

DOCKETED

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Project Title:	Huntington Beach Energy Project
TN #:	200362
Document Title:	AES Huntington Beach Response to SCAQMD's June 7, 2013 Data Request
Description:	N/A
Filer:	Tiffani Winter
Organization:	AES Southland Development, LLC
Submitter Role:	Applicant
Submission Date:	8/28/2013 11:17:21 AM
Docketed Date:	8/28/2013



AES Huntington Beach, LLC
21730 Newland Street
Huntington Beach, CA 92646

tel 562 493 7891
fax 562 493 7320

August 26, 2013

Mr. Mohsen Nazemi, P.E.
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Subject: Huntington Beach Energy Project Permit Application (Facility ID# 115389)

Dear Mr. Nazemi:

AES Huntington Beach, LLC (AES) is submitting this letter in response to the South Coast Air Quality Management District's (SCAQMD) June 7, 2013 request for a cumulative 1-hour nitrogen dioxide (NO₂) national ambient air quality impact assessment and a revised Class II visibility impact area analysis for the Huntington Beach Energy Project (HBEP). This letter presents AES's responses to the requested information.

1) Cumulative 1-hour NO₂ National Ambient Air Quality Impact Assessment

Response: Table SCAQMD-1 presents a summary of the predicted hourly and annual NO₂ impacts from HBEP operation as well as a comparison to the Class II Significant Impact Levels (SILs), Class II Prevention of Significant Deterioration (PSD) Increment Standards, and the significant monitoring concentration levels. The dispersion modeling was performed consistent with the HBEP dispersion modeling protocol and addendum, with the SCAQMD's comments of August 9, 2013 incorporated. As shown, the maximum predicted annual NO₂ impacts from HBEP operation are below the Class II SIL, PSD Class II Increment Standard, and significant monitoring concentration. Therefore, additional analysis of annual impacts is not required. However, the maximum predicted 1-hour NO₂ impacts from HBEP operation exceed the Class II SIL, with a radius of impact with predicted concentrations greater than 7.52 micrograms per cubic meter (µg/m³) of 2.7 kilometers (km). Therefore, the cumulative impacts of the HBEP and competing sources were assessed for all receptors where HBEP impacts alone exceeded the 1-hour NO₂ SIL.

TABLE SCAQMD-1
HBEP Predicted Impacts Compared to the PSD Air Quality Impact Standards

Averaging Period/ Pollutant	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$) ^a	Significant Impact Level ($\mu\text{g}/\text{m}^3$)	PSD Class II Increment Standard ($\mu\text{g}/\text{m}^3$)	Significant Monitoring Concentration ($\mu\text{g}/\text{m}^3$)
NO ₂ (1-hour)	56.1	7.52 ^b	N/A	N/A
NO ₂ (Annual)	0.34	1.0	25	14

^a The maximum 1-hour and annual NO₂ concentrations include ambient NO₂ ratios of 0.80 (U.S. Environmental Protection Agency [EPA], 2011) and 0.75 (EPA, 2005), respectively.

^b The SIL for 1-hour NO₂ is based on SCAQMD correspondence.

N/A = Not Applicable (i.e., no standard)

The SCAQMD identified three facilities within 10 km of HBEP for inclusion in the cumulative impact assessment:

- Orange County Sanitation District (Facility ID 29110): located in Huntington Beach, California with seven emission sources
- Orange County Sanitation District (Facility ID 17301): located in Fountain Valley, California with five emission sources
- Beta Offshore (Facility ID 166903): located in Huntington Beach, California with 21 emission sources

The stack locations, stack parameters, and 1-hour NO₂ emission rates for the emission sources at these three facilities were provided by the SCAQMD as part of a public records request. Attachment 1 includes the completeness letter(s) and/or correspondence for the relevant public records request(s).

In addition to the above facilities, the SCAQMD also requested that emissions from shipping lane activity off the California coast be included in the cumulative impact assessment. The SCAQMD provided the relevant locations, source parameters, and 1-hour NO₂ emission rates for the shipping lane activity; Attachment 2 includes a copy of the SCAQMD correspondence. Emission rates and stack parameters for the existing Huntington Beach Generating Station's Units 1 and 2 boilers, also requested for inclusion as a competing source by SCAQMD staff, were based on permitted oxides of nitrogen (NO_x) concentrations and the most recently available stack test data, respectively. The inclusion of existing Huntington Beach Generation Station's Units 1 and 2 boilers is highly conservative since these units will be retired after HBEP Block 2 commences commercial operation. Furthermore, the HBEP electrical interconnection at the Southern California Edison switchyard is limited to a maximum of 939 megawatts, which would be exceeded by operation of the HBEP (939 megawatts) and the Huntington Beach Generating Station's Units 1 and 2 boilers (430 megawatts).

The cumulative impacts of the HBEP and competing sources were assessed for all receptors where HBEP impacts alone exceeded the 1-hour NO₂ SIL. Table SCAQMD-2 presents a summary of the maximum predicted cumulative 1-hour NO₂ impacts from HBEP operation and competing sources as well as a

comparison to the National Ambient Air Quality Standards (NAAQS). As shown in Table SCAQMD-2, the predicted HBEP cumulative impacts, including a representative background NO₂ concentration, are below the NAAQS.

TABLE SCAQMD-2
HBEP and Competing Source Predicted 1-hour NO₂ Impacts Compared to the NAAQS

Pollutant	Averaging Time	Total Predicted Concentration (µg/m ³) ^a	Federal Standard (µg/m ³)
NO ₂	1-hour	177	188

^a Total predicted concentration for the Federal 1-hour NO₂ standard is the maximum modeled concentration paired with the three-year average of 98th percentile seasonal hour-of-day background concentrations, as provided by the SCAQMD.

A summary of the dispersion modeling input files for this analysis, as well as the modeling parameters used, are presented in Attachment 3. The AERMOD input and output files have been separately prepared and are included with this submission on compact disc.

References

U.S. Environmental Protection Agency (EPA). 2005. *Guideline on Air Quality Models*, 40 Code of Federal Regulations 51, Appendix W. November.

U.S. Environmental Protection Agency (EPA). 2011. *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-Hour NO₂ National Ambient Air Quality Standard*. EPA Office of Air Quality Planning and Standards. March 1.

2) Revised Class II Visibility Impact Area Analysis

Response: As requested, a visibility analysis for Class II areas within 50 km of HBEP was performed using the VISCREEN plume modeling program per the procedures outlined in the *Workbook for Plume Visual Impact Screening and Analysis* (EPA, 1992), as further described in Attachment 4. Please note that Tier I and II assessments were conducted using criteria for Class I areas, as no criteria exist for Class II areas. Therefore, the visibility assessment was conducted using overly conservative assumptions for Class II areas. However, even using the conservative approach, the modeled results from the visual assessment demonstrates that HBEP would not adversely affect visibility at nearby Class II Areas.

Table SCAQMD-3 summarizes the VISCREEN Tier I modeled results for each Class II area evaluated.¹ The maximum modeled values for color difference and contrast are presented for inside the area analyzed, regardless of the VISCREEN modeled lines of sight for the observer.

¹ SCAQMD staff approved the Class II areas for evaluation via e-mail on June 20, 2013.

TABLE SCAQMD-3
HBEP Tier I VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Variable	Sky	Terrain	Criteria ^a
Crystal Cove State Park	12.5	18.4	Color Difference	3.961	7.476	2.0
			Contrast	-0.041	0.042	0.05
Water Canyon State Park	33.6	42.9	Color Difference	1.732	2.326	2.0
			Contrast	-0.018	0.021	0.05
Chino Hills State Park	35.8	41.6	Color Difference	1.437	1.612	2.0
			Contrast	-0.015	0.017	0.05
San Mateo Canyon Wilderness Area	44.3	57.6	Color Difference	1.083	1.564	2.0
			Contrast	0.011	0.015	0.05

Bold values exceed the Class I significant impact criterion.

^a Levels of concern for Class I areas were used because no specific requirements or criteria exist for assessing Class II visibility impacts (Federal Land Managers [FLM], 2010).

As shown in Table SCAQMD-3, the results of the Tier I assessment demonstrate that the proposed HBEP would be below the significance criterion for both color difference and contrast at Chino Hills State Park and San Mateo Wilderness Area. The Tier I assessment did, however, exceed the criterion for color difference at Crystal Cove State Park and Water Canyon State Park. As a result, a Tier II assessment was performed for the Crystal Cove State Park and Water Canyon State Park. The Tier II assessment results are summarized in Table SCAQMD-4.

TABLE SCAQMD-4
HBEP Tier II VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Wind Speed ^a	Stability ^a	Variable	Sky	Terrain	Criteria ^b
Crystal Cove State Park	12.5	18.4	4	D	Color Difference	0.319	0.687	2.0
					Contrast	0.003	0.004	0.05
Water Canyon State Park	33.6	42.9	1	E	Color Difference	0.924	1.274	2.0
					Contrast	0.009	0.011	0.05

^a The Joint Frequency Distribution table used to calculate the wind speed and stability for the Tier II assessment is presented in Attachment 4.

^b Levels of concern for Class I areas were used because no specific requirements or criteria exist for assessing Class II visibility impacts (FLM, 2010).

The VISCREEN Tier II assessment for Crystal Cove State Park and Water Canyon State Park did not exceed the criterion for color difference or contrast. As the modeled results are below the conservative Class I area criterion for both color difference and contrast, HBEP would not adversely affect visibility at nearby Class II

Mr. Mohsen Nazemi, P.E.

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areas. The VISCREEN input and output files, as well as the meteorological data used in this analysis, have been separately prepared and are included with this submission on compact disc.


References

Federal Land Managers (FLM). 2010. *Federal Land Managers' Air Quality Related Values Workgroup (FLAG) Phase I Report – Revised (2010)*. October.

U.S. Environmental Protection Agency (EPA). 1992. *Workbook for Plume Visual Impact Screening and Analysis (EPA-454/R-92-023)*. October.

If you require further information, please don't hesitate contacting me at 562-493-7840.

Sincerely,

A handwritten signature in blue ink, appearing to read "S O'Kane". The signature is stylized and cursive.

Stephen O'Kane

Manager

AES Huntington Beach, LLC

Attachments

cc: Robert Mason/CH2M HILL
Jennifer Didlo/AES
Melissa Foster/Stoel Rives
Jerry Salamy/CH2M HILL
Felicia Miller/CEC
Tom Chico/SCAQMD

Attachment 1
Huntington Beach Energy Project Public Records
Request

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

October 25, 2012

BETH STORELLI
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref.: CONTROL NO. 70234
Received 10/5/2012

Re: COMPLETE ENGRG FILES FOR FACILITY ID. 29110, ORANGE COUNTY
SANITATION DISTRICT, 22212 BROOKHURST ST., HUNTINGTON BEACH, CA.

After a thorough search of this agency's records, the following records were found:

The following records were not found:

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 10/25/2012

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m. to 4:30 p.m.**

Sincerely,

MARIA RUBIO x2311
For Colleen Paine
Public Records Coordinator

:mr

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

April 25, 2013

BETH STORELLI
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref.: CONTROL NO. 72461
Received 4/18/2013

Re: APPL'S, P/O'S & TITLE V P/O FOR ORNAGE COUNTY SANITATION DISTRICT,
22212 BROOKHURST STREET, HUNTINGTON BEACH, CA 92646.

After a thorough search of this agency's records, the following records were found:
APPL'S, P/O'S & TITLE V P/O FOR ORNAGE COUNTY SANITATION DISTRICT, 22212
BROOKHURST STREET, HUNTINGTON BEACH, CA 92646.

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 04/25/2013

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m. to 4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Colleen Paine
Public Records Coordinator

:lr

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

November 02, 2012

BETH STORELLI
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref: CONTROL NO. 70232
Received 10/5/2012

Re: COMPLETE ENGRG FILES FOR FACILITY ID. 17301, ORANGE COUNTY
SANITATION DISTRICT, 10844 ELLIS AVE., FOUNTAIN VALLEY, CA.

After a thorough search of this agency's records, the following records were found:
COMPLETE ENGRG FILES FOR FACILITY ID. 17301, ORANGE COUNTY SANITATION
DISTRICT, 10844 ELLIS AVE., FOUNTAIN VALLEY, CA.

The following records were not found:

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 11/02/2012

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m. to 4:30 p.m.**

Sincerely,

MARIA RUBIO x2311
For Colleen Paine
Public Records Coordinator

:mr

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

April 25, 2013

BETH STORELLI
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref.: CONTROL NO. 72460
Received 4/18/2013

Re: APPL'S, P/O'S & TITLE V P/O FOR ORANGE COUNTY SANITATION DISTRICT,
10844 ELLIS AVE, FOUNTAIN FALLEY, CA 92708.

After a thorough search of this agency's records, the following records were found:
APPL'S, P/O'S & TITLE V P/O FOR ORANGE COUNTY SANITATION DISTRICT, 10844
ELLIS AVE, FOUNTAIN FALLEY, CA 92708.

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 04/25/2013

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00
a.m. to 4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Colleen Paine
Public Records Coordinator

:lr

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

April 10, 2013

BETH STORELLI
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref.: CONTROL NO. 70236
Received 10/5/2012

Re: COMPLETE ENGRG FILES FOR FACILITY ID. 166073, BETA OFFSHORE, OCS
LEASE PARCELS, HUNTINGTON BEACH, CA.

After a thorough search of this agency's records, the following records were found:
COMPLETE ENGRG FILES FOR FACILITY ID. 166073, BETA OFFSHORE, OCS LEASE
PARCELS, HUNTINGTON BEACH, CA.

The following records were not found:

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 04/10/2013

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00
a.m. to 4:30 p.m.**

Sincerely,

MARIA RUBIO x2311
For Colleen Paine
Public Records Coordinator

:mr

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 03, 2013

BETH SMOKER
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref.: CONTROL NO. 73257
Received 7/3/2013

Re: COMPLETE ENGINEERING APPLICATION FILE FOR AERA ENERGY LLC (A/N
516038, 516039 & 516040).

After a thorough search of this agency's records, the following records were found:
COMPLETE ENGINEERING APPLICATION FILES FOR AERA ENERGY LLC
(PREVIOUS A/N'S FOR 516038, 516039 & 516040).

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 07/03/2013

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m. to 4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Colleen Paine
Public Records Coordinator

:lr

Engel, Elyse/SJC

From: Lisa Ramos [lramos1@aqmd.gov]
Sent: Thursday, July 25, 2013 9:23 AM
To: Smoker, Beth/SAC
Cc: OB PR Support Docs
Subject: #73377,

BETH SMOKER
CONTROL 73377

I HAVE ATTACHED THE AVAILABLE REQUESTED INFORMATION TO THE LINK BELOW.

http://onbase-pub.aqmd.gov/AppNet/FolderPop/FolderPop.aspx?KT275_0_0_0=73377&FT=111&clienttype=html



Lisa Ramos
Public Records Unit
909.396.3211

Attachment 2
Huntington Beach Energy Project SCAQMD
Correspondence Related to Shipping Lanes

Engel, Elyse/SJC

From: Frohning, John/SEA
Sent: Friday, August 09, 2013 3:50 PM
To: Engel, Elyse/SJC
Subject: FW: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums
Attachments: OGV_AES_HB.xlsx

From: Jillian Baker [mailto:jbaker@aqmd.gov]
Sent: Friday, June 14, 2013 4:40 PM
To: Stephen O'Kane; Frohning, John/SEA
Cc: Tom Chico; Chris Perri; Vicky Lee; John Yee; Andrew Lee; Salmay, Jerry/SAC
Subject: RE: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums

Hi Stephen,

Attached is an Excel spreadsheet with the shipping lane information. As I mentioned earlier, this is the draft methodology we proposed to EPA and have not yet received approval, so this information is subject to change.

Based on your public records request for the AB2588 files, we are working on putting together a spreadsheet with the relevant stack parameters and PTE emission rates for the Exxon-Mobil refinery. You should get that information by next Friday through our public records dept. Please remember that until we get approval from EPA, the facilities we talked about for the cumulative modeling are also subject to change.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: Stephen O'Kane [mailto:stephen.okane@AES.com]
Sent: Friday, June 14, 2013 3:54 PM
To: Jillian Baker; John.Frohning@CH2M.com
Cc: Tom Chico; Chris Perri; Vicky Lee; John Yee; Andrew Lee; Jerry.Salmay@CH2M.com
Subject: RE: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums

I think we would like to get it now and continue to seek some sort of approval or acknowledgement from Region 9 in the meantime.

More important to us right now is the HARP modeling inputs for the Exxon-Mobil refinery. We've received the permit information from this facility but really need the AB2588 source parameters. Can you give us any ETA on that data?

Thanks

Stephen O'Kane

From: Jillian Baker [mailto:jbaker@aqmd.gov]
Sent: Friday, June 14, 2013 3:50 PM
To: Stephen O'Kane; John.Frohning@CH2M.com

Cc: Tom Chico; Chris Perri; Vicky Lee; John Yee; Andrew Lee; Jerry.Salamy@CH2M.com
Subject: RE: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums

Hi Stephen,

As a follow-up to my email, I wanted to let you know that I have the shipping lane information available, however, my approach (the source characterization and how the sources are to be modeled in AERMOD) has not yet been approved by EPA Region 9. Without their approval, I cannot guarantee that the shipping lane information will not change in the future. Please let me know if you would like to have this information now or would like to wait till we get our approval from EPA.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: Jillian Baker
Sent: Friday, May 31, 2013 5:22 PM
To: 'Stephen O'Kane'; John.Frohning@CH2M.com
Cc: Tom Chico; Chris Perri; Vicky Lee; John Yee; Andrew Lee; Jerry.Salamy@CH2M.com
Subject: RE: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums

Hi Stephen,

I will be able to provide the shipping information within the next 2 weeks. However, for the facility information, it is my understanding that you will need to submit a public records request for that. We discussed the procedure on the conference call on 4/5/13 and I believe that John Frohning has requested the information and is in the process of collecting it. Once you have put together the information, you can send it to me in an email and I will review and let you know if the information is correct.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: Stephen O'Kane [<mailto:stephen.okane@AES.com>]
Sent: Friday, May 31, 2013 3:09 PM
To: Jillian Baker; John.Frohning@CH2M.com
Cc: Tom Chico; Chris Perri; Vicky Lee; John Yee; Andrew Lee; Jerry.Salamy@CH2M.com
Subject: RE: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums

Thank you Jillian. Please let us know your ETA for providing the appropriate modeling emissions data and source parameters for the following:

AES Redondo Beach:
ExxonMobil (ID#800089)

AES Huntington Beach
Orange County Sanitation District (ID#29110) and Beta offshore (ID#166073) and Shipping lane activity off the coast (AQMD to provide you with the UTM coordinates, modeling parameters, and emission rates to be used)

Your attention to this matter is appreciated.

From: Jillian Baker [<mailto:jbaker@aqmd.gov>]
Sent: Friday, May 31, 2013 2:55 PM
To: John.Frohning@CH2M.com; Stephen O'Kane
Cc: Tom Chico; Chris Perri; Vicky Lee; John Yee; Andrew Lee
Subject: Written Comments on AES Huntington Beach and AES Redondo Beach Modeling Protocol Addendums

Hi John and Stephen,

Here are our written comments on the Modeling Protocol Addendums you provided for the two AES projects. These modeling protocol addendums are for modeling related to the 1-hour NO₂ cumulative impact assessment, which is triggered because the project's NO₂ emissions exceed the SIL of 7.52 µg/m³.

AES Huntington Beach – Modeling Protocol Addendum (dated March 22, 2013)

- These comments (except for the last item) were discussed on our conference call on 4/5/13.
- When using PVMRM to calculate the conversion of NO_x to NO₂, an ambient ratio of 0.9 will have to be used. If you would like to use any other ratio, then justification needs to be provided as to the validity of that ratio.
- We will provide you with the background NO₂ concentrations to use. (This was provided to you on 4/16/13)
- For the cumulative impact assessment, facilities within a 10-km radius will have to be considered.
- An analysis of the visibility impacts to Class II areas using VISCREEN needs to be provided. We suggested looking at the LADWP Scattergood comment letter and the response provided as a guide to what EPA is looking for. For example, looking at a state or regional park and using the IMPROVE network suggested visual range in the analysis.
- We will continue to work with you to narrow down the facilities which need to be included. We have proposed an approach to EPA and are waiting for their approval. This preliminary approach includes:
 - Two facilities to be included in the cumulative analysis - Orange County Sanitation District (ID#29110) and Beta offshore (ID#166073)
 - Shipping lane activity off the coast (I will provide you with the UTM coordinates, modeling parameters, and emission rates to be used)
 - The existing operations occurring at AES HB will be included unless that equipment will be removed and not operational when the new equipment becomes operational.
 - As soon as EPA approves this approach, we will let you know.

AES Redondo Beach – Modeling Protocol Addendum (dated May 9, 2013)

- An analysis of the visibility impacts to Class II areas using VISCREEN needs to be provided. We suggested looking at the LADWP Scattergood comment letter and the response provided as a guide to what EPA is looking for. For example, looking at a state or regional park and using the IMPROVE network suggested visual range in the analysis.
- We will continue to work with you to narrow down the facilities which need to be included. We have proposed an approach to EPA and are waiting for their approval. This preliminary approach includes:
 - One facility to be included in the cumulative analysis – ExxonMobil (ID#800089).
 - The existing operations occurring at AES RB will be included unless that equipment will be removed and not operational when the new equipment becomes operational.
 - As soon as EPA approves this approach, we will let you know.

Please let me know if you have any questions.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,

Diamond Bar, CA 91765

Direct: 909.396.3176

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Attachment 3
Huntington Beach Energy Project Cumulative
Impact Assessment

Huntington Beach Energy Project
Attachment 3 Table 1
Cumulative Modeling Parameters - Stack Parameters
August 2013

Point Sources

Facility	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
HBEP	Stack 1	409185	3723252	3.7	36.6	461	15.4	5.49
	Stack 2	409216	3723231	3.7	36.6	461	15.4	5.49
	Stack 3	409245	3723210	3.7	36.6	461	15.4	5.49
	Stack 4	409522	3723157	3.7	36.6	461	15.4	5.49
	Stack 5	409522	3723194	3.7	36.6	461	15.4	5.49
	Stack 6	409522	3723230	3.7	36.6	461	15.4	5.49
HBGS	Boilers 1 & 2	409274	3723095	3.7	61.0	367	7.9	6.27
Beta Offshore	Beta Rig Engines	395264	3716523	0.0	20.8	783	71.4	0.20
	Beta Crane Engines	395264	3716523	0.0	20.8	700	33.8	0.18
	Beta Saturn Turbines	395264	3716523	0.0	20.8	722	0.8	0.59
	Beta Centaur Turbines	395264	3716523	0.0	28.3	405	25.2	1.00
	Beta Flare	395264	3716523	0.0	29.0	1273	20.0	1.69
OC Sanitation - FV	OCsFV ICE	412725	3728250	7.7	18.9	533	17.9	0.76
	OCSFV Boilers	412725	3728250	7.7	12.8	455	9.3	0.46
OC Sanitation - HB	OCSHB ICE	411100	3722400	1.6	18.0	589	22.9	0.76
	OCSHB Boilers	411100	3722400	1.6	12.8	455	9.3	0.46

Volume Sources

Facility	Source ID	Base Elevation (m)	Stack Height (m)	Initial Horizontal Dimension (m)	Initial Vertical Dimension (m)
Shipping Lanes (525 sources)	734601-774425	0.0	0.0	186.0	23.3

Huntington Beach Energy Project
 Attachment 3 Table 2
 Cumulative Modeling Parameters - Emission Rates
 August 2013

Facility	Source ID	1-hr NO ₂	
		(g/s)	(lb/hr)
HBEP	Stack 1	3.21	25.5
	Stack 2	3.21	25.5
	Stack 3	3.21	25.5
	Stack 4	3.21	25.5
	Stack 5	3.21	25.5
	Stack 6	3.21	25.5
HBGS	Boilers 1 & 2	4.32	34.3
Beta Offshore	Beta Rig Engines	11.4	90.2
	Beta Crane Engines	0.19	1.49
	Beta Saturn Turbines	1.02	8.11
	Beta Centaur Turbines	7.45	59.1
	Beta Flare	7.53	59.8
OC Sanitation - FV	OCSFV ICE	2.90	23.0
	OCSFV Boilers	0.028	0.22
OC Sanitation - HB	OCSHB ICE	5.37	42.6
	OCSHB Boilers	0.11	0.88
Shipping Lanes (525 sources)	734601-774425	25.5	202.2

Huntington Beach Energy Project
 Attachment 3 Table 3
 Cumulative Modeling Results Summary
 August 2013

Source Group	Year	1-hr NO ₂ Concentrations
ALL	2008	174
	2009	177
	2010	175
	2011	176
	2012	176
HBEP	2008	44.4
	2009	37.5
	2010	45.8
	2011	45.5
	2012	43.4
HBGS	2008	10.3
	2009	11.3
	2010	37.8
	2011	11.6
	2012	9.68
Beta Offshore	2008	20.2
	2009	20.3
	2010	20.3
	2011	20.2
	2012	20.4
OC Sanitation - FV	2008	7.30
	2009	7.40
	2010	7.32
	2011	7.34
	2012	7.32
OC Sanitation - HB	2008	85.4
	2009	84.2
	2010	83.1
	2011	86.4
	2012	85.2
Shipping Lanes	2008	3.15
	2009	3.16
	2010	3.16
	2011	3.18
	2012	3.17

^a The maximum 1-hour NO₂ concentrations include ambient NO₂ ratios of 0.80.
^b Total predicted concentration for the Federal 1-hour NO₂ standard (source ALL) is the maximum modeled concentration paired with the three-year average of 98th percentile seasonal hourly background concentrations, as provided by the SCAQMD.

Attachment 4
Huntington Beach Energy Project Class II
Visibility Assessment

AES Huntington Beach Energy Project Class II Visibility Assessment

PREPARED FOR: AES Huntington Beach, LLC

COPY TO: CH2M HILL Project Folder

PREPARED BY: John Frohning/CH2M HILL

DATE: August 26, 2013

AES Huntington Beach, LLC (AES) owns and operates the Huntington Beach Generating Station located in Huntington Beach, California and is proposing to replace the existing power boilers with more efficient natural gas-fired combustion turbines in a combined cycle configuration. The proposed Huntington Beach Energy Project (HBEP) would be one of the 28 major source categories defined in Title 40 of the Code of Federal Regulations (CFR), Section 51.166, and the modification would trigger Prevention of Significant Deterioration (PSD) permitting requirements.

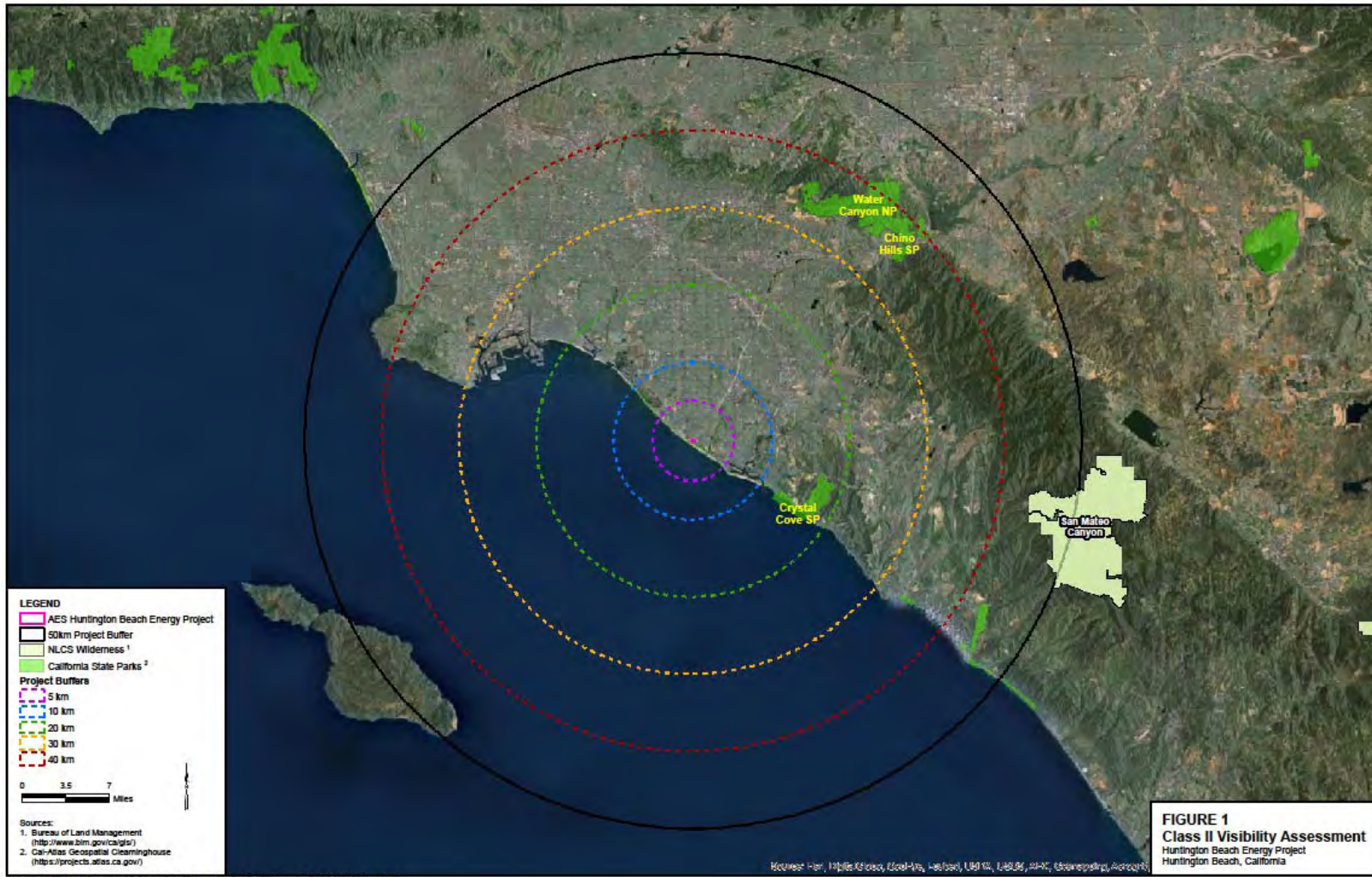
The South Coast Air Quality Management District (SCAQMD) is a responsible agency with regards to the permitting of HBEP. In addition to the information needed to satisfy the requirements for a complete PSD permit application, the SCAQMD has requested an analysis of the project's impacts on visibility for nearby Class II areas. This memorandum outlines the HBEP visibility analysis approach and results at the Class II areas of concern identified through consultation with SCAQMD.

Class II Areas of Concern

A survey of California State Parks and Wilderness areas designated as Class II areas was conducted within 50-km of HBEP. The results of this survey were summarized presented to the SCAQMD staff for review and approval. The Class II areas identified and approved by the SCAQMD for inclusion in the Class II visibility analysis are presented in Table 1 below and shown on Figure 1.

TABLE 1		
Class II Areas within 50-km of HBEP		
Class II Area	Nearest Distance	Furthest Distance
Crystal Cove State Park	12.5	18.4
Water Canyon State Park	33.6	42.9
Chino Hills State Park	35.8	41.6
San Mateo Canyon Wilderness Area	44.3	57.6

FIGURE 1
 Class II Areas within 50-km of HBEP



Visibility Assessment Approach

No specific requirements or criteria exist in the PSD regulations for assessing Class II visibility impacts. Therefore, the general approach used to assess visibility impacts of Class I areas within 50-km of a PSD project site were used.

The *Federal Land Managers' Air Quality Related Values Workgroup (FLAG) Phase I Report – Revised (2010)* (Federal Land Managers [FLM], 2010) guidance document for addressing Class I areas initially recommends the use of the U.S Environmental Protection Agency's (EPA) VISCREEN screening model to assess the change in color difference (ΔE) and contrast between the facility's plume and the viewing background. The VISCREEN screening model can use a tiered approach to determine if the facility's emissions would impact visibility at a nearby Class I area. If the VISCREEN Tier I and Tier II screening assessment demonstrate that visibility could be impacted at the Class I area, then the PLUVUE II model is recommended for a Tier III assessment. The PLUVUE II model differs from the VISCREEN screening model as VISCREEN uses a single representative worst-case meteorological condition to determine the facility's potential impacts on visibility while PLUVUE II considers a realistic array of all conditions that would be expected to occur in a typical year in the region. Procedures outlined in the *Workbook for Plume Visual Impact Screening and Analysis* (EPA, 1992) were followed to conduct a visibility assessment with VISCREEN at the nearby Class II areas.

The VISCREEN screening model was developed to present a visual effect evaluation of emissions from a source as observed from a given vantage point on either a sky or terrain background. Emissions input into the model are assumed to travel along an infinitely long, straight line toward the specified area of concern. As mentioned above, the VISCREEN screening model allows for the use of a tiered approach to assess a proposed source's impacts on visibility. A Tier I assessment utilizes conservative assumptions for both plume characteristics and dispersion conditions to determine if the plume would have an impact on visibility. If a Tier I assessment exceeds the FLAG guidance levels of concern for Class I areas of 2.0 for ΔE and 0.05 for contrast, then a Tier II assessment would be conducted. A Tier II assessment provides a more realistic representation of the possible worst-case meteorology and plume transport for a specific area to be analyzed.

Background visual ranges for the Class II areas presented in Table 1 were selected from the Interagency Monitoring of Protected Visual Environments (IMPROVE) annual average background visual range map. These data are provided on the IMPROVE website¹. The average of the annual upper and lower bounds of the background visual range for the identified Class II areas was used for the analysis.

For HBEP, if a VISCREEN Tier I assessment exceeded the conservative criteria for Class I areas for either ΔE or contrast, a Tier II assessment utilized the SCAQMD meteorological dataset for the Costa Mesa monitoring station² for determining representative worst-case single combinations of wind speed, wind direction, and atmospheric stability for each Class II area above the criteria. The Costa Mesa monitoring station pre-processed meteorological data are for a single year; the station was located approximately 6-km directly northeast of the HBEP. The SCAQMD pre-processed Costa Mesa data for the Industrial Source Complex (ISC) modeling system contain the required parameters of wind speed, wind direction, and stability class to create the joint frequency distributions³. These meteorological data would be considered representative for creating the joint frequency tables for determining the conservative representative worst-case single wind speed and stability class required for a Class I area VISCREEN assessment. Therefore, the meteorological data would be representative of the Class II area VISCREEN assessment. Additionally, considering that worst-case visibility impacts would occur during daylight hours, the joint frequency distribution only considered daylight hours. Daylight hours were conservatively considered to be between the hours of 6:00 a.m. and 8:00 p.m., which correspond to the sunrise and sunset times

¹ <http://www2.nature.nps.gov/air/monitoring/vismonresults.cfm>. Accessed June 15, 2013.

² Data obtained from http://www.aqmd.gov/smog/metdata/ISCST3_Table1.html. Accessed June 17, 2013.

³ Meteorological data processed for ISC is preferred to create the joint frequency distribution tables for a Tier II VISCREEN assessment since the data contain Pasquill-Gifford Stability Classes. Meteorological data pre-processed for AERMOD do not contain the Pasquill-Gifford stability parameters.

for the summer solstice. The meteorological data joint frequency distribution of these parameters for each Class II area requiring a Tier II assessment is provided in Attachment A.

Since the annual average background visual ranges for each Class II area was used, the annual average HBEP emissions in tons per year (tpy) were used for oxides of nitrogen (NOx) and total particulate matter (PM). The assessment conservatively assumes only the project increases in emissions from HBEP would be modeled and would not consider any contemporaneous decreases of these pollutants from removal of the existing Huntington Beach Generating Station Units 1 and 2 boilers. The HBEP potential to emit are 242.3 tpy of NOx and 99.3 tpy of PM.

Visibility Assessment Results

Following the approach above, Table 2 summarizes the VISCREEN Tier I modeled results for each Class II area shown in Table 1. The maximum modeled values for ΔE and contrast are presented for inside the area analyzed, regardless of the VISCREEN modeled lines of sight for the observer.

TABLE 2

Tier I VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Variable	Sky	Terrain	Criteria
Crystal Cove State Park	12.5	18.4	Delta E	3.961	7.476	2.0
			Contrast	-0.041	0.042	0.05
Water Canyon State Park	33.6	42.9	Delta E	1.732	2.326	2.0
			Contrast	-0.018	0.021	0.05
Chino Hills State Park	35.8	41.6	Delta E	1.437	1.612	2.0
			Contrast	-0.015	0.017	0.05
San Mateo Canyon Wilderness Area	44.3	57.6	Delta E	1.083	1.564	2.0
			Contrast	0.011	0.015	0.05

Bold Values exceed the Class I significant impact criteria.

As shown in Table 2, the results of the Tier I assessment demonstrate that the proposed HBEP would be below the significance criteria for both ΔE and contrast at Chino Hills State Park and San Mateo Canyon Wilderness Area. The Tier I assessment exceeded the criteria for ΔE at Crystal Cove State Park and Water Canyon State Park. As a result, a Tier II assessment was performed for the Crystal Cove State Park and Water Canyon State Park. The Tier II VISCREEN results are summarized in Table 3.

TABLE 3

Tier 2 VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Wind Speed ^a	Stability ^a	Variable	Sky	Terrain	Criteria
Crystal Cove State Park	12.5	18.4	4	D	Delta E	0.319	0.687	2.0
					Contrast	0.003	0.004	0.05
Water Canyon State Park	33.6	42.9	1	E	Delta E	0.924	1.274	2.0
					Contrast	0.009	0.011	0.05

^a The Joint Frequency Distribution table used to calculate the wind speed and stability for the Tier II assessment is presented in Attachment A.

The VISCREEN Tier II assessment for Crystal Cove State Park and Water Canyon State Park did not exceed the criteria for ΔE or contrast. As the modeled results are below the conservative Class I area criteria for both ΔE and contrast, HBEP would not adversely affect visibility at nearby Class II areas.

References

U.S. Environmental Protection Agency (EPA). 1992. *Workbook for Plume Visual Impact Screening and Analysis* (EPA-454/R-92-023). October.

Federal Land Managers (FLM). 2010. *Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase I Report – Revised (2010), Natural Resource Report NPS/NRPC/NRR-2010/232*. October.

South Coast Air Quality Management District (SCAQMD). 2013. *SCAQMD Meteorological Data*.
http://www.aqmd.gov/smog/metdata/ISCST3_Table1.html. Accessed June 17.

Interagency Monitoring of Protected Visual Environments (IMPROVE). 2013. *Visibility Monitoring Data, Results*.
<http://www2.nature.nps.gov/air/monitoring/vismonresults.cfm>. Accessed June 15.

Joint Frequency Distributions for Tier II VISCREEN Assessment

Table A-1
Crystal Cove State Park Joint Frequency Distribution

Dispersion Condition		$\sigma_z \cdot \sigma_y \cdot u^a$	Transport Time (hours)	Count (hours) ^b	Frequency	Cumulative Frequency
Stability	Wind Speed					
F	1	1.68E+04	3.5	15	0.00274	0.00274
F	2	3.36E+04	1.7	2	0.000365	0.003105
E	1	4.36E+04	3.5	2	0.000365	0.00347
F	3	5.04E+04	1.2	1	0.000183	0.003653
F	4	6.73E+04	0.9	0	0	0.003653
E	2	8.71E+04	1.7	0	0	0.003653
D	1	1.01E+05	3.5	13	0.002374	0.006027
E	3	1.31E+05	1.2	1	0.000183	0.00621
E	4	1.74E+05	0.9	1	0.000183	0.006393
D	2	2.03E+05	1.7	4	0.000731	0.007123
E	5	2.18E+05	0.7	0	0	0.007123
D	3	3.04E+05	1.2	3	0.000548	0.007671
D	4	4.06E+05	0.9	1	0.000183	0.007854

^a $\sigma_z \cdot \sigma_y \cdot u$ is based on a distance of 12.5 km.

^b Count is for hours during which winds blow toward the sector between 103 and 125 degrees from true north during daylight hours, which are defined as between 6:00 a.m. and 8:00 p.m. The highlighted row conservatively represents the top 1 percent of the data; the corresponding wind speed and stability were used for the Tier II analysis.

Table A-2
Water Canyon State Park Joint Frequency Distribution

Dispersion Condition	Stability	Wind Speed	$\sigma_z \cdot \sigma_y \cdot u^a$	Transport Time (hours)	Count (hours) ^b	Frequency	Cumulative Frequency
F		1	1.89E+05	9.3	36	0.006575	0.006575
F		2	3.78E+05	4.7	7	0.001279	0.007854
F		3	5.66E+05	3.1	0	0	0.007854
E		1	5.67E+05	9.3	14	0.002557	0.010411
E		2	1.13 E+06	4.7	24	0.004384	0.014795
E		3	1.70 E+06	3.1	2	0.000365	0.01516
D		1	1.89 E+06	9.3	25	0.004566	0.019726
E		4	2.27 E+06	2.3	0	0	0.019726
E		5	2.84 E+06	1.9	0	0	0.019726
D		2	3.78 E+06	4.7	38	0.006941	0.026667
D		3	5.68 E+06	3.1	49	0.00895	0.035616
D		4	7.57 E+06	2.3	5	0.000913	0.03653

^a $\sigma_z \cdot \sigma_y \cdot u$ is based on a distance of 33.6 km.

^b Count is for hours during which winds blow toward the sector between 22 and 41 degrees from true north during daylight hours, which are defined as between 6:00 a.m. and 8:00 p.m. The highlighted row conservatively represents the top 1 percent of the data; the corresponding wind speed and stability were used for the Tier II analysis.