

DOCKETED

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November 21, 2013

VIA E-FILING AND HAND-DELIVERY

El Segundo Energy Center Petition to Amend (00-AFC-14C)
Craig Hoffman, Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: El Segundo Energy Center Petition to Amend (00-AFC-14C)
ESEC LLC's November 7, 2013 Letter to the South Coast Air Quality
Management District

Dear Mr. Hoffman:

On November 7, 2013, El Segundo Energy Center LLC ("ESEC LLC") provided the enclosed letter and compact disk to the South Coast Air Quality Management District (the "Air District"). These enclosures contain ESEC LLC's responses to the Air District's comments on the combined impact analysis of the El Segundo Energy Center (00-AFC-14C) project.

Please contact me or my colleague Allison Harris if there are any questions about the enclosed letter.

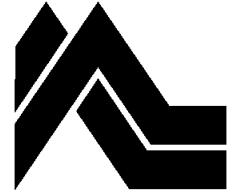
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By: _____
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Enclosures (the compact disk will be hand-delivered)



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November 7, 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

Dear Mr. Coats:

On September 11, 2013,¹ and September 13, 2013,² the District provided comments on the cumulative impact analysis³ that had been submitted on behalf of El Segundo Power.

This letter provides the response to the District's comments.

Comment: The label for Figure 1 indicates that the contour is a 5-year average of the highest eighth-high (i.e., H8H). Please ensure that you follow EPA guidance when determining the Significant Impact Area (SIA) for the project.

Response: We have confirmed that Figure 1 is mislabeled, and does in fact show the isopleths based on the 5-year average of the highest (not eighth highest) modeled impacts. We apologize for not correcting the labeling in the most recent submittal. A correctly labeled figure has been prepared and is attached to this letter.

Comment: It was assumed that unit 9 is in start-up mode and units 11 and 12 are operating under normal conditions. This is not worst-case NOx emission conditions. All three units should be in start-up mode for the cumulative analysis.

Response: While simultaneous startup of all three turbines is possible, and was used to calculate worst-case 1-hour impacts, it is expected to occur infrequently. Startup of one turbine while the others are already operating at full load could occur on a daily basis. Simultaneous startup of all three turbines during the same hour will occur much less often. EPA's most recent guidance on modeling intermittent scenarios for demonstration of compliance with the 1-hour NO₂ NAAQS states: "When EPA is the reviewing authority for a permit, for the reasons described above, we will consider it acceptable to limit the emission scenarios included in the modeling compliance demonstration for the 1-hour NO₂ NAAQS to those emissions that are continuous enough or frequent enough to contribute significantly to the annual distribution of daily maximum 1-hour

¹ Email Tom Chico to Steve Hill, (September 11, 2013)

² Email Tom Chico to Steve Hill, (September 13, 2013)

³ Supplemental Ambient Air Quality Impact Analysis, submitted July 31, 2013.

concentrations. Consistent with this rationale, the language in Section 8.2.3.d of Appendix W states that “[i]t is appropriate to model nearby sources only during those times when they, by their nature, operate at the same time as the primary source(s) being modeled. While we recognize that these intermittent emission sources could operate at the same time as the primary source(s), the discussion above highlights the additional level of conservatism in the modeled impacts inherent in an assumption that they do in fact operate simultaneously and continuously with the primary source(s).”⁴

The three turbines will not, by their nature, start up simultaneously. Basing the PSD compliance demonstration on the scenario where all three turbines are in startup mode is equivalent to the assumption that all three turbines are continuously in startup mode at all times. EPA’s guidance indicates that using this scenario to assess compliance with the 1-hour NO₂ NAAQS results in an unreasonable and unintended increase in the stringency of that standard, as it applies to the project. For that reason, and following the above guidance, the simultaneous startup of all three turbines was not used in the analysis to demonstrate compliance with the 1-hour NO₂ NAAQS. That analysis assumed Unit 9 (the largest turbine) in startup mode, while the other turbines were assumed to be operating at maximum capacity.

Nevertheless, additional modeling analysis has been performed as requested by the District, using startup emission rates from all three turbines. The results of that additional analysis are presented below.

Comment: U.S. EPA developed the output option MAXDCONT specifically to demonstrate project insignificance under conditions of modeled 1-hour NO₂ exceedances within the 1-hour NO₂ SIL contour. MAXDCONT should be used to support the conclusion of project insignificance.

Comment:⁵ We conclude that your approach is more conservative than using MAXDCONT. So if in the next round of simulations your approach shows a simultaneous exceedance of the NAAQS and the SIL you should use MAXDCONT for a more refined approach.

Response: The methodology used in the previous impact analysis to demonstrate that project impact never exceeds the interim NO₂ SIL at the same time and place as the cumulative impact from background and nearby sources exceeds the NAAQS is as follows:

1. Use the AERMOD MAXIFILE option to create a file listing each and every receptor and each and every hour, where the project impacts > 7.5 µg/m³ (MAXPRP05.txt included in the enclosed modeling CD);
2. Use the AERMOD MAXIFILE option to create a file listing each and every receptor and each and every hour, where the total impacts > 188 µg/m³ (MAXALL05.txt in the enclosed modeling CD);

⁴ Tyler Fox memorandum, “Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard,” March 1, 2011.

⁵ Email Tom Chico to Steve Hill, (September 13, 2013)

3. Import data from the two output files to a worksheet (MAXPRP05.xlsx included in the enclosed modeling CD).

- a. MAXPRP05.txt data is placed in columns A through H.
 - Column A, hour of the year (Format YMMDDHH);
 - Column B, X coordinate of the receptor (UTM);
 - Column C, Y coordinate of the receptor (UTM);
 - Column D, the project impacts for that hour and receptor in $\mu\text{g}/\text{m}^3$;
 - Column E, hour of the year, truncated from Column A (Format MMDDHH)
 - Column F, X coordinates of the receptor, truncated to 4 digits (= int (column B-360000+0.5));
 - Column G, Y coordinates of the receptor, truncated to 4 digits (= int (column C- 3750000+0.5));
 - Column H, created a composite unique ID for each hour and each receptor by combining the hour ID in Column E, X coordinates in Column F, Y coordinates in column G (=Column E *100000000+ Column F *10000+ Column G), so the ID in Column H represents the unique ID for each and every hour, and each and every receptor, where the project impacts > 7.5 $\mu\text{g}/\text{m}^3$.
- b. MAX ALL05.txt data is placed in column L through T.
 - Column L, hour of the year (Format YMMDDHH);
 - Column M, X coordinates of the receptor (UTM);
 - Column N, Y coordinates of the receptor (UTM);
 - Column O, the total impacts for that hour and receptor;
 - Column P, hour of the year, truncated from Column L (Format MMDDHH);
 - Column Q, X coordinates of the receptor, truncated to 4 digits (= int (column M-360000+0.5));
 - Column R, Y coordinates of the receptor, truncated to 4 digits (= int (column N- 3750000+0.5));
 - Column S, created a composite unique ID for each hour and each receptor by combining the hour ID in Column O, X coordinates in Column P, Y coordinates in column Q (=Column P *100000000+ Column Q *10000+ Column R), so the ID in Column S represents the unique ID for each and every hour, and each and every receptor, where the total impacts > 188 $\mu\text{g}/\text{m}^3$.
 - Column T repeats the values in column O.

4. Use the Excel Vlookup function to determine whether there are any matches in Column H and Column S. A match indicates that there is a receptor and hour where both the project impact exceeds the interim SIL (Column H) AND the cumulative impact exceeds the NAAQS (Column O).

We understand that this methodology is more stringent than MAXDCONT because MAXDCONT only performs this comparison for the highest hour of each day at each receptor, whereas our method performs the comparison for every hour of the day that exceeds the NAAQS.

We have used the MAXDCONT method to evaluate the results of the additional modeling described below, as recommended by the District.

Comment: Region 9 recommends that the ExxonMobil refinery (ID 800089) in Torrance be considered in the cumulative impact assessment for the 1-hour NO₂ federal standard, in addition to what has been modeled.

The nearest emission unit at the ExxonMobil refinery is 9 km from the project's SIA. Furthermore, both the project site and the ambient monitoring site are located at approximately the same distance and in the same wind quadrant from the ExxonMobil refinery. It is therefore unclear why Region 9 requested this addition given that: a) the refinery is outside the area recommended by EPA guidance for inclusion; b) the location of the air monitor relative to the project site and the refinery means that impacts from the refinery at the project site are very well represented by ambient monitoring data; and c) the impacts from the much larger Chevron refinery, which has a tank farm that actually overlaps the project's SIA, do not result in cumulative impact that is caused or significantly contributed to by the project. Nonetheless, as requested by Region 9, the ExxonMobil refinery has been added to the modeling analysis, using the stack parameters and emission rates provided by the District for this purpose.

In addition, the CEC staff have requested⁶ that emissions from proposed new units at AES Redondo Beach be included in the cumulative analysis. AES Redondo Beach is 7.4 km from the project site, and has potential emissions of 121.5 TPY of NOx. Although we have the same concerns about adding these units to the analysis as we do about the ExxonMobil refinery, the four proposed new units at AES Redondo Beach have been added to the modeling analysis, using the stack parameters and emission rates contained in the Application for Certification.⁷

In addition to adding the ExxonMobil and AES Redondo Beach emission units to the analysis, the present analysis differs from the previous analysis in that project emissions have been calculated using startup emissions for Units 9, 11 and 12, as requested by the District. As indicated above, this is a much more conservative analysis than required by EPA guidance. MAXDCONT was used to evaluate the results for significance.

Table 1 shows the worst-case impacts from the modeled sources. Each column shows the maximum modeled impact using meteorological data from the indicated calendar year. Emissions from the Chevron combustion sources, which are distributed along, and on both sides of, the eastern edge of the project impact area, clearly dominate the results.

Table 2 shows the 98th percentile impacts for each year. These values correspond with the form of the standard (compliance with the standard is determined by the 3-year average of the annual 98th percentile of the highest daily 1-hour NO₂ concentration).

⁶ Letter from Craig Hoffman, "CEC Request for Data Set One to El Segundo," August 12, 2013, Data Request 56.

⁷ Application for Certification for Redondo Beach Energy Project (12-AFC-03) (November 20, 2012), Tables 5.1C.4 and 5.1C.5.

Table 1*
Modeling Results: Maximum 1-hour average NO₂ impacts

Combustion Sources	Maximum 1-hour Average NO ₂ Concentration, µg/m ³				
	2005	2006	2007	2008	2009
ESP Unit 9, 11 & 12	24.1	23.5	24.4	25.1	24.5
ESP Units 5 & 7	1.8	1.7	1.8	1.9	1.8
All 5 ESP units	24.4	23.6	24.67	25.2	24.8
Chevron	691.1	546.5	688.4	523.3	709.8
LADWP Scattergood	5.7	5.6	5.7	5.7	5.9
AES Redondo Beach	2.2	2.2	2.2	2.2	2.2
Background [†]	109.6	109.6	109.6	109.6	109.6
All sources + Background [†]	753.1	619.7	750.5	618.9	771.8

NOTES:

*Table 1 shows the maximum result in the project impact area for each individual category of combustion source for each calendar year of meteorological data. The maximum impacts from all sources do not occur at the same place and time. As a result, the maximum overall impacts ("All Sources + Background") are less than the sum of individual maximum impacts.

[†]The background concentration for each hour is based on a seasonal daily profile provided by the District. Each hour of the profile is the 3rd highest measured value for that clock hour and season. The background concentration was not adjusted to account for the modeled impact of existing sources (i.e., Chevron) at the monitoring site.

Table 2*
Modeling Results: 8th-Highest Daily Maximum Hourly NO₂ impacts

Combustion Sources	Maximum 1-hour Average NO ₂ Concentration, µg/m ³				
	2005	2006	2007	2008	2009
ESP Unit 9, 11 & 12	22.9	22.5	22.9	22.8	23.1
ESP Units 5 & 7	1.7	1.6	1.6	1.6	1.6
All 5 ESP units	23.2	22.8	23.2	23.2	23.4
Chevron	521.1	518.4	520.7	521.0	524.3
LADWP Scattergood	5.3	5.2	5.1	5.4	4.8
AES Redondo Beach	2.0	2.1	2.0	2.1	2.0
Background [†]	109.6	109.6	109.6	109.6	109.6
All sources + Background [†]	608.9	607.5	609.1	608.1	614.5

*Table 2 shows the maximum result in the project impact area for each individual category of combustion source for each calendar year of meteorological data. The maximum impacts from all sources do not occur at the same place and time. As a result, the maximum overall impacts ("All Sources + Background") are less than the sum of individual maximum impacts.

[†]The background concentration for each hour is based on a seasonal daily profile provided by the District. Each hour of the profile is the 3rd highest measured value for that clock hour and season. The background concentration was not adjusted to account for the modeled impact of existing sources (i.e., Chevron) at the monitoring site.

Table 2 shows total potential impacts well above the standard of $188 \mu\text{g}/\text{m}^3$. Violations of the standard⁸ are conservatively predicted, even though all of the Chevron emission sources are existing and no violations of the 1-hour NO₂ NAAQS have ever been recorded at the nearby LAX monitoring station.

A project's impact causes or contributes to an exceedance of the standard if, at the time and place of the exceedance, the project's impact is above the Significant Impact Level.⁹ In order to determine whether project impacts cause or contribute to an exceedance of the standard, EPA's output utility MAXDCONT was used. MAXDCONT indicates that the highest project contribution to an exceedance of the 1-hour NO₂ NAAQS is $3.4 \mu\text{g}/\text{m}^3$, which is less than the interim SIL of $7.5 \mu\text{g}/\text{m}^3$. Consequently, the proposed project will not cause, or contribute significantly, to a violation of the 1-hour NO₂ standard.

Summary

The compliance demonstration that was previously submitted demonstrated that the project would not cause or contribute significantly to a violation of the 1-hour NO₂ NAAQS. At the request of District and CEC staff, additional modeling has been performed. The additional modeling added the ExxonMobil refinery and four proposed units at AES Redondo Beach to the cumulative modeling, with essentially no effect on the results; further, the additional modeling assumed simultaneous startup of all three El Segundo turbines, which results in an unreasonable and unintended increase in the stringency of the applicable standard. Nevertheless, using EPA's MAXDCONT procedure to assess impacts, the new analysis also indicates that the project does not cause or contribute significantly to a violation of the 1-hour NO₂ NAAQS.

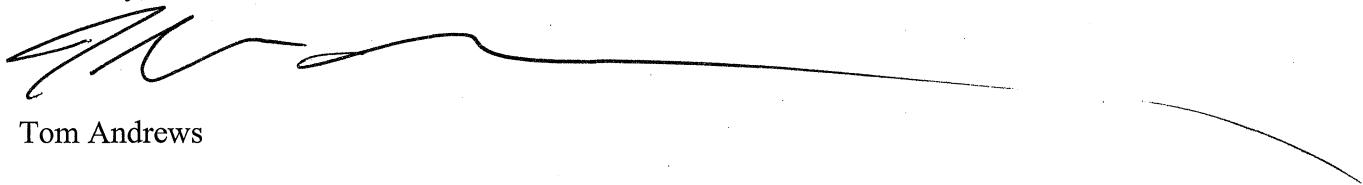
⁸ The 1-hour NO₂ NAAQS is statistically based. A violation occurs when the 3-year average of the 98th percentile of the highest daily 1-hour average (eighth highest maximum daily 1-hour value, for a full data set) is above the $188 \mu\text{g}/\text{m}^3$ standard.

⁹ 75 FR 64891. "Accordingly, a source that demonstrates that the projected ambient impact of its proposed emissions increase does not exceed the SIL for that pollutant at a location where a NAAQS or increment violation occurs is not considered to cause or contribute to that violation."

November 7, 2013

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,



Tom Andrews

cc: Tom Chico, AQMD
Jillian Baker, AQMD
Craig Hoffman, CEC Project Manager
George Piantka, NRG
Ken Riesz, NRG
Steve Odabashian, NRG
Cleveland Holladay, EPA Region 9

Figure 1
Project 1-Hour NO₂ Impact Above the SIL

