

DOCKETED

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Project Title:	Alamitos Energy Center
TN #:	214175
Document Title:	Preliminary Determination of Compliance Revisions
Description:	Proposed PDOC revisions based on changes to the AGS retirement plan
Filer:	Elyse Engel
Organization:	CH2M
Submitter Role:	Applicant Consultant
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CH2M
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833
O +1 916 920 0300
F +1 916 920 8463
www.ch2m.com

Ms. Vicky Lee
Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

October 26, 2016

Subject: Alamos Energy Center Preliminary Determination of Compliance Revisions (Facility ID 115394)

Dear Ms. Lee,

AES Alamos Energy, LLC (AES) appreciates the efforts by the South Coast Air Quality Management District (SCAQMD) in preparing the Alamos Energy Center's (AEC) Preliminary Determination of Compliance (PDOC), and subsequent preparation of the forthcoming Final Determination of Compliance (FDOC). As the draft FDOC is prepared, AES would like to propose revisions to its retirement plan for the existing Alamos Generating Station (AGS). In the Supplemental Application for Certification, AES listed existing AGS Unit 5 as part of the retirement plan for the AEC combined-cycle power block. AES would instead like to retire AGS Unit 6, which is identical to AGS Unit 5. Because these units are identical, AES expects the proposed change to have a minimal effect on the language contained within the PDOC/FDOC. However, to facilitate your incorporation of this change into the draft FDOC, AES has identified text and calculations within the PDOC that will require revision. The proposed revisions are provided below for your consideration and use.

Page 17, Condition F52.1 – This condition should be revised as follows:

F52.1 The facility is subject to the applicable requirements of the following rules or regulations(s):

The facility shall submit a detailed retirement plan for the permanent shutdown of Boilers Nos. 1, 2, ~~56~~ and 3 (Devices D39, D42, ~~D513~~, and D45, respectively), describing in detail the steps and schedule that will be taken to render Boilers Nos. 1, 2, ~~56~~, and 3 permanently inoperable.

The retirement plan shall be submitted to SCAQMD within 60 days after Permits to Construct for Combined-Cycle Turbines Nos. CCGT-1 and CCGT-2 (Devices D165 and D173, respectively), common Steam Turbine Generator, and Simple-Cycle Turbines Nos. SCGT-1, SCGT-2, SCGT-3, and SCGT-4 (Devices D185, D191, D197, and D203 respectively) are issued.

AES shall not commence any construction of the Alamos Energy Project including Gas Turbines Nos. CCGT-1, CCGT-2, SCGT-1, SCGT-2, SCGT-3, and SCGT-4, unless the retirement plan is approved in writing by SCAQMD. If SCAQMD notifies AES that the plan is not approvable, AES shall submit a revised plan addressing SCAQMD's concerns within 30 days.

Within 30 calendar days of actual shutdown but no later than December 29, 2019, AES shall provide SCAQMD with a notarized statement that Boilers Nos. 1, 2, and ~~56~~ are permanently shut down and that any re-start or operation of the boilers shall require new Permits to Construct and be subject to all requirements of Nonattainment New Source Review and the Prevention Of Significant Deterioration Program.

AES shall notify SCAQMD 30 days prior to the implementation of the approved retirement plan for permanent shutdown of Boilers Nos. 1, 2, and ~~56~~, or advise SCAQMD as soon as practicable should AES undertake permanent shutdown prior to December 29, 2019.

AES shall cease operation of Boilers Nos. 1, 2, and ~~56~~ within 90 calendar days of the first fire of Gas Turbines No. CCGT-1 or CCGT-2, whichever is earlier.

[...]

Page 68, 2nd Paragraph – This paragraph should be revised as follows:

The demolition of the existing and operating Utility Boilers 1 – 6 is not necessary for the construction of AEC. These units will continue to provide essential electrical service concurrent with the construction of the AEC CCGT power block. Units 1, 2, and ~~56~~ will be retired once the AEC CCGT reaches the commissioning stage and become operational. Unit 3 will be retired once the AEC SCGT reaches the commissioning stage and become operational. Units 4 and ~~65~~ may operate through December 31, 2020, the current facility compliance date imposed by the OTC Policy. AES is no longer including the demolition as part of the proposed AEC project, but now plans to accomplish the demolition under a separate CEQA proceeding through a Memorandum of Understanding with the City of Long Beach.

Pages 68 and 69, Last/1st Paragraph – This paragraph should be revised as follows:

AES proposes to replace existing Utility Boiler No. 1 (175 MW-gross), No. 2 (175 MW-gross), Unit ~~56~~ (480 MW-gross), and No. 3 (320 MW-gross) at AGS, with the two combined-cycle turbines (692.951 MW-gross total) and four simple-cycle turbines (401.751 MW-gross total). At this time, AES has not identified plans for the surplus 55 MWs from the retirements of these four utility boilers. In addition, AES has not identified plans for the MWs from the retirement of Utility Boiler No. 4 (320 MW) and Utility Boiler No. ~~65~~ (480 MW).

Page 70, Table 2 – The row currently listed as ‘AGS Unit 5 Retired’ should be replaced with ‘AGS Unit 6 Retired’. The dates and MW-gross values reported throughout this table are correct as is, even with incorporation of this change.

Page 161, Last Paragraph – This paragraph should be revised as follows:

AES proposes to replace existing Utility Boiler No. 1 (175 MW-gross), No. 2 (175 MW-gross), Unit ~~56~~ (480 MW-gross), and No. 3 (320 MW-gross) for a total of 1150 MW-gross. The replacement equipment are two combined-cycle turbines (692.951 MW-gross total at 59 °F) and four simple-cycle turbines (401.751 MW-gross total at 59 °F) for a total of 194.7 MW-gross total. At this time, AES has not identified plans for the surplus 55 MWs from the permanent retirements. Condition E448.1 limits the total electrical output from AEC to 1094.7 MW-gross at 59 °F.

Page 186, 1st Line – The value reported for the ‘Average Last 2 years of Existing Unit(s) Actual Generation (MWh/yr)’ should be 250,750 MW-net (instead of 311,104 MW-net), consistent with the additional Page 186 revisions noted below.

Page 186, Sentence Preceding Table 64 – This sentence should be revised as follows:

For a preliminary estimate, the applicant provided the 2013 and 2014 generation for Boilers Nos. 1, 2, ~~56~~, and 3.

Page 186, Table 64 – This table should be revised as follows:

Table 64 – AGS 2-Year Average Electrical Production (2013 & 2014)

Unit	Rating MW-gross	Shutdown Date	2013		2014		2-Year Average	
			MWh- gross	MWh- net	MWh- gross	MWh- net	MWh- gross	MWh- net
1	175	12/29/2019	17,923	15,645	22,414	22,103	20,168	18,874
2	175	12/29/2019	30,766	26,094	85,834	82,964	58,300	54,529
56	480	12/29/2019	510,029 260,275	489,433 250,662	74,2501 96,690	71,3451 89,409	292,139 228,482	280,389 220,035
3	320	12/31/2020	369,385	350,913	499,518	473,800	434,452	412,357

Source: http://energyalmanac.ca.gov/electricity/web_qfer/

Page 186, C_{2YRAvgExisting} Calculations – The calculations and associated text below Table 64 should be revised as follows:

To offset the 692.951 MW for the installation of the combined-cycle turbines, assume 175 MW are provided by the retirement of Unit 1, 38 MW from the retirement of Unit 2, and 480 MW from the retirement of Unit ~~56~~. For Unit 2, the remaining 137 MW will be used to offset the simple-cycle turbines.

$$C_{2YRAvgExisting} = (18,874 \text{ MW-net, Unit 1}) + (54,529 \text{ MW-net, Unit 2}) (38 \text{ MW}/175 \text{ MW}) + (280,389 \text{ MW-net, Unit } \del{56}) = \del{311,104} \text{ MW-net} \mathbf{250,750 \text{ MW-net}}$$

Page 187, Total Annual Fee – The total annual fee calculations should be revised as follows, consistent with the Table 65 revisions noted below.

Table 65 shows the preliminary estimate for the Total Annual Fee (\$/yr) is ~~\$2,127,993~~ **2,172,216** for the fiscal year ending on 6/30/14. This amount is required to be adjusted by the annual fee for each subsequent fiscal year.

The fee increases to date are: (1) 1.6% effective 7/1/14, (2) 1.4% effective 7/1/15, and (3) 2.4% effective 7/1/16. The fee for the fiscal year starting 7/1/16 is ~~\$2,244,924.89~~ **2,291,577.91**.
~~[\$2,127,993 * 1.016 * 1.014 * 1.024 = \$2,244,924.89]~~ **[\$2,172,216 * 1.016 * 1.014 * 1.024 = \$2,291,577.91]**

Page 187, Total Single Fee – The total single fee calculations should be revised as follows, consistent with the Table 65A revisions noted below.

Table 65A shows the preliminary estimate for the Total Single Fee (\$/yr) is ~~\$53,204,741.00~~ **54,310,426** for the fiscal year ending on 6/30/14.

The fee for the fiscal year starting 7/1/16 is ~~\$56,128,308.32~~ **57,294,750.02**.
~~[\$53,204,741.00 * 1.016 * 1.014 * 1.024 = \$56,128,308.32]~~ **[\$54,310,426 * 1.016 * 1.014 * 1.024 = \$57,294,750.02]**

Page 187, Annual Payment Prior to Issuance of Permits to Construct, Switching to Single Payment by End of First Year – The calculations for annual payment prior to issuance of permits to construct, when switching to single payment by the end of the first year, should be revised as follows, consistent with the additional Page 187 revisions noted above:

The preliminary estimated annual payment that will be required to be remitted prior to the issuance of the permits to construct for the combined-cycle turbines is ~~\$2,244,924.89~~ **2,291,577.91** (7/1/16 fiscal year).

The preliminary estimated subsequent single payment is ~~\$53,883,383.43~~ **\$55,003,172.11** (7/1/16 fiscal year). [~~\$56,128,308.32~~ **\$57,294,750.02** - ~~\$2,244,924.89~~ **\$2,291,577.91** = ~~\$53,883,383.43~~ **\$55,003,172.11**]

Page 188, Table 65 – Table 65 should be revised based on the corrected $C_{2YRAvgExisting}$ value calculated above. A revised Table 65 is attached with this letter.

Page 189, Table 65A – Table 65A should be revised based on the corrected $C_{2YRAvgExisting}$ value calculated above. A revised Table 65A is attached with this letter.

Page 194, Total Annual Fee – The total annual fee calculations should be revised as follows, consistent with the Page 187 revisions noted above:

The preliminary estimate for the total annual fee for the combined- and simple-cycle turbines is ~~\$3,791,570.35~~ **\$3,838,223.37** for the fiscal year starting 7/1/16. [~~\$2,244,924.89~~ **\$2,291,577.91** (combined-cycle) + \$1,546,645.46 (simple-cycle) = ~~\$3,791,570.35~~ **\$3,838,223.37**]

Page 194, Total Single Fee – The total single fee calculations should be revised as follows, consistent with the Page 187 revisions noted above:

The preliminary estimate for the total single fee for the combined- and simple-cycle turbines is ~~\$94,792,436.09~~ **\$95,958,877.79** for the fiscal year starting 7/1/16. [~~\$56,128,308.32~~ **\$57,294,750.02** (combined-cycle) + \$38,664,127.77 (simple-cycle) = ~~\$94,792,436.09~~ **\$95,958,877.79**]

Page 194, Annual Payment Prior to Issuance of Permits to Construct, Switching to Single Payment by End of First Year – The calculations for annual payment prior to issuance of permits to construct, when switching to single payment by the end of the first year, should be revised as follows, consistent with the additional Page 194 revisions noted above:

The preliminary estimated annual payment that will be required to be remitted prior to the issuance of the permits to construct for the combined-cycle turbines is ~~\$3,791,570.35~~ **\$3,838,223.37** (7/1/16 fiscal year).

The preliminary estimated subsequent single payment is ~~\$91,000,865.74~~ **\$92,120,654.42** (7/1/16 fiscal year). [~~\$94,792,436.09~~ **\$95,958,877.79** - ~~\$3,791,570.35~~ **\$3,838,223.37** = ~~\$91,000,865.74~~ **\$92,120,654.42**]

[...]

Page 194, Rule 1313 – Permits to Operate, Paragraph (d) – The analysis provided under paragraph (d) should be revised as follows:

From *Table 2* above, the schedule for AGS Boilers Nos. 1, 2, and ~~5~~ 6 shutdown is 12/29/2019. The combined-cycle block startup is scheduled for 11/1/2019. The schedule for AGS Boiler No. 3 shutdown is 12/31/2020. The simple-cycle block startup is scheduled for 6/1/2021.

[...]

Ms. Vicky Lee
Page 5
October 26, 2016

Should you have any questions regarding these proposed revisions, please do not hesitate to call me at 916-286-0207. We appreciate your attention to this matter and look forward to receipt of the draft FDOC issued by the SCAQMD.

Regards,

A handwritten signature in black ink, appearing to read "Jerry Salamy". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Jerry Salamy
Program Manager
CH2M HILL Engineers, Inc.

Attachments

cc: Stephen O'Kane/AES
Jeffrey Harris/ESH
Keith Winstead/CEC

Attachments

Table 65 – Rule 1304.1 Emissions Offset Fee Calculator for Combined–Cycle Turbines – Annual Fee Payment

Input Cumulative Project Profile Values:

a-Gross Rating of New Replacement Unit(s) (MW)	692.951
b-Maximum Fraction of Time Allowed to Operate (%)	53
Hours in a Year (hr/yr)	8,760
c-Max Allowable Operating Hours Annually (hr/yr)	4,640
d-Max Allowed Generation New Replacement Unit(s) Annually (MWhr/yr)	3,215,293 = C_{rep}^*
e- Average Last 2 Years of Existing Unit(s) Actual Generation (MWh/yr)	250,750 = $C_{2YRAvgExisting}$

ANNUAL FEE PAYMENT (> 100 MW Cumulatively):

i	$PTEr_{PM10}$ (lbs/day)	$R_{PM10 A1}$ (\$ per lb/day)	$R_{PM10 A2}$ (\$ per lb/day)	$R_{PM10 blended}$ (\$ per lb/day)	OF_{PM10}	C_{rep} (MWhr/yr)	$C_{2YRAvgExisting}$ (MWhr/yr)	Ratio	F_{PM10} (\$)
PM10	421.60	997	3,986	3,555	1.00	3,215,293	250,750	0.922	1,381,769
	$PTEr_{SOx}$ (lbs/day)	$R_{SOx A1}$ (\$ per lb/day)	$R_{SOx A2}$ (\$ per lb/day)	$R_{SOx blended}$ (\$ per lb/day)	OF_{SOx}	C_{rep} (MWhr/yr)	$C_{2YRAvgExisting}$ (MWhr/yr)	Ratio	F_{SOx} (\$)
SOx	241.06	793	3,170	2,827	1.00	3,215,293	250,750	0.922	628,325
	$PTEr_{VOC}$ (lbs/day)	$R_{VOC A1}$ (\$ per lb/day)	$R_{VOC A2}$ (\$ per lb/day)	$R_{VOC blended}$ (\$ per lb/day)	OF_{VOC}	C_{rep} (MWhr/yr)	$C_{2YRAvgExisting}$ (MWhr/yr)	Ratio	F_{VOC} (\$)
VOC	887.60	47	185	165	1.20	3,215,293	250,750	0.922	162,123
	$PTEr_{NOx}$ (lbs/day)	$R_{NOx A1}$ (\$ per lb/day)	$R_{NOx A2}$ (\$ per lb/day)	$R_{NOx blended}$ (\$ per lb/day)	OF_{NOx}	C_{rep} (MWhr/yr)	$C_{2YRAvgExisting}$ (MWhr/yr)	Ratio	F_{NOx} (\$)
NOx**	Not Applicable	666	2,663	2,375	1.20	3,215,293	250,750	0.922	Not Applicable

** Only applicable project source is not in RECLAIM

* If C_{rep} is known it can be entered directly (in MWh)

TOTAL ANNUAL FEE (\$/yr)	2,172,216
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Table 65A – Rule 1304.1 Emissions Offset Fee Calculator for Combined-Cycle Turbines – Single Fee Payment

Cumulative Project Profile Values:

a-Gross Rating of New Replacement Unit(s) (MW)	692.951
b-Maximum Fraction of Time Allowed to Operate (%)	53
Hours in a Year (hr/yr)	8,760
c-Max Allowable Operating Hours Annually (hr/yr)	4,640
d-Max Allowed Generation New Replacement Unit(s) Annually (MWhr/yr)	3,215,293 = C _{rep}
e- Average Last 2 Years of Existing Unit(s) Actual Generation (MWh/yr)	250,750 = C _{2YRAvgExisting}

SINGLE FEE PAYMENT (> 100 MW Cumulatively):

i	PTer _{PM10} (lbs/day)	L _{PM10 A1} (\$ per lb/day)	L _{PM10 A2} (\$ per lb/day)	L _{PM10 blended} (\$ per lb/day)	OF _{PM10}	C _{rep} (MWhr/yr)	C _{2YRAvgExisting} (MWhr/yr)	Ratio	F _{PM10} (\$)
PM10	421.60	24,911	99,643	88,858	1.00	3,215,293	250,750	0.922	34,541,109
	PTer _{SOx} (lbs/day)	L _{SOx A1} (\$ per lb/day)	L _{SOx A2} (\$ per lb/day)	L _{SOx blended} (\$ per lb/day)	OF _{SOx}	C _{rep} (MWhr/yr)	C _{2YRAvgExisting} (MWhr/yr)	Ratio	F _{SOx} (\$)
SOx	241.06	19,816	79,262	70,683	1.00	3,215,293	250,750	0.922	15,710,114
	PTer _{VOC} (lbs/day)	L _{VOC A1} (\$ per lb/day)	L _{VOC A2} (\$ per lb/day)	L _{VOC blended} (\$ per lb/day)	OF _{VOC}	C _{rep} (MWhr/yr)	C _{2YRAvgExisting} (MWhr/yr)	Ratio	F _{VOC} (\$)
VOC	887.60	1,159	4,635	4,133	1.20	3,215,293	250,750	0.922	4,059,203
	(lbs/day)	L _{NOx A1} (\$ per lb/day)	L _{NOx A2} (\$ per lb/day)	L _{NOx blended} (\$ per lb/day)	OF _{NOx}	C _{rep} (MWhr/yr)	C _{2YRAvgExisting} (MWhr/yr)	Ratio	F _{NOx} (\$)
NOx**	Not Applicable	16,643	66,571	59,366	1.20	3,215,293	250,750	0.922	Not Applicable
TOTAL SINGLE FEE(\$)									54,310,426

** Only applicable project source is not in RECLAIM

* If C_{rep} is known it can be entered directly (in MWh)