, or under construction. While there is some vegetation growing on the slope along the northern plant boundary and along the eastern fence line, this vegetation consists of nonnative species (ice plant, evergreens, and ornamental shrubs, etc.) and is not considered species or habitat requiring protection.⁴ New vegetation is planned along the southern and eastern perimeter of the site that is in the process of being installed as a visual enhancement condition in the California Energy Commission license for the El Segundo Energy Center Project (Docket 00-AFC-14C). As required by Condition of Certification VIS-1 of the California Energy Commission's Certification of the project,⁵ this will primarily be native drought tolerant vegetation that would likewise not be considered species or habitat requiring protection.

Table 1 shows that project impacts of all criteria pollutants are below the secondary national ambient air quality standards. In the absence of sensitive plant species, this leads to a conclusion that project impacts will not result in harmful effects to vegetation.⁶

Table 1
MODELED MAXIMUM IMPACTS FOR NEW UNITS ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Maximum Impact	Background	Total Impact	Federal Secondary Standard
NO ₂	Annual	0.5	24.5	25.0	100
SO ₂	3-hr	2.3 ^c	67.6 ^d	69.9	1300
PM ₁₀	24-hr	1.8 ^b	52	53.8	150
PM _{2.5}	24-hr	1.8 ^b	30 ^e	31.8	35
	Annual	0.3	12.8	13.1	15

^a Modeled impacts from *Ambient Air Quality Impact Analysis* (April 2013), Table 5.

^b Maximum impacts occur under commissioning conditions.

^c Maximum impacts occur under fumigation conditions.

^d The California Air Resources Board no longer publishes 3-hour average SO₂ concentrations, so 1-hour average background is used as conservative estimate of 3-hour average background.

^e Background concentration reflects 3-year average of the 98th percentile values based on form of standard.

³ For PSD review purposes, the area impacted by the project is the area where modeled project impacts exceed one or more Significant Impact Levels (SILs). In the case of the ESPFM, the impact area is defined by the receptors where the modeled NO₂ impacts exceed the interim NO₂ SIL of 7.5 $\mu\text{g}/\text{cu m}$.

⁴ El Segundo Energy Center, *El Segundo Energy Center Petition to Amend*, April 2013. p. 3-59.

⁵ California Energy Commission, *Commission Decision to the Amendment*, June 2010. p 91.

⁶ EPA, *New Source Review Workshop Manual (Draft)*, 1990. p. D.4.

Visibility Impact Analysis

The visibility impact analysis required by District regulation has two components: assessment of the impairment to visibility in the area surrounding the project (“Class II Visibility Impairment Analysis”) (Rule 1703(a)(3)(E)); and an assessment of the potential for adverse impact on air quality-related values, including visibility, in Class I areas within 100 km (Class I Area Impact Analysis) (Rule 1703(a)(3)(F)). The procedures for conducting the Class I and Class II visibility analyses are similar, although the purposes of the reviews are different. The Class II analysis is provided for informational purposes; in contrast, if the Class I analysis indicates an unacceptable adverse impact on visibility, the project will be denied.

Procedure for Visibility Screening Analysis

The visibility screening analysis assesses the visual impact of plumes from the project, as perceived by an observer at the location being assessed. District and federal regulations require that impacts on Class I areas be assessed. The regulations do not specify where visibility impacts must be assessed outside of Class I areas. In its review of recent PSD permits, EPA Region 9 has established a practice of requiring assessment of visual impacts at state parks and non-Class I federal parks.⁷

Up to four levels of analysis may be required, as described below.

Distant Source Impact Screening (> 50 km) – The Federal Land Managers’ Air Quality Related Values (AQRV) Work Group (FLAG) has published guidance for a screening approach to determine whether a more refined Class I Air Quality Impact Analysis is required.⁸ This screening approach, which applies to receptors located more than 50 km from the project site, requires adding all of the visibility-related emissions (SO₂, NO_x, PM₁₀, and sulfuric acid mist) from a project (in units of tons per year)⁹ and dividing the sum by the distance between the project site and the Class I area (in kilometers). If the resulting ratio (“Q/D”) is less than 10, the project is presumed to have no adverse impact, and no further analysis is performed. For all other cases, a Level 1 visibility screening analysis is performed.

Screening Level 1 – The Level 1 visibility screening analysis is a series of conservative calculations designed to identify those emission sources that have little potential of adversely affecting visibility. The VISCREEN model is used in the Level 1 analysis to model visibility impacts for observers located at each site being evaluated. Calculated values relating source emissions to visibility impacts are compared to a standardized screening value. The Class I threshold is the level at which the FLM is likely not to object to the issuance of the PSD permit based on near-field visibility impacts to a Class I

⁷ See, for example, EPA, *Fact Sheet and Ambient Air Quality Impact Report for Pio Pico Energy Center* (June 2012), p. 47.

⁸ U.S. Forest Service et al., “Federal Land Managers’ Air Quality Related Values Work Group (FLAG), Phase I Report—Revised (2010),” October 2010, p. 18.

⁹ Emissions (in tons per year) are equal to the maximum daily emissions (lb/day) * 365 days/2000 lb/ton.

area.¹⁰ Those sources with calculated values greater than the screening criteria are judged to have potential visibility impairments. If potential visibility impairments are identified, then the Level 2 analysis is undertaken.

There are two different types of visibility impacts that may be considered, based on visibility impairment inside or outside the park. The first type is the potential impairment of vistas inside the park. For this, the screening analysis assesses the project's potential to impact the view of one part of the park as seen by an observer elsewhere in the park.

The second type of visibility impact is the potential impairment of vistas outside the park. This screening analysis also assesses the project's potential to impact views of the surrounding area as seen by an observer within the park. Protection of vistas outside of Class I areas is not automatic, and protection of vistas outside of Class II areas is uncommon. Following EPA guidance,¹¹ the VISCREEN results for views outside the park are ignored when those views are not protected.

The relevant visibility parameters are "apparent contrast" and "delta E," which can be computed by the screening visibility model VISCREEN. The Class I area significance thresholds for these two visibility parameters are 0.05 for apparent contrast and 2.00 for delta E.

Screening Level 2 – The Level 2 screening procedure is similar to the Level 1 analysis in that its purpose is to estimate impacts during worst-case meteorological conditions; however, more specific information regarding the source, topography, regional visual range, and meteorological conditions is assumed to be available. The analysis may be performed with the aid of hand calculations, reference tables and figures, VISCREEN, or a computer-based visibility model called "PLUVUE II."

If the Levels 1 and 2 screening analyses indicate the possibility of visibility impairment, a still more detailed analysis may be undertaken in Level 3.

Level 3 Analysis – The Level 3 analysis, no longer a screening analysis, uses the plume visibility model and meteorological and other regional data to provide an accurate description of the magnitude and frequency of occurrence of impact. The procedures for utilizing the plume visibility model are described in the User's Manual for the Plume Visibility Model, which is available from EPA.

Class I Area Impact Analysis

Class I areas are areas of special national or regional natural, scenic, recreational, or historic value for which the PSD regulations provide special protection. If a proposed major source or major modification may affect a Class I area, the federal PSD regulations require the reviewing authority to provide written notification of any such proposed source to the Federal Land Managers (FLM) (and the U.S. Department of Interior and

¹⁰ U.S. EPA, *Workbook for Plume Visual Impact Screening and Analysis (Revised)*, EPA-454/R-92-023, October 1992, p. 1.

¹¹ U.S. EPA, *Workbook for Plume Visual Impact Screening and Analysis (Revised)*, EPA-454/R-92-023, October 1992, p. 27.

U.S. Department of Agriculture officials delegated permit review responsibility). The meaning of the term “may affect” is interpreted by EPA policy to include all major sources or major modifications that propose to locate within 100 kilometers (km) of a Class I area. There are two Class I areas within 100 km of the project site: San Gabriel Wilderness (53 km), and Cucamonga Wilderness (78 km).

Table 2 shows that the project’s emissions are well below the FLAG Distant Source screening criteria (i.e., $Q/D < 10$), described above. As indicated previously, all Class I areas are more than 50 km from the project site; therefore, no further Class I impact analysis is required.

TABLE 2
CLASS I AIR QUALITY IMPACT SCREENING ANALYSIS

Pollutant	ESPFM Emissions ^a (max 24-hours, lb/day)	ESPFM Emissions ^b (max 24-hours, TPY)	Q/D Screening Threshold ^c	Additional Class I Analysis Required?
SO ₂	41.6	7.6	--	--
PM ₁₀	237.5	43.3	--	--
NO _x	559.1	102.0	--	--
Sulfuric Acid Mist	0	0	--	--
Total = “Q”	--	153.0	--	--
San Gabriel Wilderness				
Distance, km = “D”	--	53	--	--
Q/D	--	2.9	10	NO
Cucamonga Wilderness				
Distance, km = “D”	--	78	--	--
Q/D	--	2.0	10	NO

^a Emissions shown are for combined emissions from all new ESPFM emission units.

^b TPY = max daily emissions (lb/day) *365/2000.

^c U.S Forest Service et. al., “Federal Land Managers’ Air Quality Related Values Work Group (FLAG), Phase I Report—Revised (2010),” October 2010, p. 18-19.

Class II Visibility Impairment Analysis

A Class II visibility impairment analysis is required for any PSD permit application (SCAQMD Rule 1703(a)(3)(E)). This analysis is distinct from a Class I visibility impairment analysis. It is worth noting that the Class II visibility analysis is prepared for informational purposes only, as there is no definition or standard for visibility impairment outside of Class I areas.

A conservative visibility analysis was conducted using VISCREEN for each state park¹² within 20 km¹³ of the project site. These parks are listed in Table 3, and the location of each is shown in the attached Figure 2.

¹² There are no national parks within 20 km of the project site.

¹³ EPA Region 9 has established a practice of evaluation of visibility impacts on “potentially sensitive state or federal parks, forests, monuments, or recreation areas within 50 km of the project.” See, for example, EPA, *Fact Sheet and Ambient Air Quality Impact Report for Palmdale Hybrid Power Project* (August 2011). There are other state and federal parks greater than 20 km, but less than 50 km, from the project site; however, visual impacts from the project at these more distant locations will be less than those analyzed below. Therefore, a site-specific analysis was not performed for these more distant sites.

TABLE 3
CLASS II PARKS WITHIN 20 KM OF ESPFM

Site	Distance from Project Site (km)
Dockweiler State Beach	0.9
Kenneth Hahn State Recreation Area	12
Santa Monica Beach State Park	11
Will Rogers State Historic Park	17.8

Methodology – In general, the Class II Visibility Analysis methodology follows the methodology for a Class I Visibility Analysis. The procedure is divided into two parts, reflecting very different procedures for far-field analysis (where distant plumes affect the general appearance of a scene) and near-field analysis (where plumes or layers are compared against a viewing background).

Distant/multi-source visibility impacts (>50 km) – The first step in evaluating distant visibility impacts is an initial screening step for distant receptors. If the FLAG screening value (Q/D) is less than 10 for a given receptor that is further than 50 km from the project, no further analysis is required for that receptor.

Near-field visibility impairment (plume impact) – In this part of the analysis, the potential for the project’s plume to affect visibility within the potentially sensitive Class II area is evaluated. As discussed in more detail below, this step differs from the Class I procedure in that VISCREEN results for views outside of the affected park are ignored.

Results – The results of each of the required analyses are provided below.

Distant/multi-source visibility impacts – As shown in Table 2, $Q = 153.0$ TPY. At 50 km, $Q/D = 3.1$. Using the FLAG screening methodology described above, the project cannot have an unacceptable visual impact on any receptor more than 50 km away because Q/D is less than 10 for all receptors 50 km away or further.

Near-field visibility impairment (plume impact) – The Class II areas listed in Table 2 were identified as being wholly or partially located within a 20 km radius of the project site, with the minimum distance to the project site as indicated. A Level 1 visibility screening analysis was conducted for each of these areas.

Screening Level 1 – The methodology for the Screening Level 1 analysis was described above. Results of this analysis, using worst-case project emissions, are summarized in Table 4. This table shows that, under worst-case project emissions and dispersion conditions, the project’s potential visibility impacts inside all four Class II areas are potentially above the Class I thresholds for significance.¹⁴ Because the visual impacts

¹⁴ The impacts on views outside the Class II areas are also potentially above the Class I thresholds; however, visual impacts outside the Class II areas are not “integral vistas” that are protected under PSD. Consequently, per EPA guidance, the VISCREEN results for plume parcels outside the Class II area are ignored. U.S. EPA, *Workbook for Plume Visual Impact Screening and Analysis (Revised)*, EPA-454/R-92-023, 1992, p. 27.

inside the Class II areas are above the Class I area significance criteria, a screening Level 2 visibility analysis was performed.¹⁵

TABLE 4
ESPFM IMPACTS ON VISIBILITY IN CLASS 2 AREAS
(LEVEL 1 SCREENING ANALYSIS)
Maximum Visual Impacts INSIDE Class II Area

Dockweiler State Beach								
Background	Theta	Azi	Dist	Alpha	Delta E		Contrast	
					Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	167	6	2	2	11.020*	0.05	.127*
Sky	140	167	6	2	2	6.329*	0.05	-.121*
Terrain	10	84	0.9	84	2	40.566*	0.05	0.089
Terrain	140	84	0.9	84	2	4.891*	0.05	0.013
Will Rogers State Historic Park								
Background	Theta	Azi	Dist	Alpha	Delta E		Contrast	
					Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	97	18.6	72	2	0.758	0.05	0.009
Sky	140	97	18.6	72	2	0.457	0.05	-0.008
Terrain	10	84	17.8	84	2	2.493*	0.05	0.015
Terrain	140	84	17.8	84	2	0.203	0.05	0.003
Kenneth Hahn State Recreation Area								
Background	Theta	Azi	Dist	Alpha	Delta E		Contrast	
					Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	106	13	62	2	0.955	0.05	0.011
Sky	140	106	13	62	2	0.596	0.05	-0.01
Terrain	10	84	12	84	2	3.917*	0.05	0.02
Terrain	140	84	12	84	2	0.29	0.05	0.003
Santa Monica State Beach								
Background	Theta	Azi	Dist	Alpha	Delta E		Contrast	
					Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	146	16	22	2	1.85	0.05	0.021
Sky	140	146	16	22	2	1.045	0.05	-0.02
Terrain	10	84	11	84	2	4.316*	0.05	0.021
Terrain	140	84	11	84	2	0.316	0.05	0.004

* Value is above Class I criterion.

¹⁵ U.S. EPA, *Workbook for Plume Visual Impact Screening and Analysis (Revised)*, EPA-454/R-92-023, 1992, p. 1.

Screening Level 2 – Screening Level 2 differs from Screening Level 1 in that more realistic data, representative of the specific project and the area, are used instead of conservative default values. Project-specific values for particle size distributions, ozone concentrations, and meteorological conditions are used.

The project-specific values and model results are shown in Tables 5 through 8. Tables 6 through 8 show that under worst-case project-specific emissions and dispersion conditions, the project's potential visibility impacts inside Will Rogers State Historic Park, Kenneth Hahn State Recreation Area, and Santa Monica State Beach are below the Class I thresholds for significance.¹⁶ This completes the Class II visibility analyses for these parks.

TABLE 5
ESPFM IMPACTS ON VISIBILITY IN DOCKWEILER STATE BEACH
(LEVEL 2 SCREENING ANALYSIS)

Background Ozone: 0.031 ppm					Emission Density Diameter			
Background Visual Range: 110 km ^b					Particulate:	2.08 g/s	2.5	1
Source-Observer Distance: .9 km					NOx:	2.93 g/s		
Min. Source-Class II Distance: .9 km					Primary NO2	0.00 g/s		
Max. Source-Class II Distance: 6 km					Soot	0.00 g/s	2.0	1
Plume-source-observer angle: 11.25 degrees					Sulfate	0.00 g/s	1.5	4
Stability: 6								
Wind Speed: 1.00 m/s								
Maximum Visual Impacts INSIDE Class II Area								
					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	167	6	2	2	9.217*	0.05	-.070*
Sky	140	167	6	2	2	7.182*	0.05	-.050*
Terrain	10	84	0.9	84	2	17.590*	0.1	0.017
Terrain	140	84	0.9	84	2	6.824*	0.1	0.023
Maximum Visual Impacts OUTSIDE Class II Area^{a,b}								
					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	5	0.3	164	2	5.005*	0.05	-.084*
Sky	140	5	0.3	164	2	7.327*	0.05	-0.038
Terrain	10	5	0.3	164	2	49.961*	0.05	.134*
Terrain	140	5	0.3	164	2	21.099*	0.05	.175*

^a National Park Service, Visibility Monitoring Data, <http://www.nature.nps.gov/air/monitoring/vismon.cfm#data> (accessed 3/17/2011).

^b VISCREEN results for plume parcels outside the Class II area are ignored.

* Value is above Class I criterion.

¹⁶ The impacts on views outside the Class II areas are above the Class I thresholds. However, as discussed above, visual impacts outside the Class II areas are not "integral vistas" that are protected. Consequently, per EPA guidance, the VISCREEN results for plume parcels outside the Class II area are ignored.

TABLE 6
ESPFM IMPACTS ON VISIBILITY IN WILL ROGERS STATE HISTORIC PARK
(LEVEL 2 SCREENING ANALYSIS)

Background Ozone: 0.031 ppm					Emission Density Diameter			
Background Visual Range: 110 km ^b					Particulate:	2.08 g/s	2.5	1
Source-Observer Distance: 17.8 km					NOx:	2.93 g/s		
Min. Source-Class II Distance: 17.8 km					Primary NO2	0.00 g/s		
Max. Source-Class II Distance: 18.6 km					Soot	0.00 g/s	2.0	1
Plume-source-observer angle: 11.25 degrees					Sulfate	0.00 g/s	1.5	4
Stability: 6								
Wind Speed: 1.00 m/s								
Maximum Visual Impacts INSIDE Class II Area								
					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	97	18.6	72	2	0.702	0.05	-0.005
Sky	140	97	18.6	72	2	0.522	0.05	-0.003
Terrain	10	84	17.8	84	2	0.823	0.05	0.003
Terrain	140	84	17.8	84	2	0.29	0.05	0.004
Maximum Visual Impacts OUTSIDE Class II Area^{a,b}								
					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	1	1	168	2	2.043*	0.05	-0.034
Sky	140	1	1	168	2	2.209*	0.05	-0.019
Terrain	10	1	1	168	2	5.596*	0.05	.055*
Terrain	140	1	1	168	2	2.530*	0.05	.062*

^a National Park Service, Visibility Monitoring Data, <http://www.nature.nps.gov/air/monitoring/vismon.cfm#data> (accessed 3/17/2011).

^b VISCREEN results for plume parcels outside the Class II area are ignored.

* Value is above Class I criterion.

**TABLE 7
ESPFM IMPACTS ON VISIBILITY IN
KENNETH HAHN STATE RECREATION AREA
(LEVEL 2 SCREENING ANALYSIS)**

Background Ozone: 0.031 ppm	Emission Density	Diameter
Background Visual Range: 110 kmb	Particulate: 2.08 g/s	2.5 1
Source-Observer Distance: 12 km	NOx: 2.93 g/s	
Min. Source-Class II Distance: 12 km	Primary NO2 0.00 g/s	
Max. Source-Class II Distance: 13 km	Soot 0.00 g/s	2.0 1
Plume-source-observer angle: 11.25 degrees	Sulfate 0.00 g/s	1.5 4
Stability: 6		
Wind Speed: 1.00 m/s		

Maximum Visual Impacts INSIDE Class II Area

Background	Theta	Azi	Dist	Alpha	Delta E		Contrast	
					Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	106	13	62	2	0.914	0.05	-0.006
Sky	140	106	13	62	2	0.678	0.05	-0.004
Terrain	10	84	12	84	2	1.261	0.05	0.004
Terrain	140	84	12	84	2	0.437	0.05	0.005

Maximum Visual Impacts OUTSIDE Class II Area^{a,b}

Background	Theta	Azi	Dist	Alpha	Delta E		Contrast	
					Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	5	3.7	164	2	3.266*	0.05	-0.025
Sky	140	5	3.7	164	2	2.509*	0.05	-0.018
Terrain	10	1	1	168	2	8.226*	0.05	.061*
Terrain	140	1	1	168	2	3.550*	0.05	.071*

^a National Park Service, Visibility Monitoring Data, <http://www.nature.nps.gov/air/monitoring/vismon.cfm#data> (accessed 3/17/2011).

^b VISCREEN results for plume parcels outside the Class II area are ignored.

* Value is above Class I criterion.

TABLE 8
ESPFM IMPACTS ON VISIBILITY IN SANTA MONICA STATE BEACH
(LEVEL 2 SCREENING ANALYSIS)

					Emission Density Diameter				
Background Ozone: 0.031 ppm					Particulate:	2.08 g/s	2.5	1	
Background Visual Range: 110 km ^b					NOx:	2.93 g/s			
Source-Observer Distance: 11 km					Primary NO2	0.00 g/s			
Min. Source-Class II Distance: 11 km					Soot	0.00 g/s	2.0	1	
Max. Source-Class II Distance: 16 km					Sulfate	0.00 g/s	1.5	4	
Plume-source-observer angle: 11.25 degrees									
Stability: 6									
Wind Speed: 1.00 m/s									
Maximum Visual Impacts INSIDE Class II Area									
					Delta E		Contrast		
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume	
Sky	10	146	16	22	2	1.596	0.05	-0.011	
Sky	140	146	16	22	2	1.202	0.05	-0.008	
Terrain	10	84	11	84	2	1.385	0.05	0.004	
Terrain	140	84	11	84	2	0.479	0.05	0.005	
Maximum Visual Impacts OUTSIDE Class II Area ^{a,b}									
					Delta E		Contrast		
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume	
Sky	10	5	3.4	164	2	3.565*	0.05	-0.027	
Sky	140	5	3.4	164	2	2.734*	0.05	-0.02	
Terrain	10	1	1	168	2	8.857*	0.05	.061*	
Terrain	140	1	1	168	2	3.779*	0.05	.073*	

^a National Park Service, Visibility Monitoring Data, <http://www.nature.nps.gov/air/monitoring/vismon.cfm#data> (accessed 3/17/2011).

^b VISCREEN results for plume parcels outside the Class II area are ignored.

Table 5 indicates that the project may have impacts on visibility above Class I thresholds within Dockweiler State Beach, which is located adjacent and to the north of the project site. As with the other parks, vistas outside the park are also potentially impacted above Class I thresholds; however, as with the other Class II parks, per EPA guidance these results are ignored.

Level 3 Visibility Analysis – The VISCREEN analysis described above gives a conservative characterization of plume visibility.¹⁷ The objective of the screening exercise is to identify sources that can be determined to be unlikely to cause visibility impairment. Those sources that do not screen out can, if necessary, be analyzed further in a more detailed manner, with more sophisticated models.

In a Level 3 analysis, “the objective is broadened from conservative analysis of worst-case conditions to a realistic analysis of all conditions that would be expected to occur in

¹⁷ U.S. EPA, *Workbook for Plume Visual Impact Screening and Analysis (Revised)*, EPA-454/R-92-023, October 1992, p. B-20.

a typical year in the region that includes both the emission source and the observer. A Level 3 analysis is no longer considered screening because it is a comprehensive analysis of the magnitude and frequency of plume visual impacts as observed at a sensitive Class I area vista.”¹⁸

If the purpose of the present analysis were to demonstrate that the project did not impair visibility in a Class I area, or a Class II area with protected vistas, a Level 3 analysis would be performed, because the Class I thresholds were exceeded for one of the Class II parks. A Level 3 analysis would involve calculating plume visibility impacts for a representative sample of stability, wind speed, and wind direction conditions, and preparing charts showing the frequency distribution of plume visibility impacts. Cumulative frequency plots would be developed for each season, and time of day.

However, this is a Class II visibility analysis—it is prepared for informational purposes only, and there are no standards that must be met. The Level 2 screening analysis provides adequate information for the permitting process, and the additional time and expense of a more refined analysis is not necessary or justified for this project. Given the existing industrial nature of the site and the surrounding area, the presence of other similar power plant stacks and associated plumes in the immediate vicinity, a Level 2 screening analysis provides adequate depth of analysis for this application.

Conclusions for Visibility Analysis

There are two Class I areas within 100 km of the project site, each of which is more than 50 km away. Following Federal Land Manager guidance, a Q/D screening analysis was performed, demonstrating that air quality value impacts on these Class I areas are unlikely.

For Class II sites, a Level 2 Visibility Screening Analysis was performed for all four state parks within 20 km of the project site. Plume visibility impacts within three of the four parks will be below the Class I thresholds. Plume visibility impacts within the closest park, located 0.9 km from the emission units under evaluation, may exceed the Class I thresholds. However, because the receptor is a Class II area, there is no requirement limiting visual impacts. Because the analysis is for informational purposes only, and because the area is already heavily industrialized, including nearby stacks and plumes, a Level 3 Visibility Analysis is not justified.

¹⁸ U.S. EPA, *Workbook for Plume Visual Impact Screening and Analysis (Revised)*, EPA-454/R-92-023, October 1992, p. 51.

If you have any questions regarding this matter, please do not hesitate to contact George Piantka at 760-710-2156 or me at 916-273-5139.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Andrews', with a long, sweeping underline that extends to the right.

Tom Andrews

cc: Craig Hoffman, CEC Project Manager
George Piantka, NRG
Ken Riesz, NRG
Steve Odabashian, NRG

Figure 1
Project 1-Hour NO₂ Impact Above the SIL



Figure 2
State Park Locations

