

DOCKETED

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South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

December 4, 2013

Ms. Christine Stora, Project Manager
California Energy Commission
1516 9th Street
Sacramento, CA 95814-5512

Subject: Final Determination of Compliance (FDOC) for Palen Solar Electric Generation Station,
(Facility ID# 174021), to be located at Corn Springs Road, Desert Center, CA 92239 (09-
AFC-07)

Dear Ms. Stora:

This is in reference to Palen Solar Electric Generation Station (PSEGS) proposed Power Plant Project Application for Certification (AFC) and Title V Application for a Permit to Construct filed with the California Energy Commission (CEC) and the South Coast Air Quality Management District (SCAQMD), respectively. As you know, PSEGS has proposed to construct a 500 megawatt (MW) power plant, located at Corn Springs Road, Desert Center, CA 92239.

On October 18, 2013 the SCAQMD issued the Preliminary Determination of Compliance (PDOC) to the PSEGS project. At this time the SCAQMD is issuing a Final Determination of Compliance (FDOC) indicating PSEGS complies with all the Rules and Regulations of the SCAQMD. The purpose of this letter is to transmit the FDOC to CEC which lists the revisions made to the PDOC issued on October 18, 2013, based on comments the SCAQMD has received from the CEC.

If you have any questions regarding this project, please contact Mr. Roy Olivares at (909) 396-2208 rolivares@aqmd.gov or Mr. John Yee at (909) 396-2531 jyee@aqmd.gov. For any questions regarding this letter and the FDOC, please contact Mr. Andrew Lee, Senior Manager at (909) 396-2643 alee@aqmd.gov.

Sincerely,

Mohsen Nazemi, P.E.
Deputy Executive Officer
Engineering and Compliance

MN:AYL:CDT:JTY:rd0

cc: Charles Turlinski, Palen Solar Electric Generation Station
Gerardo Rios, EPA Region IX (R9Airpermits_sc@epa.gov)

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



November 18, 2013

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

**RE: COMMENTS ON SCAQMD PRELIMINARY DETERMINATION OF COMPLIANCE
FOR THE PALEN SOLAR ELECTRIC GENERATING SYSTEM (09-AFC-7C)**

Dear Mr. Nazemi:

Thank you for you and your staff's efforts in preparing the Preliminary Determination of Compliance (PDOC) for the Palen Solar Electric Generated System, dated October 18, 2013. In our review of the PDOC, we provided comments over the telephone to Mr. Roy Olivares of your staff. I wanted to also send this letter to document the more important comments. None of these comments change the substantive approach you took or your results. We also have found at least one additional comment that we had not discovered when we last talked to your staff.

Your staff developed the PDOC analysis using expected hours of operation for several operating modes. This means that the results depend on the assumed operating hours for each of the operating modes, with the objective to estimate worst-case emissions and impacts. The more significant changes in the emissions estimates and analysis that we believe are needed are listed below:

1. On Section H of the Facility Permit, in some instances the listed conditions in the rightmost column do not match the conditions listed later in the PDOC beginning on page 73. The applicable conditions for each piece of equipment should be clearly listed in the Final Determination of Compliance (FDOC).
2. On page 15, the annual and monthly fuel usage data for each 249 mmBtu/hr (million British thermal units per hour) auxiliary boilers are too high. The correct fuel use values for this boiler are shown on pages 26 and 27 of the PDOC (307 million cubic feet [mmcf] for annual fuel use, 40 mmcf for maximum monthly fuel use) for each boiler.
3. On page 24 for the yearly boosting mode operation of the 249 mmBtu/hr boilers, we compute Particulate Matter less than 10 microns (PM10) emissions as 1,126 lb/year, not 1159 and Sulfur Oxide (SOx) emissions as 444.3 lb/year, not 457.5 lbs/year. Values in PDOC Appendix B are correct.

4. On page 28, annual monthly fuel use for the night preservation boiler should be 48 mmcf, not 49.7 mmcf and the monthly fuel use should be 4.34 mmcf, not 4.47 mmcf. The correct values are listed on PDOC page 29 and in the individual permit conditions.
5. On pages 34/35 for the facility monthly emissions, summary for Volatile Organic Compounds (VOC) emissions from Large Internal Combustion Engines (ICEs) 1 and 2 should be 8.34 lbs/month each, not 100.03 lbs/month. For CO, the monthly emissions should be 29.67 lbs/month, not 356.10 lbs/month.
6. On page 35 for the facility annual emissions, VOC emissions from Large ICEs 1 and 2 should be 100.03 lbs/year each, and the total for the year should be 1.68 tons/year, not 1.58 tons/year. This will not change the conclusion that VOC offset requirements are not triggered, which requires 4 tons/year, as shown on page 43. The VOC annual total also needs to be updated on page 43.
7. On page 45, the table of Auxiliary Boiler #2 impacts includes PM2.5 but the table above it for Auxiliary Boiler #1 does not include PM2.5. It appears that PM2.5 results were inadvertently left out of the summary for Auxiliary Boiler #1.
8. Appendix A (appears after page 100) -- Part B, Facility Monthly Emissions. Monthly VOC emissions from Large ICEs 1 and 2 should be 8.34 lb/month each, not 100.03 lbs/month and for CO the monthly emissions should be 29.67 lb/month, not 356.10 lbs/month (same comment as above for pages 34/35).
9. Appendix A -- Part C, Facility Annual Emissions. Annual VOC emissions from Large ICEs 1 and 2 should be 100.03 lbs/year each, not 6.8 lbs/year. The 6.8 lbs/year value is for Fire Pumps 1, 2 and 3.

We appreciate the opportunity to provide these comments and hope that if we can provide you any assistance in the preparation and publication of the FDOC, you will not hesitate to ask. If you have any questions or comments, please contact Ms Jacquelyn Leyva at (916) 654-3846 or jacquelyn.leyva@energy.ca.gov, or please call me at (916) 654-3868.

Sincerely,



Matthew Layton
Supervising Mechanical Engineer

cc: Ms. Jacquelyn Leyva
Dockets

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 1
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

PALEN SOLAR POWER PROJECT
FINAL ~~PRELIMINARY~~ DETERMINATION OF
COMPLIANCE **(FDOC)**

APPLICANT:

Palen Solar Electric Generation Station (PSEGS)
1999 Harrison Street, Suite 2150
Oakland, CA 94612

Contact: Mr. Charles Turlinski (510) 550-8161
SCAQMD Facility ID: 174021
Facility type: NOx RECLAIM, Title V, Title IV

EQUIPMENT LOCATION:

Corn Springs Road
Desert Center, CA 92239

SOLAR POWER GENERATING FACILITY CONSISTING OF:

Section H of the Facility Permit

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
System 1: BOILERS					
BOILER, AUXILARY NO. 1, NATURAL GAS, RENTECH, MODEL CUSTOM WITH ONE COMBUSTION BURNER, 249 MMBTU/HR WITH FLUE GAS RECIRULATION	D1	C2	NOX: MAJOR SOURCE	CO: 25.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT, 10-7-1988]; CO: 2000 PPMV (5) [Rule 407, 4-2-1982] ; CO :400 PPMV NATURAL GAS (5), RULE 1146, 11-17-2000, RULE 1146, 9-5-2008] NOX 5 PPMV NATURAL GAS (4)[Rule 1703 (a)(2)-PSD-BACT, 10-7-1988]; [Rule 2005-6-3-2011], NOX: 11.55 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005], NOX: 6.53 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005]; NOX: 80 PPMV NATURAL GAS (8)	A63.1, A99.1, A99.2, A99.3, A99.4, A195.1, A195.2, A327.1, , B61.1 , C1.1,C1.2, C1.3,C1.4, D12.1, D29.1, D29.2, D82.1, D82.2, E193.1, E448.1, H23.1, H23.2 , H23.3 I298.1, K40.1 , K67.1, K67.2

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 2
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

A/N: 549379				<p>[40CFR60 Subpart Db, 1-28-2009]</p> <p>NOX: 92.40 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005]PM: 0.01 GRAIN/DSCF Natural gas (5) [Rule 475, 10-8-1976, Rule 475, 8-7-1978]; PM: 0.1 GRAIN/DSCF Natural gas (5a) [Rule 409, 8-7-1981]; PM10: 11 LB/HR Natural gas (5B) [Rule 475, 10-8-1976, Rule 475, 8-7-1978];NOX: 83.96 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005]</p> <p>SO2: (9) [40 CFR 72-Acid Rain Provisions, 11-24-1977</p>	
CO OXIDATION CATALYST NO. 1, EMERACHEM, 10 CUBIC FEET OF TOTAL CATALYST VOLUME, DEPTH 0 FT 2 IN; WIDTH: 8 FT 10 IN; HEIGHT 6 FT 9 IN A/N: 553874	C2	D1 C3			
SELECTIVE CATALYTIC REDUCTION NO. 1, CORMETECH, MODEL CUSTOM WITH 89 CUBIC FEET OF TOTAL CATALYST VOLUME, DEPTH 1 FT 6 IN; WIDTH: 8 FT 10 IN; HEIGHT 6 FT 9 IN; WITH AMMONIA INJECTION GRID A/N: 553874	C3	S5 C2		NH3: 5.0 PPMV Natural gas (4) [Rule 1303(a)-BACT, 5-10-1996, Rule 1303 (a), 12-6-2002]	A195.6, D12.3 D12.4, D12.5 E179.1, E179.2, E193.1
STACK NO.1, DIAMETER 6 FT 0 IN, HEIGHT 120 FT, A/N 553874	S5	C3			
BOILER, AUXILARY NO. 2, NATURAL GAS, RENTECH, MODEL CUSTOM WITH ONE COMBUSTION BURNER, 249 MMBTU/HR WITH FLUE GAS RECIRULATION A/N: 549380	D6	C7	NOX: MAJOR SOURCE	<p>CO: 25.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT, 10-7-1988]; CO: 2000 PPMV (5) [Rule 407, 4-2-1982]; CO 400 PPMV NATURAL GAS (5), RULE 1146, 11-17-2000, RULE 1146, 9-5-2008]</p> <p>NOX 5 PPMV NATURAL GAS (4)[Rule 1703 (a)(2)-PSD-BACT, 10-7-1988]; [Rule 2005-6-3-2011], NOX: 11.55 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005], NOX: 6.53 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005]; NOX: 80 PPMV NATURAL GAS (8) [40CFR60 Subpart Db, 1-</p>	A63.1, A99.1, A99.2, A99.3, A99.4, A195.1, A195.2, A327.1, , B61.1 , C1.1,C1.2, C1.3,C1.4, D12.1, D29.1, D29.2, D82.1, D82.2, E193.1, E448.3, H23.1, H23.2 , H23.3 I298.2, K40.1 , K67.1, K67.2

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 3
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

				28-2009	
				PM: 0.01 GRAIN/DSCF	

EQUIPMENT DESCRIPTION (continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
System 1: BOILERS					
				Natural gas (5) [Rule 475, 10-8-1976, Rule 475, 8-7-1978]; PM: 0.1 GRAIN/DSCF Natural gas (5a) [Rule 409, 8-7-1981]; PM10: 11 LB/HR Natural gas (5B) [Rule 475, 10-8-1976, Rule 475, 8-7-1978] NOX: 92.40 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005]; NOX: 83.96 LB/MMCF NATURAL GAS (1)[RULE 2012, 5-6-2005] SO2: (9) [40 CFR 72-Acid Rain Provisions, 11-24-1977]	
CO OXIDATION CATALYST NO. 2, EMERACHEM, 10 CUBIC FEET OF TOTAL CATALYST VOLUME, DEPTH 0 FT 2 IN; WIDTH: 8 FT 10 IN; HEIGHT 6 FT 9 IN A/N: 553875	C7	D6 C8			
SELECTIVE CATALYTIC REDUCTION NO. 2, CORMETECH, MODEL CUSTOM WITH 89 CUBIC FEET OF TOTAL CATALYST VOLUME, DEPTH 1 FT 6 IN; WIDTH: 8 FT 10 IN; HEIGHT 6 FT 9 IN; WITH AMMONIA INJECTION GRID A/N: 553875	C8	S10 C7		NH3: 5.0 PPMV Natural gas (4) [Rule 1303(a)-BACT, 5-10-1996, Rule 1303 (a), 12-6-2002]	A195.6, D12.3 D12.4, D12.5 E179.1, E179.2, E193.1
STACK NO. 2, DIAMETER 6 FT 0 IN, HEIGHT 120 FT, A/N 549379	S10	C8			
BOILER, NIGHT PRESERVATION, NO. 1, NATURAL GAS, 10.5 MMBTU/HR WITH FLUE GAS RECIRCULATION, WITH LOW NOX BURNER LOW NOX BURNER, CLEAVER BROOKS,	D11		PROCESS UNIT	CO: 25.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2) PSD-BACT, 10-7-1988]; CO: 2000 PPMV Natural gas (5) [Rule 407, 4-2-1982]; CO 400 PPMV NATURAL	A63.2, A195.1, A195.3, A327.1., B61.1, C1.5,C1.6, C1.7, D12.1, D29.3, H23.1, H23.4, E448.1 I298.3, K67.5

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 4
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

MODEL CBEX ELITE, 10.5 MMBTU/HR				GAS (5A), RULE 1146, 11-17-2000, RULE 1146, 9-5-2008]	
A/N: 549381				9 PPMV NATURAL GAS (3) [Rule 2012, 5-6-2005] , NOX 9 PPMV NATURAL GAS (4) [Rule 2005-5-6-2011, Rule 1703 (a)(2) PSD-BACT, 10-7-1988]	
A/N: 549381				PM: 0.1 GRAIN/DSCF (5A) NATURAL GAS [Rule 409, 8-7-1981]	

EQUIPMENT DESCRIPTION (continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
System 1: BOILERS					
BOILER, NIGHT PRESERVATION, NO. 2, NATURAL GAS, 10.5 MMBTU/HR, WITH FLUE GAS RECIRCULATION, WITH LOW NOX BURNER.	D12		PROCESS UNIT	CO: 25.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2) PSD-BACT, 10-7-1988]; CO: 2000 PPMV Natural gas (5) [Rule 407, 4-2-1982]; CO 400 PPMV NATURAL GAS (5A), RULE 1146, 11-17-2000, RULE 1146, 9-5-2008]	A63.2, A195.1, A195.3, A327.1., B61.1, C1.5, C1.6, C1.7, D12.1, D29.4, H23.1, H23.5, E448.1 I298.3, K67.5
LOW NOX BURNER, CLEAVER BROOKS, MODEL CBEX ELITE, 10.5 MMBTU/HR				9 PPMV NATURAL GAS (3) [Rule 2012, 5-6-2005] , NOX 9 PPMV NATURAL GAS (4) [Rule 2005-5-6-2011, Rule 1703 (a)(2) PSD-BACT, 10-7-1988]	
A/N: 549383				PM: 0.1 GRAIN/DSCF (5A) NATURAL GAS [Rule 409, 8-7-1981]	

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 6
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

<p>INTERNAL COMBUSTION ENGINE, EMERGENCY, POWER, NO. 2, DIESEL FUEL, CATERPILLAR, MODEL 3516C, LEAN BURN, 12 CYLINDERS, , WITH AFTERCOOLER, TURBOCHARGER,</p> <p>3633 BHP</p> <p>A/N: 549389 GENERATOR, 2500 KW</p>	D15		NOX: PROCESS UNIT	<p>NOX+NMHC: 4.8 GM/BHP-HR DIESEL (4) [RULE 1303(a), 5-10-1996; RULE 1303(a) 12-6-2002, RULE 2005, 6-3-2011]; NOX+NMHC: 4.8 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX: 222 LB/1000 GAL DIESEL (1) [RULE 2012, 5-5-2005]</p> <p>CO: 2.6 GM/BHP-HR DIESEL (4) [RULE 1703 (a)(2)-PSD-BACT, 10-7-1988], CO: 2.6 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]</p> <p>PM: 0.15 GM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996, Rule 1303(a), 12-6-2002] , PM: 0.15 GM/BHP-HR DIESEL (8)) [40CFR 60 Subpart III, 6-28-2011]</p> <p>PM: 0.15 GM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]</p> <p>SOX: 0.005 GM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT,5-10-1996, Rule 1303(a), 12-6-2006]; HAP:(10)[40 CFR 63 Subpart ZZZZ, 3-9-2011]</p>	B61.2,C1.8, C1.9, C1.10, C1.11, D12.2, E193.1, E448.2 E448.3, H23.5 I298.6,K67.3, K67.4
<p>INTERNAL COMBUSTION ENGINE, EMERGENCY, POWER, NO. 3, DIESEL FUEL, CATERPILLAR, MODEL C9, LEAN BURN, 6 CYLINDERS, WITH AFTERCOOLER, TURBOCHARGER</p> <p>398 BHP</p> <p>A/N: 549390</p>	D17		NOX: PROCESS UNIT	<p>NOX+NMHC: 3.0 GM/BHP-HR DIESEL (4) [RULE 1303(a), 5-10-1996; RULE 1303(a) 12-6-2002, RULE 2005, 6-3-2011]; NOX+NMHC: 3.0 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX: 132 LB/1000 GAL DIESEL (1) [RULE 2012, 5-5-2005]CO: 2.6 GM/BHP-HR DIESEL (4) [RULE 1703 (a)(2)-PSD-BACT, 10-7-1988], CO: 2.6 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]PM: 0.15 GM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-</p>	B61.2,C1.8, C1.9, C1.10, C1.11, D12.2, E193.1, E448.2 E448.3, H23.5 I298.7,K67.3, K67.4

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 7
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

GENERATOR, 250 KW				10-1996, Rule 1303(a), 12-6-2002] , PM: 0.15 GM/BHP-HR DIESEL (8)) [40CFR 60 Subpart III, 6-28-2011] PM: 0.15 GM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012] SOX: 0.005 GM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT,5-10-1996, Rule 1303(a), 12-6-2006]; HAP:(10)[40 CFR 63 Subpart ZZZZ, 3-9-2011]	
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE PUMP, NO. 1, DIESEL FUEL, CLARKE, MODEL JX6H-UFAD88, LEAN BURN, 6 CYLINDERS, WITH AFTERCOOLER, TURBOCHARGER, 617 BHP A/N: 549384	D19		NOX: PROCESS UNIT	NOX+NMHC: 3.0 GM/BHP-HR DIESEL (4) [RULE 1303(a), 5-10-1996; RULE 1303(a) 12-6-2002, RULE 2005, 6-3-2011]; NOX+NMHC: 3.0 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX: 120 LB/1000 GAL DIESEL (1) [RULE 2012, 5-5-2005]CO: 2.6 GM/BHP-HR DIESEL (4) [RULE 1703 (a)(2)-PSD-BACT, 10-7-1988], CO: 2.6 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]PM: 0.15 GM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996, Rule 1303(a), 12-6-2002] , PM: 0.15 GM/BHP-HR DIESEL (8)) [40CFR 60 Subpart III, 6-28-2011] PM: 0.15 GM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012] SOX: 0.005 GM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT,5-10-1996, Rule 1303(a), 12-6-2006]; HAP:(10)[40 CFR 63 Subpart ZZZZ, 3-9-2011]	B61.2,C1.8. , C1.2, C1.11, C1.12 D12.2, E193.1, E448.2 E448.3, H23.5 I298.8 ,K67.3, K67.4
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE PUMP, NO. 2, DIESEL FUEL, CLARKE, MODEL JX6H-UFAD88, LEAN BURN, 6 CYLINDERS, WITH AFTERCOOLER, TURBOCHARGER, 617 BHP	D20		NOX: PROCESS UNIT	NOX+NMHC: 3.0 GM/BHP-HR DIESEL (4) [RULE 1303(a), 5-10-1996; RULE 1303(a) 12-6-2002, RULE 2005, 6-3-2011]; NOX+NMHC: 3.0 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III,	B61.2,C1.8. , C1.2, C1.11, C1.12 D12.2, E193.1, E448.2 E448.3, H23.5 I298.9 ,K67.3, K67.4

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 8
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

A/N: 549385				<p>6-28-2011]; NOX: 120 LB/1000 GAL DIESEL (1) [RULE 2012, 5-5-2005]</p> <p>CO: 2.6 GM/BHP-HR DIESEL (4) [RULE 1703 (a)(2)-PSD-BACT, 10-7-1988], CO: 2.6 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]</p> <p>PM: 0.15 GM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996, Rule 1303(a), 12-6-2002] , PM: 0.15 GM/BHP-HR DIESEL (8)) [40CFR 60 Subpart III, 6-28-2011], PM: 0.15 GM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]</p> <p>SOX: 0.005 GM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT,5-10-1996, Rule 1303(a), 12-6-2006]; HAP:(10)[40 CFR 63 Subpart ZZZZ, 3-9-2011]</p>	
<p>INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE PUMP, NO. 2, DIESEL FUEL, CLARKE, MODEL JX6H-UFAD88, LEAN BURN, 6 CYCLINDERS, WITH AFTERCOOLER, TURBOCHARGER,</p> <p>617 BHP</p> <p>A/N: 549386</p>	D21		NOX: PROCESS UNIT	<p>NOX+NMHC: 3.0 GM/BHP-HR DIESEL (4) [RULE 1303(a), 5-10-1996; RULE 1303(a) 12-6-2002, RULE 2005, 6-3-2011]; NOX+NMHC: 3.0 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX: 120 LB/1000 GAL DIESEL (1) [RULE 2012, 5-5-2005]</p> <p>CO: 2.6 GM/BHP-HR DIESEL (4) [RULE 1703 (a)(2)-PSD-BACT, 10-7-1988], CO: 2.6 GM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]</p> <p>PM: 0.15 GM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996, Rule 1303(a), 12-6-2002] , PM: 0.15 GM/BHP-HR DIESEL (8)) [40CFR 60 Subpart III, 6-28-2011], PM: 0.15 GM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]</p> <p>SOX: 0.005 GM/BHP-HR DIESEL (4) [RULE</p>	<p>B61.2,C1.8,, C1.2, C1.11, C1.12 D12.2, E193.1, E448.2 E448.3, H23.5 I298.10 ,K67.3, K67.4</p>

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 9
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

				1303(a)(1)-BACT,5-10-1996, Rule 1303(a), 12-6-2006];	
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Section D of the Facility Permit

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 3: RULE 219 EXEMPT EQUIPMENT SUBJECT TO SOURCE SPECIFIC RULES					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATING	E25			VOC: (9) [Rule 1113],[Rule 1171]	K67.6
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E26			VOC: (9) [Rule 1171]	
RULE 219 EXEMPT EQUIPMENT 300 GALLONS PORTABLE AQUEOUS AMMONIA STORAGE TOTE	E27				

BACKGROUND / HISTORY

The Palen Solar Electric Generating Station (PSEGS) is a new facility which will be located in the Southern California inland desert, off of Corn Springs Road, approximately ¼ mile north of interstate 10, approximately 10 miles east of Desert Center in eastern Riverside County (see the plant layout diagram included in the next page). The project site will occupy 3,794 acres of public lands owned by the Federal Government. PSEGS is proposing to construct and operate a 500 MW solar-electric power generating plant consisting of two 250 MW facilities operating adjacent to each other. Table 1 below shows the applications for Permit to Construct and the corresponding equipment descriptions and permit processing fees.

Table 1 Application Summary

A/N	Equipment	Submittal Date	Deemed Complete	BCAT/CCAT	Schedule	Base Fee ^(a)	XPP Fee	Total Filing Fees
549379	Auxiliary Boiler no. 1	4/4/13	7/17/13	011005	E	\$5,458.60	\$2,729.30	\$8,187.90
549380	Auxiliary Boiler no. 2	4/4/13	7/17/13	011005	E	\$2,729.30	\$1,364.65	\$4,093.95
549381	Night Preservation Boiler no. 1	4/4/13	7/17/13	011003	C	\$3,440.06	\$1,720.03	\$5,160.09
549383	Night Preservation Boiler no. 2	4/4/13	7/17/13	011003	C	\$1,720.03	\$860.02	\$2580.05
549387	Emergency ICE no. 1	4/4/13	7/17/13	043902	B	\$2,174.89	\$1,087.45	\$3,262.34
549389	Emergency ICE no. 2	4/4/13	7/17/13	043902	B	\$1,087.45	\$543.7345	\$1,631.184
549390	Emergency ICE no. 3	4/4/13	7/17/13	043902	B	\$2,174.89	\$1,087.45	\$3,262.34
549384	Emergency Fire Pump ICE no. 1	4/4/13	7/17/13	044102	B	\$2,174.89	\$1,087.45	\$3,262.34
549385	Emergency Fire Pump ICE no. 2	4/4/13	7/17/13	044102	B	\$1,087.45	\$543.7345	\$1,631.184

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 10
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

549386	Emergency Fire Pump ICE no. 3	4/4/13	7/17/13	044102	B	\$1,087.45	\$543.7345	\$1,631.184
553874	SCR/CO Catalyst no. 1	6/21/13	7/17/13	81	C	\$3,508.86	\$1,754.43	\$5,160.09
553875	SCR/CO Catalyst no. 2	6/21/13	7/17/13	81	C	\$1,754.43	\$1,754.43	\$877.22
549399	RECLAIM/Title V application	6/7/12	7/17/13	555009	-	\$1,747.19	-	\$1,747.19
Total								\$61,007.96

The applications listed in Table 1 above were initially deemed data inadequate on April 26, 2013 because application package were insufficient and information pertaining to the specific equipment was also not included. The applicant submitted the data request to the SCAQMD on 6/14/2013 and made the following changes to the project; Each auxiliary boiler will be vented to a SCR with oxidation catalyst, the operating schedule for the auxiliary boiler has been modified; the night preservation boiler btu rating has been revised to 10.5 mmbtu/hr, there will be a lower CO ppmv limit 25 ppmv for the night preservation boiler; the two large emergency ICE will be Tier II instead of Tier IV. The applications for the SCR was submitted on 6/21/13 and the fees on 6/28/13. The applicant submitted a request to the SCAQMD to opt-in the NOx RECLAIM program on 7/12/13. The SCAQMD deemed the applications data adequate on July 25, 2013.

There will also be an additional fee for the hours of work completed for the air quality analysis. In addition, the project triggers a public notice per Rule 212(g). Therefore, additional fees will be billed to the facility in accordance with Rule 301.

Plant Layout Diagram for the Proposed Palen Solar Power Plant

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING & COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

PAGES
103

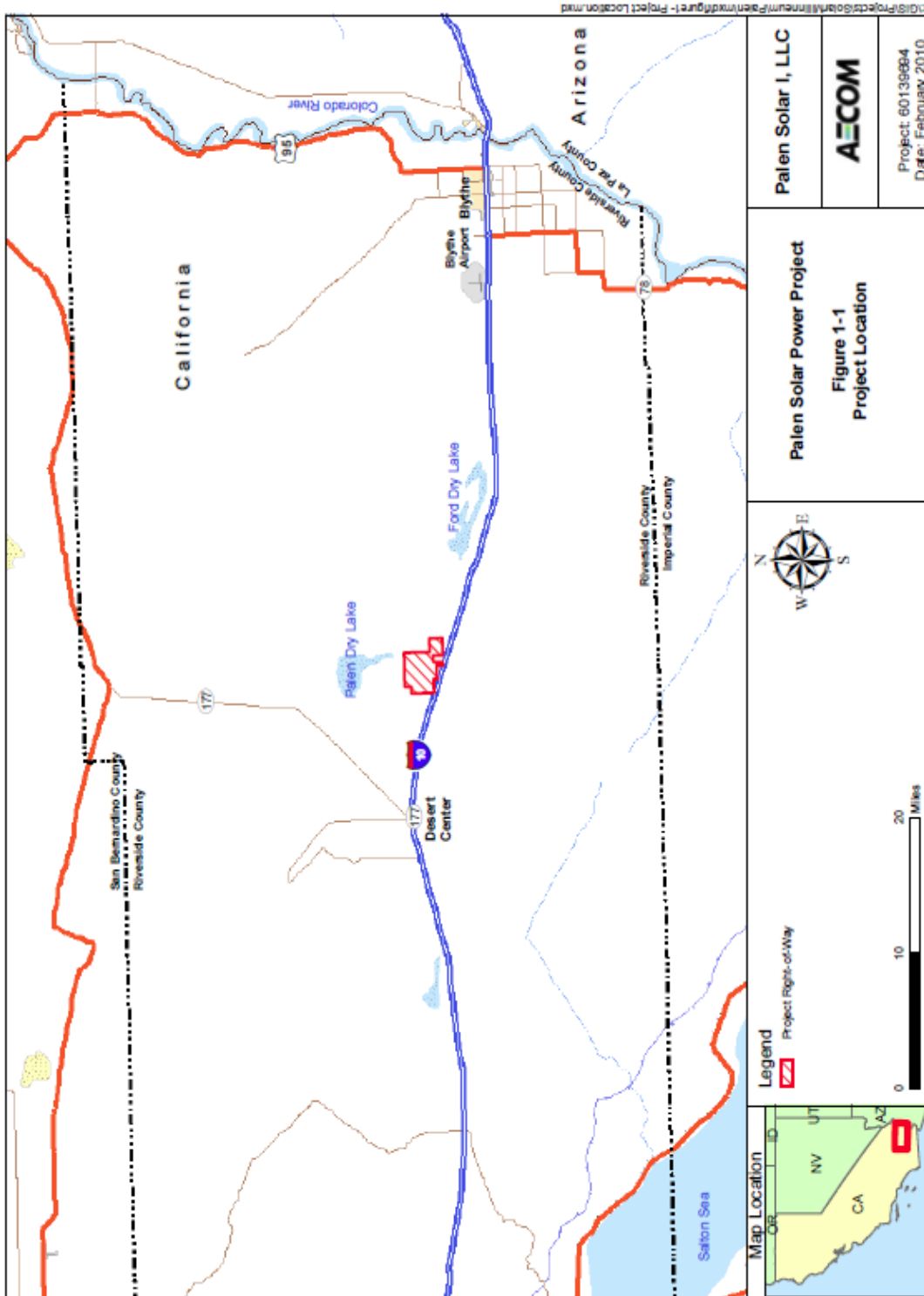
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11

APPL. NO.
549379, 80, 81, 83, 87,
89, 90, 553874 and 76

DATE
12/4/2013

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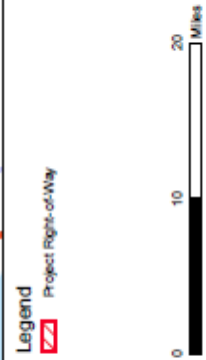


Palen Solar I, LLC

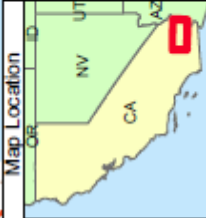
AECOM

Project: 60139684
Date: February, 2010

Palen Solar Power Project
Figure 1-1
Project Location



Legend
Project Right-of-Way



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 12
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

PROCESS DESCRIPTION

PSEGS will use Brightsource’s solar tower technology to generate electricity. The applicant proposes two independent solar plants each 250 MW (called Solar Plant 1 and Solar Plant 2). Both plants will share common facilities. Each solar field will have a dedicated Solar Receiver Steam Generator (SRSG)/tower, solar field/heliostat array, and a dedicated on-reheat Rankine-cycle steam turbine generator .

Each solar plants will use heliostats-elevated mirrors guided by a tracking system mounted on a pylon-to focus the sun’s rays on a SRSG located on a tower near the center of each solar field to create steam to drive a turbine that provides electricity. The solar field and power generation equipment will start each morning after sunrise and will shut down (unless augmented by the auxiliary boiler) when isolation drops below the level required to keep the turbine online. Natural gas Auxiliary boilers may be also be used to extend daily power generation. However, on an annual basis, the natural gas used as a supplement to power generation is limited to below 2% of the annual energy output of the project.

Each solar plant includes auxiliary boilers. A start-up boiler (Auxiliary) will be used during he morning start-up cycle to assist the plant in coming up to operating temperature sooner and for augmenting the solar operation when solar energy is reduced or during transient cloudy conditions. Each solar plant also includes a night preservation boiler that will be used to provide steam to the gland systems of the steam turbine and boiler feedwater pump turbine to prevent air ingress overnight and during other shutdown periods when steam is not available form the SRSG. The night preservation boilers do not provide any steam to the turbine to generate electricity.

Solar Field

Each solar field will consist of 85,000 heliostats, 750 foot solar tower and receiver and power block. Each heliostat consists of two mirror with a surface area of 205 square feet. Each heliostat assembly is mounted on a single pylon along with a computer programmed aiming control system that directs the motion of the heliostat to track the movement of the sun.

Generating units

- Each solar tower is 620 feet tall
- The SRSG located on top of the solar tower is 130 feet tall, giving the total height of the solar tower and SRSG 750 feet tall.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 13
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

- No heliostat will be located closer than 260 feet from the solar tower location.

Steam turbine generator

Each unit would contain a non-reheat, Rankine-cycle, condensing steam turbine generator (STG) with gland steam system, lubricating oil system, hydraulic control system and steam admission/induction valving. High Pressure (HP) steam from the SRSG super heater enters the HP steam turbine section and expands through multiple stages of the turbine, driving a generator to produce electricity. On exiting the Low Pressure (LP) turbine, the steam is directed into the air cooled condenser.

Mirror washing

Regular mirror washing will be performed by a small mirror washing machine. To maintain heliostat performance, heliostat washing is projected to occur up to 24 hours per day (including night time mirror washing), covering the entire solar field weekly. The mirror washing machine, the water pumps are mechanically driven via the “power take-off” coupling on the small tractors that will pull the water wash supply carts. As such, no air permits required from this mobile vehicle. The applicant does not anticipate the use of detergents, soaps, or surfactants at this time because the use of these products will leave a film on the heliostats and will impact efficiency.

Permitted equipment description

Each solar plant will include two natural gas fired boilers to assist with daily start-up of the power generation equipment and to preserve energy in the steam cycle during the evenings.

Each solar plant will have the following permitted equipment

- One 249 mmbtu/hr natural gas fired auxiliary boiler used for start up and cycle augmentation
- One 10.5 mmbtu/hr natural gas fired night preservation boiler used to maintain system water temperatures at night.
- One 3633 hp emergency electrical generator
- One 617 hp emergency fire pump engine

Common facilities area

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 14
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

A common facilities area will be located on the southwestern corner of the site to locate administration, warehouse, and maintenance complex and will have the following permitted equipment

- One 617 hp emergency fire pump engine
- One 398 hp emergency electrical generator

EMISSION CALCULATIONS

Brief overview of the boiler operation

Normally the emissions determination from boilers is routinely done at the SCAQMD. The boilers are evaluated at 100% load for full time for the month and year. However for PSEGS there are two types of boilers. The auxiliary boilers (249 mmbtu/hr) are used during the daytime to augment the heating of the water to maintain a minimum temperature before the Solar Plant goes on line. During the night time, small boilers (10.5 mmbtu/hr) are used to maintain a minimum temperature of the water

Auxiliary boilers

Boiler mode
Non-boosting
Turbine Boosting
Hot/emergency starts
Cold start
Very cold start

- Non-boost mode is the ideal operation for the boiler. The boiler is started in the morning for a few hours and is used to provide pre-heating of the water to the solar receiver steam generator (SRSG) and feed water heating. The boiler is shut-down for about four hours and restarted is re-started for less than hour. This is to provide the boiler to come on line in a quicker time if the solar plant if the solar plant needs a restart due to weather or other conditions. The boiler is re-started in the late afternoon and is used to provide SRSG piping cooling as the solar plant goes off line. The boiler will be off line during the night and will repeat the process the next day.
- Turbine boost mode is used to provide steam to the steam generation for several hours during the day when conditions are not ideal for solar generation. The operation of the turbine

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 15
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

boosting is the same as the non-boosting (see above) except steam is used directly to generate electricity.

- Hot-restart- is used to help the solar plant come on line due a cloud event or emergency trip. The boiler is operated for several hours and is used to provide SRSG panel cooling/heating and feed water heating
- Cold start-the solar plant has been off line for 36 hours and will go through a eight hour restart procedure.
- Very cold start- solar plant has been off line for 80 hours and will go through a 16 hour restart procedure.

Night Preservation Boilers

These boilers are used to maintain a minimum temperature of the water during the evening hours.

Auxiliary Boilers

The auxiliary boilers will be operated under the following assumptions and are the basis for emission calculations

- Natural gas will be the only fuel used by the boilers;
- Boilers will be vented to SCR and controlled NOx concentration of 5 ppmv burners and CO concentration of 25 ppmv;
- There are multiple modes of operations as listed in the tables below
- Annual operation of each boiler will be based on ~~307~~ 316 mmcf annual fuel usage (see emissions calculations for details). The maximum fuel usage is based on boosting mode (220 day/yr), non-boosting mode (120 day/yr), 10 cold starts, 5 very cold starts and 60 boosting/emergency starts per year
- The maximum fuel usage per month is ~~40~~ 41 mmcf monthly ~~annual~~ fuel usage (see emissions calculations for details). The maximum fuel usage is based on boosting mode (29 day/mon), 1 cold start, 1 very cold starts and 29 boosting/emergency starts per month
- 100 percent of the PM10 emissions are PM2.5

The criteria pollutant emission factors used for the NOx and CO emission estimates are based ≤ 5 ppmv and ≤ 25 ppmv respectively, each at 3% O2, dry basis. The PM10 and VOC emission factors are based on vendor performance warranties, and the SOx emission factor was base on 0.75 gr/100 cf of gas (0.002101 lb/MMBTU). Boiler criteria pollutant emissions for a single boiler and two

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 16
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

boilers are shown in the calculation sheets at the end of this engineering evaluation and summarized in Tables 7 below, respectively (Note 30-DA means 30-day average emissions).

One natural gas fired auxiliary boilers are proposed for each power block. The boilers will be used during the morning start-up cycle to assist the power generation equipment in coming up to operating temperature more quickly and for augmenting the solar operation when solar energy diminishes or during transient cloudy conditions.

1 Modes of operation for the boiler

A. Turbine Boosting mode operation

This mode of operation is used to provide additional steam to be sent to the steam generator to generate electricity during days when solar generation is not optimal (basically the same as non-boosting mode (see section B below), but with the addition of steam generation for the steam turbine) . The boiler is started at 5 am after 12- 14 hours of being shut down the previous evening. This type of start-up is called a “warm start” and will last for 90 minutes and the boiler will be at 17.5% load. The boiler will be operated for additional one hour at 100% load. During this operation the boiler is used to help the solar plant to come on line by providing heated feed water to the system. The boiler is then shut down from 7:30 to noon. At noon the boiler is started. The boiler is operated for 45 minutes at 17.5% load. This is done if there is not enough solar generation, the boiler will be able to augment the solar generation in a minimal time period. The boiler is then shut down from 12:45 to 3:15. The boiler is restarted with a second hot start from 3:15 to 4:00 and is operated at 17.5% load

“Turbine boosting mode”, during this operation the boiler will provide steam to the turbine and produce electricity from 4 pm to 6 pm. The applicant estimates less than 2 percent of electrical generation will be from both boilers. The turbine boosting mode is used when there is not ideal conditions of the solar plant to produce electricity. The applicant estimates 30 MWh (average) per day (email dated 7/9/2013 from applicant) when operating in this mode (SRSG and aux boiler are in operation). There is no operation of turbine with only the aux boiler and SRSG off line. From 6 pm to 7 pm is operated for piping cooling prior to going off line for the evening. Table below show the operations of the boiler during this mode

Table , Turbine Boosting Mode

Boiler operations	Boiler load	Adjusted for partial load MMbtu/hr	Schedule	Duration (min)	SCR on line
Start-up (after 12-14 hr shutdown	17.5%	43.6	5:00-6:30	90	No

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 17
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

SRSG panel/feedwater heating (morning with aux steam)	100%	249	6:30-7:30	60	Yes
Aux boiler bottled up (boiler is off line)			7:30-12:00		
Aux boiler restart (after 3-4 hours shutdown)	17.5%	43.6	12:00-12:45	45	No
Aux boiler bottled up			12:45-15:15		
Aux boiler start (after 2-3 hours shutdown)	17.5%	43.6	15:15-16:00	45	No
Turbine boosting mode (with aux boiler steam)	50%	124.5	16:00-16:30	30	Yes
Turbine boosting mode (with aux boiler steam)	100%	249	16:30-17:30	60	Yes
Turbine boosting mode (with aux boiler steam)	80%	199.2	17:30-18:00	30	Yes
SRGS piping cooling (evening) with aux boiler steam)	80%	199.2	18:00-19:00	60	Yes

B. Non-Boosting mode operation

This mode of operation is not used to provide additional steam to generate electricity. The boiler is started at 6:30 am after 12- 14 hour shut down in the evening prior. This type of start-up is called a “warm start” and will last for 90 minutes and the boiler will be at 17.5% load. The boiler will be operated for additional one hour at 100% load. During this operation the boiler is used to help the solar plant to come on line by providing heated feed water to the system. The boiler is shut down from 9:00 to noon. At noon the boiler is started, this start is known as a “Hot start”. The boiler is operated for 45 minutes at 17.5% load. This is done if there is not enough solar generation, the boiler will be able to augment the solar generation in a minimal time period. The boiler is then shut down from 12:45 to 3:15. The boiler is restarted with a second hot start from 3:15 to 4:00 and is operated at 17.5% load, then from 4 pm to 5 pm the boiler is operated at 80% load for SRSG piping cooling to prepare the solar plant to come off line. Table below show the operations of the boiler during this

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 18
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

mode.

Table, Non-Boosting Mode

Boiler operations	Boiler load	Adjusted for partial load MMbtu/hr	Schedule	Duration (min)	SCR on line
Start-up (after 12-14 hr shutdown)	17.5%	43.6	6:30-8:00	90	No
SRGS panel/feedwater heating (morning with aux steam)	100%	249	8:00-9:00	60	Yes
Aux boiler bottled up			9:00-12:00		
Aux boiler restart (after 3-4 hours shutdown)	17.5%	43.6	12:00-12:45	45	No
Aux boiler bottled up			12:45-15:15		
Aux boiler start (after 2-3 hours shutdown)	17.5%	43.6	15:15-16:00	45	No
SRGS piping cooling (evening) with aux boiler steam)	80%	199.2	16:00-16:45	45	Yes

C. Hot start after cloud event/emergency trip

This mode of operation is not used to provide additional steam to generate electricity during unexpected cloudy conditions or after the solar plant had a emergency shut-down trip. . During this mode of operation the boiler generates steam to keep the SRSG panel warm to allow for a fast restart of the plant after its emergency trip. . **The boiler is not used to produce electricity in this mode of operation.** When the boiler is operated in this mode, it is started for 45 minutes at 17.5% load. The boiler will be operated for an additional 30 minutes at 100% load. The boiler then operates for 60 minutes at 30 percent load and for 30 minutes at 100% load. The applicant estimates 60 starts of this type of mode per year. The table below shows the operations of the boiler during this mode.

Table Hot start/emergency trip

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 19
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Boiler operations	Boiler load	Adjusted for partial load MMbtu/hr	Schedule	Duration (min)	SCR on line
Start-up	17.5%	43.6	Variable	45	No
SRGS panel cooling	100%	249	Variable	30	Yes
Aux boiler is at min load until plant is ready to restart	30%	74.7	Variable	60	Yes
SRGS panel/ feed water heating	100%	249	Variable	30	Yes

D. Cold start

This mode of operation occurs when the SRSG and boiler have not been in operation for one day and two nights due to possible cloudy or windy weather. The boiler is operated in this mode, it is started for 3 hours (the slow start-up times are to avoid thermal shock on the metallurgy for the plant pipes) at 17.5% load. The boiler will be operated for additional 4 hours at 50% load. Then operated for 1 hour at 100% load. Table 5 below show the operations of the boiler during this mode

Table 5 Cold Start

Boiler operations	Boiler load	Adjusted for partial load MMbtu/hr	Schedule	Duration (hr)	SCR on line
Start-up	17.5%	43.6	Variable	3	No
Aux boiler steam for plant system/ piping preheating	50%	125.4	Variable	4	Yes
SRGS panel/ feed water heating	100%	249	Variable	1	Yes

E. Very cold start

This mode of operation occurs when the SRSG and boiler have not been in operation for more than three days or 80 hours due to plant maintenance or bad weather. When the boiler is operated in this

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 20
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

mode, it is started for 4.5 hours (the slow start-up times are to avoid thermal shock on the metallurgy for the plant pipes) are at 17.5% load. The boiler will then be operated for an additional 10 hours at 50% load. The boiler then operates for 1 hour at 100% load. Table 6 below show the operations of the boiler during this mode.

Table 6 Very Cold Start

Boiler operations	Boiler load	Adjusted for partial load MMbtu/hr	Schedule	Duration (hr)	SCR on line
Start-up	17.5%	43.6	Variable	4.5	No
Aux boiler steam for plant system/ piping preheating	50%	125.4	Variable	10	Yes
SRGS panel/ feed water heating	100%	249	Variable	1	Yes

2 Maximum monthly emissions (see Appendix B)

The applicant proposes the following modes of operations to determine the maximum monthly emission (to determine the max. 30 day average for offset determination) will be based on the follow table

Table Worst Case mode of operation for maximum monthly emissions

Boiler mode	Days/mon
Boosting	29
Very cold start	1
Cold start	1
Hot/emergency starts	29

Note, the hot/emergency start will be incorporated into the boosting mode schedule

For the worst case emission determination, the non-boosting mode of operation is not included

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 21
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

(because the emissions are less than turbine boosting mode emissions)

A. Boosting mode emission (per one boiler)

Pollutant	Maximum Daily normal operation 100% load (lb/day)	Maximum Daily start-up/hot start operation 17.5% load no control (lb/day)	Maximum Daily hot start operation 50% load control (lb/day)	Maximum Daily 80% load controlled (lb/day)	Maximum Total Daily (lb/day)	Maximum Total Month Daily (lb/mon)
NOx	3.097	10.454	0.387	1.858	15.796	458.088
VOC	1.992	0.706	0.249	1.195	4.142	120.121
CO	9.425	19.595	1.178	5.655	35.853	1039.743
PM10	2.490	0.974	0.311	1.494	5.1269	148.44 152.809
SOx	1.046	0.275	0.131	0.628	2.0279	58.58 60.301

See calculations sections for details

B. Very cold start mode (per one boiler)

Pollutant	Maximum Daily normal operation 100% load (lb/day)	Maximum Daily start-up operation 17.5% load (lb/day)	Maximum Daily start-up operation 50% load (lb/day)	Maximum Total Daily (lb/day)	Maximum Total Month Daily (lb/mon)
NOx	1.548	15.681	7.742	24.972	24.972
VOC	0.996	1.059	4.980	7.035	7.035
CO	4.713	29.392	23.563	57.668	57.668
PM10	1.245	1.461	6.225	8.68931	8.68931
SOx	0.523	0.412	2.616	3.4551	3.4551

C. Cold start mode emissions (per one boiler)

	Maximum	Maximum	Maximum	Maximum	Maximum
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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 22
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Pollutant	Daily normal operation 100% load (lb/day)	Daily start-up operation 17.5% load no control (lb/day)	Daily normal operation 50% load (lb/day)	Total Daily (lb/day)	Total <u>Month</u> <u>Daily</u> (lb/mon)
NOx	1.548	10.454	3.097	15.099	15.099
VOC	0.996	0.706	1.992	3.694	3.694
CO	4.713	19.595	9.425	33.733	33.733
PM10	1.245	0.974	2.490	4.5709	4.5709
SOx	0.523	0.275	1.046	1.79844	1.79844

D. Emergency/hot start mode (per one boiler)

Pollutant	Maximum Daily normal operation 100% load controlled (lb/day)	Maximum Daily normal operation 30% load controlled (lb/day)	Maximum Daily start-up operation 17.5% load no control (lb/day)	Maximum Total Daily (lb/day)	days/month	Maximum Total <u>Month</u> <u>Daily</u> (lb/mon)
NOx	1.548	0.465	2.614	4.626	29.000	134.168
VOC	0.996	0.299	0.171	1.466	29.000	42.515
CO	4.713	1.414	4.899	11.025	29.000	319.726
PM10	1.245	0.374	0.244	1.8162	29.000	53.998 52.45
SOx	0.523	0.157	0.069	0.7349	29.000	21.09712

E. Total emissions per month and 30 ave (per one boiler)

Pollutant	Maximum monthly boosting (lb/mon)	Maximum monthly very cold start (lb/mon)	Maximum monthly cold start (lb/mon)	Maximum monthly hot start emergency (lb/mon)	Maximum Total <u>Month</u> <u>Daily</u> (lb/mon)	30DA (lb/day)
NOx	458.088	24.972	15.099	134.168	632.327	21.08
VOC	120.121	7.035	3.694	42.515	173.366	5.78

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 23
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

CO	1039.743	57.668	33.733	319.726	1450.869	48.36
PM10	152.809	8.931	4.709	53.998	220.447	7.1435
SOx	60.301	3.551	1.844	21.712	87.408	2.8391

The applicant based the various modes of operation on annual bases as seen in the table below

Item	Maximum <u>Year</u> monthly boosting	Maximum <u>Year</u> monthly very cold start	Maximum <u>Year</u> monthly cold start	Maximum <u>Year</u> monthly hot start emergency	Maximum Non- boosting mode
Day/yr	220	5	10	60	125

Regulation 13 requires offsets to be based on the worst operating month. The applicant provided the following Table for the worst case month. Note, Non-boosting mode is not included because the emissions are less than boosting mode emissions.

Worst Case mode of operation for maximum monthly emissions

Boiler mode	Days/mon
Boosting	29
Very cold start	1
Cold start	1
Hot/emergency starts	29

F. Maximum annual emissions

The applicant proposes the following modes of operations to determine the maximum annual emission will be based on the follow table

Boiler mode	Days/year
Boosting	220

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 24
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Very cold start	5
Cold start	10
Hot/emergency starts	60
Non-boosting	125

Per one boiler

Pollutant	Maximum yearly boosting (lb/yr)	Maximum yearly very cold start (lb/yr)	Maximum yearly cold start (lb/yr)	Maximum yearly hot start emergency (lb/yr)	Maximum yearly non- boosting (lb/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
day/yr	220	5	10	60	125		
NOx	3475.15	124.86	150.99	277.59	1616.45	5645.04	2.82
VOC	911.27	35.17	36.94	87.96	287.44	1358.78	0.68
CO	7887.70	288.348	337.33	661.50	3391.87	12566.74	6.28
PM10	1159.24 <u>1126.09</u>	44.66 <u>43.38</u>	47.09 <u>45.75</u>	111.72 <u>108.53</u>	370.75 <u>360.16</u>	1733.46 <u>1168.93</u>	0.847
SOx	457.46 <u>444.43</u>	17.75 <u>17.25</u>	18.44 <u>17.91</u>	44.92 <u>43.64</u>	138.95 <u>134.98</u>	677.52 <u>658.17</u>	0.334

The annual emission is based on the following

- First determine the yearly emission from each mode of operation, by taking the lb/day emissions per pollutant and multiplying the value of the day of operation per year. Repeat the process for each pollutant
 - Second sum the annual emissions for each mode of operation to determine the annual emissions
3. Fuel Usage
- A. Monthly Fuel usage

The monthly fuel usage per boiler is based on the different modes of operations as outlined below

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 25
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Boosting mode

boiler load	hr/dy	mmcf
17.50%	3	0.1245
100%	2	0.4743
50%	0.5	0.0593
80%	1.5	0.2846
total		0.9426

$$\text{Mmcf/load} = 249 \text{ mmbtu/hr} * \text{Load \%} * \text{hr/dy} * (1 \text{ mmcf}/1050 \text{ mmbtu})$$

Very Cold day mode

boiler load	hr/dy	mmcf
17.50%	4.5	0.1868
100%	1	0.2371
50%	10	1.1857
total		1.6096

Cold day mode

boiler load	hr/dy	mmcf
17.50%	3	0.1245
100%	1	0.2371
50%	4	0.4728
total		0.8359

Hot restart/emergency trip mode

boiler load	hr/dy	mmcf

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 26
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

17.50%	0.75	0.0311
100%	1	0.2371
30%	1	0.0711
total		0.3394

Monthly fuel usage per mode

Pollutant	Maximum monthly boosting (mmcf)	Maximum monthly very cold start (lb/mmcf)	Maximum monthly cold start (mmcf)	Maximum monthly hot start emergency (mmcf)	Maximum <u>Total Monthly Daily</u> (mmcf)
mmcf	27.337	1.610	0.836	9.843	39.625

maximum monthly fuel usage = (29 boost days* 0.9426) + (1 cold start *0.8359) + (1 very cold start * 1.6096)+ (29 emergency/hot start* 0.3394)

maximum monthly fuel usage = 40 MMCF

B. Annual Fuel usage (per one boiler)

fuel	Maximum annual boosting (mmcf)	Maximum annual very cold start (lb/mmcf)	Maximum annual cold start (mmcf)	Maximum annual hot start emergency (mmcf)	annual non- boosting (mmcf)	Annual (MMCF)
mmcf/day	0.943	1.610	0.836	0.339	0.503	
days/yr	220	5	10	60	125	
mmcf/yr	207.38	8.05	8.36	20.36	62.92	307.07

Non boosting mode fuel usage

		mmcf
boiler load	hr/dy	mmcf
17.50%	3	0.1245
100%	1	0.2371
80%	0.75	0.1417

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 27
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

total	3	0.5034
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The above non-boosting fuel usage was not included in the worst case emission or fuel usage, but is include in the annual fuel usage

$$\text{annual fuel usage} = (220 \text{ boost day/yr} * 0.943) + (10 \text{ cold start/yr} * 0.836) + (5 \text{ very cold start/yr} * 1.610) + (60 \text{ emergency/hot start per year} * 0.339) + (125 \text{ non-boost days/yr} * 0.503)$$

$$\text{annual fuel usage} = 307.07 \text{ mmcf/yr} = 307 \text{ mmcf/yr}$$

Note use 1050 btu/ft3 for determining fuel usage, RECLAIM purpose

The following table list the monthly, yearly and commissions fuel usage, with the appropriate permit conditions

Item	Fuel usage	Units	Permit Condition	Reference
Monthy fuel usage	40	Mmcf/mon	C1.1	Appendix B
Commissioning fuel usage	4.28	Mmcf/month	C1.26	Appendix E
Yearly fuel usage-non commissioning year	307	Mmcf/yr	C1.3	Appendix B
Yearly fuel usage-commissioning year	311	Mmcf/yr	C1.4	Appendix B

3. Commissioning

The applicant is proposing 40 hours of commissioning time as listed below

Hours	Mode	EF	Mmbtu/hr
4	Cold start	SU emissions factors	31.1
4	Warm start	SU emissions factors	31.1
12	Low load	Low load emissions factors	63
12	Med load	High load emissions factors	125
8	High load	High load emissions factors	249

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 28
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Pollutant	Start-up	Low load	High load	Units	Reference
NOx	0.088	0.011	0.011	Lb/mmbtu	Vendor
VOC	0.0054	0.0054	0.0054	Lb/mmbtu	Vendor
CO	0.146	0.037	0.037	Lb/mmbtu	Vendor
PM10	0.01	0.005	0.005	Lb/mmbtu	Vendor
SOX	0.0021	0.0021	0.0021	Lb/mmbtu	Vendor

Mode	NOx	CO	VOC	SOX	PM10
	Lb/period	Lb/period	Lb/period	Lb/period	Lb/period
SU	21.89	36.32	1.34	0.52	3.78
Low	8.32	27.97	0.0054	4.08	1.59
Med	16.5	55.5	8.1	3.15	7.5
High	21.91	73.7	10.76	4.18	9.96
total	68.62	193.50	0.81	9.44	23.73

Night Preservation Boilers

The **night preservation** ~~auxiliary~~ boilers will be operated under the following assumptions and are the basis for emission calculations

- Natural gas will be the only fuel used by the boilers;
- Boilers will be equipped with ultra-low-NOx (9 parts per million by volume) burners and CO concentration limit of 25 ppmv;
- Normal operation of each boiler will be 14 hours/day at full load
- Annual operation of each boiler will be based on ~~48~~ 49.74 mmcf annual fuel usage
- Monthly operation of each boiler will be based on 4.347 mmcf **monthly** ~~annual~~ fuel usage
- 100 percent of the PM10 emissions are PM2.5

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 29
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The criteria pollutant emission factors used for the NO_x and CO emission estimates are based on ≤ 9 ppmv and ≤ 25 ppmv respectively, each at 3% O₂, dry basis. The applicant is proposing to limit the CO concentration to 25 ppmv or less. The PM₁₀ and VOC emission factors are based on AP-42 and vendor performance warranties (0.007451 lb/MMBTU for PM₁₀ and 0.004 lb/MMBTU for VOC, respectively), and the SO_x emission factor was base on 0.75 gr/100 cf of gas (0.002101 lb/MMBTU). Boiler criteria pollutant emissions for a single boiler and two boilers are shown in the calculation sheets at the end of this engineering evaluation and summarized in Tables 7 and 8 below, respectively (Note 30-DA means 30-day average emissions).

The boilers are used to keep as much heat as possible in the system during the night.

A. Emissions summary

Pollutant	Emission Factor (lb/MMBTU)	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)	Annual Emissions (lb/yr)	Monthly Emissions (lb/month)	30DA (lb/day)
NO _x	0.011109	0.1166	1.633	563.39	50.62	1.69
VOC	0.0040	0.0400	0.588	202.86	18.23	0.61
CO	0.0018	0.1972	2.761	952.59	85.60	2.85
PM ₁₀	0.007238	0.0760	1.064	367.08	32.98	1.10
SO _x	0.002014	0.0204	0.300	103.50	9.30	0.31

See attachment for calculations details

B. Fuel usage summary

$$FC = (10,500,000 \text{ BTU/hr})(14 \text{ hr} \cdot 100\%)(1 \text{ scf}/1050 \text{ BTU})(1 \text{ mmcf}/1000000 \text{ scf}) = 0.14 \text{ MMCF/DAY}$$

$$FC = (0.14 \text{ MMCF/dy})(31 \text{ day/mon}) = 4.34 \text{ mmcf/mon}$$

$$FC = (0.14 \text{ MMCF/dy})(345 \text{ day/yr}) = 48.301 \text{ mmcf/yr} = 48 \text{ mmcf/yr}$$

Use 1050 btu/ft³ for RECLAIM purposes

The following table list the monthly, yearly and commissions fuel usage, with the appropriate permit conditions

Item	Fuel usage	Units	Permit Condition	Reference
Monthly fuel usage	4.34	Mmcf/mon	C1.5	Appendix D
Yearly fuel usage	48	Mmcf/yr	C1.7	Appendix D
Commissioning fuel usage	0.11	Mmcf/month	C1.6	Appendix F

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 30
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

C. Commissioning

The applicant is proposing 20 hours of commissioning time as listed below

Hours	Mode	EF	Mmbtu/hr
4	Cold start	Low load emissions factors	2.625
4	Low load	Low load emissions factors	2.625
6	Med load	High load emissions factors	5.25
6	High load	High load emissions factors	10.5

Pollutant	Start-up	Low load	High load	Units	Reference
NOx	0.011	0.011	0.011	Lb/mmbtu	Vendor
VOC	0.0054	0.0054	0.0054	Lb/mmbtu	Vendor
CO	0.018	0.018	0.018	Lb/mmbtu	Vendor
PM10	0.013	0.013	0.013	Lb/mmbtu	Vendor
SOX	0.0021	0.0021	0.0021	Lb/mmbtu	Vendor

Mode	NOx	CO	VOC	SOX	PM10
	Lb/period	Lb/period	Lb/period	Lb/period	Lb/period
total	1.27	2.08	0.62	0.24	1.50

[Emergency Fire Water Pump Engines, A/N 549384, 549385 and 549386, each 617 HP](#)

The assumptions made regarding emergency fire pump engine operation are listed below:

- Engines will use ultra-low sulfur (15 parts per million by weight) diesel fuel;
- Engines have Tier 3 Certification;

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 31
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

- Engine emissions are based on 4.2 hours per month testing, not to exceed 50 hours per year, and will be limited to an annual maximum of 200 hr/yr emergency use. The engine will be limited to 30 min/test in any one hour (CEQA). Note the 200 hr/yr limit is inclusive of the allotted 50 hr/yr for maintenance and testing.

Emission estimates are based on emission factors for EPA Tier 3 certified engines, as determined by the BACT Guidelines for Minor Sources. Emission estimates for SOx are based on estimated fuel use of 34 gallons per hour for each engine with a heating value of 137,000 Btu per gallon and fuel sulfur content of 15 ppm by weight. Fire pump engine criteria pollutant emissions for a single engine per the calculation sheets at the end of this engineering evaluation and summarized in Tables 9, respectively.

Emergency Fire Water Pump Emissions (One Engine)

Pollutant	Emission Factor (gm/bhp-hr)	Hourly (lb/hr)	Annual (lb/yr)	Monthly (lb/month)	30-DA (lb/day)
NOx	2.60	3.533	176.67	14.72	0.4908
VOC	0.10	0.136	6.80	0.57	0.0189
CO	0.50	0.680	33.98	2.83	0.0944
PM10	0.09	0.122	6.12	0.51	0.0170
PM2.5	0.09	0.122	6.12	0.51	0.0170
SOx		0.0073	0.37	0.03	0.0010

Emergency Electrical Generator, A/N 549390, 398 HP (one engine)

The assumptions made regarding emergency electrical generator engine operation are listed below:

- Engine will use ultra-low sulfur (15 parts per million by weight) diesel fuel;
- Engine have Tier 3 Certification, copy in file
- Engine emissions are based on 4.2 hours per month testing, not to exceed 50 hours per year, and will be limited to an annual maximum of 200 hr/yr emergency use. The engine will be limited to 30 min/test in any one hour (CEQA). Note the 200 hr/yr limit is inclusive of the allotted 50 hr/yr for maintenance and testing;

Emission estimates are based on emission factors for EPA Tier 3 certified engines. Emission estimates for SOx are based on estimated fuel use of 20 gallons per hour for each engine and fuel sulfur content of 15 ppm by weight. Emergency electrical generator engine emissions for a single engine are shown in the calculation sheets at the end of the engineering evaluation and summarized in Tables 11.

Emergency Electrical Generator Emission (One Engine)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 32
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Pollutant	Emission Factor (gm/bhp-hr)	Hourly (lb/hr)	Annual (lb/yr)	Monthly (lb/month)	30-DA (lb/day)
NOx	2.49	2.183	109.14	9.10	0.3032
VOC	0.27	0.237	11.83	0.99	0.0329
CO	2.31	2.025	101.25	8.44	0.2813
PM10	0.11	0.096	4.82	0.40	0.0134
PM2.5	0.11	0.0096	4.82	0.40	0.0134
SOx		0.0043	0.22	0.02	0.0006

Emergency Electrical Generators, A/N 549387 and 549388, 3633 HP

The assumptions made regarding emergency electrical generator engine operation are listed below:

- Engines will use ultra-low sulfur (15 parts per million by weight) diesel fuel;
- Engines have Tier II certification, copy in file
- Engine emissions are based on 4.2 hours per month testing, not to exceed 50 hours per year, and will be limited to an annual maximum of 200 hr/yr emergency use. The engine will be limited to 30 min/test in any one hour (CEQA). Note the 200 hr/yr limit is inclusive of the allotted 50 hr/yr for maintenance and testing;

Emission estimates are based on emission factors for EPA Tier II certified engines. Emission estimates for SOx are based on estimated fuel use of 179.2 gallons per hour for each engine and fuel sulfur content of 15 ppm by weight. Emergency electrical generator engine emissions for a single engine and two engines are shown in the calculation sheets at the end of the engineering evaluation and summarized in Tables 11.

Emergency Electrical Generator Emissions (One Engine)

Pollutant	Emission Factor (gm/bhp-hr)	Hourly (lb/hr)	Annual (lb/yr)	Monthly (lb/month)	30-DA (lb/day)
NOx	3.70	29.608	1,480.41	123.37	4.1122
VOC	0.25	2.001	100.03	8.34	0.2779
CO	0.89	7.122	356.10	29.67	0.9892
PM10	0.09	0.716	35.81	2.98	0.0995
PM2.5	3.70	0.716	35.81	2.98	0.0995
SOx		0.0305	1.53	0.13	0.0042

Selective Catalytic Reduction/CO Catalyst Systems (A/Ns 553874 and 553875)

The table below shows the specifications for the SCR manufacturer to be used for the Auxiliary boilers.

Table - Selective Catalytic Reduction

Catalyst Properties	Specifications
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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 33
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Manufacturer	Cormetech, Inc
Catalyst Description	Ti V honeycomb single layer structure
Catalyst Model No.	custom
Catalyst Volume	90 ft ³
Guaranteed Life	3 years from contracted delivery.
Space Velocity	34,300 hr ⁻¹
Ammonia Injection Rate	1 lb/hr starts at exhaust temp of 550 F (density = 7.48 lb/gal)
Ammonia slip	5 ppmv
NOx removal efficiency	>90%
NOx at stack outlet	5 ppmv at 3% O ₂
Exhaust Temperature	550-750°F
Pressure drop	4.5 inches water column
Depth	1'-6"
Width	8-10"
Height	6'-9"

The SCR catalyst will use ammonia injection in the presence of the catalyst to reduce NOx. Diluted ammonia vapor will be injected into the exhaust gas stream via a grid of nozzles located upstream of the catalyst module. The subsequent chemical reaction will reduce NOx to elemental nitrogen (N₂) and water, resulting in NOx concentrations in the exhaust gas at no greater than 5 ppmvd at 3% O₂ on a 15 min average. The basis of the SCR system control will employ a PLC commissioned with a proportional feed forward curve (mapping), correlating fuel flow/firing rate to outlet NOx concentration. The firing rate signal will be sent from the boiler Combustion Control system to the SCR PLC. The PLC will then integrate this signal, and thus output a proportional signal to regulate the correct amount of ammonia to be injected into the SCR for NOx control. A Rule 2012 NOx CEMs will be installed at the outlet exhaust of the SCR, but will not be tied into the feed forward system.

Ammonia Slip

item		
Ammonia slip	5	ppmv
Lb/hr	0.68	Lb/hr
Lb/mon	128	Lb/mon
Lb/yr	894	Lb/yr

See appendix L for calculations

CO Oxidation Catalyst

The CO oxidation catalyst will be installed within the catalyst housing which will reduce CO in the exhaust gas to no greater than 25 ppmvd at 3% O₂, on a 15 minute average. The exhaust from each catalyst housing will be discharged from individual 120-foot tall, 6 foot diameter exhaust stacks. Each Auxiliary boiler will have its own individual stack.

The following table lists the specifications for the CO catalyst.

Table - CO Oxidation Catalyst

Catalyst Properties	Specifications
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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 34
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Manufacturer	Emerachem
Model	ADCAT
Catalyst Type	Pt on metal substrate
Catalyst Life	3 years
Volume	10 ft ³
CO removal efficiency	90%
CO at stack outlet	25 ppmvd at 3% O ₂
Max inlet temperature	1150 F
Pressure drop	1 inche water column
Depth	2"
Width	8"-10"
Height	6"-9"

Aqueous Ammonia Storage

The applicant will use aqueous ammonia with a concentration of 19 percent by wt. The aqueous ammonia will be stored in 300 gallon portable totes and one tote will be used per boiler. The applicant estimated less than 9 totes will be used per year per boiler. The applicant estimates one tote will be delivered per boiler once every 45 days. Each tote is less than 500 gallons capacity and is Rule 219 (m)(16) exempt from SCAQMD permit.

FACILITY EMISSIONS SUMMARIES

Facility 30 day average Emissions Summary

Equipment	Device no.	NOx	VOC	CO	SOx	PM10
Large boiler 1	D1	21.08	5.78	48.36	2.83	7.14
Large boiler 2	D6	21.08	5.78	48.36	2.83	7.14
small boiler 1	D11	1.69	0.61	2.85	0.31	1.10
small boiler 2	D12	1.69	0.61	2.85	0.31	1.10
Large ICE 1	D13	4.11	0.28	0.99	0.00	0.10
Large ICE 2	D15	4.11	0.28	0.99	0.00	0.10
Small ICE	D17	0.30	0.03	0.28	0.00	0.01
Large fire pump 1	D19	0.49	0.02	0.09	0.00	0.02
Large fire pump 2	D20	0.49	0.02	0.09	0.00	0.02
Large fire pump 3	D21	0.49	0.02	0.09	0.00	0.02
totals		55.53	13.42	104.97	6.48	17.22

Facility Monthly Emissions Summary

Equipment	Device no.	NOx	VOC	CO	SOx	PM10
Large boiler 1	D1	632.33	173.37	1450.87	84.91	214.15
Large boiler 2	D6	632.33	173.37	1450.87	84.91	214.15
small boiler 1	D11	50.62	18.23	85.60	9.30	32.98

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 35
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

small boiler 2	D12	50.62	18.23	85.60	9.30	32.98
Large ICE 1	D13	123.37	100.03 8.34	356.10 29.67	0.13	2.98
Large ICE 2	D15	123.37	100.03 8.34	356.10 29.67	0.13	2.98
Small ICE	D17	9.10	0.99	8.44	0.02	0.40
Large fire pump 1	D19	14.72	0.57	2.83	0.03	0.51
Large fire pump 2	D20	14.72	0.57	2.83	0.03	0.51
Large fire pump 3	D21	14.72	0.57	2.83	0.03	0.51
Totals lb/mon		1666	403.586 3149	3802	189	502
ton/mon		0.83	0.209 1.5790		0.09	0.25

Facility Annual Emissions Summary

Equipment	Device no.	NOx	VOC	CO	SOx	PM10
Large boiler 1	D1	5645.04	1358.78	12566.74	658.17	1683.93
Large boiler 2	D6	5645.04	1358.78	12566.74	658.17	1683.93
small boiler 1	D11	563.39	202.86	952.59	103.50	367.08
small boiler 2	D12	563.39	202.86	952.59	103.50	367.08
Large ICE 1	D13	1480.41	6.80 100.03	356.10	1.53	35.81
Large ICE 2	D15	1480.41	6.80 100.03	356.10	1.53	35.81
Small ICE	D17	109.14	11.83	101.25	0.22	4.82
Large fire pump 1	D19	176.67	6.80	33.98	0.37	6.12
Large fire pump 2	D20	176.67	6.80	33.98	0.37	6.12
Large fire pump 3	D21	176.67	6.80	33.98	0.37	6.12
Totals lb/yr		16,017	3169 3356	27,954	1528	4197
ton/yr		8.01	1.658	13.98	0.76	2.10

EVENTS SINCE PDOC ISSUANCE

The PDOC for this project was issued on October 18, 2013. The Public Notice was published in the Riverside Press Enterprise on October 25, 2013 (copy of actual newspaper notice in file). In addition, copies of the Public Notice were submitted to interested agencies and parties including U.S. Environmental Protection Agency (USEPA), U.S. Forest Service, Federal Land Manager, California Air Resources Board (CARB), California Energy Commission (CEC), Colorado River Indian Tribes, Antelope Valley AQMD, Mojave Desert AQMD, Ventura County Air Pollution Control District, Imperial County Air Pollution Control District, Riverside County Planning Department, SCAG, Pechanga Band of Luiseno Missions Indians, Pala Band of Missions Indians, San Diego Air Pollution

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 36
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Control District, Palen Solar Electric Generating Station, and the Lake Tamarisk Library located in Desert Center in proximity to the proposed project site. The applicant also was required to circulate the Public Notice to all addresses within a ¼ mile radius of the proposed project site. Email dated 11/22/2013 from the applicant indicated there are no addresses m within ¼ mile radius of the proposed project. SCAQMD received no comments from the general public for whom the distributed copies of the Public Notice were sent. SCAQMD received one formal comment letter from interested parties. SCAQMD received formal written comments from CEC dated November 18, 2013, and during the 30 day public comment period, which ended November 25, 2013. The U.S EPA comment review period ended on 12/3/2013 with no comments. Below is a summary of the written comments from the CEC, along with SCAQMD's responses.

Comments Received from CEC

Comment No. 1

PDOC condition no. B61.2 was not tagged to the small ICE and the three fire pump ICEs, the conditions have been added in the FDOC. Condition no. K67.4 on page 96 and 95, the number of years for recordkeeping should be 5 not 3. Tables 2 and 3 use the original operating basis for the auxiliary boilers and should be updated to reflect the revised operating basis. Staff also believes there are similar discrepancies with the air toxics emissions tables in the PDOC.

SCAQMD Response

SCAQMD concurs with this comment and has revised the conditions accordingly.

Comment No. 2

On page 15 the monthly and annual fuel usage for the auxiliary boilers is listed slightly higher from what listed in the appendix boiler calculations.

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 3

On page 24 for the yearly boosting mode of the auxiliary boiler the annually PM10 and SOx emissions is not correct. The values in the PDOC appendix B are correct.

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 4

On page 28 the monthly and annual fuel usage for the night preservation boilers is listed slightly higher from what listed in the appendix boiler calculations.

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 5

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 37
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

PDOC, page 34 and 35 for the facility monthly emissions table, the monthly VOC and CO for the large ICEs were not listed correctly (the annual emissions was listed instead of the monthly emissions).

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 6

PDOC, page 35 the table for annual emissions the VOC for the large ICEs were not listed correctly (the annual VOC emissions for the fire pump engines was listed instead of the large ICE VOC emissions). The annual VOC emissions needs to be corrected on the page 55 Rule 1303 (b)(2) offset table.

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 7

PDOC page 45, the PM2.5 modeling impacts was not listed for auxiliary boiler no. 1, but was listed for auxiliary boiler no. 2.

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 8

PDOC, Appendix A section B, the monthly VOC and CO for the large ICEs were not listed correctly (the annual emissions was listed instead of the monthly emissions).

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

Comment No. 9

PDOC, Appendix A section C, the annual VOC for the large ICEs were not listed correctly (the annual VOC emissions for the fire pump engines was listed instead of the large ICE VOC emissions).

SCAQMD Response

SCAQMD has reviewed and made the necessary amendments where appropriate.

In addition to the CEC comments, the following are changes to the PDOC

- **Condition B61.1 is listed in error on page 1, 2, 3 and 4.**
- **Condition B23.2 and K40.1 is listed in error on page 1 and 2**
- **Page 24, the SOx and PM10 annual emission were revised to match the values in Appendix B**
- **Page 21, 22, in the tables remove daily and add month**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 38
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

- **Page 23, in the table remove monthly and add year**
- **Page 27 condition no. C1.6 should be C1.2**
- **Page 28, remove auxiliary and add night preservation**
- **Page 49- list the correct ton/yr of SOx (listed correctly in the appendix section)**
- **Page 97 and 99 for condition no. K67.4 revise five instead of three years**
- **Conditio B61.2 added to page 95 and 97**

The following are changes to the Facility Permit

- **Condition C1.9 remove Device D19, D20 and D21**
- **Condition C1.10 add Device D19, D20 and D21**

RULES EVALUATION

RULE 212-STANDARDS FOR APPROVING PERMITS AND ISSUING PUBLIC NOTICES

Rule 212 requires that a person shall not build, erect, install, alter, or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants without first obtaining written authorization for such construction from the Executive Officer. Rule 212(c) states that a project requires written notification if there is an emission increase for ANY criteria pollutant in excess of the daily maximums specified in Rule 212(g), if the equipment is located within 1,000 feet of the outer boundary of a school, or if the MICR is equal to or greater than one in a million (1×10^6) during a lifetime (70 years) for facilities with more than one permitted unit, source under Regulation XX, or equipment under Regulation XXX, unless the applicant demonstrates to the satisfaction of the Executive Officer that the total facility-wide maximum individual cancer risk is below ten in a million (10×10^6) using the risk assessment procedures and toxic air contaminants specified under Rule 1402; or, ten in a million (10×10^6) during a lifetime (70 years) for facilities with a single permitted unit, source under Regulation XX, or equipment under Regulation XXX.

FACILITY / EQUIPMENT AND SCHOOL LOCATIONS

The closest kindergarten to grade 12 school is not located within 1,000 feet as stated by the applicant and as determined by Greatschools (<http://www.greatschools.org>). The following table summarizes the name, location and proximity of nearby schools. A public notice will not be required per section (c)(1).

K-12 Schools Near Facility

Name of School	Address	Distance in miles
Eagle Mountain Elementary	1434 Kaiser Road, Desert Center	2

DAILY EMISSIONS

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 39
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

As shown in table below, the daily emissions from this project does exceed the daily thresholds of Rule 212(g) for NO_x; therefore, the project does triggers a public notice for section (c)(2). Rule Implementation Guidance, Rule 212, dated 12/19/2006 section 2 (b)(1) allows the use of the 30 –day average to determine emissions thresholds. There will be permit conditions for each equipment limiting the monthly emissions.

Daily Emissions

Pollutant	Project	R212 (g) Daily Threshold	Public Notice triggered ?
NO _x	56	40	Yes
SO _x	6	60	No
PM10	17	30	No
CO	105	220	No
VOC	13	30	No

MAXIMUM INDIVIDUAL CANCER RISK (MICR)

The MICR for each permit unit is less than 1x10⁶, as shown in the discussion under the Regulation XIV section; therefore, a public notice is not required for section (c)(3). The total MICR for the facility is 1.28E-06.

RULE 218 – CONTINUOUS EMISSION MONITORING

The Auxiliary boiler will be required to have CEMS to monitor NO_x to verify compliance the Rule 1146 NO_x 5 ppm concentration limits and to monitor CO to verify compliance with the 25 ppm concentration limit. A permit condition will require a NO_x and CO CEMs to be installed.

RULE 219 – EQUIPMENT NOT REQUIRING A WRITTEN PERMIT PURSUANT TO REGULATION II

PSGS will be installing a wet cooling tower with the project which is exempt from SCAQMD permit per section (d)(3). The applicant will be using 300 gallon totes to store the aqueous ammonia. The totes are exempt from permit per section (m)(16). Therefore, an application for this equipment is not required.

WET COOLING TOWER – RULE 219(d)(3) EXEMPT

The excess heat from the steam turbine unit will be handled with a new wet surface condenser (cooling tower), which will be rated at 4,000 gallons per minute (gpm), with potable water as make-up, and will consist of four cells. The drift factor for the cooling tower will be 0.0005%. The specifications for the cooling tower and the data used to determine the PM10 emissions and toxic emissions for the maximum individual cancer risk (MICR) as well as the calculations are shown below:

Parameter	Value
Manufacturer	TBD
Circulation Rate	4,000 gpm
Hr/dy	12
Hr/yr	4000
Drift Eliminator Efficiency	0.0005 %
Cooling Tower Air Exit Velocity	70.44 m/sec

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 40
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Cooling Tower Hot Water Temperature	Ambient + 5 degrees K
Number of Cells	4
Cooling stack Diameter	2.69 m
Cooling tower release ht	3.66 m
Maximum total dissolved solids (TDS)	1500 mg/l
Drift rate	10 lb/hr

Cooling Tower PM10 Emissions

PM10 (lbs/day) = circulation rate (gpm) x drift%/100 x density (lb/gal) x [TDS (ppmw)/1E+06] x 720 min/day

$$= 4000 \text{ gal/min} * (0.0005/100) * 8.34 \text{ lb/gal} * (1500/1E+06) * 720 \text{ min/dy}$$

$$= \mathbf{0.18}$$

PM10 lb/yr = pm10 lb/dy * hr/yr

$$= 0.18 \text{ lb/dy} * 1 \text{ dy/} 12 \text{ hr} * 4000 \text{ hr/yr}$$

$$= 60 \text{ lb/yr or } 0.3 \text{ ton/yr}$$

Cooling Tower Toxic Air Contaminant (TAC) Emissions

Pollutant	Conc. in Water ^(a) (ppm)	Drift ^(b) (gpm)	Emissions ^(c) (lb/hr)	Emissions ^(d) (lb/yr)
Copper	0.01	0.02	1.0E-07	4.0E-04
Beryllium	0.0025	0.02	2.5E-08	1.0E-04

(a) PSGS water quality report.

(b) Drift (gpm) = 4,000 gpm x 0.0005/100 = 0.02 gpm (0.02 gal/min * 60 min/hr * 8.33 lb/gal = 10 lb/hr)

(c) Inorganic compounds calculated on drift only (lb/hr) = Drift (gpm) x 8.34 lb/gal x concentration (ppb)/1E06 x 60 min/hr

(d) Emissions (lb/yr) = Emissions (lb/hr) x 4000 hrs/yr

The cooling tower TAC emissions were used for the Health Risk Assessment (HRA) to determine the MICR and Rule 219 applicability of the cooling tower. The applicant performed a Tier 4 HRA and was reviewed by SCAQMD modeling staff, see results below

HRA Results (wet surface condenser-cooling tower no. 1)

Parameter	MICR
Maximum	7.24EE-13
Risk Threshold w/T-BACT	10EE-6
Comply (Yes/No)	Yes

Parameter	value
Acute	2.57EE-5
Chronic	1.81EE-9
Comply (Yes/No)	Yes

HRA Results (wet surface condenser-cooling tower no. 2)

Parameter	MICR
Maximum	2.82EE-12
Risk Threshold w/T-BACT	10EE-6
Comply (Yes/No)	Yes

Parameter	value
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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 41
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Acute	5.36EE-9
Chronic	1.65EE-7
Comply (Yes/No)	Yes

Tier 4 modeling was done for each cooling tower, the MICRs are different because of the location on the facility

Because MICR is less than the Rule 1401 significance threshold of 1 in a million, the wet surface condenser (cooling tower) is exempt per Rule 219(d)(3).

RULE 401 - Visible Emissions

This rule limits visible emissions to an opacity of less than 20 percent (Ringlemann No.1), as published by the United States Bureau of Mines. The applicant will use equipment configured with BACT and will be burning natural gas in the boilers. Therefore, during normal operation, no visible emissions are expected. The emergency engines complies with BACT and will be using a ultra low sulfur fuel, visible emissions not expected during normal operations. Compliance with this rule is expected.

RULE 402 - Nuisance

A person must not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Due to the application of BACT on each emission source and the distance from the emission sources to any potential receptors, the Project will comply with this rule.

RULE 403 - Fugitive Dust

The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The provisions of this rule apply to any activity or man-made condition capable of generating fugitive dust. This rule prohibits emissions of fugitive dust beyond the property line of the emission source. The applicant will be taking steps to prevent and/or reduce or mitigate fugitive dust emissions from the project site. Such measures include covering loose material on haul vehicles, watering, and using chemical stabilizers when necessary. The facility falls under Large Operations per (c)(21) and will have to file a notification form per section (e)(1)(A). The CEC will add Air Quality Conditions of Certification AQ-SC3 and AQ-SC4 to address Fugitive dust issues, see PSA dated 6/28/2013

RULE 403.1 - Supplemental Fugitive Dust Control requirements for Coachella Valley sources

The provisions of this rule are supplemental to Rule 403 requirements and shall apply only to fugitive dust sources in the Coachella Valley. The facility is located in the Chuckwalla Valley and thus not subject to the provisions of this regulation

RULE 407 – LIQUID AND GASEOUS AIR CONTAMINANTS

This rule limits CO emissions to 2,000 ppmvd and SO₂ emissions to 500 ppmvd, averaged over 15 minutes. For CO, the natural gas fired boilers the applicant proposes limit of 25 ppmvd @ 15% O₂, for all four boiler boilers. The boilers will be conditioned as such and will be required to verify compliance testing per Rule 1146 and Rule 1303 (a)-BACT. For SO₂, equipment which complies with Rule 431.1 is exempt from the SO₂

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 42
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

limit in Rule 407. The applicant will be required to comply with Rule 431.1 and thus the SO₂ limit in Rule 407 will not apply. Per section (b)(2) the emergency engines are not subject to this Rule.

RULE 409 – COMBUSTION CONTAMINANTS

This rule restricts the discharge of contaminants from the combustion of fuel to 0.1 grain per cubic foot of gas, calculated to 12% CO₂, averaged over 15 minutes. The equipment is expected to meet this limit based on the calculations shown in table 19.

Auxiliary Boiler

	Parameter	Unit	Value	Reference
a	Volumetric Flow Rate, wet	acfm	84965	Vendor Data
b	Exhaust Temperature	°F	420	Vendor Data
d	CO2 Content	%	8.38	Vendor Data
e	PM Emission Rate	lb/hr	1.245;	Vendor Guarantee
f	Exhaust Rate	scf/hr	3,012,395	$a \times [(460+60)/(460+420)] \times 60$
g	Grain Loading	0.004	gr/dscf	$e \times 7000 \times 12/ (d \times f)$

Night Preservation Boiler

	Parameter	Unit	Value	Reference
a	Volumetric Flow Rate, wet	acfm	38498	Vendor Data
b	Exhaust Temperature	°F	478	Vendor Data
d	CO2 Content	%	9.2	Vendor Data
e	PM Emission Rate	lb/hr	0.147	Vendor Data
f	Exhaust Rate	scf/hr	128,026	$a \times [(460+60)/(460+478)] \times 60$
g	Grain Loading	0.01	gr/dscf	$e \times 7000 \times 12/ (d \times f)$

As shown in above tables, the grain loading is less than the 0.1 gr/dscf required by Rule 409. The emergency engines are not subject to this Rule.

RULE 431.1 - Sulfur Content of Gaseous Fuels

The boilers will use pipeline quality natural gas which will comply with the 16 ppm sulfur limit, calculated as H₂S, specified in this rule. Natural gas will be supplied by the Southern California Gas Company. The facility proposed an H₂S content of 0.75 gr/100scf, which is equivalent to a concentration of about 12 ppm. It is also much less than the 1 gr/100scf limit typical of pipeline quality natural gas. Compliance is expected. The applicant will comply with the reporting and record keeping requirements as outlined in subdivision (e) of this Rule.

Rule 431.2 – Sulfur Content of Liquid Fuels

Any fuel oil combusted in the emergency engines must comply with the rule limit of 15 ppm sulfur. The emergency engines are required to use a low sulfur oil in the units which complies with the sulfur limits of this rule. The boilers are not using any stand-by fuel, thus are not subject to this Rule.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 43
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

RULE 474 - Fuel Burning Equipment-Oxides of Nitrogen

A person is not allowed to discharge into the atmosphere from any non-mobile fuel burning equipment NOx in excess of the concentrations specified in the rule. The boilers are not subject to sections (a) or (b).

RULE 475-ELECTRIC POWER GENERATING EQUIPMENT

This rule applies to power generating equipment greater than 10 MW installed after May 7, 1976. Requirements are that the equipment meet a limit for combustion contaminants of 11 lbs/hr or 0.01 gr/scf. Compliance is achieved if either the mass limit or the concentration limit is met. Mass PM10 emissions from the boiler are estimated at 1.245 lbs/hr, and 0.0034 gr/scf during natural gas firing at maximum firing load (see calculations below). Therefore, compliance is expected.

$$\text{Stack Exhaust Flow} \left(\frac{\text{scf}}{\text{hr}} \right) = F_d \times \frac{20.9}{(20.9 - \%O_2)} \times \text{TFD}$$

where:

Fd: Dry F factor for fuel type, 8710 dscf/MMBtu

O2: Rule specific dry oxygen content in the effluent stream, 3%

TFD: Total fired duty measured at HHV, 249 MMBtu/hr

$$\text{Combustion Particulate} \left(\frac{\text{grain}}{\text{scf}} \right) = \frac{PM_{10}, \text{ lb / hr}}{\text{Stack Exhaust Flow, scf / hr}} \times 7000 \frac{\text{gr}}{\text{lb}}$$

$$\text{Stack flow} = 8710 \times (20.9/17.9) \times 249 = 2.53 \text{ mmscf/hr}$$

$$\text{Combustion particulate} = (1.245/2.53E+06) \times 7000 = \boxed{0.0034 \text{ gr/scf}}$$

Rule 1110.2 - Emissions from Gaseous and Liquid-Fueled Internal Combustion Engines

The purpose of Rule 1110.2 is to reduce NOx, VOC, and CO from internal combustion engines. The diesel emergency engines proposed for this Project are low-usage engines which will each operate less than 200 hours per year and which will be used for firefighting and emergency electrical generation purposes only, and are therefore exempt from the requirements of this rule per section (i)(2). Elapsed operating time meters will be installed and maintained on each engine to substantiate compliance.

Rule 1146—Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

The purpose of this rule is to limit NOx emissions from boilers, steam generators, and process heaters of greater than 5 MMBtu per hour rated input capacity used in industrial, institutional, and commercial operations with several listed exceptions. The rule specifies NOx limits and CO compliance plans for boilers, steam generators, and process heaters by size process function. The boilers will burn natural gas exclusively and will comply with CO BACT (applicant proposes 25 ppmv for each boiler) which is less than the 400 ppm CO limits in this rule. The applicant is

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 44
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

proposing 5 ppmv NOx for the auxiliary boilers and 9 ppmv NOx for the NTP boilers, The applicant proposes to opt-in to RECLAIM. Compliance is expected.

Section (c)(4)—The CO limit is 400 ppmv, corrected to 3% O₂. The two Type I boilers the applicant proposes to limit the CO emissions to 25 ppmv, for all four boilers, see attached burner specification sheet.

Section (c)(6)—The two Type I boilers btu rating is greater than 40 mmbtu/hr. If the heat input exceeds 200x10⁹ btu per year, then the boilers have to be equipped with a oxides of nitrogen CEMs. The boilers will be subject to RECLAIM CEMs requirements

Section (c)(9)—This paragraph sets forth the requirements for the Rule 1146 compliance plan application. Not applicable.

Section (d)(3)—All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes. Te initial source test requires the sampling times to be at least 15 consecutive minutes for maximum and minimum loads. BACT requires 1 hr for normal load.

Section (d)(6)—Compliance with the NOx emission requirements in paragraph (d)(4) shall be conducted once:

- (A) every three years for units with a rated heat input greater than or equal to 10 million Btu per hour, except for units subject to paragraph (c)(6) (CEMS).

Does not apply, the boilers are subject to the RECLAIM and BACT testing requirements.

Section (d)(8)—Any owner or operator of units subject to this rule shall check NOx emissions with a portable NOx, CO and oxygen analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1 according to the following schedule:

- (A) On or after July 1, 2009, the owner or operator of units subject to paragraph (c)(1) shall check NOx emissions at least monthly or every 750 unit operating hours, whichever occurs later.

Does not apply for NOx monitoring

Section (d)(9)—An owner or operator shall opt to comply with the requirements as applied to CO emissions specified in paragraph (d)(8) or subparagraph:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 45
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

(A) (d)(6)(A) for units greater than or equal to 10 mmbtu/hr.

Permit condition requires compliance with Rule 1146. The facility may opt to perform testing with a portable analyzer pursuant to Rule 1146(d)(8), or perform source testing pursuant to (d)(6)(A). Since the applicant is choosing a CO concentration limit of 25 ppmv all four boilers require the same periodic monitoring requirements as NOx monitoring of Rule 1146 section (d)(8).

Reg 13 NEW SOURCE REVIEW (NSR) ANALYSIS

This regulation sets forth pre-construction review requirements for new, modified, or relocated facilities to ensure that the operation of such facilities does not interfere with progress in attainment of the National Ambient Air Quality Standards (NAAQS), and that future economic growth within the District is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors. In addition to nonattainment air contaminants, this regulation also limits emission increases of ammonia and ozone depleting compounds from new, modified or relocated facilities by requiring the use of BACT on each permit unit.

Rule 1303 (b)(1) BACT

The Executive Officer shall deny the Permit to Construct for any new source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia unless the applicant can demonstrate that BACT is employed for the new source. PSEGS is a new source with a potential for an increase in emissions and therefore, BACT is required. Below is an analysis of the BACT requirements for the major components of the PSEGS. (Note for attainment contaminants, CO and NOx BACT is addressed under Regulation XX and XVII section).

Auxiliary Boiler, 249 MMBTU/hr

Pollutant	Minor Source	Proposed	Comply (Yes/No)
VOC	None	None	Yes
PM10	Natural Gas	Natural gas fired	Yes
SOx	Natural Gas	Natural gas fired	Yes
Ammonia	5 ppmv	5 ppmv	yes

NTP Boiler, 10.5 MMBTU/hr

Pollutant	Minor Source	Proposed	Comply (Yes/No)
VOC	None	None	Yes
PM10	Natural Gas	Natural gas fired	Yes
SOx	Natural Gas	Natural gas fired	Yes

Large Emergency ICE, 3633 bhp (>750 HP)

Pollutant	Minor Source (Tier 2)	Proposed BACT (Tier 3)	Comply (Yes/No)
PM10	0.15 gm/bhp-hr	0.09 gm/bhp-hr	Yes
SOx	Fuel with sulfur content less than or equal to 15 ppm by weight	Fuel with sulfur content less than or equal to 15 ppm by weight	Yes

Emergency Fire Pump, 617 bhp (600 ≤ bhp < 750)

Pollutant	Minor Source (Tier 3)	Proposed BACT (Tier 3)	Comply (Yes/No)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 46
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

PM10	0.15 gm/bhp-hr	0.09 gm/bhp-hr	Yes
SOx	Fuel with sulfur content less than or equal to 15 ppm by weight	Fuel with sulfur content less than or equal to 15 ppm by weight	Yes

Small Emergency ICE, 398 bhp (300 ≤ bhp < 600)

Pollutant	Minor Source (Tier 3)	Proposed BACT (Tier 2)	Comply (Yes/No)
PM10	0.15 gm/bhp-hr	0.11 gm/bhp-hr	Yes
SOx	Fuel with sulfur content less than or equal to 15 ppm by weight	Fuel with sulfur content less than or equal to 15 ppm by weight	Yes

Based on the above tables, the equipment will comply with the current minor source BACT requirements.

Rule 1303 (b)(2) -Offsets

The emissions from the proposed equipment are shown in the Table below:

Facility Exemption Thresholds

Pollutant	Facility PTE 30 day ave	Facility PTE (TPY)	Exemption Thresholds (TPY)	Title V thresholds
Nitrogen Oxides (NOx)	55.53	8.01	4	25
Volatile Organic Compounds (VOC)	13.42	1.658	4	25
Sulfur Oxides (SOx)	6.29	0.76	28	100
Particulate Matter < 10 microns (PM10)	16.74	2.10	4	70
Carbon Monoxide (CO)	104.97	13.98	29	100

As indicated in the above, NOx emissions are greater than the 4 ton per year exemption thresholds shown in the table above. Therefore, the NOx emissions are required to be offset in accordance with Rule 1303(b)(2). The applicant submitted a written request on 7/12/13 to opt-in the NOx RECLAIM program, thus NOx ERC's are not required. The VOC, SOx and PM10 emissions has a Facility Exemption from Rule 1303 (b)(2) per Rule 1304 (d)(1)(A).

In addition, note that the non-RECLAIM pollutants for the emergency internal combustion engines are exempt from offsets under SCAQMD Rule 1304(a)(4). Compliance is expected.

The facility is not subject to Title V based on annual emissions because this project is located in the Mojave Desert Air Basin (MDAB) and the major source thresholds for VOC NOx, SOx, CO and PM10, thus the facility is not a Major Source based on criteria emissions.

Rule 1303 (b)(1) Modeling

The applicant must substantiate with modeling that the new facility or modification will not cause a violation, or make significantly worse an existing violation according to Appendix A of Rule 1303, or other analysis approved by the Executive Officer or designee, of any state or national ambient air quality standards at any receptor location in the District. If the emission from the individual permit units are greater than the amounts in the table below, then modeling is required. (Note that the emissions listed in the table below are for a

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 47
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

single night preservation boiler rated at 10.5 MMBTU/hr. The emergency IC engines are exempt from modeling under SCAQMD Rule 1304(a)(4) because they operate less than 200 hours/year

A. Night Preservation Boilers

Rule 1303 (a) Table A-1, Screening Analysis

Night Preservation Boiler, 10.5 MMBTU/hr

Pollutant	Emissions lb/hr	Screening Modeling Thresholds lb/hr	Comply (Yes/No)
NOx	0.1166	0.86	Yes
CO	0.1972	47.3	Yes
PM10	0.0760	5.2	Yes

The emissions from the night preservation boilers are below the screening levels listed in the Table above. Therefore, no additional modeling is required for the night preservation boilers. Compliance with this Rule is met.

B. Auxiliary Boilers

The auxiliary boilers exceed the btu range in Rule 1303 (a) Table A-1, Screening Analysis, thus are subject to Table A-2. PSEGS provided modeling evaluations using the AERMOD dispersion model, version 12345 and five years of meteorological data from 2002 through to 2006 from the Blythe Airport and upper air sounding data collected from Tucson. SCAQMD Modeling staff provided their comments in a memorandum from Mrs. Elaine Change to Mr. Andrew Lee dated August 21, 2013. A copy of this memorandum is contained in the project file. Staff's review of the modeling analysis concluded that the applicant used appropriate EPA AERMOD model along with the appropriate model options in the analysis. The memorandum states that the modeling as performed by the applicant conforms to the District's dispersion modeling requirements and no significant deficiencies in methodology were noted. Therefore compliance with modeling requirements is expected.

Table

Air Quality Impact Summary for Auxiliary Boiler #1 Normal Operating Conditions							
Pollutant	Avg. Period	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total ($\mu\text{g}/\text{m}^3$)	SIL ($\mu\text{g}/\text{m}^3$)	CAAQS/NAAQS	
						($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
NO ₂	1-hr CAAQS	4.3	124.3	128.6	-	339	-
	1-hr NAAQS	1.7	97.8	99.5	7.5	-	188
	Annual	0.006	22.6	22.61	1	57	100
PM ₁₀	24-hr	0.169	144.8	144.96	5	50	150
	Annual	0.003	32.7	32.7	1	20	-
PM_{2.5}	24-hr	0.0075	15.7	15.78	1.2	-	35
PM_{2.5}	Annual	0.003	7.8	7.8	0.3	12	15

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 48
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

CO	1- hr	7.041	3543	3550.04	2000	23,000	40,000
	8- hr	1.618	2000	2001.6	500	10,000	10,000
SO ₂	1- hr	1.17	28.6	29.8	7.8	655	196
	3- hr	0.48	28.6	29.1	25	-	1,300
	24- hr	0.101	13.1	13.2	5	105	-

Air Quality Impact Summary for Auxiliary Boiler #2 Normal Operating Conditions							
Pollutant	Avg. Period	Modeled Concentration (µg/m ³)	Background (µg/m ³)	Total (µg/m ³)	SIL (µg/m ³)	CAAQS/NAAQS	
						(µg/m ³)	(µg/m ³)
NO ₂	1-hr CAAQS	3.7	124.3	128.0	-	339	-
	1-hr NAAQS	1.4	97.8	99.2	7.5	-	188
	Annual	0.011	22.6	22.61	1	57	100
PM ₁₀	24-hr	0.234	144.8*	145.03	5	50	150
	Annual	0.005	32.7	32.71	1	20	-
PM _{2.5}	24- hr	0.096	15.7	15.8	1.2	-	35
	Annual	0.005	7.8	7.81	0.3	12	15.0
CO	1- hr	5.986	3543	3549.0	2000	23,000	40,000
	8- hr	2.046	2000	2002.0	500	10,000	10,000
SO ₂	1- hr	0.998	28.6	29.6	7.8	655	196
	3- hr	0.45	28.6	29.1	25	-	1,300
	24- hr	0.139	13.1	13.2	5	105	-

The two auxiliary boilers complies with the limits listed in Table A-2, thus compliance with this Rule is met.

RULE 1303(b)(3) – SENSITIVE ZONE REQUIREMENTS

Does not apply

RULE 1303(b)(4) – FACILITY COMPLIANCE

PSEGS is a new facility and is expected to comply with the Rules and Regulations of the District

RULE 1303(b)(5) – ADDITIONAL REQUIREMENTS

Does not apply, PSEGS is not a Major Stationary Source as defined per Rule 1302 (s), the facility emissions for each pollutant are less than 10 tons per year (facility is located in the Mojave Desert Air Basin (MDAB) and the Major Source threshold is 100 tons per year)

RULE 1313(g)– Emission Limitation Permit Conditions

Every permit shall have the following conditions:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 49
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

- (1) Identified BACT conditions;
- (2) Monthly maximum emissions from the permitted source.

A. Boilers

Permit conditions limiting maximum fuel usage (install fuel meters) and list emissions limits (excluding NOx)

NOx and CO concentrations limits will be listed in the Emissions & Requirements of the Facility Permit

B. Emergency engines

Permit conditions limiting maximum hours per month for testing and require time meters to be installed.

NOx, VOC, PM and CO g/bhp-hr limits will be listed in the Emissions & Requirements of the Facility Permit

RULE 1325 – FEDERAL PM2.5 NEW SOURCE REVIEW PROGRAM

This rule applies to any new major polluting facility, major modifications to a major polluting facility, and any modification to an existing facility that would constitute a major polluting facility in and of itself; located in areas federally designated pursuant to Title 40 of the Code of Federal Regulations (40 CFR) 81.305 as non-attainment for PM2.5. The proposed facility is not a major source and is not subject to this Rule.

Pollutant	Ton/yr PTE	Triggers Rule 1325?
NOx	8	No
PM2.5	2.10	No
SOx	<u>0.76</u> 1.84	No

The above table summarizes the facility's NOx, PM2.5, and SOx emissions. The facility is not a Major Polluting Facility for PM2.5, PM10 or SOx; therefore, this project does not trigger the requirements of Rule 1325.

Rule 1401 – New Source Review of Toxic Air Contaminants

This rule specifies limits for maximum individual cancer risk (MICR), acute hazard index (HIA), chronic hazard index (HIC) and cancer burden (CB) from new permit units, relocations, or modifications to existing permits which emit toxic air contaminants. These requirements are summarized in the Table as follows:

Rule 1401 Requirements

Parameters and Specifications	Rule 1401 Requirements
MICR, without T-BACT	≤ 1EE-6

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 50
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

MICR, with T-BACT	≤ 1EE-5
Acute Hazard Index	≤ 1.0
Chronic Hazard Index	≤ 1.0
Cancer Burden	≤ 0.5

The applicant originally performed a Tier 4 health risk assessment using the Hot Spots Analysis and Reporting Program (HARP, version 1.4f). The analysis included an estimate of the MICR for the nearest residential and commercial receptors, as well as the acute and chronic hazard indices. SCAQMD modeling staff reviewed and concluded that applicant's modeling analysis was consistent with SCAQMD HRA procedures. (see modeling approval memo dated 8/21/2013, copy in file, see Appendix M) the Tier 4 health risk assessment and the results are shown in the tables below (see attachment for TAC emissions calculations)

HRA Results (Auxiliary boiler No. 1)

Parameter	MICR
Maximum	1.81EE-9
Risk Threshold w/T-BACT	10EE-6
Comply (Yes/No)	Yes

Parameter	value
Acute	2.57EE-5
Chronic	7.53EE-7
Comply (Yes/No)	Yes

HRA Results (Auxiliary boiler No. 2)

Parameter	MICR
Maximum	3.76EE-9
Risk Threshold w/T-BACT	10EE-6
Comply (Yes/No)	Yes

Parameter	value
Acute	4.49EE-5
Chronic	1.563EE-6
Comply (Yes/No)	Yes

HRA Results (Night Preservation boiler No. 1)

Parameter	MICR
Maximum	8.41E-10
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	8.62E-6
Chronic	1.16E-6
Comply (Yes/No)	Yes

HRA Results (Night Preservation boiler No. 2)

Parameter	MICR
Maximum	1.18E-09
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	4.0.62E-6
Chronic	1.62E-6
Comply (Yes/No)	Yes

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 51
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The emergency engines are exempt from Rule 1401 per section (g)(1)(F). The MICR was determined for informational purposes

HRA Results (Large emergency ICE No. 1)

Parameter	MICR
Maximum	1.35E-07
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	n/a
Chronic	n/a
Comply (Yes/No)	Yes

HRA Results (Large emergency ICE No. 2)

Parameter	MICR
Maximum	6.0E-07
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	n/a
Chronic	n/a
Comply (Yes/No)	Yes

HRA Results (Small emergency ICE)

Parameter	MICR
Maximum	4.33E-07
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	n/a
Chronic	n/a
Comply (Yes/No)	Yes

HRA Results (Large emergency fire pump no.1)

Parameter	MICR
Maximum	1.39E-08
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	n/a
Chronic	n/a
Comply (Yes/No)	Yes

HRA Results (Large emergency fire pump no. 2)

Parameter	MICR
Maximum	3.90E-08
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	n/a

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 52
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Chronic	n/a
Comply (Yes/No)	Yes

HRA Results (Large emergency fire pump no. 3)

Parameter	MICR
Maximum	6.81E-07
Risk Threshold w/T-BACT	10E-6
Comply (Yes/No)	Yes

Parameter	value
Acute	n/a
Chronic	n/a

RULE 1401.1 – REQUIREMENTS FOR NEW AND RELOCATED FACILITIES NEAR SCHOOLS

The purpose of this rule is to provide additional health protection to children at schools or schools under construction from new or relocated facilities emitting toxic air contaminants. This rule applies to new and relocated, but not to existing facilities. Applications for Permit to Construct/Operate from such new or relocated facilities shall be evaluated under this rule using the list of toxic air contaminants in the version of Rule 1401 that is in effect at the time the application is deemed complete. The proposed facility is not located within 1000 feet of any school; therefore, the requirements of this rule are not applicable

Rule 1470-Requirements for Stationary Diesel-Fueled Internal Combustion and Other CI Engines

PAR 1470 was amended by the AQMD’s Governing Board on May 4, 2012.

- 1470 (b)(47)-New CI engine installed after 2005.
- 1470 (b)(57)-The engines are not located within 1000 feet of a school (K-12)
- 1470 (b)(60)- Each engine is not located within 50 meters of a sensitive receptor
- 1470 (c)(1)-Requires ultra low sulfur be used in this equipment 1/2006, but Rule 431.2 requires the use of this fuel at this time.
- 1470 (c)(2)(A)-Does not apply, engine not located within 1000 feet of a school
- 1470 (c)(2)(C)(i)-Limit the testing to no more than 50 hours per year.
- 1470 (c)(2)(C)(v)-The engine is beyond 1000 feet of any school, thus this section does not apply.
- 1470 (c)(2)(C)(vi)- Limits the PM emissions to less than 0.15 g/bhp-hr. (does not apply to fire pumps)

Item	PM	PM limit	Compliance

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 53
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

	G/bhp-hr	G/bhp-hr	
a/n 549387	0.09	0.15	Yes
a/n 549389	0.09	0.15	Yes
a/n 549390	0.11	0.15	yes

1470 (c)(2)(C)(vii) (Table 2)-The equipment does comply,

Item	HP	NOx +VOC	CO
		G/bhp-hr	G/bhp-hr
a/n		4.8	2.6
a/n 549387	3633	3.95	0.89
a/n 549389	3633	3.95	0.89
Compliance		Yes	Yes

Item	HP	NOx +VOC	CO
		G/bhp-hr	G/bhp-hr
a/n		3.0	2.6
a/n 549390	398	2.76	2.31
Compliance		Yes	Yes

1470 (c)(2)(D)(i)(I) (Table 3)-The equipment does comply (this section applies to fire pumps)

Item	HP	NOx +VOC	CO	PM
		G/bhp-hr	G/bhp-hr	G/bhp-hr
a/n		3.0	2.6	0.15
a/n 549384	617	2.70	0.50	0.09
a/n 549385	617	2.70	0.50	0.09
a/n 549385	617	2.70	0.50	0.09
Compliance		Yes	Yes	Yes

1470 (c)(2)(D)(i)(III)-limit testing to 50 hours per year-BACT

1470 (d)(7)(A)-Require time meter to be installed

1470 (d)(7)(A)-Records are kept for at least 36 months (Title V facility, require records to be kept for five years)

REGULATION XVII-Prevention of Significant Deterioration

On July 25, 2007 SCAQMD and EPA have signed a new Partial PSD Delegation Agreement intended to delegate the authority and responsibility to SCAQMD for issuance of initial PSD permits and for PSD permit modifications where the applicant does not seek to use the emissions calculation methodologies promulgated

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 54
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

in 40 CFR 52.21 (NSR Reform) but not set forth in SCAQMD Regulation XVII. The Partial Delegation agreement also does not delegate authority and responsibility to SCAQMD to issue new or modified PSD permits based on Plant-wide Applicability Limits (PALS) provisions of 40 CFR 52.21. Therefore, consistent with the Partial Delegation Agreement, for all new and modified PSD permits, AQMD will only use Regulation XVII as the bases for the PSD analysis. The SEDAB, where the project is to be located, is in attainment for NO_x, SO₂, and CO emissions. Therefore PSD applies to these pollutants. For the proposed project a significant emission increase is 40 tpy or more of NO_x or SO₂ or 100 tons per year or more of CO. The emissions from the proposed project will not exceed these thresholds. Therefore a PSD analysis is not required.

Rule 1703(a)(2) requires each permit unit be constructed using BACT for each attainment air contaminant for which there is a net emission increase. The BACT requirements for CO and NO_x as well as the applicant's BACT proposals are listed below: As shown below, the equipment will comply with PSD BACT requirements.

Auxiliary Boiler, 249 MMBTU/hr

Pollutant	Minor Source	Proposed	Comply (Yes/No)
CO	≤100 ppmv @ 3% O ₂ , dry	≤25 ppmv @ 3% O ₂ , dry	Yes
NO _x	<7 ppmv@ 3% O ₂ dry	<5 ppmv@ 3% O ₂ dry	Yes

Night preservation boiler, 10.5 MMBTU/hr

Pollutant	Minor Source	Proposed	Comply (Yes/No)
CO	≤100 ppmv @ 3% O ₂ , dry	≤25 ppmv @ 3% O ₂ , dry	Yes
NO _x	<12 ppmv@ 3% O ₂ dry	<9 ppmv@ 3% O ₂ dry	Yes

Large Emergency ICE, 3633 bhp (>750 HP)

Pollutant	Minor Source BACT (Tier 2)	Proposed (Tier 2)	Comply (Yes/No)
CO	2.6 gm/bhp-hr	0.89 gm/bhp-hr	Yes
NO _x +VOC	4.8 gm/bhp-hr	3.95 gm/bhp-hr	Yes

Emergency Fire Pump, 617 bhp (600 ≤ bhp < 750)

Pollutant	Minor Source BACT (Tier 3)	Proposed (Tier 3)	Comply (Yes/No)
CO	2.6 gm/bhp-hr	0.50 gm/bhp-hr	Yes
NO _x +VOC	3.0 gm/bhp-hr	2.7 gm/bhp-hr	Yes

Small Emergency ICE, 398 bhp (300 ≤ bhp < 600)

Pollutant	Minor Source BACT (Tier 3)	Proposed (Tier 3)	Comply (Yes/No)
CO	2.60 gm/bhp-hr	2.21 gm/bhp-hr	Yes
NO _x +VOC	3.0 gm/bhp-hr	2.79 gm/bhp-hr	Yes

Rule 1714 – PSD for Greenhouse Gases

This rule sets forth preconstruction review requirements for greenhouse gases (GHG). The provisions of this rule apply only to GHGs as defined by EPA to mean the air pollutant as an aggregate group of six GHGs: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). All other attainment air contaminants, as defined in Rule 1702 subdivision (a), shall be regulated for the purpose of Prevention of Significant Deterioration (PSD) requirements pursuant to Regulation XVII, excluding Rule 1714. The provisions of this rule shall apply to any source and the owner or operator of any source subject to any GHG requirements under 40 Code of Federal Regulations Part 52.21 as incorporated into this rule. The rule specifies what portions of 40 CFR, Part 52.21 do not apply to GHG emissions, which are identified in Rule 1714(c)(1) as exclusions.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 55
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The GHG pollutants of CO₂, N₂O and CH₄ are products of combustion. The use of HFCs, PFCs, and SF₆ are associated with equipment that are used for the operation of the facility, such as: HFCs used as heat transfer medium in air condition control equipment, PFCs used as an agent in fire suppression equipment, and SF₆ as gas used to insulate transformers as well as in circuit breakers. The facility is expected to follow appropriate procedures to minimize any release of GHGs during installation, operation, and maintenance activities. The purchase of equipment that meet applicable standards and the practice of proper maintenance will ensure compliance for the non-combustion GHG products.

A PSD permit is required, prior to actual construction, of a new major stationary source or major modification to an existing major source as defined in 40 CFR 52.21(b)(1) and (b)(2), respectively. The rule incorporates the EPA rule by reference, so determination of PSD applicability for GHG is done using the EPA's document PSD and Title V Permitting Guidance for Greenhouse Gases, March 2010. The GHG emissions calculated in the tables below, using the heat input data and emission factor, respectively, were used for the project GHG PSD applicability determination.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 56
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Maximum Fuel and Heat Input for Potential to Emit

Equipment	Parameter	Unit	Value	Reference	
Aux Boiler 1 ^(a)	a	Rating	MMBtu/hr	249	Applicant's data and Permit description
	b	Hours	hrs/yr	n/a	n/a
	c	Annual Heat Input	MMBtu/yr	322,422	d x 1020
	d	Annual Fuel Use	MMscf/yr	316.1	Applicants data
Aux Boiler 2 ^(a)	e	Rating	MMBtu/hr	249	Applicant's data and Permit description
	f	Hours	hrs/yr	n/a	n/a
	g	Annual Heat Input	MMBtu/yr	322,422	h x 1020
	h	Annual Fuel Use	MMscf/yr	316.1	Applicants data
Night Preservation Boiler 1 ^(b)	i	Rating	MMBtu/hr	10.5	Applicant's data and Permit description
	j	Hours	hrs/yr	n/a	n/a
	k	Annual Heat Input	MMBtu/yr	50,704	l x 1020
	l	Annual Fuel Use	MMscf/yr	49.71	Applicants data
Night Preservation Boiler 2 ^(b)	m	Rating	MMBtu/hr	10.5	Applicant's data and Permit description
	n	Hours	hrs/yr	n/a	n/a
	o	Annual Heat Input	MMBtu/yr	50,704	p x 1020
	P	Annual Fuel Use	MMscf/yr	49.71	Applicants data
Large ICE 1	q	Fuel Rate	gal/hr	172.9	Applicant's data
	r	Hours	hrs/yr	200	Applicant's data and Permit condition
	s	Annual Fuel Use	gal/yr	34,580	q x r
	t	Annual Heat Input	MMBtu/yr	4772	s x 0.138 MMBtu/gal
Large ICE 2	u	Fuel Rate	gal/hr	172.9	Applicant's data
	v	Hours	hrs/yr	200	Applicant's data and Permit condition
	w	Annual Fuel Use	gal/yr	34,580	u x v
	x	Annual Heat Input	MMBtu/yr	4772	w x 0.138 MMBtu/gal
Fire Pump 1	y	Fuel Rate	gal/hr	34	Applicant's data
	z	Hours	hrs/yr	200	Applicant's data and Permit conditions
	a	Annual Fuel Use	gal/yr	6,800	y x z
	b	Annual Heat Input	MMBtu/yr	938	a x 0.138 MMBtu/gal
Fire Pump 2	c	Fuel Rate	gal/hr	34	Applicant's data
	d	Hours	hrs/yr	200	Applicant's data and Permit conditons
	e	Annual Fuel Use	gal/yr	6,800	c x d
	f	Annual Heat Input	MMBtu/yr	938	e x 0.138 MMBtu/gal
Fire Pump 3	g	Fuel Rate	gal/hr	34	Applicant's data
	h	Hours	hrs/yr	200	Applicant's data and Permit conditions
	i	Annual Fuel Use	gal/yr	6,800	g x h
	j	Annual Heat Input	MMBtu/yr	938	i x 0.138 MMBtu/gal
Small ICE	k	Fuel Rate	gal/hr	20	Applicant's data
	l	Hours	hrs/yr	200	Applicant's data and Permit condition
	m	Annual Fuel Use	gal/yr	4000	k x l
	n	Annual Heat Input	MMBtu/yr	552	m x 0.138 MMBtu/gal

^(a) Auxiliary Boilers 1 and 2 are identical units with the same permit conditions, the applicant set a max. annual fuel usage of 316.1 mmcf (units does not operate max hours of 8760 hr/yr. Permit condition will limit fuel usage)

^(b) Nighth Preservation Boilers 1 and 2 are identical units with the same permit conditions, the applicant set a max. annual fuel usage of 49.71 mmcf (units does not operate max hours of 8760 hr/yr. Permit condition will limit fuel usage)

GHG Emission Factors for Mass and Carbon Dioxide Equivalent (CO2E)

Fuel	GHG	kg/MMBtu ^(a)	ton/MMBtu (Mass) ^(b)	GWP ^(c)	ton/MMBtu (CO2E) ^(d)	
Natural Gas	a	CO2	53.02	5.84E-02	1	5.84E-02
	b	CH4	0.001	1.102E-06	21	2.31E-05

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 57
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Diesel	c	N2O	0.0001	1.102E-07	310	3.42E-05
	d	CO2	73.96	8.15E-02	1	8.15E-02
	e	CH4	0.003	3.306E-06	21	6.94E-05
	f	N2O	0.0006	6.612E-07	310	2.05E-04

- (a) Emission Factors from EPA's Emission Factors for Greenhouse Inventories, November 2011
(b) kg/MMBtu x 1.102E-03 ton/kg
(c) Global Warming Potential (GWP) taken from EPA's Emission Factors for Greenhouse Inventories, November 2011
(d) ton/MMBtu (Mass) x GWP

GHG Emission Rates for Mass and CO2E

Equipment	Mass (tpy)				CO2E (tpy)				
	CO2 ^(a)	CH4 ^(b)	N2O ^(c)	Total	CO2 ^(d)	CH4 ^(e)	N2O ^(f)	Total	
Aux boiler 1	18,829	0.36	0.04	18,829	18,829	7	11	18,847	
Aux boiler 2	18,829	0.36	0.04	18,829	18,829	7	11	18,847	
Night preservation boiler 1	2,961	0.05	0.01	2,961	2,961	1	2	2,964	
Night preservation boiler 2	2,961	0.05	0.01	2,961	2,961	1	2	2,964	
Large ICE 1	389	0.01	0	389	389	0.33	0	389	
Large ICE 2	389	0.01	0	389	389	0.33	0	389	
Fire pump 1	76	0	0	76	76	0.07	0	76	
Fire pump 2	76	0	0	76	76	0.07	0	76	
Fire pump 3	76	0	0	76	76	0.07	0	76	
Small ICE	45	0	0	45	45	0.04	0	45	
Project Total				44,631	Project Total				44,673

- (a) Annual Heat Input MMBtu/yr {from Table 29} x CO2 ton/MMBtu (Mass) {from Table 30}
(b) Annual Heat Input MMBtu/yr {from Table 29} x CH4 ton/MMBtu (Mass) {from Table 30}
(c) Annual Heat Input MMBtu/yr {from Table 29} x N2O ton/MMBtu (Mass) {from Table 30}
(d) Annual Heat Input MMBtu/yr {from Table 29} x CO2 ton/MMBtu (CO2E) {from Table 30}
(e) Annual Heat Input MMBtu/yr {from Table 29} x CH4 ton/MMBtu (CO2E) {from Table 30}
(f) Annual Heat Input MMBtu/yr {from Table 29} x N2O ton/MMBtu (CO2E) {from Table 30}

GHG PSD Applicability Flowchart for Project^(a)

Step	GHG PSD Applicability Step	Result	Response
1	Will the permit be issued on or after July 1, 2011	Yes	Go to Step 2
2	Is this modification subject to PSD permitting for a regulated NSR pollutant other than GHGs?	No	Go to Step 3
3	Determine PTE for existing stationary source, before modification, for each of the 6 GHG pollutants. Determine the mass sum and the CO2e sum (using GWP equivalent).	Mass Sum: 44,631 tpy {Table above} CO2E Sum: 44,673 tpy {Table above}	Go to Step 4
4	Are the PTE for GHG emissions equal or greater than both 100,000 tons per year CO2e and 100 tons per year on mass basis?	No	Go to Step 5
5	Is this a new stationary source subject to PSD for regulated NSR pollutant other than GHGs	No	GHG emissions not subject to PSD Review

- (a) Flowchart from Appendix A and B. GHG Applicability Flowchart – Modified Sources (On or after July 1, 2011) of EPA's document PSD and Title V Permitting Guidance for Greenhouse Gases, March 2010.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 58
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The above table identifies that this project is not subject to PSD analysis for GHG Emissions. Therefore, BACT is not required for GHG.

REGULATION XX – REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

The facility is exempt from RECLAIM per Rule 2001 (i)(2)(M) and elected to enter the RECLAIM program per Rule 2001 (f).

RULE 2005(b)(1)(A) – BACT

The NOx BACT limit for natural gas fired boilers and emergency engines were discussed in the Regulation XVII PSD NSR BACT section as listed in the table below

Auxiliary Boiler, 249 MMBTU/hr

Pollutant	Minor Source	Proposed	Comply (Yes/No)
NOx	≤7 ppmv @ 3% O2, dry	≤5 ppmv @ 3% O2, dry	Yes

NTP Boiler, 10.5 MMBTU/hr

Pollutant	Minor Source	Proposed	Comply (Yes/No)
NOx	≤12 ppmv @ 3% O2, dry	≤9 ppmv @ 3% O2, dry	Yes

Large Emergency ICE, 3633 bhp (>750 HP)

Pollutant	Minor Source (Tier 2)	Proposed BACT (Tier 3)	Comply (Yes/No)
NOx+NMHC	4.8 gm/bhp-hr	3.95 gm/bhp-hr	Yes

Emergency Fire Pump, 617 bhp (600 ≤ bhp < 750)

Pollutant	Minor Source (Tier 3)	Proposed BACT (Tier 3)	Comply (Yes/No)
NOx+NMHC	3.0 gm/bhp-hr	2.7 gm/bhp-hr	Yes

Small Emergency ICE, 398 bhp (300 ≤ bhp < 600)

Pollutant	Minor Source (Tier 3)	Proposed BACT (Tier 2)	Comply (Yes/No)
NOx+NMHC	3.0 gm/bhp-hr	2.7 9 6 gm/bhp-hr	Yes

Permit conditions, verification through CEMS and source testing will ensure compliance.

RULE 2005(c)(1)(B) – MODELING

This section of the rule requires a facility that is located in an attainment area for nitrogen dioxide (NO2) to demonstrate through modeling analysis that the proposed NOx emission sources will not cause a violation of the most stringent ambient air quality standards. PSEGS conducted dispersion modeling using the AERMOD model for the maximum project impacts of NO2 emissions. The results of the analysis are shown in the table below.

Rule 2005(c)(1)(B) Modeling Results-Auxiliary Boiler no. 1

Criteria	Operation with maximum impact	Impact (ug/m3)	Background (ug/m3)	Total Impact (ug/m3)	Most Stringent AQ Standard (ug/m3)
NOx, 1-hour (CAAQS)	Start-up hour uncontrolled	4.3	124.3	128.6	339
NOx, 1-hour (NAAQS)	Start-up hour uncontrolled	1.17	97.8	99.5	188
NOx, annual	Maximum operation	0.006	22.6	22.61	57

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 59
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Table Rule 2005(c)(1)(B) Modeling Results-Auxiliary Boiler no. 2

Criteria	Operation with maximum impact	Impact (ug/m3)	Background (ug/m3)	Total Impact (ug/m3)	Most Stringent AQ Standard (ug/m3)
NOx, 1-hour (CAAQS)	Start-up hour uncontrolled	3.7	124.3	128	339
NOx, 1-hour (NAAQS)	Start-up hour uncontrolled	1.4	97.8	99.2	188
NOx, annual	Maximum	0.011	22.6	22.61	57

Modeling staff provided their comments in a memorandum from Mrs. Elaine Change to Mr. Andrew Lee dated August 21, 2013. A copy of this memorandum is contained in the project file. Staff's review of the modeling analysis concluded that the applicant used appropriate EPA AERMOD model along with the appropriate model options in the analysis. The memorandum states that the modeling as performed by the applicant conforms to the District's dispersion modeling requirements and no significant deficiencies in methodology were noted. Therefore compliance with modeling requirements is expected.

The emergency engines are exempt from modeling per section (k)(5), permit conditions will limit operating time to less than 200 hours in any one year.

RULE 2005(b)(2)(A) – OFFSET (RTC)

The facility is required to demonstrate that it holds sufficient RTCs to offset the annual emission increase for the first year of operation using a 1-to-1 offset ratio. Furthermore, paragraph (b)(2)(B) states that the RTCs must comply with the zone requirements of Rule 2005(e). The repower project is expected to undergo commissioning in Year 2015. Since the facility is located in Zone 2 (Inland, Cycle 1); thus, RTCs may only be obtained from Zones 1 or 2.

PSEGS will be required to purchase the required NOx RTCs from the open market, compliance with Regulation XX, Rule 2005, is expected. The NOx RTC amounts are listed below

Equipment	Device no.	RTC Commissioning yr	RTC Non-commissioning year
Aux boiler no. 1	D1	5714	5645
Aux boiler no. 2	D6	5714	5645
Night preservation boiler no. 1	D11	565	563
Night preservation boiler no. 2	D12	565	563
Large em ice no. 1	D13	5922	5922
Large em ice no. 2	D15	5922	5922
Small em ice	D17	434	434
Emergency fire pump no. 1	D19	707	707
Emergency fire pump no. 2	D20	707	707
Emergency fire pump no. 3	D21	707	707

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 60
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

See Appendix N for RTC determination

Emergency engines annual NOx emissions based on max 200 hours per year operation, not 50 hr/yr testing

RULE 2005(g) – ADDITIONAL REQUIREMENTS

Does not apply, PSEGS is not a Major Stationary Source as defined per Rule 2000 (c)(45), the facility NOx emissions less than 10 tons per year (facility is located in the Mojave Desert Air Basin (MDAB) and the NOx Major Source threshold is 25 tons per year)

RULE 2005(h) – PUBLIC NOTICE

PSEGS will comply with the requirements for Public Notice found in Rule 212. Therefore compliance with Rule 2005(h) is demonstrated.

RULE 2005(i) – RULE 1401 COMPLIANCE.

PSEGS will comply with Rule 1401 as demonstrated in HRA and subsequently reviewed and found to be satisfactory by SCAQMD modeling staff. Compliance is expected.

RULE 2005(j) – COMPLIANCE WITH STATE AND FEDERAL NSR.

PSEGS will comply with the provisions of this rule by having demonstrated compliance with SCAQMD NSR Regulations XIII and Rule 2005-NSR for RECLAIM.

RULE 2012 – RECLAIM, MONITORING, REPORTING, & RECORDKEEPING REQUIREMENTS

Auxiliary boilers

The boiler will be classified as major NOx source under RECLAIM per Rule 2012 (C)(1)(A)(i) with a btu rating less than 500 mmbtu/hr and a fuel usage greater than 90 billion btu per year (max btu/yr is 3.22E+11). As such, per section (c)(2)(A) is required to measure and record NOx concentrations and calculate mass NOx emissions with a Continuous Emissions Monitoring System (CEMS). The CEMS will include in-stack NOx and O2 analyzers, a fuel meter, and a data recording and handling system. NOx emissions are reported to SCAQMD on a daily basis. The CEMS system will be required to be installed within 90 days of start up..

Night Preservation Boilers

The boilers will be classified as process unit NOx source under RECLAIM per Rule 2012 (e)(1)(A)(i). Per section (e)(2)(A) install a fuel meter and section (e)(2)(C) accept a emission factor or concentration limit The applicant proposes to accept a concentration limit of 9 ppmv (see email dated 6/24/2013).. Section (e)(2)(E) he concentration limit is measured over one hour. The concentration limit will have to be verified by source test once every five years. Compliance is expected .

Emergency ICES

The emergency engines will be classified as process unit NOx source under RECLAIM per Rule 2012 (e)(1)(D). Per section (e)(2)(A) install a fuel meter and section (e)(2)(C) accept a emission factor. The emissions factor are listed below .

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 61
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The engines are process unit, per Rule 2002 Table 1, the equipment is allowed to use a emission factor based on the BACT NO_x limit, see below

A. Large emergency ICE

BACT limit (combined NO_x+VOC) = 4.8 g/bhp-hr

Fuel rate = 172.9 gal/hr

HP rating = 3633

For RECLAIM purposes, assume VOC is zero and max NO_x = 4.8 g/bhp-hr

$$EF = (4.8 \text{ g/bhp-hr})(3633 \text{ hp}) (1\text{lb}/454 \text{ g}) * (1 \text{ hr}/172.9 \text{ gal}) * (1000 \text{ gal}/1\text{mgal})$$

$$EF = 222 \text{ lb/mgal}$$

B. Small emergency ICE

BACT limit (combined NO_x+VOC) = 4.8 g/bhp-hr

Fuel rate = 20 gal/hr

HP rating = 398

For RECLAIM purposes, assume VOC is zero and max NO_x = 3.0 g/bhp-hr

$$EF = (3.0 \text{ g/bhp-hr})(398 \text{ hp}) (1\text{lb}/454 \text{ g}) * (1 \text{ hr}/20 \text{ gal}) * (1000 \text{ gal}/1\text{mgal})$$

$$EF = 132 \text{ lb/mgal}$$

C. Fire Pump ICE

BACT limit (combined NO_x+VOC) = 3.0 g/bhp-hr

Fuel rate = 34 gal/hr

HP rating = 617

For RECLAIM purposes, assume VOC is zero and max NO_x = 3.0 g/bhp-hr

$$EF = (3.0 \text{ g/bhp-hr})(617 \text{ hp}) (1\text{lb}/454 \text{ g}) * (1 \text{ hr}/34 \text{ gal}) * (1000 \text{ gal}/1\text{mgal})$$

$$EF = 120 \text{ lb/mgal}$$

INTERIM PERIOD EMISSION FACTORS-AUXILIARY BOILERS

RECLAIM requires a NO_x emission factor to be used for reporting emissions during the interim reporting period. The interim period is defined as a period, of no greater than 12 months from initial operation, when the CEMS has not been certified. During this period, the emissions cannot be accurately, monitored, or verified. The emissions during this period are assumed to be at uncontrolled levels. The interim reporting period can be broken down into the two parts which includes the commissioning period in which an uncontrolled emission rate is assumed.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 62
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Since PSEGS is included in NOx RECLAIM, an interim period emission factor will be determined. In the event CEMS data is not available, NOx emissions during the interim period will be calculated using monthly fuel usage and the emission factors shown below. There will be two interim period emission factors for NOx.

The first factor will be for use during the commissioning period when the boiler is assumed to be operating at uncontrolled levels and the second factor will be for use after commissioning is complete. The emission factors for NOx are shown in the table below.

Emission Factors for Interim Period for the Aux Boiler

Pollutant	Controlled NOx	Uncontrolled NOx
Commissioning Emission Factors (lb/MMscf)	11.55	92.40
Non commissioning Period Emission Factors (lb/MMscf)	6.53	83.96

The commissioning emission factors were provided by the vendor (lb/mmbtu convert to lb/mmcf using 1050 but/ft3) and is only to be used during the commissioning of the auxiliary boilers prior to normal operations

The non-commissioning period emissions factor is to be used when the aux boilers are in normal operations and the NOx RECLAIM CEMs has not been certified or offline.

See Appendix N

REGULATION XXX – Title V

The facility is not subject to Title V based on annual emissions because this project is located in the Mojave Desert Air Basin (MDAB) and the major source thresholds for VOC NOx, SOx, CO and PM10 are not exceeded, see table below

The facility is not subject to Title V based on annual emissions because this project is located in the Mojave Desert Air Basin (MDAB) and the major source thresholds for VOC NOx, SOx, CO and PM10 are not exceeded, see table below

	VOC	NOx	SOx	PM-10	CO	CO2e
Maximum emissions tons/yr	1.658	8.01	0.76	2.10	13.98	44,673
Threshold levels tons/yr	100	100	100	100	100	100000
Threshold exceeded	No	No	No	No	No	no

However the facility is subject to Federal ACID Rain program, thus subject to the Title V program per Rule 3001(b)(c)(3). The initial Title V permit will be processed and the required public notice

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 63
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

will be sent along with the Rule 212(g) Public Notice, which is also required for this project. EPA is afforded the opportunity to review and comment on the project within a 45-day review period.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The California Energy Commission (CEC) is the lead agencies for the Palen Solar Electric Generation Station (PSEGS) (09-AFC-7) and will be addressing CEQA compliance.

CALIFORNIA AIRBORNE TOXIC CONTROL MEASURE FOR STATIONARY COMPRESSION IGNITION ENGINES.

The ATCM was amended October 2010 and the requirements for Tier 4i and Tier 4 was removed and section 93115.6 (a)(3)(A)(1)(a) Table 1. Table 1 keeps the current Tier 2 and Tier 3 emissions standards for the applicable HP engine group. CARB in November 2010 distributed a regulatory advisory that provided guidance on compliance with the ATCM during the transition period from the current ATCM to the amended ATCM. The ATCM became effective on May 19, 2011 when the California Office of Administrative Law (OAL) approved the CARB rulemaking for the amendments to ATCM. The SCAQMD amended Rule 1470 in May of 2012 to align with the amended ATCM for all pollutants except diesel particulate matter (PM), which is a toxic and cancer causing air contaminant

FEDERAL REGULATIONS

40 CFR Part 63, Subpart JJJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

The final ruling was released on 3/21/2011 and applies to boilers using non-gaseous fuels. For this project the boilers are using natural gas. The boilers meet the definition of gas fired boiler per 40 CFR 63.11237. Per 40 CFR 63.11195 (e) these type of boilers are not subject any requirements of this subpart.

40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

This regulation applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 19, 1984 and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)). Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the NO_x standards under this subpart. The proposed boilers are rated at 249 mmbtu/hr and will use natural fired only. As such the rule requires compliance with the following requirements:

§60.42b-SO_x Standards- does not apply to boilers firing only natural gas

§60.42c-PM Standards- does not apply to boilers firing only natural gas

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 64
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

§60.44b-NOx Standards

Fuel Type	Nitrogen Oxide (NO ₂) Emission Limit	
	ng/J	lb/MMBTU
Natural Gas low heat release	43	0.10

Natural Gas

Use conversion factor of 0.78 to convert lb/mmscf to ppmv

$$\text{NO}_x = 0.10 \text{ lb/mmBTU} * 1,020 \text{ BTU/scf} * 0.78 = 79.56 \text{ ppmv}$$

The boilers will be vented to SCR with a Controlled emission NO_x guarantee 5 ppmv, thus the controlled NO_x emissions is expected to comply with the NO_x limit of this regulation.

§60.44(b)(h)-For purposes of paragraph (i) of this section, the NO_x standards under this section apply at all times including periods of start-up, shutdown, or malfunction

This will be listed as a permit condition (A194.4)

§60.44(b)(i)-Except as provided under paragraph (j) of this section, compliance with the emissions limits under this section is determined on a 30-day rolling average basis

This will be listed as a permit condition (A194.4)

§60.49b Reporting and record keeping requirements

§60.49b (a)- The operator shall submit notification of the date of initial start-up, as provided in §60.7

(a)(1) The design heat input capacity of the boilers and the type of fuels to be used by the equipment.

(a)(2)-If applicable, a copy of any federally enforceable requirements that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(ii), 60.44b(c), (d), (e), (i),(j), (k), 60.45b(d), (g), 60.46b(h)(1), or 60.48b(i).

(a)(3)- The annual capacity factor at which the operator anticipated operating the facility based on all fuels fired and based on each individual fuel fired, and

(a)(4)- not applicable

§60.49b(d)(1)-The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12 month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

Permit condition E448.4 will require daily fuel records be keep.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 65
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

§60.49b (g) The operator of the boilers subject to the NO_x standards under 60.44b shall maintain records of the following information for each steam generating unit operating day

- (1) Calendar date
- (2) The ave hourly NO_x emissions rate (expressed as NO₂)(ng/J or lb/mmbtu heat input.
- (3) The 30 day average NO_x emission rate calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emissions rate for the proceeding 30 steam generating unit operating days.
- (4) Identification of the steam unit operating days when the calculated 30-day average NO_x emissions rates are in excess of the NO_x emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective action taken;
- (5) Identifications of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective action taken;
- (6) Identification of the times when emissions data have been excluded from the calculations of average emission rates and the reasons for excluding data;
- (7) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted.
- (8) Identification of the times when the pollutant concentration exceeded full span of CEMs;
- (9) Description of any modifications to the CEMs that could affect the ability of the CEMs to comply with Performance Specification 2 or 3; and
- (10) Results of daily CEMs drift test and quarterly accuracy assessments as required under Appendix F, Procedure 1 of this part.

§60.49b (h)- The owner or operator of any affected facility in any category listed in paragraph (h)(1) or (2) of this section is required to submit excess emission reports for any excess emission that occurred during the reporting period.

- (2) Any affected facility that is subject to the NO_x standard of §60.44b, and that:
 - (i) Combust natural gas, distillate oil, gasified coal, or residual oil with a nitrogen content of 0.3 weight percent or less; or
 - (ii) Has an heat input capacity of 250 MMBTU/hr or less and is required to monitor NO_x emissions on a continuous basis under §60.48b(g)(1) or steam generating unit operations conditions under §60.48b(g)(2).
- (4) For the purposes of §60.48b(g)(1), excess emission are defined as any calculated 30-day rolling average NO_x emissions rate, as determined under §60.46b(e), that exceed the applicable emissions limits of §60.44b

§60.49b (i)-The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_x under §60.48b shall submit reports containing the information recorded under paragraph (g) of this section.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 66
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Compliance is demonstrated.

40 CFR Part 60, Subpart Dc--Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

§60.40c Applicability and delegation of authority

The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and has a maximum design input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. This subpart is applicable to the proposed 10.5 MMBtu/hr boilers.

§60.42c Standard for sulfur dioxide (SO₂)

Affected facilities that combust coal, oil, or coal and oil with any other fuel are subject to this standard. Thus the proposed natural gas-fired boiler, with no backup fuel, is not subject to this section and the subsequent sections related to this SO₂ standard.

§60.43c Standard for particulate matter (PM)

Affected facilities that combust coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with other fuels are subject to this standard. Thus the proposed natural gas-fired boiler, with no backup fuel, is not subject to this section and the subsequent sections related to this PM standard.

§60.48c Reporting and recordkeeping requirements

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(g)(2) As an alternative to meeting the requirements of (g)(1), the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in §60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month. **(permit condition C1.5)**

(g)(3) As an alternative to meeting the requirements of (g)(1), the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO₂ standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

*****To comply with (g)(2), permit condition a non-resettable, totalizing fuel flow meter, and recordkeeping for the monthly fuel usage. **(permit condition D12.1)**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 67
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

NSPS, application no. 549387 and 549388, emergency ICE 3633 HP

40 CFR Part 60 Subpart III--NSPS for Stationary Compression Ignition Internal Combustion Engines

§60.4200(a)—The provision of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) engines as specified in paragraphs (a)(1) through (a)(4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

§60.4200(a)(2)(i) specifies this subpart is applicable to owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE is manufactured after April 1, 2006 and are not fire pump engines. Therefore, this subpart is applicable to the engines under evaluation.

The EPA comment letter, dated 5/23/12, regarding the proposed permit for A/N 529701 for an emergency ICE for US Govt., Veterans Admin Medical Center (ID 5679) indicated permit conditions should include at a minimum the requirements of the following sections.

- A. **§60.4202(b)(2)** provides that for engines with a maximum engine power greater than or equal to 3000 HP and less than 10 liters per cylinder, the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2011.

40 CFR 89.112—Exhaust emission from nonroad engines shall not exceed the applicable exhaust standards in Table 1 of this provision. For an engine rated at 1500 kW for model year 2007 and later, Tier 2 is applicable (6.4 g/kW-hr NMHC + NO_x, 3.5 g/kW-hr CO, 0.2 g/kW-hr PM) . The engine comply with these limits, which are the same as the District BACT standards.

Permit condition: the emissions limits are listed in the Emissions & Requirements section of Section H per device

§60.4202(f)(1)—Stationary CI internal combustion engine manufacturers must certify their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 3,700 HP and a displacement of greater than 10 liters per cylinder and less than 30 liters per cylinders. Does not apply the displacement per cylinder is less than 10 liters.

§60.4205(b)—See §60.4202

- B. **§60.4207(b)**—Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

40 CFR 80.510(b)—Except as other specifically provided in this subpart, all NR and LM diesel fuel is subject to the following per-gallon standards:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 68
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

(1) Sulfur content.

- (i) 15 ppm maximum for NR [nonroad] diesel fuel
- (ii) 500 ppm maximum for LM [locomotive or marine] diesel fuel

Permit condition: Condition no. B61.2 limits diesel fuel sulfur content to 15 ppm, which is the same as BACT.

- C. §60.4209(a)**— An owner or operator of an emergency stationary CI ICE that does not meet the standards applicable to non-emergency engines must install a non-resettable hour meter prior to start-up of the engine.

Permit condition: Condition no. D12.2 requires a non-resettable hour meter.

- D. §60.4209(b)**—An owner or operator of a stationary CI ICE equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

Permit condition: not applicable, no DPF installed on these engines.

- E. §60.4211(a)**—An owner or operator who must comply with the emission standards specified in this subpart must do all of the following, except as permitted under paragraph (g) of this section:

- (1) Operate and maintain the stationary CI internal combustion engine and control device according to manufacturer’s emission-related written instructions;
- (2) Change only those emission-related settings that are permitted by the manufacturer; and
- (3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.

Permit condition: Pursuant to EPA guidance, condition E448.3 is added to implement the above requirements regarding the engine (no control device).

- F. §60.4211(c)**—An owner or operator of a 2007 model year and later stationary CI ICE and must comply with the emission standards specified in §60.4204(b) [non-emergency engine] or §60.4205(b) [emergency engine], or an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to the fire pump engine power rating in table 3 to this subpart and must comply with the emission standard specified in §60.4205(c), must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in paragraph (g) of this section.

Permit condition: Pursuant to EPA guidance, condition no. E448.2 is added to implement the above requirements regarding the engine. As discussed above, the engine is in compliance with the emissions standards specified in 40 CFR 60.4205(b).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 69
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

G. §60.4211(f)—Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations....

Permit condition: Federal standards allow 100 hours per year for testing and maintenance and no time limit for emergency use. District requirements are more stringent and allow 50 hours for testing and maintenance, and 200 hours total including the 50 hours for testing and maintenance. Condition no. C1.9 implements the more stringent SCAQMD requirements.

H. §60.4214(b)—If the stationary CI ICE is an emergency stationary ICE, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to on-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Permit condition: Condition no. K67.3 sets forth the recordkeeping requirements.

I §60.4214(c)—If the stationary CI ICE is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

Permit condition: not applicable, engine not equipped with DPF.

NSPS, application no. 549390, emergency ICE 398 HP

40 CFR Part 60 Subpart IIII--NSPS for Stationary Compression Ignition Internal Combustion Engines

§60.4200(a)—The provision of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) engines as specified in paragraphs (a)(1) through (a)(4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

§60.4200(a)(2)(i) specifies this subpart is applicable to owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE is manufactured after April 1, 2006 and are not fire pump engines. Therefore, this subpart is applicable to the engines under evaluation.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 70
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The EPA comment letter, dated 5/23/12, regarding the proposed permit for A/N 529701 for an emergency ICE for US Govt., Veterans Admin Medical Center (ID 5679) indicated permit conditions should include at a minimum the requirements of the following sections.

Title 40 Part 60 subpart III section 60.4205

Emergency CI ICE of model year of 2007 or later with a displacement of less than 30 liters per cylinder has to comply with the non road emissions standards. The engine displacement is 15 liters and the engine complies with Tier 3 emissions limits for this HP range, thus compliance with this Regulation is met. The engine complies with the Tier 3 emissions requirements of this Rule (40 CFR Part 89.112). Permit condition no. 13, Rule tag the NOx+VOC and CO emissions limits to this Rule. For NOx, VOC and PM, Rule tag Rule 1303 (a) which is more stringent.

Per EPA, email dated 5/23/2012, as applicable, the permit conditions should at least include the requirements of these sections:

- A. **§60.4202(a)(2)** provides that for engines with a maximum engine power less than or equal to 3000 HP and less than 10 liters per cylinder, the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007 or later.

40 CFR 89.112—Exhaust emission from nonroad engines shall not exceed the applicable exhaust standards in Table 1 of this provision. For an engine rated at 315 kW for model year 2007 and later, Tier 3 is applicable (4.0 g/kW-hr NMHC + NOx, 3.5 g/kW-hr CO, 0.2 g/kW-hr PM) . The engine comply with these limits, which are the same as the District Tier 3 BACT standards.

Permit condition: The emissions limits are listed in the Emissions & Requirements section of Section H per device

§60.4202(f)(1)—Stationary CI internal combustion engine manufacturers must certify their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 3,700 HP and a displacement of greater than 10 liters per cylinder and less than 30 liters per cylinders. Does not apply the displacement per cylinder is less than 10 liters.

§60.4205(b)—See §60.4202

- B. **§60.4207(b)**—Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 71
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel.

40 CFR 80.510(b)—Except as other specifically provided in this subpart, all NR and LM diesel fuel is subject to the following per-gallon standards:

(1) Sulfur content.

- (i) 15 ppm maximum for NR [nonroad] diesel fuel
- (ii) 500 ppm maximum for LM [locomotive or marine] diesel fuel

Permit condition: Condition no. B61.2 limits diesel fuel sulfur content to 15 ppm, which is the same as BACT.

- C. §60.4209(a)**— An owner or operator of an emergency stationary CI ICE that does not meet the standards applicable to non-emergency engines must install a non-resettable hour meter prior to start-up of the engine.

Permit condition: Condition no. D12.2 requires a non-resettable hour meter.

- D. §60.4209(b)**—An owner or operator of a stationary CI ICE equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

Permit condition: Does not apply engine not equipped with DPF.

- E. §60.4211(a)**—An owner or operator who must comply with the emission standards specified in this subpart must do all of the following, except as permitted under paragraph (g) of this section:

- (1) Operate and maintain the stationary CI internal combustion engine and control device according to manufacturer’s emission-related written instructions;
- (2) Change only those emission-related settings that are permitted by the manufacturer;
and
- (3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.

Permit condition: Pursuant to EPA guidance, condition no. E448.3 is added to implement the above requirements regarding the engine (no control device).

- F. §60.4211(c)**—An owner or operator of a 2007 model year and later stationary CI ICE and must comply with the emission standards specified in §60.4204(b) [non-emergency engine] or §60.4205(b) [emergency engine], or an owner or operator of a CI fire pump engine that is

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 72
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

manufactured during or after the model year that applies to the fire pump engine power rating in table 3 to this subpart and must comply with the emission standard specified in §60.4205(c), must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in paragraph (g) of this section.

Permit condition: Pursuant to EPA guidance, condition no. E448.2 is added to implement the above requirements regarding the engine. As discussed above, the engine is in compliance with the emissions standards specified in 40 CFR 60.4205(b).

- G. §60.4211(e)**—Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations....

Permit condition: Federal standards allow 100 hours per year for testing and maintenance and no time limit for emergency use. District requirements are more stringent and allow 50 hours for testing and maintenance, and 200 hours total including the 50 hours for testing and maintenance. Condition no. C1.9 implements the more stringent SCAQMD requirements.

- H. §60.4214(b)**—If the stationary CI ICE is an emergency stationary ICE, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to on-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Permit condition: Condition no. K67.3 sets forth the recordkeeping requirements.

- I §60.4214(c)**—If the stationary CI ICE is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

Permit condition: does not apply, no DPF installed on engine.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 73
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

NSPS, application no. 549384, 549385 and 549386, emergency fire pump, each rated at 617 HP

40 CFR Part 60 Subpart III--NSPS for Stationary Compression Ignition Internal Combustion Engines

§60.4200(a)—The provision of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) engines as specified in paragraphs (a)(1) through (a)(4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

§60.4200(a)(2)(ii) specifies this subpart is applicable to owners and operators of fire pump manufactured as certified National Fire Protection Association (NFPA) construction after July 1, 2006. Therefore, this subpart is applicable to the engines under evaluation.

Title 40 Part 60 subpart III section 60.4205 (c)

Owners and operators of fire pump engines with a displacement less than 30 liters per cylinder must comply with the emissions standards in table 4 to this subpart for all pollutants.

- A. **§60.4202(d)(2)** beginning the model years in table 3 to this subpart, stationary CI internal combustion engines manufacturers must certify their fire pump stationary CI ICE to the emissions standards in table 4 of this subpart, for all pollutants, for the same model year and NFPA nameplate power.

Table 4 to Subpart III of Part 60—Exhaust emission from fire pump engines shall not exceed the applicable exhaust standards in Table 4 of this provision. For an engine rated at 617 HP for model year 2009 and later, Tier 3 is applicable (4.0 g/kW-hr NMHC + NO_x, 3.5 g/kW-hr CO, 0.2 g/kW-hr PM) . The engine comply with these limits, which are the same as the District Tier 3BACT standards.

Permit condition: The emissions limits are listed in the Emissions & Requirements section of Section H per device.

- B. **§60.4207(b)**—Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel.

40 CFR 80.510(b)—Except as other specifically provided in this subpart, all NR and LM diesel fuel is subject to the following per-gallon standards:

- (1) Sulfur content.
 - (i) 15 ppm maximum for NR [nonroad] diesel fuel
 - (ii) 500 ppm maximum for LM [locomotive or marine] diesel fuel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 74
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Permit condition: Condition no. B61.2 limits diesel fuel sulfur content to 15 ppm, which is the same as BACT.

- C. §60.4209(a)**— An owner or operator of an emergency stationary CI ICE that does not meet the standards applicable to non-emergency engines must install a non-resettable hour meter prior to start-up of the engine.

Permit condition: Condition no. D12.2 requires a non-resettable hour meter.

- D. §60.4211(a)**—An owner or operator who must comply with the emission standards specified in this subpart must do all of the following:

- (1) Operate and maintain the stationary CI internal combustion engine and control device according to manufacturer’s emission-related written instructions;
- (2) Change only those emission-related settings that are permitted by the manufacturer; and
- (3) Must the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.

Permit condition: Pursuant to EPA guidance, condition no. E448.3 is added to implement the above requirements regarding the engine (no control device).

- E. §60.4211(c)**—An owner or operator of a 2007 model year and later stationary CI ICE and must comply with the emission standards specified in §60.4204(b) [non-emergency engine] or §60.4205(b) [emergency engine], or an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to the fire pump engine power rating in table 3 to this subpart and must comply with the emission standard specified in §60.4205(c), must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer’s emission-related specifications, except as permitted in paragraph (g) of this section.

Permit condition: Pursuant to EPA guidance, condition no. E448.2 is added to implement the above requirements regarding the engine. As discussed above, the engine is in compliance with the emissions standards specified in 40 CFR 60.4205(b).

- F. §60.4211(e)**—Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations....

Permit condition: Federal standards allow 100 hours per year for testing and maintenance and no time limit for emergency use. District requirements are more stringent and allow 50 hours for testing and maintenance, and 200 hours total including the 50 hours for testing and maintenance. Condition no. C1.9 implements the more stringent SCAQMD requirements.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 75
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

G. §60.4214(b)—If the stationary CI ICE is an emergency stationary ICE, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to on-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Permit condition: Condition no. K67.3 sets forth the recordkeeping requirements.

NESHAP for a/n 549387, 549388, 549389, 549384, 549385, 549386 and 549390 (all engines at the facility)

40 CFR Part 63 Subpart ZZZZ--NESHAPS for Stationary Reciprocating Internal Combustion Engines

§63.6580 Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions.

§63.6585(b) A “major source” is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year.

§63.6585(c) An “area source” is a source that is not a major source. The proposed Solar Power Plant is an area source for HAPs.

§63.6590(a) This subpart applies to each affected source. An “affected source” is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

§63.6590(a)(2)(iii) A stationary RICE located at an area source of HAP emissions is new if construction of the stationary RICE is commenced on or after June 12, 2006. Therefore, the engine under evaluation is new.

§63.6590 (c) provides an affected source that meets any of the criteria in paragraphs (c)(1) through (c)(7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII for compression ignition engines or 40 CFR part 60 subpart JJJJ for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source.

Conclusion: Since the emergency engine is a new compression-ignition RICE located at an area source, it is required to meet 40 CFR Part 60 Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. (See discussion on Subpart IIII, above.), thus compliance with this met, see NSPS section

40 CFR PART 72 – ACID RAIN PROVISIONS

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 76
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The PSEGS facility is subject to the requirements of the federal Acid Rain program. EPA reviewed 72.6(b)(4)(ii) to determine if the auxiliary boilers met the definition of cogeneration. EPA determined, see email dated 8/26/2013 that the boilers did not meet the definition of cogeneration and the full provision of the ACID Rain regulation applies. The program is similar in concept to RECLAIM in that facilities are required to cover SO2 emissions with SO2 allowances; analogous to NOx RTCs. Per EPA, email dated 8/26/2013, there is no minimum threshold values of SO₂. Facilities with insufficient allowances are required to purchase SO₂ credits on the open market. Appropriate conditions are in Appendix B of the Title V permit. PSEGS is expected to comply with this regulation.

Each Auxiliary boiler is capable of producing steam to be used in the steam generator. The applicant estimates 20 MWe output. The applicant estimates the maximum SOx emission during steam generation to the turbine (Boosting mode) per boiler, see Appendix C for calculations

Hr/dy	2
Number of boosting events per year	220
SOx emissions per event	1.17
SOx emissions per year	257

40 CFR Part 64 – Compliance Assurance Monitoring

The CAM regulation applies to emission units at major stationary sources required to obtain a Title V permit, which use control equipment to achieve a specified emission limit. The rule is intended to provide “reasonable assurance” that the control systems are operating properly to maintain compliance with the emission limits. The facility emissions are well below the major source thresholds based on the equipment location, thus is not subject to this Regulation. In addition the two Auxiliary boilers are equipped with a NOx and CO CEMs

RECOMMENDATION(S)

It is recommended that Permit to Construct be issued to the subject equipment. The permits will be subject to the following conditions.

Facility Permit conditions

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

- (a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or
- (b) Of such opacity as to obscure an observer' s view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.
[RULE 401, 3-2-1984; RULE 401, 11-09-2001]

F14.1 The operator shall only use diesel fuel containing the following specified compounds:

COMPOUND	Range	PPM BY WEIGHT
Sulfur	Less than or equal to	15

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 77
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The operator shall maintain a copy of the MSDS on site
[Rule 431.2]

F10.1 The operator shall not use natural gas containing the following specified compounds:

Compound	Grains per 100 scf
H2S	Greater than 0.750

This concentration limit is an annual average based on monthly sample of natural gas composition or gas supplier documentation. Gaseous fuel samples shall be tested using District Method 307-91 for total sulfur calculated as H2S.
[Rule 1303(b) - Offset]

AUXILIARY BOILERS, A/N 549379 AND 549380 (D1 AND D6)

A63.1 The operator shall limit emission from this equipment as follows:

CONTAMINANT	EMISSION LIMIT
PM ₁₀	214 LBS IN ANY ONE MONTH
CO	1451 LBS IN ANY ONE MONTH
SO _x	85 LBS IN ANY ONE MONTH
VOC	173 LBS IN ANY ONE MONTH

The operator shall calculate the calendar monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors:

Uncontrolled emission factors: VOC: 5.7 lb/mmcf; PM10: 7.6 lb/mmcf; CO: 157.39 lb/mmcf, and SOx: 2.14 lb/mmcf.

Controlled emission factors: VOC: 4.1 lb/mmcf; PM10: 5.1 lb/mmcf; CO: 19.87 lb/mmcf and SOx: 2.14 lb/mmcf.

The uncontrolled emissions factors are to be used during start-up when the boiler is operating at 17.5% load or less

Monthly Emissions, lb/month = X (E.F.)

Where X = monthly fuel usage in mmcf/month and E.F. = emission factor indicated above.

The operator shall calculate the emission limit(s) for the purpose of determining compliance with the monthly CO limit in the absence of valid CEMS data by using the above equation and the following emission factor(s):

During the commissioning period the, 38.85 lbs CO/mmcf emissions factor to be used during low, medium and high loads. During cold start and warm start 153.30 lb/mmcf is to be used.

After installation of the CO catalyst but prior to CO CEMS certification testing - 19.87 lb CO/mmcf to be used for all modes of operation, excluding start-up operations, boiler restarts, hot restart/emergency trip, boiler cold and very cold start. 157.4 lb CO/mmcf to be used during boiler morning start-up

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 78
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

operations, boiler restarts, hot restart/emergency trip and boiler cold and very cold start.

After CO CEMS certification testing - 19.87 lb/CO mmcf is to be used. After CO CEMS certification test is approved by the SCAQMD, the emissions monitored by the CEMS and calculated in accordance with condition 82.1 shall be used to calculate emissions.

The operator shall provide the SCAQMD with written notification of the date of initial CO catalyst use within seven (7) days of this event.

For the purpose of this condition the boiler shall not commence with normal operation until the commissioning process has been completed. The District shall be notified in writing once the commissioning process has been completed. Normal operations may proceed in the same commissioning month provided the operator follows the requirements listed below.

The operator shall calculate the commissioning emissions for VOC, SO_x and PM₁₀ for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emissions factor; VOC: 5.7 lb/mmcf; PM₁₀ 5.25 lb/mmcf; and SO_x: 2.14 lb/mmcf. For Start-up (cold or warm start) the following emission factors shall be used: PM₁₀:10.5 lb/mmcf

$$\text{Commissioning Emissions, lb/month} = X * EF$$

Where X = commissioning fuel usage in mmcf/month and E.F = emission factor indicated above.

The commissioning emissions for VOC, SO_x, CO and PM₁₀ shall be subtracted from the monthly emissions limits (listed in the table a the top of this condition) and the revised monthly emissions limits will be the maximum emissions allowed for the remaining calendar month.

The operator shall keep records of monthly emissions and the records shall be made available upon request by the Executive Officer.
[Rule 1303 - Offsets]

A99.1 The 5.0 PPM NO_x emission limits shall not apply during boiler commissioning, start-ups and emergency trips. The commissioning period shall not exceed 40 total hours. Start-up time shall not exceed the times listed below. Written records of commissioning, start-ups and emergency trips shall be maintained and made available upon request from the Executive Officer.

For this condition a boiler hot/emergency trip start-up is defined as a start-up in which the boiler has been shut down for less than 12 hours. A boiler hot/emergency trip start-up period shall not exceed 45 minutes.

For this condition, a boiler warm start-up is defined as a start-up in which the boiler has been shut down for at least 12 hours but less than 36 hours. A boiler warm start-up period shall not exceed 90 minutes

For this condition a boiler cold start-up is defined as a start-up in which he boiler has been shut down for at least 36 hours but less than 80 hours. A boiler cold start-up period shall not exceed 180 minutes

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 79
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

For this condition boiler very cold start-up is defined as a start-up in which the boiler has been shut down for at least 80 hours. A boiler very cold start-up period shall not exceed 270 minutes

[Rule 1703 (a) (2)-PSD BACT, Rule 2005]

- A99.2 The 25 PPM CO emission limits shall not apply during boiler commissioning, start-ups and emergency trips. The commissioning period shall not exceed 40 total hours. Start-up time shall not exceed the times listed below. Written records of commissioning, start-ups and shall be maintained and made available upon request from the Executive

For this condition a boiler hot/emergency trip start-up is defined as a start-up in which the boiler has been shut down for less than 12 hours. A boiler hot/emergency trip start-up period shall not exceed 45 minutes.

For this condition, a boiler warm start-up is defined as a start-up in which the boiler has been shut down for at least 12 hours but less than 36 hours. A boiler warm start-up period shall not exceed 90 minutes

For this condition a boiler cold start is defined as a start-up in which the boiler has been shut down for at least 36 hours but less than 80 hours. A boiler cold start-up period shall not exceed 180 minutes

For this condition boiler very cold start is defined as a start-up in which the boiler has been shut down for at least 80 hours. A boiler very cold start-up period shall not exceed 270 minutes

[Rule 1703 (a) (2)-PSD BACT]

- A99.3 The 11.55 LBS/MMCF NOx emission limits shall only apply during the interim reporting period during initial boiler commissioning to report RECLAIM emissions. During start-up or warm start modes the 92.40 lb/mmcf NOx emissions limits shall only apply during the interim reporting period during initial turbine commissioning to report RECLAIM emissions. The interim reporting period shall not exceed 12 months from entry into RECLAIM.

[Rule 2012 - Requirements for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen Emissions]

- A99.4 The 6.53 LBS/MMCF NOx emission limits shall only apply during the interim reporting period after initial boiler commissioning to report RECLAIM emissions. During start-up mode operations with a boiler mode not to exceed 17.5%, the 83.96 lb/mmcf NOx emissions limits shall only apply during the interim reporting period during after initial boiler commissioning to report RECLAIM emissions The interim reporting period shall not exceed 12 months from entry into RECLAIM.

[Rule 2012 - Requirements for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen Emissions]

- A195.1 The 25 PPMV CO emission limit(s) is averaged over 15 minutes at 3 percent O2, dry.

[Rule 1703(a) (2)- PSD-BACT]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 80
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

A195.2 The 5 PPMV NOX emission limit(s) is averaged over 15 minutes at 3 percent O2, dry.

[Rule 2005, Rule 1703(a)(2) - PSD-BACT]

A195.4 The 80 PPMV NOX emission limit(s) is averaged over 30 day rolling average

Per §60.44(b)(h) the NOx standards under this section shall apply all times including periods of start-up, shut-down or malfunction

§60.44(b)(i) - Except as provided under paragraph (j) of this section, compliance with the emissions limits under this section is determined on a 30-day rolling average basis

[40 CFR 60 Subpart Db]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminants emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[Rule 475]

A433.1 The operator shall comply at all times with the 5 ppm BACT limit for NOx, except as defined in condition A99.1 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
Start-up event	3.5 lb/hr	NOx emissions not to exceed 10.5 lbs total per cold start-up per boiler. The boiler shall be limited to 10 cold start-ups per year, with each start-up not to exceed 180 minutes.

[Rule 1703(a)(2) - PSD-BACT, Rule 2005]

A433.2 The operator shall comply at all times with the 5 ppm BACT limit for NOx, except as defined in condition A99.1 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
Start-up event	3.5 lb/hr	NOx emissions not to exceed 15.7 lbs total per very cold start-up per boiler. The boiler shall be limited to 5 very cold start-ups per year, with each start-up not to exceed 270 minutes.

[Rule 1703(a)(2) - PSD-BACT, Rule 2005]

C1.1 The operator shall limit the fuel usage to no more than 40 mmcf in any one calendar month.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 81
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The operator shall record and maintain the amount of all fuel combusted during calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request
[Rule 1303(b) (2) Offset]

C1.2 The operator shall limit the fuel usage to no more than 4.28 mmcf in any one calendar month.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during the commissioning period.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request
[Rule 1303(b) (2) Offset]

C1.3 The operator shall limit the fuel usage to no more than 307 mmcf in any one year.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during a non-commissioning year.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition. Year is defined as 12-month rolling average. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request

[Rule 1401, Rule 1701 (b), Rule 1303 (b) (2)]

C1.4 The operator shall limit the fuel usage to no more than 311 mmcf in any one year.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during a commissioning year.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition. Year is defined as 12-month rolling average. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request

[Rule 1401, Rule 1701 (b), Rule 1303 (b) (2)]

D12.1 The operator shall install and maintain a(n) flow meter to accurately indicate the fuel usage being supplied to the boiler.

The operator shall also install and maintain a device to continuously record the parameter being measured
[Rule 1303(b) (2) - Offset, Rule 2012,40 CFR 60.48c(g) (2)]

D29.1 The operator shall conduct source test(s) for the pollutant(s) identified below.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 82
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District Method 100.1	15 minutes	Outlet of the SCR serving this equipment
CO emissions	District Method 100.1	15 minutes	Outlet of the SCR serving this equipment
SOX emissions	SCAQMD Laboratory Method 307-91	Not applicable	Fuel Sample
PM emissions	District method 5.1	1 hour minimum	Outlet SCR
NH3 emissions	District method 201.7 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

The test shall be conducted after SCAQMD approval of the source test protocol, but no later than 180 days after initial start-up. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test. The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (mmcf/hour), and the flue gas flow rate.

The test shall be conducted in accordance with SCAQMD approved test protocol. The protocol shall be submitted to the SCAQMD engineer no later than 45 days before the proposed test date and shall be approved by the SCAQMD before the test commences.

The test protocol shall include the proposed operating conditions of the boiler during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted for each load, while firing at maximum, minimum and low firing rates.

The test shall be conducted for compliance verification of the 25 ppmv CO limit.

The test shall be conducted for compliance verification of the 5 ppmv NOx limit.

The test shall be conducted for compliance verification of the 5 ppmv ammonia slip limit.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 83
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Two complete copies of source test reports (include the application number and a copy of the permit in the report) shall be submitted to the District (addressed to south coast air quality management district, attn Roy Olivares, P.O. Box 4941, Diamond bar, CA 91765). The results in writing shall be submitted within 45 days after the source test is completed. It shall include, but not be limited to emissions rate in pounds per hour and concentration in ppmv at the outlet of the boiler.

A testing laboratory certified by the SCAQMD laboratory approval program (LAP) in the required test methods for criteria pollutant to be measured, and in compliance with district rule 304 (no conflict of interest) shall conduct the test

Sampling facilities shall comply with the SCAQMD "guidelines for construction of sampling and testing facilities", pursuant to rule 217. Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Rule 2005, Reg 1703(a-PSD-BACT]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	60 minutes	Outlet of the SCR serving this equipment

The test shall be conducted and the results submitted to the District within 45 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 BACT concentration limit
[Rule 1303(a)(1) - BACT]

D82.1 The operator shall install and maintain a CEMS to measure the following parameters:

CO concentration in ppmv

Concentrations shall be corrected to 3 percent oxygen on a dry basis
The CEMS shall be installed and operated no later than 90 days after initial start-up of the boiler, and in accordance with an approved SCAQMD Rule 218 CEMS plan application. The operator shall not install the CEMS prior to receiving initial approval from SCAQMD. Within two weeks of the boiler start-up, the operator shall provide written notification to the District of the exact date of start-up.

The CEMS shall be installed and operated to measure CO concentrations over a 15 minute averaging time period.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 84
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The CEMS would convert the actual CO concentrations to mass emission rates (lbs/hr) using the equation below and record the hourly emission rates on a continuous basis.

CO Emission Rate, lbs/hr = $K Cco Fd [20.9\% - \%O_2 d] [(Qg * HHV)/106]$, where

$K = 7.267 * 10^{-8}$ (lb/scf)/ppm

Cco = Average of four consecutive 15 min. ave. CO concentration, ppm

Fd = 8710 dscf/MMBTU natural gas

%O₂ d = Hourly ave. % by vol. O₂ dry, corresponding to Cco

Qg = Fuel gas usage during the hour, scf/hr

HHV = Gross high heating value of fuel gas, BTU/scf
[Rule 1703(a)(2)- PSD-BACT, Rule 218]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

NOx concentration in ppmv

Concentrations shall be corrected to 3 percent oxygen on a dry basis.

The CEMS shall be installed and operating no later than 90 days after initial start-up of the boiler and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks of the boiler start-up date, the operator shall provide written notification to the District of the exact date of start-up.

The CEMS shall be installed and operating (for BACT purposes only) no later than 90 days after initial start up of the boiler.
[Rule 2005; Rule 2012, Rule 1703]

H23.1 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
CO	District Rule	1146

The operator of this equipment shall comply with source testing requirements in subdivision (D)(6)--compliance determination of rule 1146.

The operator of this equipment shall comply with periodic monitoring requirements of rule 1146 (C)(8).
[Rule 1146]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 85
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

H23.3 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
PM	40CFR60, SUBPART	Db
SOX	40CFR60, SUBPART	Db
NOx	40CFR60, SUBPART	Db

[40CFR 60 SUBPART Db]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project
[CEQA]

E448.1 The operator shall comply with the following requirements

This boiler shall not be operated unless the flue gas recirculation system is in full operation.

The operator shall have the burner equipped with a control system to automatically regulate the combustion air, fuel, and recirculation flue gas as the boiler load varies. This control system shall be adjusted and tuned according to the manufacturer's specifications to maintain its ability to repeat the same performance at the same firing rate.

[Rule 1303 (a), Rule 2005]

E448.4 The operator shall comply with the following requirements

§60.49b Reporting and record keeping requirements and shall include the following

(a) (1) The design heat input capacity of the boilers and the type of fuels to be used by the equipment.

(a) (2)-If applicable, a copy of any federally enforceable requirements that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d) (1), 60.43b(a) (2), (a) (3) (iii), (c) (2) (ii), (d) (2) (ii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h) (1), or 60.48b(i).

(a) (3)- The annual capacity factor at which the operator anticipated operating the facility based on all fuels fired and based on each individual fuel fired

§60.49b(d) (1)-The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12 month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

§60.49b(g) The operator of the boilers subject to the NOx standards under 60.44b shall maintain records of the following information for each steam generating unit operating day:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 86
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

- (1) Calendar date
- (2) The ave hourly NOx emissions rate (expressed as NO2) (ng/J or lb/mmbtu heat input.
- (3) The 30 day average NOx emission rate calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emissions rate for the proceeding 30 steam generating unit operating days.
- (4) Identification of the steam unit operating days when the calculated 30-day average NOx emissions rates are in excess of the NOx emissions standards under 60.44b, with the reasons for such excess emissions as well as a description of corrective action taken;
- (5) Identifications of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective action taken;
- (6) Identification of the times when emissions data have been excluded from the calculations of average emission rates and the reasons for excluding data;
- (7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.
- (8) Identification of the times when the pollutant concentration exceeded full span of CEMs;
- (9) Description of any modifications to the CEMs that could affect the ability of the CEMs to comply with Performance Specification 2 or 3; and
- (10) Results of daily CEMs drift test and quarterly accuracy assessments as required under Appendix F, Procedure 1 of this part.

§60.49b (h)- The owner or operator of any affected facility in any category listed in paragraph (h) (1) or (2) of this section is required to submit excess emission reports for any excess emission that occurred during the reporting period.

§60.49b (i)-The owner or operator of any affected facility subject to the continuous monitoring requirements for NOx under §60.48b shall submit reports containing the information recorded under paragraph (g) of this section.

The operator shall comply with remaining sections of this subpart, if applicable.
[40 CFR 60 Subpart Db]

I298.1 This equipment shall not be operated unless the facility holds 5714 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operations. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at commencement of each compliance year after the start of operation, the facility holds 5645 pounds RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by hold RTCs may be transferred upon their respective expiration dates. His hold amount is addition to any other amount of RTCs required to be held under condition(s) stated in this permit
[Rule 2005

K67.1 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 87
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Retain all records required by permit for a period of five years and make all records available to district personnel upon request.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request.
[Rule 1303 (b) (2), 40 CFR 60 Subpart Db]

K67.2 The operator shall keep records in a manner approved by the District, for the following parameter(s) or item(s):

Natural gas fuel use after CEMS certification
 Natural gas fuel use during the commissioning period
 Natural gas fuel use after the commissioning period and prior to CEMS certification

[Rule 2012]

(SCR/CO Catalyst)a/n 553874 and 553875 (C3 and C8)

A195.6 The 5 ppmv NH3 emission limit is averaged over 60 minutes at 3% O2, dry basis. The operator shall calculate and continuously record the NH3 slip concentration using the following:

$$\text{NH3 (ppmv)} = [a - b * c / 1\text{EE}+06] * 1\text{EE}+06 / b$$

where,

a = NH3 injection rate (lbs/hr)/17(lb/lb-mol)
 b = dry exhaust gas flow rate (scf/hr)/385.3 scf/lb-mol)
 c = change in measured NOx across the SCR (ppmvd at 3% O2)

The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppmv accurate to plus or minus 5 percent calibrated at least once every twelve months.

The NOx analyzer shall be installed and operated within 90 days of initial start-up.

The operator shall use the above described method or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia.

[Rule 1303(a) (1) - BACT]

D12.3 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent.

It shall be calibrated once every twelve months. The records shall be kept on site and made available to SCAQMD personnel upon request

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 88
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

The maximum ammonia injection rate shall not exceed 1.9 gal/hr based on 19% aqueous ammonia

[Rule 1303(a)(1) - BACT, Rule 2005]

D12.4 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the SCR reactor.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent.

It shall be calibrated once every twelve months. The records shall be kept on site and made available to SCAQMD personnel upon request

The catalyst temperature range shall be remain between 550 degree F and 750 degree F.

The catalyst inlet temperature shall not exceed 750 degrees F.

The temperature range requirement of this condition does not apply during start-up operations of the boiler listed in condition A99.1.

[Rule 1303(a)(1) - BACT, Rule 2005]

D12.5 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent.

It shall be calibrated once every twelve months. The records shall be kept on site and made available to SCAQMD personnel upon request

The pressure drop across the catalyst and ammonia injection grid shall not exceed 4.5 inches water column

[Rule 1303(a)(1) - BACT, Rule 2005]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

Condition Number D12.3

Condition Number D12.4

[Rule 1303(a)(1) - BACT, Rule 2005-BACT]

E179.2 For the purpose of the following condition numbers, continuously record shall be defined as measuring at least once every month and shall be calculated based upon the average of the continuous monitoring for that month.

Condition Number: D12.5

[Rule 1303(a)(1) - BACT, Rule 2005-BACT]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 89
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project
[CEQA]

E448.5 The operator shall comply with the following requirements

The ammonia injection system shall be placed in full operation as soon as the minimum temperature is reached. The minimum temperature is listed as 550 degrees F. at the inlet to the SCR reactor.
[Rule 1303(a)(1) - BACT, Rule 2005]

NIGHT PRESERVATION BOILERS, A/N 549381 AND 549383 (D11 AND D12)

A63.2 The operator shall limit emission from this equipment as follows:

CONTAMINANT	EMISSION LIMIT
PM ₁₀	33 LBS IN ANY ONE MONTH
CO	86 LBS IN ANY ONE MONTH
SO _x	9 LBS IN ANY ONE MONTH
VOC	18 LBS IN ANY ONE MONTH

The operator shall calculate the calendar monthly emissions for VOC, PM10 and SO_x using the equation below and the following emission factors: VOC: 4.2 lb/mmcf; PM10: 7.6 lb/mmcf; CO: 19.72 lb/mmcf and SO_x: 2.14 lb/mmcf.

Monthly Emissions, lb/month = X (E.F.)

Where X = monthly fuel usage in mmscf/month and E.F. = emission factor indicated above.

For the purpose of this condition the boiler shall not commence with normal operation until the commissioning process has been completed. The District shall be notified in writing once the commissioning process has been completed. Normal operations may proceed in the same commissioning month provide the operator follows the requirements listed below.

The operator shall calculate the commissioning emissions for VOC, SO_x, PM10 and CO for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emissions factor; VOC: 5.67 lb/mmcf; PM10 13.65 lb/mmcf; SO_x: 2.14 lb/mmcf and CO: 18.96 lb/mmcf.

Commissioning Emissions, lb/month = X * EF

Where X = commissioning fuel usage in mmcf/month and E.F = emission factor indicated above.

The commissioning emissions for VOC, SO_x, CO and PM10 shall be subtracted the monthly emissions limits (listed in the table a the top of this condition) and the revised monthly emissions limits will be the maximum emissions allowed for the remaining month.

[Rule 1303 - Offsets]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 90
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

A195.1 The 25 PPMV CO emission limit(s) is averaged over 15 minutes at 3 percent O2, dry.
[Rule 1703(a)(2) - PSD-BACT]

A195.3 The 9 PPMV NOX emission limit(s) is averaged over 15 minutes at 3 percent O2, dry.
[Rule 2005, Rule 1703(a)(2) - PSD-BACT]

C1.5 The operator shall limit the fuel usage to no more than 4.34 mmcf in any one calendar month.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request
[40 CFR 60 Subpart Dc, Rule 1303(b)(2) Offset]

C1.6 The operator shall limit the fuel usage to no more than 0.11 mmcf in any one commissioning period.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request
[40 CFR 60 Subpart Dc, Rule 1303(b)(2) Offset]

C1.7 The operator shall limit the fuel usage to no more than 48 mmcf in any one calendar year.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

The operator shall record and maintain the amount of all fuel combusted during each year. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request
[Rule 1401, Rule 1303 (b)(2)]

D12.1 The operator shall install and maintain a(n) flow meter to accurately indicate the fuel usage being supplied to the boiler.

The operator shall also install and maintain a device to continuously record the parameter being measured
[Rule 1303(b)(2) - Offset, Rule 2012, 40 CFR Subpart Dc]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 91
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District Method 100.1	15 minutes	Outlet stack
CO emissions	District Method 100.1	15 minutes	Outlet stack
SOX emissions	AQMD Laboratory Method 307-91	Not applicable	Fuel Sample
PM emissions	District method 5.1	1 hour minimum	Outlet stack

The test shall be conducted after SCAQMD approval of the source test protocol, but no later than 180 days after initial start-up. the SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test. The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (mmcf/hour), and the flue gas flow rate.

The test shall be conducted in accordance with SCAQMD approved test protocol. The protocol shall be submitted to the SCAQMD engineer no later than 45 days before the proposed test date and shall be approved by the SCAQMD before the test commences.

The test protocol shall include the proposed operating conditions of the boiler during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted for 15 minutes for each load, while firing at maximum, minimum and low firing rates.

The test shall be conducted for compliance verification of the 25 ppmv CO limit.

The test shall be conducted for compliance verification of the 9 ppmv NOx limit.

Two complete copies of source test reports (include the application number and a copy of the permit in the report) shall be submitted to the District (addressed to south coast air quality management district, attn Roy Olivares, P.O. Box 4941, Diamond bar, CA 91765). The results in writing shall be submitted within 45 days after the source test is completed. It shall include, but not be limited to emissions rate in pounds per hour and concentration in ppmv at the outlet of the boiler.

A testing laboratory certified by the SCAQMD laboratory approval program (LAP) in the required test methods for criteria pollutant to be measured, and in compliance with district rule 304 (no conflict of interest) shall conduct the test

Sampling facilities shall comply with the SCAQMD "guidelines for construction of sampling and testing facilities", pursuant to rule 217.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 92
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Rule 2005, Reg 1703(a-PSD-BACT]

D29.4 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District Method 100.1	60 minutes	Outlet stack

The test shall be conducted at least once every five years

The test shall be conducted for compliance verification of the 9 ppmv NOx RECLAIM concentration limit.

[Rule 2012]

H23.1 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
CO	District Rule	1146

The operator of this equipment shall comply with source testing requirements in subdivision (D) (6)--compliance determination of rule 1146.

The operator of this equipment shall comply with periodic monitoring requirements of rule 1146 (C) (8).

[Rule 1146]

H23.4 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
PM	40CFR60, SUBPART	Dc
SOX	40CFR60, SUBPART	Dc

[40CFR 60 SUBPART Dc]

K67.5 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

Retain all records required by permit for a period of five years and make all records available to district personnel upon request.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request.

[Rule 1303 (b) (2), 40 CFR 60 Subpart Dc]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 93
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project
[CEQA]

E448.1 The operator shall comply with the following requirements

This boiler shall not be operated unless the flue gas recirculation system is in full operation.

The operator shall have the burner equipped with a control system to automatically regulate the combustion air, fuel, and recirculation flue gas as the boiler load varies. This control system shall be adjusted and tuned according to the manufacturer's specifications to maintain its ability to repeat the same performance at the same firing rate.

[Rule 1303 (a)]

I298.3 This equipment shall not be operated unless the facility holds 565 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operations. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at commencement of each compliance year after the start of operation, the facility holds 563 pounds RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by hold RTCs may be transferred upon their respective expiration dates. His hold amount is addition to any other amount of RTCs required to be held under condition(s) stated in this permit

[Rule 2005]

This condition is identical for I293.4 for D12

(Large Emergency engines, a/n 549387 and 549389) D13 and D15

B61.2 The operator shall only use diesel fuel containing the following specified compounds:

COMPOUND	Range	PPM BY WEIGHT
Sulfur	Less than or equal to	15

The operator shall maintain a copy of the MSDS on site
[Rule 431.2, Rule 1303 (a)-BACT, Rule 1470, 40 CFR 60 Subpart IIII]

C1.8 The operator shall limit the operating time to no more than 200 hours in any one year.

[Rule 1110.2, Rule 1304, Rule 1303 (a), Rule 2005, Rule 1470, Rule 1714]

C1.9 The operator shall limit the operating time to no more than 50 hours in any one year.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 94
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

Operation beyond the 50 hours per year for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage. Engine operation shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect

[Rule 1303(a)-BACT, Rule 1304, Rule 2012, Rule 1470]

C1.10 The operator shall limit the operating time to no more than 4.2 hours in any one month.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[Rule 1304, Rule 2012]

C1.11 The operator shall limit the operating time to no more than 30 minutes in any one day.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[CEQA]

D12.2 The operator shall install and maintain a(n) non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine.

[Rule 1110.2, Rule 1304, Rule 1470, Rule 2012, 40 CFR 60 Subpart IIII]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project.

E448.2 The operator shall comply with the following requirements

The operator shall comply with the emission standards specified in 40 CFR 60.4205(B) by purchasing an engine certified to the emission standards in 40 CFR 60.4205(B), as applicable, for the same model year and maximum engine power. the engine must be installed and configured according to the manufacturer's emission related specifications.

[40 CFR 60.4211(c)]

E448.3 The operator shall comply with the following requirements

The operator shall operate and maintain the stationary engine and control device according to the manufacturer's written emission-related instructions (or procedures developed by the operator that are approved by the engine manufacturer), change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 CFR 89, 94 and/or 1068, as they apply.

[40 CFR 60.4211(a)]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 95
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

H23.5 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1470
Sulfur	District Rule	431.2

[Rule 431.2, Rule 1470]

I298.5 This equipment shall not be operated unless the facility holds 5922 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operations. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at commencement of each compliance year after the start of operation, the facility holds 5922 pounds RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by hold RTCs may be transferred upon their respective expiration dates. His hold amount is addition to any other amount of RTCs required to be held under condition(s) stated in this permit
[Rule 2005

CONDITION I128.6 applies to engine no. 2

K67.3 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

Manual and automatic operation and shall list all engine operations in each of the following areas:

- A. emergency use
- B. MAINTENANCE AND TESTING
- C. OTHER (BE SPECIFIC)

In addition, for each time the engine is manually started, the log shall include the date of engine operation, the specific reason for operation, and the totalizing hour meter reading (in hours and tenths of hours) at the beginning and the end of the operation.

[Rule 1110.2, Rule 1470, 40 CFR 60.4214 (b)]

K67.4 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

On or before January 15th of each year, the operator shall record in the engine operating log:

- A. the total hours of engine operation for the previous calendar year, and
- B. The total hours of engine operation for maintenance and testing for the previous calendar year

Engine operation log(s) shall be retained on site for a minimum of five calendar years and shall be made available to the executive officer or representative upon request.

[Rule 1304]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 96
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

(Small Emergency engine, a/n 549390) D17

B61.2 The operator shall only use diesel fuel containing the following specified compounds:

<u>COMPOUND</u>	<u>Range</u>	<u>PPM BY WEIGHT</u>
<u>Sulfur</u>	<u>Less than or equal to</u>	<u>15</u>

The operator shall maintain a copy of the MSDS on site
[Rule 431.2, Rule 1303 (a)-BACT, Rule 1470, 40 CFR 60 Subpart IIII]

C1.8 The operator shall limit the operating time to no more than 200 hours in any one year.

[Rule 1110.2, Rule 1304, Rule 1303 (a), Rule 2012, Rule 1470, Rule 1714]

C1.9 The operator shall limit the operating time to no more than 50 hours in any one year.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

Operation beyond the 50 hours per year for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage. Engine operation shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect

[Rule 1303-BACT, Rule 1304, Rule 2012, Rule 1470]

C1.10 The operator shall limit the operating time to no more than 4.2 hours in any one month.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[Rule 1304, Rule 2012]

C1.11 The operator shall limit the operating time to no more than 30 minutes in any one day.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[CEAQ]

D12.2 The operator shall install and maintain a(n) non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine.

[Rule 1110.2, Rule 1304, Rule 1470, Rule 2012, 40 CFR 60.4209 (a)]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 97
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project.

E448.2 The operator shall comply with the following requirements

The operator shall comply with the emission standards specified in 40 cfr 60.4205(B) by purchasing an engine certified to the emission standards in 40 CFR 60.4205(B), as applicable, for the same model year and maximum engine power. the engine must be installed and configured according to the manufacturer's emission related specifications.
[40 CFR 60.4211(c)]

E448.3 The operator shall comply with the following requirements

The operator shall operate and maintain the stationary engine and control device according to the manufacturer's written emission-related instructions (or procedures developed by the operator that are approved by the engine manufacturer), change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 CFR 89, 94 and/or 1068, as they apply.
[40 CFR 60.4211(a)]

H23.5 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1470
Sulfur	District Rule	431.2

[Rule 431.2, Rule 1470]

I298.7 This equipment shall not be operated unless the facility holds 434 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operations. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at commencement of each compliance year after the start of operation, the facility holds 434 pounds RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by hold RTCs may be transferred upon their respective expiration dates. His hold amount is addition to any other amount of RTCs required to be held under condition(s) stated in this permit
[Rule 2005]

K67.3 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

Manual and automatic operation and shall list all engine operations in each of the following areas:

- A. emergency use
- B. MAINTENANCE AND TESTING
- C. OTHER (BE SPECIFIC)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 98
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

In addition, for each time the engine is manually started, the log shall include the date of engine operation, the specific reason for operation, and the totalizing hour meter reading (in hours and tenths of hours) at the beginning and the end of the operation.

[Rule 1110.2, Rule 1470, 40 CFR 60.4214 (b)]

K67.4 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

On or before January 15th of each year, the operator shall record in the engine operating log:

- A. the total hours of engine operation for the previous calendar year, and
- B. The total hours of engine operation for maintenance and testing for the previous calendar year

Engine operation log(s) shall be retained on site for a minimum of ~~five~~ three calendar years and shall be made available to the executive officer or representative upon request.

[Rule 1304]

(Fire Pump engine, a/n 549384, 549385 and 549386) D19, D20, D21

B61.2 The operator shall only use diesel fuel containing the following specified compounds:

<u>COMPOUND</u>	<u>Range</u>	<u>PPM BY WEIGHT</u>
<u>Sulfur</u>	<u>Less than or equal to</u>	<u>15</u>

The operator shall maintain a copy of the MSDS on site

[Rule 431.2, Rule 1303 (a)-BACT, Rule 1470, 40 CFR 60 Subpart IIII]

C1.8 The operator shall limit the operating time to no more than 200 hours in any one year.

[Rule 1110.2, Rule 1304, Rule 1303 (a), Rule 2012, Rule 1470, Rule 1714]

C1.12 The operator shall limit the operating time to no more than 50 hours in any one year.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[Rule 1110.2, Rule 1304, Rule 2012, Rule 1470]

C1.10 The operator shall limit the operating time to no more than 4.2 hours in any one month.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing

[Rule 1303-BACT, Rule 1304, Rule 2012, Rule 1470]

C1.11 The operator shall limit the operating time to no more than 30 minutes in any one day.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 99
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing
[CEQA]

D12.2 The operator shall install and maintain a(n) non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine.
[Rule 1110.2, Rule 1304, Rule 1470, Rule 2012, 40 CFR 60.4209 (a)]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project.

E448.2 The operator shall comply with the following requirements

The operator shall comply with the emission standards specified in 40 cfr 60.4205(B) by purchasing an engine certified to the emission standards in 40 CFR 60.4205(B), as applicable, for the same model year and maximum engine power. the engine must be installed and configured according to the manufacturer's emission related specifications.
[40 CFR 60.4211(c)]

E448.3 The operator shall comply with the following requirements

The operator shall operate and maintain the stationary engine and control device according to the manufacturer's written emission-related instructions (or procedures developed by the operator that are approved by the engine manufacturer), change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 CFR 89, 94 and/or 1068, as they apply.
[40 CFR 60.4211(a)]

H23.5 This equipment is subject to the applicable requirements of the following Rules or Regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1470
Sulfur	District Rule	431.2

[Rule 431.2, Rule 1470]

I298.8 This equipment shall not be operated unless the facility holds 707 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operations. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at commencement of each compliance year after the start of operation, the facility holds 707 pounds RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by hold RTCs may be transferred upon their respective expiration dates. His hold amount is addition to any other amount of RTCs required to be held under condition(s) stated in this permit

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 100
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

[Rule 2005

K67.3 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

Manual and automatic operation and shall list all engine operations in each of the following areas:

- A. emergency use
- B. MAINTENANCE AND TESTING
- C. OTHER (BE SPECIFIC)

In addition, for each time the engine is manually started, the log shall include the date of engine operation, the specific reason for operation, and the totalizing hour meter reading (in hours and tenths of hours) at the beginning and the end of the operation.

[Rule 1110.2, Rule 1470, 40 CFR 60.4214 (b)]

K67.4 The operator shall keep records in a manner approved by the Executive Officer, for the following parameter(s) or item(s):

On or before January 15th of each year, the operator shall record in the engine operating log:

- A. the total hours of engine operation for the previous calendar year, and
- B. The total hours of engine operation for maintenance and testing for the previous calendar year

Engine operation log(s) shall be retained on site for a minimum of **five** ~~three~~ calendar years and shall be made available to the executive officer or representative upon request

[Rule 1304]

(Section D; Device E25)

K67.6 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

[Rule 1113]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 101
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 102
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

PSGES ENERGY PROJECT
List of Appendices

1. Appendix A - Facility emissions summaries
 - Daily emissions
 - monthly Emissions
 - Yearly Emissions

2. Appendix B - Auxiliary Boiler Emissions
 - Boosting emissions
 - Cold start emissions
 - Very cold start emissions
 - Hot start/emergency trip emissions
 - Worst case monthly emissions and 30-day ave
 - Non-Boosting emissions (used only for annual emissions determination)
 - Annual emissions
 - Monthly fuel usage
 - Annual fuel usage

3. Appendix C - Auxiliary Boiler SOx boosting emissions

4. Appendix D - Night Preservation Boiler Emissions

5. Appendix E - Auxiliary Boiler Commissioning Emissions

6. Appendix F - Night Preservation Commissioning emissions

7. Appendix G - Large Emergency ICE Emissions

8. Appendix H - Small Emergency ICE emissions

9. Appendix I - Fire Pump ICE Emissions

10. Appendix J - Boiler TAC emissions

11. Appendix K - Emergency engines TAC emissions

12. Appendix L - Ammonia Slip emissions

13. Appendix M - NOx RTC determination

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 103	PAGE NO. 103
	APPL. NO. 549379, 80, 81, 83, 87, 89, 90, 553874 and 76	DATE 12/4/2013
	PROCESSED BY R. Olivares	CHECKED BY

- 14. Appendix M - NOx RECLAIM Reporting Values
- 15. Appendix O - SCAQMD Modeling Approval Memo

PALEN SOLAR POWER PROJECT
Appendix A Facility Emissions Summaries

PAGES	PAGE	A/N Palen
BY RDO	DATE	

A. Facility totals 30 days averages

NSR 30 day Ave

Equipment	NOx	VOC	CO	SOx	PM10
Large boiler 1	21.08	5.78	48.36	2.83	7.14
Large boiler 2	21.08	5.78	48.36	2.83	7.14
small boiler 1	1.69	0.61	2.85	0.31	1.10
small boiler 2	1.69	0.61	2.85	0.31	1.10
Large ICE 1	4.11	0.28	0.99	0.00	0.10
Large ICE 2	4.11	0.28	0.99	0.00	0.10
Small ICE	0.30	0.03	0.28	0.00	0.01
Large fire pump 1	0.49	0.02	0.09	0.00	0.02
Large fire pump 2	0.49	0.02	0.09	0.00	0.02
Large fire pump 3	0.49	0.02	0.09	0.00	0.02
totals	55.53	13.42	104.97	6.29	16.74

B. Facility Monthly Emissions

Equipment	NOx	VOC	CO	SOx	PM10
Large boiler 1	632.33	173.37	1450.87	84.91	214.15
Large boiler 2	632.33	173.37	1450.87	84.91	214.15
small boiler 1	50.62	18.23	85.60	9.30	32.98
small boiler 2	50.62	18.23	85.60	9.30	32.98
Large ICE 1	123.37	100.3 8.34	356.10 29.67	0.13	2.98
Large ICE 2	123.37	100.3 8.34	356.10 29.67	0.13	2.98
Small ICE	9.10	0.99	356.10	0.02	0.40
Large fire pump 1	14.72	0.57	2.83	0.03	0.51
Large fire pump 2	14.72	0.57	2.83	0.03	0.51
Large fire pump 3	14.72	0.57	2.83	0.03	0.51
totals	1665.90	586 403	3802 3149	188.79	502.16

PALEN SOLAR POWER PROJECT
Appendix A Facility Emissions Summaries

PAGES	PAGE	A/N 502597
BY RDO	DATE	

C. Facility totals annual emissions

Equipment	NOx	VOC	CO	SOx	PM10
Large boiler 1	5645.04	1358.78	12566.74	658.17	1683.93
Large boiler 2	5645.04	1358.78	12566.74	658.17	1683.93
small boiler 1	563.39	202.86	952.59	103.50	367.08
small boiler 2	563.39	202.86	952.59	103.50	367.08
Large ICE 1	1480.41	6.80 100.03	356.10	1.53	35.81
Large ICE 2	1480.41	6.80 100.03	356.10	1.53	35.81
Small ICE	109.14	11.83	101.25	0.22	4.82
Large fire pump 1	176.67	6.80	33.98	0.37	6.12
Large fire pump 2	176.67	6.80	33.98	0.37	6.12
Large fire pump 3	176.67	6.80	33.98	0.37	6.12
totals	16016.84	3169 3356	27954.04	1527.70	4196.82
ton/yr	8.01	1.658 1.658	13.98	0.76	2.10

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-total emissions-Very Cold start

Pollutant	Maximum Daily normal operation 100% load (lb/day)	Maximum Daily start-up operation 17.5% load (lb/day)	Maximum Daily start-up operation 50% load (lb/day)	Maximum Total Daily (lb/day)	Maximum Total Daily (lb/mon)
NOx	1.548	15.681	7.742	24.972	24.972
VOC	0.996	1.059	4.980	7.035	7.035
CO	4.713	29.392	23.563	57.668	57.668
PM10	1.209	1.419	6.047	8.676	8.676
SOx	0.508	0.400	2.541	3.449	3.449

Cold day start mode

Data:

Emission Rate = Emission Factor (lb/MMBTU) * Heat Input (MMBTU/hr)

NOx = 5 ppm @ 3% O₂, CO = 25 ppm @ 3% O₂

Maximum daily operation of each boiler is 1 hr/day at full load, 4 hr/dy at 50% load and 3 hr/day at 17.5% load

Maximum number of colds start per month is 1 and per year is 10

PM2.5 emissions are equivalent to PM10 emissions

Boilers fired exclusively with natural gas

30DA means 30-day average

One Boiler-load, uncontrolled/controlled hr/dy totals

	Uncontrolled	controlled	mmcf	mmbtu
boiler load	hr/dy	hr/dy		
17.50%	3		0.1245	130.725
100%	0	1	0.237142857	249
50%	0	4	0.474285714	498
total	3	5	0.835928571	877.725

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	AM
BY RDO	DATE	

One Boiler-Controlled emissions-100% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	hr/dy	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	249	1.0000	1.5484	1.548
VOC	0.004000	lb/MMBTU	applicant	0.004000	249	1.0000	0.9960	0.996
CO	25	ppmv	applicant	0.018926	249	1.0000	4.7126	4.713
PM10	0.004857	lb/MMBTU	vender	0.004857	249	1.0000	1.2094	1.209
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	249	1.0000	0.5082	0.508

One Boiler-Controlled emissions-50% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	hr/dy	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	124.5	4.0000	0.7742	3.097
VOC	0.004	lb/MMBTU	applicant	0.004000	124.5	4.0000	0.4980	1.992
CO	25	ppmv	applicant	0.018926	124.5	4.0000	2.3563	9.425
PM10	0.0048571	lb/MMBTU	vender	0.004857	124.5	4.0000	0.6047	2.419
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	124.5	4.0000	0.2541	1.016

One Boiler-Uncontrolled emissions-17.5% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	hr/dy	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)
NOx	64.3	ppmv	applicant	0.079970	43.575	3.0000	3.4847	10.454
VOC	0.005240	lb/MMBTU	AP-42 1.4-2	0.005400	43.575	3.0000	0.2353	0.706
CO	198	ppmv	applicant	0.149894	43.575	3.0000	6.5316	19.595
PM10	0.007238	lb/MMBTU	vender	0.007238	43.575	3.0000	0.3154	0.946
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	43.575	3.0000	0.0889	0.267

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-total monthly emissions-Cold start

Pollutant	Maximum Daily normal operation 100% load (lb/day)	Maximum Daily start-up operation 17.5% load no control (lb/day)	Maximum Daily normal operation 50% load (lb/day)	Maximum Total Daily (lb/day)	Maximum Total Daily (lb/mon)
NOx	1.548	10.454	3.097	15.099	15.099
VOC	0.996	0.706	1.992	3.694	3.694
CO	4.713	19.595	9.425	33.733	33.733
PM10	1.209	0.946	2.419	4.574	4.574
SOx	0.508	0.267	1.016	1.791	1.791

Hot restart after cloud event/emergency trip

Data:

Emission Rate = Emission Factor (lb/MMBTU) * Heat Input (MMBTU/hr)

NOx = 5 ppm @ 3% O₂, CO = 25 ppm @ 3% O₂

Maximum daily operation of each boiler, see table below

Maximum number of hot re-start per month is 29 and per year is 60

PM2.5 emissions are equivalent to PM10 emissions

Boilers fired exclusively with natural gas

30DA means 30-day average

One Boiler-load, uncontrolled/controlled hr/dy totals

	Uncontrolled	controlled	mmcf	mmbtu
boiler load	hr/dy	hr/dy		
17.50%	0.75		0.031125	32.68125
100%		1	0.237142857	249
30%		1	0.071142857	74.7
total	0.75	2	0.339410714	356.38125

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	AVN
BY RDO	DATE	

One Boiler-Controlled emissions-100% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	249	1.5484	1.0000	1.548
VOC	0.004000	lb/MMBTU	applicant	0.004000	249	0.9960	1.0000	0.996
CO	25	ppmv	applicant	0.018926	249	4.7126	1.0000	4.713
PM10	0.004857	lb/MMBTU	vender	0.004857	249	1.2094	1.0000	1.209
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	249	0.5082	1.0000	0.508

One Boiler-Controlled emissions-30% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	74.7	0.4645	1.0000	0.465
VOC	0.004000	lb/MMBTU	applicant	0.004000	74.7	0.2988	1.0000	0.299
CO	25	ppmv	applicant	0.018926	74.7	1.4138	1.0000	1.414
PM10	0.004857	lb/MMBTU	vender	0.004857	74.7	0.3628	1.0000	0.363
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	74.7	0.1524	1.0000	0.152

One Boiler-Uncontrolled emissions-17.5% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	64.3	ppmv	applicant	0.079970	43.575	3.4847	0.7500	2.614
VOC	0.005240	lb/MMBTU	AP-42 1.4-2	0.005240	43.575	0.2283	0.7500	0.171
CO	198	ppmv	applicant	0.149894	43.575	6.5316	0.7500	4.899
PM10	0.007238	lb/MMBTU	vender	0.007238	43.575	0.3154	0.7500	0.237
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	43.575	0.0889	0.7500	0.067

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-total monthly emissions-Hot Start

Pollutant	Maximum Daily normal operation 100% load controlled (lb/day)	Maximum Daily normal operation 30% load controlled (lb/day)	Maximum Daily start-up operation 17.5% load no control (lb/day)	Maximum Total Daily (lb/day)	days/month	Maximum Total Daily (lb/mon)
NOx	1.548	0.465	2.614	4.626	29.000	134.168
VOC	0.996	0.299	0.171	1.466	29.000	42.515
CO	4.713	1.414	4.899	11.025	29.000	319.726
PM10	1.209	0.363	0.237	1.809	29.000	52.455
SOx	0.508	0.152	0.067	0.727	29.000	21.092

Non-Boosting mode

Data:
Emission Rate = Emission Factor (lb/MMBTU) * Heat Input (MMBTU/hr)
NOx = 5 ppm @ 3% O₂, CO = 25 ppm @ 3% O₂
Maximum daily operation of each boiler, see table below
The applicant estimates 120 of operation in non-boosting mode per year. During this operation no steam is used to generate electricity for worst case monthly emisissions, non-boosting mode is **not used**, but will be used for the annual emissions

PM2.5 emissions are equivalent to PM10 emissions
Boilers fired exclusively with natural gas

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-load, uncontrolled/controlled hr/dy totals

	Uncontrolled	controlled	mmcf	mmbtu
boiler load	hr/dy	hr/dy		
17.50%	3		0.1245	130.725
100%	0	1	0.237142857	249
80%		0.75	0.141714286	149.4
total	3	1.75	0.503357143	529.125

One Boiler-Controlled emissions-100% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	Maximum hr/dy	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006218532	249	1.5484	1.0000	1.548
VOC	0.004	lb/MMBTU	applicant	0.004	249	0.9960	1.0000	0.996
CO	25	ppmv	applicant	0.018925966	249	4.7126	1.0000	4.713
PM10	0.0048571	lb/MMBTU	vender	0.004857143	249	1.2094	1.0000	1.209
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002040816	249	0.5082	1.0000	0.508

One Boiler-Uncontrolled emissions-17.5% Load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	64.3	ppmv	applicant	0.079970318	43.4	3.4847	3.0000	10.454
VOC	0.0054	lb/MMBTU	AP-42 1.4-2	0.0054	43.4	0.2353	3.0000	0.706
CO	198	ppmv	applicant	0.149893652	43.4	6.5316	3.0000	19.595
PM10	0.0072381	lb/MMBTU	vender	0.007238095	43.4	0.3154	3.0000	0.946
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002040816	43.4	0.0889	3.0000	0.267

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-Controlled emissions-80% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006218532	199.2	1.2387	0.7500	0.929
VOC	0.004	lb/MMBTU	AP-42 1.4-2	0.004	199.2	0.7968	0.7500	0.598
CO	25	ppmv	applicant	0.018925966	199.2	3.7701	0.7500	2.828
PM10	0.0048571	lb/MMBTU	applicant	0.004857143	199.2	0.9675	0.7500	0.726
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002040816	199.2	0.4065	0.7500	0.305

One Boiler-non Booster total emissions

Pollutant	Maximum Daily normal operation 100% load (lb/day)	Maximum Daily start-up/hot start operation 17.5% load no control (lb/day)	Maximum Daily 80% load controlled (lb/day)	Maximum Total Daily (lb/day)
NOx	1.548	10.454	0.929	12.932
VOC	0.996	0.706	0.598	2.300
CO	4.713	19.595	2.828	27.135
PM10	1.209	0.946	0.726	2.881
SOx	0.508	0.267	0.305	1.080

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-total max. monthly, daily emissions for boosting, emergency hot start, very cold start and cold start operation modes

Pollutant	Maximum monthly boosting (lb/mon)	Maximum monthly very cold start (lb/mon)	Maximum monthly cold start (lb/mon)	Maximum monthly hot start emergency (lb/mon)	Maximum Total Daily (lb/mon)	30DA (lb/day)
NOx	458.088	24.972	15.099	134.168	632.327	21.078
VOC	120.121	7.035	3.694	42.515	173.366	5.779
CO	1039.743	57.668	33.733	319.726	1450.869	48.362
PM10	148.443	8.676	4.574	52.455	214.149	7.138
SOx	58.579	3.449	1.791	21.092	84.911	2.830

One Boiler-total annual emissions for boosting, non-boosting, emergency hot start, very cold start and cold start operation modes

Pollutant	Maximum yearly boosting (lb/yr)	Maximum yearly very cold start (lb/yr)	Maximum yearly cold start (lb/yr)	Maximum yearly hot start emergency (lb/yr)	Maximum yearly non-boosting (lb/yr)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
day/yr	220	5	10	60	125		
NOx	3475.153	124.858	150.994	277.588	1616.448	5645.041	2.823
VOC	911.265	35.174	36.939	87.963	287.439	1358.781	0.679
CO	7887.704	288.338	337.325	661.503	3391.869	12566.739	6.283
PM10	1126.120	43.379	45.745	108.528	360.161	1683.934	0.842
SOx	444.43 457.46	17.246	17.913	43.639	134.981	658.167	0.334

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

Determination of Controlled Emission Factors

$\text{NOx EF} = (5/1,000,000)(8710 \text{ scf/MMBTU})(46 \text{ lb/mol})(1 \text{ mol}/379 \text{ scf})(20/20-3) = 0.0112 \text{ lb/MMBTU}$

$\text{COx EF} = (25/1,000,000)(8710 \text{ scf/MMBTU})(28 \text{ lb/mol})(1 \text{ mol}/379 \text{ scf})(20/20-3) = 0.01893 \text{ lb/MMBTU}$

Pollutant	con.	F-Factor	MW (lb/mol)	MV (scf/mol)	%O2 Corr	EF lb/MMBTU	EF lb/MMcf
R2 NOx	0.000005	8710	46	379	1.176470588	0.00622	6.52945833
R2 CO	0.000025	8710	28	379	1.176470588	0.01893	19.8722645
R1 NOx	0.0000643	8710	46	379	1.176470588	0.07997	83.9688341
R1 CO	0.000198	8710	28	379	1.176470588	0.14989	157.388335
R1 VOC						0.00540	5.7
R2 VOC						0.00400	4.1
PM10						0.00724	7.6
SOx						0.00204	2.14285714

Pollutant	gr/100ft3	HHV btu/ft3	gr/lb	SOxMW(lb/mol)	S MW (lb/mol)	EF lb/mmbtu	EF lb/mmcf
SOx	0.75		7000	64	32	0.002041	
SOx	0.75	1050	7000	64	32		2.142857
PM10 start up							7.600000
PM10 start up		1050				0.007238	
PM10 Normal operations							5.100000
PM10 Normal operations		1050				0.004857	

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

SOx EF = (0.75 gr/100 scf)*(1 lb/7000 gr)* (1 scf/1050 btu)(1000000 btu/mmbtu)*(64 lb SOx/32 lbS) = 0.002041 lb/mmbtu
 SOx EF = (0.75 gr/100 scf)*(1 lb/7000 gr)(1000000 ft3/mmcf)*(64 lb SOx/32 lbS) = 2.14 lb/mmcf
 Startu-up PM10 EF = (7.6 lb/mmcf)(1 mmcf/1000000 scf)(1 scf/1050 btu)(1000000 btu/mmbtu) = 0.007238 lb/mmbtu
 Normal operations PM10 EF = (5.1 lb/mmcf)(1 mmcf/1000000 scf)(1 scf/1050 btu)(1000000 btu/mmbtu) = 0.004857 lb/mmbtu (ref vendor)

VOC and PM10 emisson factors based AP-42 table 1.4-2
 SOx emission factor per 0.75 gr-H2S/100 scf gas

Monthly Fuel Usage per boiler

Pollutant	Maximum monthly boosting (mmcf)	Maximum monthly very cold start (lb/mmcf)	Maximum monthly cold start (mmcf)	Maximum monthly hot start emergency (mmcf)	Maximum Total Monthly (mmcf)
mmcf	27.337	1.610	0.836	9.843	39.625

maximum monthly fuel usage = 29 boost days + 1 cold start + 1 very cold start + 29 emergency/hot start

Annual Fuel usage per boiler

fuel	Maximum annual boosting (mmcf)	Maximum annual very cold start (lb/mmcf)	Maximum annual cold start (mmcf)	Maximum annual hot start emergency (mmcf)	annual non-boosting (mmcf)	Annual (MMCF)	Annual (btu/yr)
R1-mmbtu	130.725	196.0875	130.725	32.68125	130.725		
R2 mmbtu	859.05	1494	747	323.7	398.4		
mmcf/day	0.943	1.610	0.836	0.339	0.503		
days/yr	220	5	10	60	125		
mmcf/yr	207.38	8.05	8.36	20.36	62.92	307.07	3.22E+11

annual fuel usage = 220 boost day/yr + 10 cold start/yr + 5 very cold start/yr + 60 emergency/hot start per year+ 125 non-boost days/yr

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	AVN
RDO	DATE	

Annual hours per year

fuel	Maximum annual boosting	Maximum annual very cold start	Maximum annual cold start	Maximum annual hot start emergency	annual non- boosting	Annual
Start-up hr/yr	660.000	22.500	30.000	45.000	375.000	757.50
normal hr/yr	880	55	50	120	218.75	1323.75

PALEN SOLAR POWER PROJECT
Appendix C Auxiliary Boiler Emissions

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Boosting mode-SOx emissions

when operating at boosting mode, the boiler provides steam to the turbine to generate electricity

when operating at boosting mode, the maximum hours per day is 2

the number of boosting days per year is 220

heating value 1050 Ref District

One Boiler-load, uncontrolled/controlled hr/dy totals

	Uncontrolled	controlled	mmcf
boiler load	hr/dy	hr/dy	
100%	0	1	0.237142857
50%	0	0.5	0.059285714
80%		0.5	0.094857143
total	0	2	0.391285714

One Boiler-SOx boosting emissions

Pollutant	Emission Factor	Units	Referance	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximun lb/event
SOx	0.002041	1b/MMBTU	0.75 gr-H2S /100scf gas	0.002041	249	0.5082
SOx	0.0020408	1b/MMBTU	0.75 gr-H2S /100scf gas	0.002041	124.5	0.2541
sox	0.0020408	1b/MMBTU	0.75 gr-H2S /100scf gas	0.002041	199.2	0.4065
total lb/event						1.1688
total lb/yr						257.1306

SOx lb/yr = SOx emisisions /day * 220 boosting days/yr

**PALEN SOLAR POWER PROJECT
Appendix D NTP Boilers Emissions**

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Data:

Emission Rate = Emission Factor (lb/MMBTU) * Heat Input (MMBTU/hr)

NOx = 9 ppm @ 3% O₂, CO = 25 ppm @ 3% O₂

Maximum daily operation of each boiler is 14 hr/day. 13 hours full load, 1 hour Start up load

Maximum annual operation of each boiler is 4830 hrs

days per year operation is 345 days

btu rating is 10,500,000 btu/hr

PM2.5 emissions are equivalent to PM10 emissions

Boilers fired exclusively with natural gas

30DA means 30-day average

hr/dy	14
dy/yr	345

One Boiler

Pollutant	Emission Factor	Units	Referance	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximun Hourly (lb/hr)	Maximum Daily (lb/day)	Annual Emissions (lb/yr)	Monthly Emissions (lb/month)	30DA (lb/day)
NOx	9	ppmv	vendor	0.011109	10.500000	0.1166	1.633	563.39	50.62	1.69
VOC	0.004000	lb/MMBTU	vendor	0.004000	10.500000	0.0420	0.588	202.86	18.23	0.61
CO	25	ppmv	vendor	0.018783	10.500000	0.1972	2.761	952.59	85.60	2.85
PM10	0.007238	lb/MMBTU	AP-42	0.007238	10.500000	0.0760	1.064	367.08	32.98	1.10
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	10.500000	0.0214	0.300	103.50	9.30	0.31

PALEN SOLAR POWER PROJECT
Appendix D NTP Boilers Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

Two Boilers

Pollutant	Emission Factor	Units	Emission Factor (lb/MMBTU)	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)	Annual Emissions (lb/yr)	Monthly Emissions (lb/month)	30DA (lb/day)
NOx	9	ppmv	0.0111	0.2333	3.2660	1126.7796	101.2469	3.3749
VOC	0.004	lb/MMBTU	0.0040	0.0840	1.1760	405.7200	36.4560	1.2152
CO	25	ppmv	0.0188	0.3944	5.5223	1905.1829	171.1903	5.7063
PM10	0.0072381	lb/MMBTU	0.0072	0.1520	2.1280	734.1600	65.9680	2.1989
SOx	0.002041	lb/MMBTU	0.0020	0.0429	0.6000	207.0000	18.6000	0.6200

Determination of Emission Factors

NOx EF = (9/1,000,000)(8710 scf/MMBTU)(46 lb/mol)(1 mol/379 scf)(20.9/20.9-3) = 0.0112 lb/MMBTU

COx EF = (25/1,000,000)(8710 scf/MMBTU)(28 lb/mol)(1 mol/379 scf)(20.9/20.9-3) = 0.03785 lb/MMBTU

Pollutant	ppmv	F-Factor	MW (lb/mol)	MV (scf/mol)	%O2 Corr	EF lb/MMBTU	EF lb/MMcf
NOx	0.000009	8710	46	379	1.167597765	0.01111	11.6643849
CO	0.000025	8710	28	379	1.167597765	0.01878	19.7223899
VOC						0.00400	4.2
PM10						0.00724	7.6
SOx						0.00204	2.14285714

Pollutant	gr/100ft3	HHV btu/ft3	gr/lb	SOxMW(lb/mol)	S MW (lb/mol)	EF lb/mmmbtu	EF lb/mmcf
SOx	0.75		7000	64	32	0.002041	
SOx	0.75	1050	7000	64	32		2.142857
PM10							7.600000
PM10		1050				0.007238	

PALEN SOLAR POWER PROJECT NTP Boilers Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

$$\text{SOx EF} = (0.75 \text{ gr}/100 \text{ scf}) * (1 \text{ lb}/7000 \text{ gr}) * (1 \text{ scf}/1050 \text{ btu}) * (1000000 \text{ btu}/\text{mmbtu}) * (64 \text{ lb SOx}/32 \text{ lbS}) = 0.002041 \text{ lb}/\text{mmcf}$$

$$\text{SOx EF} = (0.75 \text{ gr}/100 \text{ scf}) * (1 \text{ lb}/7000 \text{ gr}) * (1000000 \text{ ft}^3/\text{mmcf}) * (64 \text{ lb SOx}/32 \text{ lbS}) = 2.14 \text{ lb}/\text{mmcf}$$

$$\text{PM10 EF} = (7.6 \text{ lb}/\text{mmcf}) * (1 \text{ mmcf}/1000000 \text{ scf}) * (1 \text{ scf}/1050 \text{ btu}) * (1000000 \text{ btu}/\text{mmbtu}) = 0.007238 \text{ lb}/\text{mmbtu}$$

VOC and PM10 emission factors based AP-42 table 1.4-2

SOx emission factor per 0.75 gr-H₂S/100 scf gas

Mass Emissions Sample Calculations (single boiler)

$$\text{NOx Max Hourly} = (10.5 \text{ MMBTU}/\text{hr}) * (0.01119 \text{ lb}/\text{MMBTU}) = 0.1175 \text{ lb}/\text{hr}$$

$$\text{NOx Max Daily} = (0.1166 \text{ lb}/\text{hr}) * (14 \text{ hr}/\text{day}) * (100\%) = 1.63 \text{ lb}/\text{dy}$$

$$\text{NOx Monthly} = (1.63 \text{ lb}/\text{day}) * (31 \text{ day}/\text{month}) = 50.62 \text{ lb}/\text{month}$$

$$\text{NOx Annual} = 1.63 \text{ lb}/\text{dy} * 345 \text{ day}/\text{yr} = 563 \text{ lb}/\text{yr} = 0.282 \text{ ton}/\text{yr}$$

$$\text{NOx 30DA} = (1.63 \text{ lb}/\text{dy}) * (31 \text{ days}/\text{mon}) * (1 \text{ month}/31 \text{ day}) = 1.69 \text{ lb}/\text{day}$$

Boiler Fuel Consumption (single boiler)

the applicant is proposing an annual btu limit of 50715 mmbtu per year(used to determine Rule 1401 compliance), back calculate to determine wk/yr operation

$$\text{FC} = (10,500,000 \text{ BTU}/\text{hr}) * (14 \text{ hr} * 100\%) * (1 \text{ scf}/1050 \text{ BTU}) * (1 \text{ mmcf}/1000000 \text{ scf}) = 0.14 \text{ MMCF}/\text{DAY}$$

$$\text{FC} = (0.14 \text{ MMCF}/\text{dy}) * (31 \text{ day}/\text{mon}) = 4.34 \text{ mmcf}/\text{mon}$$

$$\text{FC} = (0.14 \text{ MMCF}/\text{dy}) * (345 \text{ day}/\text{yr}) = 48.30 \text{ mmcf}/\text{yr}$$

btu/yr	49710000
reclaim limit	2.3E+10
	-2.295E+10

operations	
hr/dy	14
dy/wk	7
wk/yr	49.7
mmbtu	10.5
hr/dy	14
hr/yr	4872

PALEN SOLAR POWER PROJECT
Appendix E Auxiliary Boiler Commissioning Emissions

PAGES	PAGE	A/N Palen
BY RDO	DATE	

One boiler heating value 249 mmbtu/hr
 1050 btu/ft3 Ref per District

Proposed hours of operation

hours	mode	EF	load
4	cold start	SU emissions factors	31.1
4	warm start	SU emissions factors	31.1
12	low load	low load emissions factors	63
12	med load	high load emissions factor	125
8	high load	high load emissions factor	249

total

SU emissions factors

Pollutant	Start-up	low load	high load	Units	Referance
NOx	0.088	0.011	0.011	lb/MMBTU	vendor
VOC	0.005400	0.0054	0.0054	lb/MMBTU	vendor
CO	0.1460	0.037	0.037	lb/MMBTU	vendor
PM10	0.010000	0.005	0.005	lb/MMBTU	vendor
SOx	0.002100	0.0021	0.0021	lb/MMBTU	vendor

SU emissions factors

Pollutant	Start-up	low load	high load	Units	Referance
NOx	92.4	11.55	11.55	lb/MMCF	vendor
VOC	5.67	5.67	5.67	lb/MMCF	vendor
CO	153.3	38.85	38.85	lb/MMCF	vendor
PM10	10.5	5.25	5.25	lb/MMCF	vendor
SOx	2.205	2.205	2.205	lb/MMCF	vendor

PALEN SOLAR POWER PROJECT
Appendix E Auxiliary Boiler Commissioning Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

Heat input during commissioning

Mode	mmbtu/event
SU	248.80
low	756.00
med	1500.00
High	1992.00
total	4496.80
total mmcf	4.28

Aux boiler Commissioning Emissions

Mode	NOx	CO	VOC	SOx	PM10
	lb/period	lb/period	lb/period	lb/period	lb/period
SU	21.89	36.32	1.34	0.52	2.49
Low	8.316	27.972	4.0824	1.5876	3.78
med	16.5	55.5	8.1	3.15	7.5
high	21.912	73.704	10.7568	4.1832	9.96
total	68.62	193.50	24.28	9.44	23.73

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N Palen
BY RDO	DATE 9/12/2013	

Boosting mode

Data:

Emission Rate = Emission Factor (lb/MMBTU) * Heat Input (MMBTU/hr)

NOx = 5 ppm @ 3% O₂, CO = 25 ppm @ 3% O₂

Maximum daily operation of each boiler, see table below

Maximum days/mon is 29 day (for worst case month emissions) and 220 days per year

PM2.5 emissions are equivalent to PM10 emissions

Boilers fired exclusively with natural gas

30DA means 30-day average

One Boiler-load, uncontrolled/controlled hr/dy totals

boiler load	Uncontrolled hr/dy	controlled hr/dy	mmcf	mmbtu
17.50%	3		0.1245	130.725
100%	0	2	0.474285714	498
50%	0	0.5	0.059285714	62.25
80%		1.5	0.284571429	298.8
total	3	4	0.942642857	989.775

One Boiler-Controlled emissions-100% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	Maximum	Maximum
							hr/dy	Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	249	1.5484	2.0000	3.097
VOC	0.004000	lb/MMBTU	applicant	0.004000	249	0.9960	2.0000	1.992
CO	25	ppmv	applicant	0.018926	249	4.7126	2.0000	9.425
PM10	0.004857	lb/MMBTU	vender	0.004857	249	1.2094	2.0000	2.419
SOx	0.002041	lb/MMBTU	0.75 gr-H ₂ S /100scf gas	0.002041	249	0.5082	2.0000	1.016

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-Uncontrolled emissions-17.5% Load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	64.3	ppmv	applicant	0.079970	43.575	3.4847	3.0000	10.454
VOC	0.005400	lb/MMBTU	AP-42 1.4-2	0.005400	43.575	0.2353	3.0000	0.706
CO	198	ppmv	applicant	0.149894	43.575	6.5316	3.0000	19.595
PM10	0.007238	lb/MMBTU	vendor	0.007238	43.575	0.3154	3.0000	0.946
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	43.575	0.0889	3.0000	0.267

One Boiler-Controlled emissions-50% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	124.5	0.7742	0.5000	0.387
VOC	0.004	lb/MMBTU	applicant	0.004000	124.5	0.4980	0.5000	0.249
CO	25	ppmv	applicant	0.018926	124.5	2.3563	0.5000	1.178
PM10	0.0048571	lb/MMBTU	vendor	0.004857	124.5	0.6047	0.5000	0.302
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	124.5	0.2541	0.5000	0.127

One Boiler-Controlled emissions-80% load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	Maximum Hourly (lb/hr)	hr/dy	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	199.2	1.2387	1.5000	1.858
VOC	0.004	lb/MMBTU	AP-42 1.4-2	0.004000	199.2	0.7968	1.5000	1.195
CO	25	ppmv	applicant	0.018926	199.2	3.7701	1.5000	5.655
PM10	0.0048571	lb/MMBTU	vendor	0.004857	199.2	0.9675	1.5000	1.451
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	199.2	0.4065	1.5000	0.610

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	AVN
BY RDO	DATE	

One Boiler-Booster total emissions

Pollutant	Maximum Daily normal operation 100% load (lb/day)	Maximum Daily start-up/hot start operation 17.5% load no control (lb/day)	Maximum Daily hot start operation 50% load control (lb/day)	Maximum Daily 80% load controlled (lb/day)	Maximum Total Daily (lb/day)	Maximum Total Daily (lb/mon)
NOx	3.097	10.454	0.387	1.858	15.796	458.088
VOC	1.992	0.706	0.249	1.195	4.142	120.121
CO	9.425	19.595	1.178	5.655	35.853	1039.743
PM10	2.419	0.946	0.302	1.451	5.119	148.443
SOx	1.016	0.267	0.127	0.610	2.020	58.579

Very Cold day start mode

Data:

Emission Rate = Emission Factor (lb/MMBTU) * Heat Input (MMBTU/hr)

NOx = 5 ppm @ 3% O₂, CO = 25 ppm @ 3% O₂

Maximum daily operation of each boiler is 1 hr/day at full load, 10 hr/dy at 50% load and 4.5 hr/day at 17.5% load

Maximum number of colds start per month is 1 and per year is 5

PM2.5 emissions are equivalent to PM10 emissions

Boilers fired exclusively with natural gas

30DA means 30-day average

One Boiler-load, uncontrolled/controlled hr/dy totals

	Uncontrolled	controlled	mmcf	mmbtu
boiler load	hr/dy	hr/dy		
17.50%	4.5		0.18675	196.0875
100%	0	1	0.237142857	249
50%	0	10	1.185714286	1245
total	4.5	11	1.609607143	1690.0875

PALEN SOLAR POWER PROJECT
Appendix B Auxiliary Boiler Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One Boiler-Controlled emissions-100 percent load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	hr/dy	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	249	1.0000	1.5484	1.548
VOC	0.004000	lb/MMBTU	applicant	0.004000	249	1.0000	0.9960	0.996
CO	25	ppmv	applicant	0.018926	249	1.0000	4.7126	4.713
PM10	0.004857	lb/MMBTU	vender	0.004857	249	1.0000	1.2094	1.209
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	249	1.0000	0.5082	0.508

One Boiler-Controlled emissions-50 percent load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	hr/dy	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)
NOx	5	ppmv	applicant	0.006219	124.5	10.0000	0.7742	7.742
VOC	0.004	lb/MMBTU	applicant	0.004000	124.5	10.0000	0.4980	4.980
CO	25	ppmv	applicant	0.018926	124.5	10.0000	2.3563	23.563
PM10	0.004857	lb/MMBTU	vender	0.004857	124.5	10.0000	0.6047	6.047
SOx	0.0020408	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	124.5	10.0000	0.2541	2.541

One Boiler-Uncontrolled emission-17.5 percent load

Pollutant	Emission Factor	Units	Reference	Emission Factor (lb/MMBTU)	mmbtu/hr	hr/dy	Maximum Hourly (lb/hr)	Maximum Daily (lb/day)
NOx	64.3	ppmv	applicant	0.079970	43.575	4.5000	3.4847	15.681
VOC	0.005400	lb/MMBTU	AP-42 1.4-2	0.005400	43.575	4.5000	0.2353	1.059
CO	198	ppmv	applicant	0.149894	43.575	4.5000	6.5316	29.392
PM10	0.007238	lb/MMBTU	vender	0.007238	43.575	4.5000	0.3154	1.419
SOx	0.002041	lb/MMBTU	0.75 gr-H2S /100scf gas	0.002041	43.575	4.5000	0.0889	0.400

PALEN SOLAR POWER PROJECT
Appendix F Night Preservation Boiler Commissioning Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

One boiler 10.5 mmbtu/hr
 heat conte 1050 btu/ft3

Proposed hours of operation

hours	mode	EF	load
4	cold start	low load emissions factors	2.625
4	low load	low load emissions factors	2.625
6	med load	high load emissions factor	5.25
6	high load	high load emissions factor	10.5

total

SU emissions factors

Pollutant	Start-up	low load high load		Units	Reference
NOx	0.011	0.011	0.011	lb/MMBTU	vendor
VOC	0.005400	0.0054	0.0054	lb/MMBTU	vendor
CO	0.0180	0.018	0.018	lb/MMBTU	vendor
PM10	0.013000	0.013	0.013	lb/MMBTU	vendor
SOx	0.002100	0.0021	0.0021	lb/MMBTU	vendor

Pollutant	lb/mmbtu	lb/mmcf
NOx	0.011	11.55
VOC	0.0054	5.67
CO	0.018	18.9
PM10	0.013	13.65
SOx	0.0021	2.205

Heat input during commissioning

Mode	mmbtu/event
SU	10.50
low	10.50
med	31.50
High	63.00
total	115.50
total mmcf	0.11

$$\text{lb/mmcf} = \text{lb/mmbtu} * 1050 \text{ ft}^3/\text{mmbtu}$$

PALEN SOLAR POWER PROJECT
Appendix F Night Preservation Boiler Commissioning Emissions

PAGES	PAGE	A/N
BY RDO	DATE	

Aux boiler Total Commissioning Emissions

Mode	NOx	CO	VOC	SOx	PM10
	lb	lb	lb	lb	lb
total	1.27	2.08	0.62	0.24	1.50

PALEN SOLAR POWER PROJECT
Appendix G Emergency Generator Emissions

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Data:

Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit
 Manufacturer: Caterpillar, model 3516C, turbocharge/aftercooled, 12 cylinders
 Model No.: 9CPXL08.8ESK
 Type of Fuel: Diesel w/ 15 ppm sulfur by weight
 Rated Power: 3633 bhp
 Engine Design: Lean Burn
 Maximum Rated Fuel Consumption: 172.9 gph
 MW SO₂ = 64 lb/lb-mol
 MW S = 32 lb/lb-mol
 Diesel Density = 7.2 lb/gal
 no. of engine 2
 VOC and NO_x ref a/n 452608
 CO and PM ref emissions data sheet, EO U-R-001-3698-1

RECLAIM EF

BACT	4.8	g/bhp-hr
fuel rate	172.9	gal/hr
HP	3633	
lb/mgal	222.15	

$$\text{lb/mgal} = 4.8 \text{ g/bhp-hr} * 3633 \text{ Hp} * (1 \text{ lb}/454 \text{ g})(1\text{hr}/172.9 \text{ gal})(1000 \text{ gal/mgal})$$

Assumptions:

Maximum hours of operation: 50 hr/y
 Steady speed, steady load operations

Pollutant	Emission Factor (gm/BHP-hr)	Maximum Rated Power (BHP)	Conversion Factor (gm/lb)	Emission Rate (lb/hr)	Annual Emission Rate (lb/year)	Monthly Emission Rate (lb/month)	30 Day Average (lb/day)
NO _x	3.70	3,633	454	29.608	1,480.41	123.37	4.1122
VOC	0.25	3,633	454	2.001	100.03	8.34	0.2779
CO	0.89	3,633	454	7.122	356.10	29.67	0.9892
PM10	0.09	3,633	454	0.716	35.81	2.98	0.0995
SO _x				0.0305	1.53	0.13	0.0042

Mass Emission Sample Calculations (single engine)

NO_x Hourly = (4.56 gm/bhp-hr)(2922 bhp)(1 lb/454 gm) = 29.349 lb/hr
 NO_x Annual = (29.349 lb/hr)(50 hr/yr) = 1,467.44 lb/yr
 NO_x Monthly = (1,467.44 lb/yr)(1 yr/12 months) = 122.29 lb/month
 NO_x 30DA = (1,467.44 lb/yr)(1 yr/12 months)(1 month/30 days) = 4.076 lb/day
 SO_x Hourly = (15/1,000,000)(141.3 gal/hr)(7.2 lb/gal)(64 lb/mol SO₂ / 32 lb/mol S) = 0.0305 lb/hr
 Emissions factors per engine manufacturer

PALEN SOLAR POWER PROJECT
Appendix H Emergency Generator Emissions

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Data:

Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit
 Manufacturer: Caterpillar
 Model No.: C9
 Type of Fuel: Diesel w/ 15 ppm sulfur by weight
 Rated Power: 398 bhp
 Engine Design: Lean Burn
 Maximum Rated Fuel Consumption: 20 gph
 MW SO₂ = 64 lb/lb-mol
 MW S = 32 lb/lb-mol
 Diesel Density = 7.2 lb/gal
 number of engine 1
 emissions ref a/n 455162

RECLAIM EF

BACT	3 g/bhp-hr
fuel rate	20 gal/hr
HP	398
lb/mgal	131.50

lb/mgal = 4.8 g/bhp-hr * 3633 Hp *(1 lb/454 g)(1hr/172.9 gal)(1000 gal/mgal)

Assumptions:

Maximum hours of operation: 50 hr/yr
 Steady speed, steady load operations

Pollutant	Emission Factor (gm/BHP-hr)	Maximum Rated Power (BHP)	Conversion Factor (gm/lb)	Emission Rate (lb/hr)	Annual Emission Rate (lb/year)	Monthly Emission Rate (lb/month)	30 Day Average (lb/day)
NOx	2.49	398	454	2.183	109.14	9.10	0.3032
VOC	0.27	398	454	0.237	11.83	0.99	0.0329
CO	2.31	398	454	2.025	101.25	8.44	0.2813
PM10	0.11	398	454	0.096	4.82	0.40	0.0134
SOx				0.0043	0.22	0.02	0.0006

Mass Emission Sample Calculations (single engine)

NOx Hourly = (2.97 gm/bhp-hr)(398 bhp)(1 lb/454 gm) = 2.64 lb/hr

NOx Annual = (2.64 lb/hr)(50 hr/yr) = 130 lb/yr

NOx Monthly = (130 lb/yr)(1 yr/12 months) = 10.85 lb/month

NOx 30DA = (130.18 lb/yr)(1 yr/12 months)(1 month/30 days) = 0.3616 lb/day

SOx Hourly = (15/1,000,000)(20 gal/hr)(7.2 lb/gal)(64 lb/mol SO₂ / 32 lb/mol S) = 0.00432 lb/hr

PALEN SOLAR POWER PROJECT
Appendix I Emergency Generator Emissions

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Data:

Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit
 Manufacturer: Clarke
 Model No.: JX6H-UfAD88
 Type of Fuel: Diesel w/ 15 ppm sulfur by weight
 Rated Power: 617 bhp
 Engine Design: Lean Burn
 Maximum Rated Fuel Consumption: 34 gph
 MW SO2 = 64 lb/lb-mol
 MW S = 32 lb/lb-mol
 Diesel Density = 7.2 lb/gal
 number of engine 3

RECLAIM EF

BACT	3	g/bhp-hr
fuel rate	34	gal/hr
HP	617	
lb/mgal	119.91	

lb/mgal = 3 g/bhp-hr * 617 Hp *(1 lb/454 g)(1hr/34 gal)(1000 gal/mgal)

Assumptions:

Maximum hours of operation: 50 hr/yr
 Steady speed, steady load operations

Pollutant	Emission Factor (gm/BHP-hr)	Maximum Rated Power (BHP)	Conversion Factor (gm/lb)	Emission Rate (lb/hr)	Annual Emission Rate (lb/year)	Monthly Emission Rate (lb/month)	30 Day Average (lb/day)
NOx	2.60	617	454	3.533	176.67	14.72	0.4908
VOC	0.10	617	454	0.136	6.80	0.57	0.0189
CO	0.50	617	454	0.680	33.98	2.83	0.0944
PM10	0.09	617	454	0.122	6.12	0.51	0.0170
SOx				0.0073	0.37	0.03	0.0010

Mass Emission Sample Calculations (single engine)

NOx Hourly = (2.60 gm/bhp-hr)(617 bhp)(1 lb/454 gm) = 3.533 lb/hr

NOx Annual = (3.533 lb/hr)(50 hr/yr) = 177 lb/yr

NOx Monthly = (177 lb/yr)(1 yr/12 months) = 14.72 lb/month

NOx 30DA = (176.67 lb/yr)(1 yr/12 months)(1 month/30 days) = 0.4908 lb/day

SOx Hourly = (15/1,000,000)(34 gal/hr)(7.2 lb/gal)(64 lb/mol SO2 / 32 lb/mol S) = 0.007344 lb/hr

PALEN SOLAR POWER PROJECT
Appendix J Boiler TAC Emissions

PAGES	PAGE	of
BY RDO	DATE	PALEN

A Toxic Air Contaminant Emissions from each Auxiliary boiler

Max Fuel Flow (HHV) 249.0 MMBtu/hr
Maximum annual fuel usag 307 mmcf
based on heating value 1050 btu/ft3
ave hour/yr 1930 hr/yr

Pollutant	Emission Factor (lb/mmcf)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Ammonia *		BACT	0.67	1.29E+03
Acetaldehyde	9.00E-04	AB2588	2.20E-04	2.76E-01
Acrolein	8.00E-04	AB2588	1.95E-04	2.46E-01
Benzene	1.70E-03	AB2588	4.15E-04	5.22E-01
Ethylbenzene	2.00E-03	AB2588	4.88E-04	6.14E-01
Formaldehyde	3.60E-03	AB2588	8.79E-04	1.11E+00
Hexane	1.30E-03	AB2588	3.17E-04	3.99E-01
Toluene	7.80E-03	AB2588	1.90E-03	2.39E+00
Xylenes	5.80E-03	AB2588	1.42E-03	1.78E+00
Propylene	3.78E-03	AB2588	9.23E-04	1.16E+00
PAH	1.00E-04	AB2588	2.44E-05	3.07E-02
Naphthalene	3.00E-04	AB2588	7.32E-05	9.21E-02
Total Annual HAP Emissions per Boiler (ton/yr)				4.31E-03

Notes:

- Emission factors obtained from Ventura APCD, AP2588 HAP combustion emissions factorsr uncontrolled natural gas-fired external combustion turbines.
- 'combustion turbine with a CO catalystr.
- Ammonia emission rate based on an exhaust NH₃ limit of 5 ppmv @ 15% O₂ provided by the
- Used a HHV (Btu/scf) 1020

B Toxic Air Contaminant Emissions from each night preservation boiler

Max Fuel Flow (HHV) 10.5 MMBtu/hr
Maximum annual fuel usag 48.3 mmcf

Pollutant	Emission Factor (lb/mmcf)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Acetaldehyde	9.00E-04	AB2588	9.26E-06	4.35E-02
Acrolein	8.00E-04	AB2588	8.24E-06	3.86E-02
Benzene	1.70E-03	AB2588	1.75E-05	8.21E-02
Ethylbenzene	2.00E-03	AB2588	2.06E-05	9.66E-02
Formaldehyde	3.60E-03	AB2588	3.71E-05	1.74E-01
Hexane	1.30E-03	AB2588	1.34E-05	6.28E-02
Toluene	7.80E-03	AB2588	8.03E-05	3.77E-01
Xylenes	5.80E-03	AB2588	5.97E-05	2.80E-01
Propylene	3.78E-03	AB2588	3.89E-05	1.83E-01
PAH	1.00E-04	AB2588	1.03E-06	4.83E-03
Naphthalene	3.00E-04	AB2588	3.09E-06	1.45E-02
Total Annual HAP Emissions per Boiler (ton/yr)				6.78E-04

Notes:

- Emission factors obtained from Ventura APCD, AP2588 HAP combustion emissions factorsr
- Used a HHV (Btu/scf) 1020

PALEN SOLAR POWER PROJECT
Appendix K Emergency engine TAC Emissions

PAGES	PAGE	AN Palen
BY RDO	DATE	

A. Toxic Air Contaminant Emissions from Large Emergency Diesel generator

Rated Horsepower **3663** BHP
 Expected non-emergency usage **50** hr/yr

Pollutant	CAS	Emission Factor (Power Output) (g/hp-hr)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Diesel Particulate (PM10)	9901	0.09	Vendor guarantee	0.726	36.307

B. Toxic Air Contaminant Emissions from Small Emergency Diesel generator

Rated Horsepower **398** BHP
 Expected non-emergency usage **50** hr/yr

Pollutant	CAS	Emission Factor (Power Output) (g/hp-hr)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Diesel Particulate (PM10)	9901	0.11	Vendor guarantee	0.096	4.822

C. Toxic Air Contaminant Emissions from Emergency Diesel fire pump

Rated Horsepower **617** BHP
 Expected non-emergency usage **50** hr/yr

Pollutant	CAS	Emission Factor (Power Output) (g/hp-hr)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Diesel Particulate (PM10)	9901	0.09	Vendor guarantee	0.122	6.116

PALEN SOLAR POWER PROJECT
Appendix L Ammonia Slip emissions from SCR

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Ammonia slip 5 ppmv
mw 17 hr/yr
STP Temp 60 F
DSCFM 50207 ft3/min
Ft³/lb-mole 379.5
mw

Ammonia Slip 0.68 lb/hr

$$R1(LB / HR) = \frac{PPM_V \times MW_{ave} \times CFM \times 60 MIN / HR}{1 \times 10^6 \times 379 FT^3 / MOLE}$$

Ammonia emissions per year
hr/yr-ave 1323.75 (based on boiler operating above 17.5% load)
controlled hr/mon 190
lb/mon 128.37
NH3yr 894.34 lb/yr

ammonia emissions per year = hr/yr * ammonia slip -lb/hr
ammonia emissions per month = controlled hr/mon * ammonia slip -lb/hr

**PALEN SOLAR POWER PROJECT
Appendix M NOx RTC Calculations**

PAGES	PAGE	A/N Palen
BY RDO	DATE	

NOx RECLAIM RTC CALCUATIONS

A. Auxliuary boilers

Annual Fuel usage per boiler

fuel	Maximum annual boosting	Maximum annual very cold start	Maximum annual cold start	Maximum annual hot start emergency	annual non-boosting	Annual (mmbtu/yr)
R1-mmbtu/dy	130.73	196.09	130.73	32.68	130.73	
R2 mmbtu/dy	859.05	1494	747	323.7	398.4	
R1 mmbtu/yr	28759.5	980.4375	1307.25	1960.875	16340.63	49,348.69
R2 mmbtu/yr	188991	7470	7470	19422	49800	273,153.00
days/yr	220	5	10	60	125	

annual RTC per boiler

	lb/mmbtu	lb/mmcf	mmcf/yr	lb/yr
R1-lb/mmcf	0.07997	83.96883	47.00	3,946.43
R2-lb/mmbtu	0.006219	6.529458	260.15	1,698.61
total				5,645.04

$lb/mmcf = lb/mmbtu * 1050$

$lb/yr = NOx lb/mmcf * mmcf/yr$

Commissioning emissions

	mmbtu	mmcf	lb/mmbtu	lb/mmcf	lb/commission
start-up	248.80	0.236952	0.088	92.4	21.8944
non start up	4248.00	4.045714	0.011	11.55	46.728
	4496.80				68.6224

RTC	RTC/yr
commission yr	5,714
non commission yr	5,645

**PALEN SOLAR POWER PROJECT
Appendix M NOx RTC Calculations**

PAGES	PAGE	A/N Palen
BY RDO	DATE	

B. Night Preservation Boilers

mmbtu/dy	147
mmbtu/yr	50715
mmcf/yr	48.3
lb/mmbtu	0.011109
lb/mmcf	11.66438
lb/yr	563.39

$lb/mmcf = lb/mmbtu * 1050$
 $lb/yr = NOx lb/mmcf * mmcf/yr$

The boilers are process units and the applicant elected to take a concentration limit of 9 ppmv or reporting purposes (see emial dated 7/24/13)
 The emissions and requirments section of the Facility Permit the 9 ppmv NOx is tagged (3), and the boilers has be tested within the first year of operation and every 5 years thereafter.
 for NOx reporting use lb/mmcf based on 9 ppm concentration limit

commissioning emissions
 mmbtu

	mmbtu	mmcf	lb/mmbtu	lb/mmcf	lb/commission
event	115.50	0.11	0.011	11.55	1.27

RTC	RTC/yr
commission yr	565
non commission yr	563

PALEN SOLAR POWER PROJECT
Appendix M NOx RTC Calculations

PAGES	PAGE	A/N Palen
BY RDO	DATE	

C Emergency engines

	NOx lb/yr	hr/yr	RTC/yr
Large ICE 1	29.61	200	5922
Large ICE 2	29.61	200	5922
Small ICE	2.18	200	437
Fire pump 1	3.53	200	707
Fire pump 2	3.53	200	707
Fire pump 3	3.53	200	707

$RTC/yr = NOx \text{ lb/hr} * 200 \text{ hr/yr}$

**PALEN SOLAR POWER PROJECT
Appendix N NOx RELCAIM Reporting Values**

PAGES	PAGE	A/N Palen
BY RDO	DATE	

Auxiliary Boiler

A. Non-commissioning start-up and normal operations

Pollutant	lb/MMBTU	lb/MMcf	Reference
R2 NOx	0.006219	6.529458	BACT
R1 NOx	0.07997	83.96883	Vender

$lb/MMCF = lb/Mmbtu * 1050 Mmbtu/MMCF$

B. Commissioning start-up and normal operations

Pollutant	Start-up	low load and high load	Units	Referance
NOx	0.088	0.011	lb/MMBTU	vendor
NOx	92.4	11.55	lb/mmc ^f	

$lb/MMCF = lb/Mmbtu * 1050 Mmbtu/MMCF$

NTB boilers

applicant is proposing a 9 ppmv concentration limit

Emergency Engines

engine	RV-lb/mga	Ref
Large ICE	222.15	G
Small ICE	131.50	H
Fire pump	119.91	I

FACILITY PERMIT TO OPERATE

PALEN SOLAR ELECTRIC GENERATING STATION 10 MI EAST DESERT CENTER, BLM ROW # CACA48810, TOWNSHIP DESERT CENTER, CA 92239

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Barry R. Wallerstein, D. Env.
EXECUTIVE OFFICER

By _____
Mohsen Nazemi, P.E.
Deputy Executive Officer
Engineering & Compliance

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

TABLE OF CONTENTS

Section	Description	Revision #	Date Issued
A	Facility Information	DRAFT	12/04/2013
B	RECLAIM Annual Emission Allocation	DRAFT	12/04/2013
C	Facility Plot Plan	TO BE DEVELOPED	
D	Facility Description and Equipment Specific Conditions	DRAFT	12/04/2013
E	Administrative Conditions	DRAFT	12/04/2013
F	RECLAIM Monitoring and Source Testing Requirements	DRAFT	12/04/2013
G	Recordkeeping and Reporting Requirements for RECLAIM Sources	DRAFT	12/04/2013
H	Permit To Construct and Temporary Permit to Operate	DRAFT	12/04/2013
I	Compliance Plans & Schedules	DRAFT	12/04/2013
J	Air Toxics	DRAFT	12/04/2013
Appendix			
A	NOx and SOx Emitting Equipment Exempt From Written Permit Pursuant to Rule 219	DRAFT	12/04/2013
B	Rule Emission Limits	DRAFT	12/04/2013

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION A: FACILITY INFORMATION

LEGAL OWNER &/OR OPERATOR: PALEN SOLAR ELECTRIC GENERATING STATION

LEGAL OPERATOR (if different than owner):

EQUIPMENT LOCATION: 10 MI EAST DESERT CENTER, BLM ROW #
 SACA48810, TOWNSHIP
 DESERT CENTER, CA 92239

MAILING ADDRESS: 1999 HARRISON ST STE 2150
 OAKLAND, CA 94612

RESPONSIBLE OFFICIAL: CHARLES TURLINSKI

TITLE: PROJECT MANAGER

TELEPHONE NUMBER: (510) 550-8161

CONTACT PERSON: CHARLES TURLINSKI

TITLE: PROJECT MANAGER

TELEPHONE NUMBER: (510) 550-8161

TITLE V	RECLAIM
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NO	NOx: NO SOx: NO CYCLE: 0 ZONE: INLAND
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**FACILITY PERMIT TO OPERATE
PALEN SOLAR ELECTRIC GENERATING STATION
SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION**

NOT APPLICABLE

**FACILITY PERMIT TO OPERATE
PALEN SOLAR ELECTRIC GENERATING STATION**

SECTION C: FACILITY PLOT PLAN

(TO BE DEVELOPED)

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 3: RULE 219 EXEMPT EQUIPMENT SUBJECT TO SOURCE SPECIFIC RULES					
System 1:					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATING	E25			VOC: (9) [RULE 1113, 7-13-2007; RULE 1113, 6-3-2011; RULE 1171, 2-1-2008; RULE 1171, 5-1-2009]	K67.6
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E26			VOC: (9) [RULE 1171, 2-1-2008; RULE 1171, 5-1-2009]	
RULE 219 EXEMPT EQUIPMENT, 300 GALLONS PORTABLE AQUEOUS AMMONIA STORAGE TOTE	E27				

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit
 (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit
 (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits
 (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION D: DEVICE ID INDEX

**The following sub-section provides an index
to the devices that make up the facility
description sorted by device ID.**

**FACILITY PERMIT TO OPERATE
PALEN SOLAR ELECTRIC GENERATING STATION
SECTION D: DEVICE ID INDEX**

Device Index For Section D			
Device ID	Section D Page No.	Process	System
E25	1	3	1
E26	1	3	1
E27	1	3	1

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

F10.1 Material(s) that contain the following compound(s) shall not be used in this facility;

The operator shall not use natural gas containing H₂S greater than 0.75 grains per 100 cubic feet of natural gas

This concentration limit is an annual average based on monthly sample of natural gas composition or gas supplier documentation. Gaseous fuel samples shall be tested using District Method 307-91 for total sulfur calculated as H₂S

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

F14.1 The operator shall not purchase any diesel fuel, for stationary source application as defined in Rule 431.2, containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

The operator shall maintain a copy of the MSDS on site

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

DEVICE CONDITIONS

K. Record Keeping/Reporting

K67.6 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings

[RULE 1113, 7-13-2007; RULE 1113, 6-3-2011]

[Devices subject to this condition : E25]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION E: ADMINISTRATIVE CONDITIONS

The operating conditions in this section shall apply to all permitted equipment at this facility unless superseded by condition(s) listed elsewhere in this permit.

1. The permit shall remain effective unless this permit is suspended, revoked, modified, reissued, denied, or it is expired for nonpayment of permit processing or annual operating fees. [201, 203, 209, 301]
 - a. The permit must be renewed annually by paying annual operating fees, and the permit shall expire if annual operating fees are not paid pursuant to requirements of Rule 301(d). [301(d)]
 - b. The Permit to Construct listed in Section H shall expire one year from the Permit to Construct issuance date, unless a Permit to Construct extension has been granted by the Executive Officer or unless the equipment has been constructed and the operator has notified the Executive Officer prior to the operation of the equipment, in which case the Permit to Construct serves as a temporary Permit to Operate. [202, 205]
 - c. The Title V permit shall expire as specified under Section K of the Title V permit. The permit expiration date of the Title V facility permit does not supercede the requirements of Rule 205. [205, 3004]
2. The operator shall maintain all equipment in such a manner that ensures proper operation of the equipment. [204]
3. This permit does not authorize the emissions of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the Rules and Regulations of the AQMD. This permit cannot be considered as permission to violate existing laws, ordinances, regulations, or statutes of other governmental agencies. [204]
4. The operator shall not use equipment identified in this facility permit as being connected to air pollution control equipment unless they are so vented to the identified air pollution control equipment which is in full use and which has been included in this permit. [204]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION E: ADMINISTRATIVE CONDITIONS

5. The operator shall not use any equipment having air pollution control device(s) incorporated within the equipment unless the air pollution control device is in full operation. [204]
6. The operator shall maintain records to demonstrate compliance with rules or permit conditions that limit equipment operating parameters, or the type or quantity of material processed. These records shall be made available to AQMD personnel upon request and be maintained for at least five years. [204]
7. The operator shall maintain and operate all equipment to ensure compliance with all emission limits as specified in this facility permit. Compliance with emission limits shall be determined according to the following specifications, unless otherwise specified by AQMD rules or permit conditions: [204]
 - a. For internal combustion engines and gas turbines, measured concentrations shall be corrected to 15 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1110.2, 1134]
 - b. For other combustion devices, measured concentrations shall be corrected to 3 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1146, 1146.1, 204]
 - c. For non-combustion sources, compliance with emission limits shall be determined and averaged over a period of 60 minutes; [204]
 - d. For the purpose of determining compliance with Rule 407, carbon monoxide (CO) shall be measured on a dry basis and be averaged over 15 consecutive minutes, and sulfur compounds which would exist as liquid or gas at standard conditions shall be calculated as sulfur dioxide (SO₂) and be averaged over 15 consecutive minutes; [407]
 - e. For the purpose of determining compliance with Rule 409, combustion contaminant emission measurements shall be corrected to 12 percent of carbon dioxide (CO₂) at standard conditions and averaged over a minimum of 15 consecutive minutes. [409]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION E: ADMINISTRATIVE CONDITIONS

- f. For the purpose of determining compliance with Rule 475, combustion contaminant emission measurements shall be corrected to 3 percent of oxygen (O₂) at standard conditions and averaged over 15 consecutive minutes or any other averaging time specified by the Executive Officer. [475]
8. The operator shall, when a source test is required by AQMD, provide a source test protocol to AQMD no later than 60 days before the proposed test date. The test shall not commence until the protocol is approved by AQMD. The test protocol shall contain the following information: [204, 304]
 - a. Brief description of the equipment tested.
 - b. Brief process description, including maximum and normal operating temperatures, pressures, throughput, etc.
 - c. Operating conditions under which the test will be performed.
 - d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts and stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
 - e. Brief description of sampling and analytical methods used to measure each pollutant, temperature, flow rates, and moisture.
 - f. Description of calibration and quality assurance procedures.
 - g. Determination that the testing laboratory qualifies as an "independent testing laboratory" under Rule 304 (conflict of interest).
9. The operator shall submit a report no later than 60 days after conducting a source test, unless otherwise required by AQMD rules or equipment-specific conditions. The report shall contain the following information: [204]
 - a. The results of the source test.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION E: ADMINISTRATIVE CONDITIONS

- b. Brief description of the equipment tested.
 - c. Operating conditions under which the test was performed.
 - d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts and stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
 - e. Field and laboratory data forms, strip charts and analyses.
 - f. Calculations for volumetric flow rates, emission rates, control efficiency, and overall control efficiency.
10. The operator shall, when a source test is required, provide and maintain facilities for sampling and testing. These facilities shall comply with the requirements of AQMD Source Test Method 1.1 and 1.2. [217]
 11. Whenever required to submit a written report, notification or other submittal to the Executive Officer, AQMD, or the District, the operator shall mail or deliver the material to: Deputy Executive Officer, Engineering and Compliance, AQMD, 21865 E. Copley Drive, Diamond Bar, CA 91765-4182. [204]

**FACILITY PERMIT TO OPERATE
PALEN SOLAR ELECTRIC GENERATING STATION**

SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS

NOT APPLICABLE

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION G: RECORDKEEPING AND REPORTING REQUIREMENTS FOR RECLAIM SOURCES

The Facility shall comply with all applicable reporting and recordkeeping requirements in Regulation XX. These requirements may include but are not limited to the following:

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
System 1: Boilers					

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
BOILER, NO. 1, NATURAL GAS, RENTECH, MODEL CUSTOM, AUXILIARY, WITH ONE COMBUSTION BURNER, WITH FLUE GAS RECIRCULATION, 249 MMBTU/HR A/N:	D1	C2	NOX: MAJOR SOURCE**	CO: 25 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 400 PPMV NATURAL GAS (5A) [RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]; CO: 2000 PPMV NATURAL GAS (5) [RULE 407, 4-2-1982]; NOX: 5 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]; NOX: 6.53 LBS/MMSCF NATURAL GAS (1A) [RULE 2012, 5-6-2005]; NOX: 11.55 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 5-6-2005]; NOX: 80 PPMV NATURAL GAS (8) [40CFR 60 Subpart Db, 1-28-2009]; NOX: 83.96 LBS/MMSCF NATURAL GAS (2A) [RULE 2012, 5-6-2005]; NOX: 92.4 LBS/MMSCF NATURAL GAS (1B) [RULE 2012, 5-6-2005]; PM: 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM: 0.1 GRAINS/SCF NATURAL GAS (5A) [RULE 409, 8-7-1981]; PM: 11 LBS/HR NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475,	A63.1, A99.1, A99.2, A99.3, A99.4, A195.1, A195.2, A195.4, A195.5, A327.1, A433.1, A433.2, C1.1, C1.2, C1.3, C1.4, D12.1, D29.1, D29.2, D82.1, D82.2, E193.1, E448.1, E448.4, H23.1, H23.2, I298.1, K67.1, K67.2

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
				8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	
CO OXIDATION CATALYST, NO. 1, 0"-2" D. X 8"-10" W. X 6"-9" H., EMERACHEM, MODEL ADCAT, WITH 10 CUBIC FEET OF CATALYST VOLUME A/N:	C2	D1 C3			
SELECTIVE CATALYTIC REDUCTION, NO. 1, 1 FT-6 IN DEPTH. X 8 FT-10 IN W. X 6 FT-9 IN H., CORMETECH, WITH 90 FEET OF TOTAL CATALYST VOLUME WITH A/N: AMMONIA INJECTION, GRID	C3	C2 S5		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a) -BACT, 5-10-1996; RULE 1303(a), 12-6-2002]	A195.6, D12.4, D12.5, E179.1, E193.1, E448.5
STACK, NO. 1, HEIGHT: 120 FT ; DIAMETER: 6 FT A/N:	S5	C3			

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
BOILER, NO.2, NATURAL GAS, RENTECH, MODEL CUSTOM, AUXILIARY, WITH ONE COMBUSTION BURNER, WITH FLUE GAS RECIRCULATION, 249 MMBTU/HR A/N:	D6	C7	NOX: MAJOR SOURCE**	CO: 25 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 400 PPMV NATURAL GAS (5A) [RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]; CO: 2000 PPMV NATURAL GAS (5) [RULE 407, 4-2-1982]; NOX: 5 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]; NOX: 6.53 LBS/MMSCF (1A) [RULE 2012, 5-6-2005]; NOX: 11.55 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 5-6-2005]; NOX: 80 PPMV NATURAL GAS (8) [40CFR 60 Subpart Db, 1-28-2009]; NOX: 83.96 LBS/MMSCF (2A) [RULE 2012, 5-6-2005]; NOX: 92.4 LBS/MMSCF (1B) [RULE 2012, 5-6-2005]; PM: 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM: 0.1 GRAINS/SCF NATURAL GAS (5A) [RULE 409, 8-7-1981]; PM: 11 LBS/HR NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A63.1, A99.1, A99.2, A99.3, A99.4, A195.1, A195.2, A195.4, A327.1, A433.1, A433.2, C1.1, C1.2, C1.3, C1.4, D12.1, D29.1, D29.2, D82.1, D82.2, E193.1, E448.1, E448.4, H23.1, H23.2, I298.2, K67.1, K67.2

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
CO OXIDATION CATALYST, NO. 2, 0"-2" D. X 8"-10" W. X 6"-9" H., EMERACHEM, MODEL ADCAT, WITH 10 CUBIC FEET OF CATALYST VOLUME A/N:	C7	D6 C8			
SELECTIVE CATALYTIC REDUCTION, NO. 2, 1 FT-6 IN DEPTH. X 8 FT-10 IN W. X 6 FT-9 IN H., CORMETECH, WITH 90 FEET OF TOTAL CATALYST VOLUME WITH A/N: AMMONIA INJECTION, GRID	C8	C7 S10		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a) -BACT, 5-10-1996; RULE 1303(a), 12-6-2002]	A195.6, D12.3, D12.4, D12.5, E179.1, E179.2, E193.1, E448.5
STACK, NO. 2, HEIGHT: 120 FT ; DIAMETER: 6 FT A/N:	S10	C8			

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit
 (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit
 (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits
 (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
BOILER, NIGHT PRESERVATION, NO. 1, NATURAL GAS, WITH LOW NOX BURNER, 10.5 MMBTU/HR WITH A/N: BURNER, NATURAL GAS, CLEAVER BROOKS, MODEL CBEX ELITE, WITH LOW NOX BURNER, 10.5 MMBTU/HR	D11		NOX: PROCESS UNIT**	CO: 25 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 400 PPMV NATURAL GAS (5A) [RULE 1146, 11-17-2000; <i>RULE 1146, 9-5-2008</i>]; CO: 2000 PPMV NATURAL GAS (5) [RULE 407, 4-2-1982]; NOX: 9 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988 ; RULE 2005, 6-3-2011]; NOX: 9 PPMV NATURAL GAS (3) [RULE 2012, 5-6-2005]; PM: 0.1 GRAINS/SCF NATURAL GAS (5A) [RULE 409, 8-7-1981]	A63.2, A195.1, A195.3, C1.5, C1.6, C1.7, D12.1, D29.3, D29.4, E193.1, E448.1, H23.1, H23.4, I298.3, K67.5

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See section J for NESHAP/MACT requirements
 ** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: external combustion					
BOILER, NIGHT PRESERVATION, NO. 2, NATURAL GAS, WITH LOW NOX BURNER, 10.5 MMBTU/HR WITH A/N: BURNER, NATURAL GAS, CLEAVER BROOKS, MODEL CBEX ELITE, WITH LOW NOX BURNER, 10.5 MMBTU/HR	D12		NOX: PROCESS UNIT**	CO: 25 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 400 PPMV NATURAL GAS (5A) [RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]; CO: 2000 PPMV NATURAL GAS (5) [RULE 407, 4-2-1982]; NOX: 9 PPMV NATURAL GAS (4) [RULE 1303(a) -BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; NOX: 9 PPMV NATURAL GAS (3) [RULE 2012, 5-6-2005]; PM: 0.1 GRAINS/SCF NATURAL GAS (5A) [RULE 409, 8-7-1981]	A63.2, A195.1, A195.3, C1.5, C1.6, C1.7, D12.1, D29.3, D29.4, E193.1, E448.1, H23.1, H23.4, I298.4, K67.5
Process 2: Internal Combustion					
System 1: Emergency Engines					

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See section J for NESHAP/MACT requirements
 ** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: Internal Combustion					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER NO. 1, DIESEL FUEL, CATERPILLAR, MODEL 3516C, LEAN BURN, 12 CYLINDERS, WITH AFTERCOOLER, TURBOCHARGER, 3633 HP WITH A/N:	D13		NOX: PROCESS UNIT**	CO: 2.6 GRAM/BHP-HR DIESEL (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 2.6 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; HAP: (10) [40CFR 63SubpartZZZZ, 3-9-2011]; NOX: 222 LBS/1000 GAL DIESEL (1) [RULE 2012, 5-6-2005]; NOX + ROG: 4.8 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX + ROG: 4.8 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; PM: 0.15 GRAM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]; SOX: 0.005 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]	B61.2, C1.8, C1.9, C1.10, C1.11, D12.2, E193.1, E448.2, E448.3, H23.5, I298.5, K67.3, K67.4
GENERATOR, 2500 KW					

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: Internal Combustion					
INTERNAL COMBUSTION ENGINE, FIRE PUMP NO.1, DIESEL FUEL, CLARKE, MODEL JX6H-UFAD88, LEAN BURN, 6 CYLINDERS, WITH AFTERCOOLER, TURBOCHARGER, 617 HP A/N:	D19		NOX: PROCESS UNIT**	CO: 2.6 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; CO: 2.6 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; HAP: (10) [40CFR 63SubpartZZZZ, 3-9-2011]; NOX: 120 LBS/1000 GAL DIESEL (1) [RULE 2012, 5-6-2005]; NOX + ROG: 3 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX + ROG: 3 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; PM: 0.15 GRAM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]; SOX: 0.005 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]	B61.2, C1.8, C1.10, C1.11, C1.12, D12.2, E193.1, E448.2, E448.3, H23.5, I298.8, K67.3, K67.4

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See section J for NESHAP/MACT requirements
 ** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: Internal Combustion					
INTERNAL COMBUSTION ENGINE, FIRE PUMP NO.2, DIESEL FUEL, CLARKE, MODEL JX6H-UFAD88, LEAN BURN, 6 CYCLINDERS, WITH AFTERCOOLER, TURBOCHARGER, 617 HP A/N:	D20		NOX: PROCESS UNIT**	CO: 2.6 GRAM/BHP-HR DIESEL (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 2.6 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; HAP: (10) [40CFR 63SubpartZZZZ, 3-9-2011]; NOX: 120 LBS/1000 GAL DIESEL (1) [RULE 2012, 5-6-2005]; NOX + ROG: 3 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX + ROG: 3 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005]; PM: 0.15 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; PM: 0.15 GRAM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]; SOX: 0.005 GRAM/BHP-HR DIESEL (4) [RULE 1303(a) -BACT, 5-10-1996; RULE 1303(a), 12-6-2002]	B61.2, C1.8, C1.10, C1.11, C1.12, D12.2, E193.1, E448.2, E448.3, H23.5, I298.9, K67.3, K67.4

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See section J for NESHAP/MACT requirements
 ** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: Internal Combustion					
INTERNAL COMBUSTION ENGINE, FIRE PUMP NO.3, DIESEL FUEL, CLARKE, MODEL JX6H-UFAD88, LEAN BURN, 6 CYCLINDERS, WITH AFTERCOOLER, TURBOCHARGER, 617 HP A/N:	D21		NOX: PROCESS UNIT**	CO: 2.6 GRAM/BHP-HR DIESEL (4) [RULE 1703(a)(2) - PSD-BACT, 10-7-1988]; CO: 2.6 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; HAP: (10) [40CFR 63SubpartZZZZ, 3-9-2011]; NOX: 120 LBS/1000 GAL DIESEL (1) [RULE 2012, 5-6-2005]; NOX + ROG: 3 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; NOX + ROG: 3 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 2005, 6-3-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (8) [40CFR 60 Subpart III, 6-28-2011]; PM: 0.15 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]; PM: 0.15 GRAM/BHP-HR DIESEL (5) [RULE 1470, 5-4-2012]; SOX: 0.005 GRAM/BHP-HR DIESEL (4) [RULE 1303(a) -BACT, 5-10-1996; RULE 1303(a), 12-6-2002]	B61.2, C1.8, C1.10, C1.11, C1.12, D12.2, E193.1, E448.2, E448.3, H23.5, I298.10, K67.3, K67.4

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits
 (2) (2A) (2B) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: DEVICE ID INDEX

**The following sub-section provides an index
to the devices that make up the facility
description sorted by device ID.**

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: DEVICE ID INDEX

Device Index For Section H			
Device ID	Section H Page No.	Process	System
D1	3	1	1
C2	3	1	1
C3	3	1	1
S5	3	1	1
D6	4	1	1
C7	5	1	1
C8	5	1	1
S10	5	1	1
D11	6	1	1
D12	7	1	1
D13	8	2	1
D15	9	2	1
D17	10	2	1
D19	11	2	1
D20	12	2	1
D21	13	2	1

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

F10.1 Material(s) that contain the following compound(s) shall not be used in this facility;

The operator shall not use natural gas containing H₂S greater than 0.75 grains per 100 cubic feet of natural gas

This concentration limit is an annual average based on monthly sample of natural gas composition or gas supplier documentation. Gaseous fuel samples shall be tested using District Method 307-91 for total sulfur calculated as H₂S

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

F14.1 The operator shall not purchase any diesel fuel, for stationary source application as defined in Rule 431.2, containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

The operator shall maintain a copy of the MSDS on site

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

DEVICE CONDITIONS

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A. Emission Limits

A63.1 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
PM10	Less than or equal to 214 LBS IN ANY ONE MONTH
CO	Less than or equal to 1451 LBS IN ANY ONE MONTH
SOX	Less than or equal to 85 LBS IN ANY ONE MONTH
VOC	Less than or equal to 173 LBS IN ANY ONE MONTH

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The operator shall calculate the calendar monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors:

Uncontrolled emission factors: VOC: 5.7 lb/mmcf; PM10: 7.6 lb/mmcf; CO: 157.39 lb/mmcf, and SOx: 2.14 lb/mmcf.

Controlled emission factors: VOC: 4.1 lb/mmcf; PM10: 5.1 lb/mmcf; CO: 19.87 lb/mmcf and SOx: 2.14 lb/mmcf.

The uncontrolled emissions factors are to be used during start-up when the boiler is operating at 17.5% load or less

Monthly Emissions, lb/month = X (E.F.)

Where X = monthly fuel usage in mmcf/month and E.F. = emission factor indicated above

The operator shall calculate the emission limit(s) for the purpose of determining compliance with the monthly CO limit in the absence of valid CEMS data by using the above equation and the following emission factor(s):

During the commissioning period the 38.85 lbs CO/mmcf emissions factor to be used during low, medium and high loads. During cold start and warm start 153.30 lb/mmcf is to be used.

After installation of the CO catalyst but prior to CO CEMS certification testing - 19.87 lb CO/mmcf to be used for all modes of operation, excluding start-up operations, boiler restarts, hot restart/emergency trip, boiler cold and very cold start. 157.40 lb CO/mmcf to be used during boiler morning start-up operations, boiler restarts, hot restart/emergency trip and boiler cold and very cold start.

After CO CEMS certification testing - 19.87 lb/CO mmcf. After CO CEMS certification test is approved by the SCAQMD, the emissions monitored by the CEMS and calculated in accordance with condition 82.1 shall be used to calculate emissions.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The operator shall provide the SCAQMD with written notification of the date of initial CO catalyst use within seven (7) days of this event.

For the purpose of this condition the boiler shall not commence with normal operation until the commissioning process has been completed. The District shall be notified in writing once the commissioning process has been completed. Normal operations may proceed in the same commissioning month provided the operator follows the requirements listed below.

The operator shall calculate the commissioning emissions for VOC, SO_x and PM₁₀ for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emissions factor; VOC: 5.7 lb/mmcf; PM₁₀ 5.1 lb/mmcf; and SO_x: 2.14 lb/mmcf. For Start-up (cold or warm start) the following emission factors shall be used: PM₁₀: 10.5 lb/mmcf

Commissioning Emissions, lb/month = X * EF

Where X = commissioning fuel usage in mmcf/month and E.F = emission factor indicated above.

The commissioning emissions for VOC, SO_x, CO and PM₁₀ shall be subtracted from the monthly emissions limits (listed in the table a the top of this condition) and the revised monthly emissions limits will be the maximum emissions allowed for the remaining calendar month.

The operator shall keep records of monthly emissions and the records shall be made available upon request by the Executive Officer.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1, D6]

A63.2 The operator shall limit emissions from this equipment as follows:

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

CONTAMINANT	EMISSIONS LIMIT
PM10	Less than or equal to 33 LBS IN ANY ONE MONTH
CO	Less than or equal to 86 LBS IN ANY ONE MONTH
SOX	Less than or equal to 9 LBS IN ANY ONE MONTH
VOC	Less than or equal to 18 LBS IN ANY ONE MONTH

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The operator shall calculate the calendar monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors: VOC: 4.2 lb/mmcf; PM10: 7.6 lb/mmcf; CO: 19.72 lb/mmcf and SOx: 2.14 lb/mmcf.

Monthly Emissions, lb/month = X (E.F.)

Where X = monthly fuel usage in mmscf/month and E.F. = emission factor indicated above

For the purpose of this condition the boiler shall not commence with normal operation until the commissioning process has been completed. The District shall be notified in writing once the commissioning process has been completed. Normal operations may proceed in the same commissioning month provide the operator follows the requirements listed below.

The operator shall calculate the commissioning emissions for VOC, SOx, PM10 and CO for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emissions factor; VOC: 5.67 lb/mmcf; PM10 13.65 lb/mmcf; SOx: 2.14 lb/mmcf and CO: 18.93 lb/mmcf.

Commissioning Emissions, lb/month = X * EF

Where X = commissioning fuel usage in mmcf/month and E.F = emission factor indicated above

The commissioning emissions for VOC, SOx, CO and PM10 shall be subtracted the monthly emissions limits (listed in the table a the top of this condition) and the revised monthly emissions limits will be the maximum emissions allowed for the remaining month

[**RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002**]

[Devices subject to this condition : D11, D12]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A99.1 The 5 PPM NOX emission limit(s) shall not apply during boiler commissioning, start-ups and emergency trips. The commissioning period shall not exceed 40 hours. Start-up time shall not exceed the times listed below . Written records of commissioning, start-ups and emergency trips shall be maintained and made available upon request from the Executive Officer.

For this condition a boiler hot/emergency trip start-up is defined as a start-up in which the boiler has been shut down for less than 12 hours. A boiler hot/emergency trip start-up period shall not exceed 45 minutes

For this condition, a boiler warm start-up is defined as a start-up in which the boiler has been shut down for at least 12 hours but less than 36 hours. A boiler warm start-up period shall not exceed 90 minutes

For this condition a boiler cold start-up is defined as a start-up in which the boiler has been shut down for at least 36 hours but less than 80 hours. A boiler cold start-up period shall not exceed 180 minutes

For this condition boiler very cold start-up is defined as a start-up in which the boiler has been shut down for at least 80 hours. A boiler very cold start-up period shall not exceed 270 minutes

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]

[Devices subject to this condition : D1, D6]

A99.2 The 25 PPM CO emission limit(s) shall not apply during boiler commissioning, start-ups and emergency trips. The commissioning period shall not exceed 40 hours. Start-up time shall not the times listed below. Written records of commissioning, start-ups and emergency trips shall be maintained and made available upon request from the Executive Officer..

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

For this condition a boiler hot/emergency trip start-up is defined as a start-up in which the boiler has been shut down for less than 12 hours. A boiler hot/emergency trip start-up period shall not exceed 45 minutes

For this condition, a boiler warm start-up is defined as a start-up in which the boiler has been shut down for at least 12 hours but less than 36 hours. A boiler warm start-up period shall not exceed 90 minutes

For this condition a boiler cold start-up is defined as a start-up in which the boiler has been shut down for at least 36 hours but less than 80 hours. A boiler cold start-up period shall not exceed 180 minutes

For this condition boiler very cold start-up is defined as a start-up in which the boiler has been shut down for at least 80 hours. A boiler very cold start-up period shall not exceed 270 minutes

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]

[Devices subject to this condition : D1, D6]

- A99.3 The 11.55 LBS/MMCF NOX emission limit(s) shall only apply during the interim reporting period during initial boiler commissioning to report RECLAIM emissions. During start-up or warm start modes the 92.40 lb/mmcf NOx emission limit shall only apply during the interim reporting period during initial boiler commissioning to report RECLAIM emissions. The interim reporting period shall not exceed 12 months from entry into RECLAIM..

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D1, D6]

- A99.4 The 6.53 LBS/MMCF NOX emission limit(s) shall only apply during the interim reporting period after initial boiler commissioning to report RECLAIM emissions. During start-up mode operations with a boiler mode not to exceed 17.5%, the 83.96 lb/mmcf NOx emission limit shall only apply during the interim reporting period during after initial boiler commissioning to report RECLAIM emissions The interim reporting period shall not exceed 12 months from entry into RECLAIM..

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D1, D6]

A195.1 The 25 PPM CO emission limit(s) is averaged over 15 minutes at 3 percent O₂, dry.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]

[Devices subject to this condition : D1, D6, D11, D12]

A195.2 The 5 PPM NO_X emission limit(s) is averaged over 15 minutes at 3 percent O₂, dry.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]

[Devices subject to this condition : D1, D6]

A195.3 The 9 PPM NO_X emission limit(s) is averaged over 15 minutes at 3 percent O₂, dry.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]

[Devices subject to this condition : D11, D12]

A195.4 The 80 PPM NO_X emission limit(s) is averaged over 30 day rolling average.

Per 60.44(b)(h) the NO_x standards under this section shall apply all times including periods of start-up, shut-down or malfunction.

60.44(b)(i)-Except as provided under paragraph (j) of this section, compliance with the emissions limits under this section is determined on a 30-day rolling average basis.

[40CFR 60 Subpart Db, 1-28-2009]

[Devices subject to this condition : D1, D6]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A195.5 The 80 PPM NOX emission limit(s) is averaged over 30 day rolling average.

Per 60.44(b)(h) the NOx standards under this section shall apply all times including periods of start-up, shut-down or malfunction.

60.44(b)(i)-Except as provided under paragraph (j) of this section, compliance with the emissions limits under this section is determined on a 30-day rolling average basis.

[40CFR 60 Subpart Db, 1-28-2009]

[Devices subject to this condition : D1]

A195.6 The 5 PPMV NH3 emission limit(s) is averaged over 60 minutes.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

$$\text{NH}_3 \text{ (ppmv)} = [a-b*c/1\text{EE}+06]*1\text{EE}+06/b.$$

where,.

a = NH₃ injection rate (lbs/hr)/17(lb/lb-mol).

b = dry exhaust gas flow rate (scf/hr)/385.3 scf/lb-mol).

c = change in measured NO_x across the SCR (ppmvd at 3% O₂).

The operator shall install and maintain a NO_x analyzer to measure the SCR inlet NO_x ppmv accurate to plus or minus 5 percent calibrated at least once every twelve months..

The NO_x analyzer shall be installed and operated within 90 days of initial start-up..

The operator shall use the above described method or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C3, C8]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition : D1, D6]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A433.1 The operator shall comply at all times with the 5 ppm BACT limit for NO_x, except as defined in condition A99.1 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
start-up event	3.5 lb/hr	NO _x emissions not to exceed 10.5 lbs total per cold start-up per boiler. The boiler shall be limited to 10 cold start-ups per year, with each start-up not to exceed 180 minutes.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D1, D6]

A433.2 The operator shall comply at all times with the 5 ppm BACT limit for NO_x, except as defined in condition A99.1 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
start-up event	3.5 lb/hr	NO _x emissions not to exceed 15.7 lbs total per very cold start-up per boiler. The boiler shall be limited to 5 very cold start-ups per year, with each start-up not to exceed 270 minutes.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D1, D6]

B. Material/Fuel Type Limits

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

B61.2 The operator shall only use fuel oil containing the following specified compounds:

Compound	Range	ppm by weight
Sulfur	less than or equal to	15

The operator shall maintain a copy of the MSDS on site

**[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1470, 5-4-2012;
 RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000; 40CFR 60 Subpart III, 6-28-2011]**

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

C. Throughput or Operating Parameter Limits

C1.1 The operator shall limit the fuel usage to no more than 40 MM cubic feet in any one calendar month.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1, D6]

C1.2 The operator shall limit the fuel usage to no more than 4.28 MM cubic feet in any one calendar month.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during a commissioning period.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1, D6]

- C1.3 The operator shall limit the fuel usage to no more than 307 MM cubic feet per year.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during a non-commissioning year.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. Year is defined as 12-month rolling average. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010]

[Devices subject to this condition : D1, D6]

- C1.4 The operator shall limit the fuel usage to no more than 311 MM cubic feet per year.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during a commissioning year.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. Year is defined as 12-month rolling average. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010]

[Devices subject to this condition : D1, D6]

- C1.5 The operator shall limit the fuel usage to no more than 4.34 MM cubic feet in any one calendar month.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; 40CFR 60 Subpart Dc, 10-4-1991]

[Devices subject to this condition : D11, D12]

- C1.6 The operator shall limit the fuel usage to no more than 0.11 MM cubic feet in any one calendar month.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler during a commissioning period.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; 40CFR 60 Subpart Db, 11-16-2006]

[Devices subject to this condition : D11, D12]

- C1.7 The operator shall limit the fuel usage to no more than 48 MM cubic feet per year.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single boiler.

The operator shall record and maintain the amount of all fuel combusted during each year. The fuel usage records shall be kept for a period of five years and all records shall be made available to District personnel upon request.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010]

[Devices subject to this condition : D11, D12]

C1.8 The operator shall limit the operating time to no more than 200 hour(s) in any one year.

[RULE 1110.2, 2-1-2008; RULE 1110.2, 9-7-2012; RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1470, 5-4-2012; RULE 1714, 11-5-2010]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

C1.9 The operator shall limit the operating time to no more than 50 hour(s) in any one year.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing.

Operation beyond the 50 hours per year for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage. Engine operation shall be terminated i.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1470, 5-4-2012; RULE 2012, 5-6-2005]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : D13, D15, D17]

- C1.10 The operator shall limit the operating time to no more than 4.2 hour(s) in any one calendar month.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing.

[**RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 2012, 5-6-2005**]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

- C1.11 The operator shall limit the operating time to no more than 30 minute(s) in any one day.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing.

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

- C1.12 The operator shall limit the operating time to no more than 50 hour(s) in any one year.

For the purposes of this condition, the operating time is inclusive of time allotted for maintenance and testing.

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1470, 5-4-2012; RULE 2012, 5-6-2005**]

[Devices subject to this condition : D19, D20, D21]

D. Monitoring/Testing Requirements

- D12.1 The operator shall install and maintain a(n) flow meter to accurately indicate the fuel usage being supplied to the boiler.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The operator shall also install and maintain a device to continuously record the parameter being measured

[RULE 1303(b)(3), 5-10-1996; RULE 1303(b)(3), 12-6-2002; RULE 2012, 5-6-2005; 40CFR 60 Subpart Db, 1-28-2009; 40CFR 60 Subpart Dc, 2-27-2006]

[Devices subject to this condition : D1, D6, D11, D12]

- D12.2 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 9-7-2012; RULE 1304(c)-Offset Exemption, 6-14-1996; RULE 1470, 5-4-2012; RULE 2012, 5-6-2005; 40CFR 60 Subpart III, 6-28-2011]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

- D12.3 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent

It shall be calibrated once every twelve months. The records shall be kept on site and made available to SCAQMD personnel upon request

The ammonia injection system shall be placed in full operation as soon as the minimum temperature is reached. The minimum temperature is listed as 550 degrees F. at the inlet to the SCR reactor

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : C8]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- D12.4 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the the exhaust at the inlet to the SCR reactor.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent

It shall be calibrated once every twelve months. The records shall be kept on site and made available to SCAQMD personnel upon request

The catalyst temperature range shall be remain between 550 degree F and 750 degree F

The catalyst inlet temperature shall not exceed 750 degrees F.

The temperature range requirement of this condition does not apply during start-up operations of the boiler listed in condition A99.1.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : C3, C8]

- D12.5 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent

It shall be calibrated once every twelve months. The records shall be kept on site and made available to SCAQMD personnel upon request

The pressure drop across the catalyst and ammonia injection grid shall not exceed 4.5 inches water column

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : C3, C8]

D29.1 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	15 minutes	Outlet of the SCR serving this equipment
CO emissions	District method 100.1	15 minutes	Outlet of the SCR serving this equipment
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
PM emissions	District method 5.1	1 hour	Outlet of the SCR serving this equipment
NH3 emissions	District method 207.1 and 5.3 or EPA method	1 hour	Outlet of the SCR serving this equipment

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The test shall be conducted after SCAQMD approval of the source test protocol, but no later than 180 days after initial start-up. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test. The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (mmcf/hour), and the flue gas flow rate.

The test shall be conducted in accordance with SCAQMD approved test protocol. The protocol shall be submitted to the SCAQMD engineer no later than 45 days before the proposed test date and shall be approved by the SCAQMD before the test commences.

The test protocol shall include the proposed operating conditions of the boiler during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of rule 304, and a description of all sampling and analytical procedures

The test shall be conducted for each load, while firing at maximum, minimum and low firing rates

The test shall be conducted for compliance verification of the 25 ppmv CO limit.

The test shall be conducted for compliance verification of the 5 ppmv NOX limit.

The test shall be conducted for compliance verification of the 5 ppmv ammonia slip limit.

Two complete copies of source test reports (include the application number and a copy of the permit in the report) shall be submitted to the District (addressed to south coast air quality management district, attn Roy Olivares, P.O. Box 4941, Diamond bar, CA 91765). The results in writing shall be submitted within 45 days after the source test is completed. It shall include, but not be limited to emissions rate in pounds per hour and concentration in ppmv at the outlet of the boiler

A testing laboratory certified by the SCAQMD laboratory approval program (LAP) in the required test methods for criteria pollutant to be measured, and in compliance with district rule 304 (no conflict of interest) shall conduct the test

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Sampling facilities shall comply with the SCAQMD "guidelines for construction of sampling and testing facilities", pursuant to rule 217

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]

[Devices subject to this condition : D1, D6]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

The test shall be conducted and the results submitted to the District within 45 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 7 days prior to the test

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002]

[Devices subject to this condition : D1, D6]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	15 minutes	Outlet of the SCR serving this equipment
CO emissions	District method 100.1	15 minutes	Outlet of the SCR serving this equipment
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
PM emissions	District method 5.1	1 hour	Outlet of the SCR serving this equipment

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The test shall be conducted after SCAQMD approval of the source test protocol, but no later than 180 days after initial start-up. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test. The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (mmcf/hour), and the flue gas flow rate.

The test shall be conducted in accordance with SCAQMD approved test protocol. The protocol shall be submitted to the SCAQMD engineer no later than 45 days before the proposed test date and shall be approved by the SCAQMD before the test commences.

The test protocol shall include the proposed operating conditions of the boiler during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of rule 304, and a description of all sampling and analytical procedures

The test shall be conducted for 15 minutes for each load, while firing at maximum, minimum and low firing rates

The test shall be conducted for compliance verification of the 25 ppmv CO limit.

The test shall be conducted for compliance verification of the 9 ppmv NOx limit.

Two complete copies of source test reports (include the application number and a copy of the permit in the report) shall be submitted to the District (addressed to south coast air quality management district, attn Roy Olivares, P.O. Box 4941, Diamond bar, CA 91765). The results in writing shall be submitted within 45 days after the source test is completed. It shall include, but not be limited to emissions rate in pounds per hour and concentration in ppmv at the outlet of the boiler

A testing laboratory certified by the SCAQMD laboratory approval program (LAP) in the required test methods for criteria pollutant to be measured, and in compliance with district rule 304 (no conflict of interest) shall conduct the test

Sampling facilities shall comply with the SCAQMD "guidelines for construction of sampling and testing facilities", pursuant to rule 217

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011]

[Devices subject to this condition : D11, D12]

D29.4 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet

The test(s) shall be conducted at least once every five years.

The test shall be conducted for compliance verification of the 9 ppmv NOx RECLAIM concentration limit.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D11, D12]

D82.1 The operator shall install and maintain a CEMS to measure the following parameters:

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

CO concentration in ppmv

Concentrations shall be corrected to 3 percent oxygen on a dry basis

The CEMS shall be installed and operated to measure CO concentrations over a 15 minute averaging time period.

The CEMS will convert the actual CO concentrations to mass emission rates (lbs/hr) and record the hourly emission rates on a continuous basis.

CO Emission Rate, lbs/hr = $K C_{co} F_d [20.9\% - \%O_2 d] [(Q_g * HHV)/106]$, where

$K = 7.267 * 10^{-8}$ (lb/scf)/ppm

C_{co} = Average of four consecutive 15 min. ave. CO concentration, ppm

F_d = 8710 dscf/MMBTU natural gas

$\%O_2 d$ = Hourly ave. % by vol. O₂ dry, corresponding to C_{co}

Q_g = Fuel gas usage during the hour, scf/hr

HHV = Gross high heating value of fuel gas, BTU/scf

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 218, 5-14-1999]

[Devices subject to this condition : D1, D6]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

NOX concentration in ppmv

Concentrations shall be corrected to 3 percent oxygen on a dry basis.

The CEMS shall be installed and operating no later than 90 days after initial start-up of the boiler and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks of the boiler start-up date, the operator shall provide written notification to the District of the exact date of start-up

The CEMS shall be installed and operating (for BACT purposes only) no later than 90 days after initial start up of the boiler.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 6-3-2011; RULE 2012, 5-6-2005]

[Devices subject to this condition : D1, D6]

E. Equipment Operation/Construction Requirements

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 3

Condition Number D 12- 4

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : C3, C8]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Condition Number D 12- 5

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : C8]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 09-AFC-7 project

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D1, C3, D6, C8, D11, D12, D13, D15, D17, D19, D20, D21]

E448.1 The operator shall comply with the following requirements:

This boiler shall not be operated unless the flue gas recirculation system is in full operation

The operator shall have the burner equipped with a control system to automatically regulate the combustion air, fuel, and recirculation flue gas as the boiler load varies. This control system shall be adjusted and tuned according to the manufacturer's specifications to maintain its ability to repeat the same performance at the same firing rate.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : D1, D6, D11, D12]

E448.2 The operator shall comply with the following requirements:

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

The operator shall comply with the emission standards specified in 40 CFR 60.4205(B) by purchasing an engine certified to the emission standards in 40 CFR 60.4205(B), as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission related specifications

[40CFR 60 Subpart III, 6-28-2011]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

E448.3 The operator shall comply with the following requirements:

The operator shall operate and maintain the stationary engine and control device according to the manufacturer's written emission-related instructions (or procedures developed by the operator that are approved by the engine manufacturer), change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 CFR 89, 94 and/or 1068, as they apply

[40CFR 60 Subpart III, 6-28-2011]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

E448.4 The operator shall comply with the following requirements:

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

60.49b Reporting and record keeping requirements and shall include the following

(a)(1) The design heat input capacity of the boilers and the type of fuels to be used by the equipment.

(a)(2)-If applicable, a copy of any federally enforceable requirements that limits the annual capacity factor for any fuel or mixture of fuels under 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(ii), 60.44b(c), (d), (e), (i),(j), (k), 60.45b(d), (g), 60.46b(h)(1), or 60.48b(i).

(a)(3)- The annual capacity factor at which the operator anticipated operating the facility based on all fuels fired and based on each individual fuel fired

60.49b(d)(1)-The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12 month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

60.49b(g)The operator of the boilers subject to the NO_x standards under 60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date

(2)The ave hourly NO_x emissions rate (expressed as NO₂)(ng/J or lb/mmbtu heat input

(3) The 30 day average NO_x emission rate calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emissions rate for the proceeding 30 steam generating unit operating days

(4) (4) Identification of the steam unit operating days when the calculated 30-day average NO_x emissions rates are in excess of the NO_x emissions standards under

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

60.44b, with the reasons for such excess emissions as well as a description of corrective action taken;

(5) Identifications of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective action taken;

(6) Identification of the times when emissions data have been excluded from the calculations of average emission rates and the reasons for excluding data;

(7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted

(8) Identification of the times when the pollutant concentration exceeded full span of CEMs;

(9) Description of any modifications to the CEMs that could affect the ability of the CEMs to comply with Performance Specification 2 or 3; and

(10) Results of daily CEMs drift test and quarterly accuracy assessments as required under Appendix F, Procedure 1 of this part.

60.49b (h)- The owner or operator of any affected facility in any category listed in paragraph (h)(1) or (2) of this section is required to submit excess emission reports for any excess emission that occurred during the reporting period.

60.49b (i)-The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_x under §60.48b shall submit reports containing the information recorded under paragraph (g) of this section.

The operator shall comply with remaining sections of this subpart, if applicable.

[40CFR 60 Subpart Db, 1-28-2009]

[Devices subject to this condition : D1, D6]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

E448.5 The operator shall comply with the following requirements:

The ammonia injection system shall be placed in full operation as soon as the minimum temperature is reached. The minimum temperature is listed as 550 degrees F. at the inlet to the SCR reactor

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 6-3-2011]

[Devices subject to this condition : C3, C8]

H. Applicable Rules

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
CO	District Rule	1146

The operator of this equipment shall comply with source testing requirements in subdivision (D)(6)--compliance determination of rule 1146.

The operator of this equipment shall comply with periodic monitoring requirements of rule 1146 (C)(8).

[RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]

[Devices subject to this condition : D1, D6, D11, D12]

H23.2 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
PM	40CFR60, SUBPART	Db
SOX	40CFR60, SUBPART	Db

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

NOX	40CFR60, SUBPART	Db
[40CFR 60 Subpart Db, 2-27-2006]		

[Devices subject to this condition : D1, D6]

H23.4 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
PM	40CFR60, SUBPART	Dc
SOX	40CFR60, SUBPART	Dc

[40CFR 60 Subpart Dc, 2-27-2006]

[Devices subject to this condition : D11, D12, D17]

H23.5 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1470
Sulfur compounds	District Rule	431.2

[RULE 1470, 5-4-2012; RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

I. Administrative

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

I298.1 This equipment shall not be operated unless the facility holds 5714 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 5645 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D1]

I298.2 This equipment shall not be operated unless the facility holds 5714 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 5645 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D6]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

I298.3 This equipment shall not be operated unless the facility holds 565 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 563 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D11]

I298.4 This equipment shall not be operated unless the facility holds 565 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 563 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D12]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

I298.5 This equipment shall not be operated unless the facility holds 5922 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 5922 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D13]

I298.6 This equipment shall not be operated unless the facility holds 5922 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 5922 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D15]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

I298.7 This equipment shall not be operated unless the facility holds 434 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 434 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D17]

I298.8 This equipment shall not be operated unless the facility holds 707 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 707 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D19]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

I298.9 This equipment shall not be operated unless the facility holds 707 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 707 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D20]

I298.10 This equipment shall not be operated unless the facility holds 707 pounds of NO_x RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 707 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 6-3-2011]

[Devices subject to this condition : D21]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

K. Record Keeping/Reporting

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Retain all records required by permit for a period of five years and make all records available to district personnel upon request.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; 40CFR 60 Subpart Db, 9-7-1990]

[Devices subject to this condition : D1, D6]

K67.2 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Natural gas fuel use after CEMS certification

Natural gas fuel use during the commissioning period

Natural gas fuel use after the commissioning period and prior to CEMS certification

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D1, D6]

K67.3 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Manual and automatic operation and shall list all engine operations in each of the following areas:

A. emergency use

B. MAINTENANCE AND TESTING

C. OTHER (BE SPECIFIC)

In addition, for each time the engine is manually started, the log shall include the date of engine operation, the specific reason for operation, and the totalizing hour meter reading (in hours and tenths of hours) at the beginning and the end of the operation.

[RULE 1110.2, 9-7-2012; RULE 1470, 5-4-2012; **40CFR 60 Subpart IIII, 6-28-2011**]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

On or before January 15th of each year, the operator shall record in the engine operating log:

A. the total hours of engine operation for the previous calendar year, and

B. The total hours of engine operation for maintenance and testing for the previous calendar year

Engine operation log(s) shall be retained on site for a minimum of five calendar years and shall be made available to the executive officer or representative upon request

[**RULE 1304(c)-Offset Exemption, 6-14-1996**]

[Devices subject to this condition : D13, D15, D17, D19, D20, D21]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

K67.5 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Retain all records required by permit for a period of five years and make all records available to district personnel upon request.

The operator shall record and maintain the amount of all fuel combusted during each calendar month. The fuel usage records shall be kept for a period of five years and all records shall be made available to district personnel upon request

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; 40CFR 60 Subpart Dc, 2-27-2006]

[Devices subject to this condition : D11, D12]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION I: PLANS AND SCHEDULES

This section lists all plans approved by AQMD for the purposes of meeting the requirements of applicable AQMD rules.

NONE

NOTE: This section does not list compliance schedules pursuant to the requirements of Regulation XXX - Title V Permits; Rule 3004(a)(10)(C). For equipment subject to a variance, order for abatement, or alternative operating condition granted pursuant to Rule 518.2, equipment specific conditions are added to the equipment in Section D or H of the permit.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION J: AIR TOXICS [40CFR 63SubpartZZZZ 03-09-2011]

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS: STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

The owner/operator of existing emergency stationary Reciprocating Internal Combustion Engines (RICE) located at an area source of hazardous air pollutant (HAP) emissions shall comply with the applicable requirements of 40 CFR 63 Subpart ZZZZ including but not limited to the following:

1. The owner/operator shall comply with the applicable requirements as specified in 63.6603 including but not limited to the following:

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Emergency stationary CI RICE and black start stationary CI RICE. ²	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE. ²	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹ b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	

¹Sources have the option to utilize an oil analysis program as described in §63.6625(i) in order to extend the specified oil change requirement in Table 2d of this subpart.

²If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION J: AIR TOXICS [40CFR 63SubpartZZZZ 03-09-2011]

has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

2. The owner/operator shall comply with the applicable general requirements as specified in 63.6605.
3. The owner/operator shall comply with the applicable monitoring, installation, collection, operation, and maintenance requirements specified in 63.6625.
4. The owner/operator shall demonstrate continuous compliance with the applicable emission limitations and operating limitations specified in 63.6640 including but not limited to the following:
 - (a) You must demonstrate continuous compliance with each emission limitation and operating limitation according to methods specified in Table 6 to this subpart.

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, Operating Limitations, Work Practices, and Management Practices

As stated in §63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
existing emergency and black start stationary RICE located at an area source of HAP	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650.

(c) you must operate the emergency stationary RICE according to the requirements in paragraphs (i) through (iii) of this section. Any operation other than emergency operation, maintenance and

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION J: AIR TOXICS [40CFR 63SubpartZZZZ 03-09-2011]

testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (i) through (iii) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (i) through (iii) of this section, the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency engines.

(i) There is no time limit on the use of emergency stationary RICE in emergency situations.

(ii) You may operate your emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year.

(iii) You may operate your emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph (iii), as long as the power provided by the financial arrangement is limited to emergency power.

5. The owner/operator shall comply with the applicable record keeping requirements specified in 63.6655 and 63.6660.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

GENERAL PROVISIONS

1. This permit may be revised, revoked, reopened and reissued, or terminated for cause, or for failure to comply with regulatory requirements, permit terms, or conditions. [3004(a)(7)(C)]
2. This permit does not convey any property rights of any sort or any exclusive privilege. [3004(a)(7)(E)]

Permit Renewal and Expiration

3. (A) Except for solid waste incineration facilities subject to standards under section 129(e) of the Clean Air Act, this permit shall expire five years from the date that this Title V permit is issued. The operator's right to operate under this permit terminates at midnight on this date, unless the facility is protected by an application shield in accordance with Rule 3002(b), due to the filing of a timely and complete application for a Title V permit renewal, consistent with Rule 3003. [3004(a)(2), 3004(f)]

(B) A Title V permit for a solid waste incineration facility combusting municipal waste subject to standards under Section 129(e) of the Clean Air Act shall expire 12 years from the date of issuance unless such permit has been renewed pursuant to this regulation. These permits shall be reviewed by the Executive Officer at least every five years from the date of issuance. [3004(f)(2)]
4. To renew this permit, the operator shall submit to the Executive Officer an application for renewal at least 180 days, but not more than 545 days, prior to the expiration date of this permit. [3003(a)(6)]

Duty to Provide Information

5. The applicant for, or holder of, a Title V permit shall furnish, pursuant to Rule 3002(d) and (e), timely information and records to the Executive Officer or designee within a reasonable time as specified in writing by the Executive Officer or designee. [3004(a)(7)(F)]

Payment of Fees

6. The operator shall pay all required fees specified in Regulation III - Fees. [3004(a)(7)(G)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

Reopening for Cause

7. The Executive Officer will reopen and revise this permit if any of the following circumstances occur:
- (A) Additional regulatory requirements become applicable with a remaining permit term of three or more years. Reopening is not required if the effective date of the requirement is later than the expiration date of this permit, unless the permit or any of its terms and conditions has been extended pursuant to paragraph (f)(4) of Rule 3004.
 - (B) The Executive Officer or EPA Administrator determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
 - (C) The Executive Officer or EPA Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements. [3005(g)(1)]

COMPLIANCE PROVISIONS

8. The operator shall comply with all regulatory requirements, and all permit terms and conditions, except:
- (A) As provided for by the emergency provisions of condition no. 17 or condition no. 18, or
 - (B) As provided by an alternative operating condition granted pursuant to a federally approved (SIP-approved) Rule 518.2.

Any non-compliance with any federally enforceable permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or denial of a permit renewal application. Non-compliance may also be grounds for civil or criminal penalties under the California State Health and Safety Code. [3004(a)(7)(A)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

9. The operator shall allow the Executive Officer or authorized representative, upon presentation of appropriate credentials to:
 - (A) Enter the operator's premises where emission-related activities are conducted, or records are kept under the conditions of this permit;
 - (B) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
 - (C) Inspect at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - (D) Sample or monitor at reasonable times, substances or parameters for the purpose of assuring compliance with the facility permit or regulatory requirements. [3004(a)(10)(B)]

10. All terms and conditions in this permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the EPA Administrator and citizens under the federal Clean Air Act, unless the term or condition is designated as not federally enforceable. Each day during any portion of which a violation occurs is a separate offense. [3004(g)]

11. A challenge to any permit condition or requirement raised by EPA, the operator, or any other person, shall not invalidate or otherwise affect the remaining portions of this permit. [3007(b)]

12. The filing of any application for a permit revision, revocation, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition. [3004(a)(7)(D)]

13. It shall not be a defense for a person in an enforcement action, including those listed in Rule 3002(c)(2), that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit, except as provided for in "Emergency Provisions" of this section. [3004(a)(7)(H)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

14. The operator shall not build, erect, install, or use any equipment, the use of which, without resulting in a reduction in the total release of air contaminants to atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Chapter 3 (commencing with Section 41700) of Part 4, of Division 26 of the California Health and Safety Code or of AQMD rules. This rule shall not apply to cases in which the only violation involved is of Section 41700 of the California Health and Safety Code, or Rule 402 of AQMD Rules. [408]

15. Nothing in this permit or in any permit shield can alter or affect:
 - (A) Under Section 303 of the federal Clean Air Act, the provisions for emergency orders;
 - (B) The liability of the operator for any violation of applicable requirements prior to or at the time of permit issuance;
 - (C) The applicable requirements of the Acid Rain Program, Regulation XXXI;
 - (D) The ability of EPA to obtain information from the operator pursuant to Section 114 of the federal Clean Air Act;
 - (E) The applicability of state or local requirements that are not "applicable requirements", as defined in Rule 3000, at the time of permit issuance but which do apply to the facility, such as toxics requirements unique to the State; and
 - (F) The applicability of regulatory requirements with compliance dates after the permit issuance date. [3004(c)(3)]

16. For any portable equipment that requires an AQMD or state permit or registration, excluding a) portable engines, b) military tactical support equipment and c) AQMD-permitted portable equipment that are not a major source, are not located at the facility for more than 12 consecutive months after commencing operation, and whose operation does not conflict with the terms or conditions of this Title V permit: 1) the facility operator shall keep a copy of the AQMD or state permit or registration; 2) the equipment operator shall comply with the conditions on the permit or registration and all other regulatory requirements; and 3) the facility operator shall treat the permit or registration as a part of its Title V permit, subject to recordkeeping, reporting and certification requirements. [3004(a)(1)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration EMERGENCY PROVISIONS

17. An emergency¹ constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limit only if:
- (A) Properly signed, contemporaneous operating records or other credible evidence demonstrate that:
 - (1) An emergency occurred and the operator can identify the cause(s) of the emergency;
 - (2) The facility was operated properly (i.e. operated and maintained in accordance with the manufacturer's specifications, and in compliance with all regulatory requirements or a compliance plan), before the emergency occurred;
 - (3) The operator took all reasonable steps to minimize levels of emissions that exceeded emissions standard, or other requirements in the permit; and,
 - (4) The operator submitted a written notice of the emergency to the AQMD within two working days of the time when the emissions limitations were exceeded due to the emergency. The notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - (B) The operator complies with the breakdown provisions of Rule 430 – Breakdown Provisions, or subdivision (i) of Rule 2004 – Requirements, whichever is applicable. [3002(g), 430, 2004(i)]
18. The operator is excused from complying with any regulatory requirement that is suspended by the Executive Officer during a state of emergency or state of war emergency, in accordance with Rule 118 - Emergencies. [118]

¹ "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the operator, including acts of God, which: (A) requires immediate corrective action to restore normal operation; and (B) causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency; and (C) is not caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration RECORDKEEPING PROVISIONS

19. In addition to any other recordkeeping requirements specified elsewhere in this permit, the operator shall keep records of required monitoring information, where applicable, that include:
- (A) The date, place as defined in the Title V permit, and time of sampling or measurements;
 - (B) The date(s) analyses were performed;
 - (C) The company or entity that performed the analyses;
 - (D) The analytical techniques or methods used;
 - (E) The results of such analyses; and
 - (F) The operating conditions as existing at the time of sampling or measurement. [3004(a)(4)(B)]
20. The operator shall maintain records pursuant to Rule 109 and any applicable material safety data sheet (MSDS) for any equipment claimed to be exempt from a written permit by Rule 219 based on the information in those records. [219(t)]
21. The operator shall keep all records of monitoring data required by this permit or by regulatory requirements for a period of at least five years from the date of the monitoring sample, measurement, report, or application. [3004(a)(4)(E)]

REPORTING PROVISIONS

22. The operator shall comply with the following requirements for prompt reporting of deviations:
- (A) Breakdowns shall be reported as required by Rule 430 – Breakdown Provisions or subdivision (i) of Rule 2004 - Requirements, whichever is applicable.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

- (B) Other deviations from permit or applicable rule emission limitations, equipment operating conditions, or work practice standards, determined by observation or by any monitoring or testing required by the permit or applicable rules that result in emissions greater than those allowed by the permit or applicable rules shall be reported within 72 hours (unless a shorter reporting period is specified in an applicable State or Federal Regulation) of discovery of the deviation by contacting AQMD enforcement personnel assigned to this facility or otherwise calling (800) CUT-SMOG.
 - (C) A written report of such deviations reported pursuant to (B), and any corrective actions or preventative measures taken, shall be submitted to AQMD, in an AQMD approved format, within 14 days of discovery of the deviation.
 - (D) All other deviations shall be reported with the monitoring report required by condition no. 23. [3004(a)(5)]
23. Unless more frequent reporting of monitoring results are specified in other permit conditions or in regulatory requirements, the operator shall submit reports of any required monitoring to the AQMD at least twice per year. The report shall include a) a statement whether all monitoring required by the permit was conducted; and b) identification of all instances of deviations from permit or regulatory requirements. A report for the first six calendar months of the year is due by August 31 and a report for the last six calendar months of the year is due by February 28. [3004(a)(4)(F)]
24. The operator shall submit to the Executive Officer and to the Environmental Protection Agency (EPA), an annual compliance certification. For RECLAIM facilities, the certification is due when the Annual Permit Emissions Program (APEP) report is due and shall cover the same reporting period. For other facilities, the certification is due on March 1 for the previous calendar year. The certification need not include the period preceding the date the initial Title V permit was issued. Each compliance certification shall include:
- (A) Identification of each permit term or condition that is the basis of the certification;

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

- (B) The compliance status during the reporting period;
- (C) Whether compliance was continuous or intermittent;
- (D) The method(s) used to determine compliance over the reporting period and currently, and
- (E) Any other facts specifically required by the Executive Officer to determine compliance.

The EPA copy of the certification shall be sent to: Director of the Air Division Attn:
Air-3 USEPA, Region IX 75 Hawthorne St. San Francisco, CA 94105 [3004(a)(10)(E)]

25. All records, reports, and documents required to be submitted by a Title V operator to AQMD or EPA shall contain a certification of accuracy consistent with Rule 3003(c)(7) by a responsible official (as defined in Rule 3000). [3004(a)(12)]

PERIODIC MONITORING

26. All periodic monitoring required by this permit pursuant to Rule 3004(a)(4)(c) is based on the requirements and justifications in the AQMD document "Periodic Monitoring Guidelines for Title V Facilities" or in case-by-case determinations documented in the TitleV application file. [3004(a)(4)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

FACILITY RULES

This facility is subject to the following rules and regulations

With the exception of Rule 402, 473, 477, 1118 and Rules 1401 through 1420, the following rules that are designated as non-federally enforceable are pending EPA approval as part of the state implementation plan. Upon the effective date of that approval, the approved rule(s) will become federally enforceable, and any earlier versions of those rules will no longer be federally enforceable.

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 1110.2	2-1-2008	Federally enforceable
RULE 1110.2	9-7-2012	Non federally enforceable
RULE 1113	11-8-1996	Federally enforceable
RULE 1113	6-3-2011	Non federally enforceable
RULE 1113	7-13-2007	Federally enforceable
RULE 1146	11-17-2000	Federally enforceable
RULE 1146	9-5-2008	Non federally enforceable
RULE 1171	2-1-2008	Federally enforceable
RULE 1171	5-1-2009	Non federally enforceable
RULE 1303(a)	12-6-2002	Non federally enforceable
RULE 1303(a)(1)-BACT	12-6-2002	Non federally enforceable
RULE 1303(a)(1)-BACT	5-10-1996	Federally enforceable
RULE 1303(a)-BACT	5-10-1996	Federally enforceable
RULE 1303(b)(1)-Modeling	12-6-2002	Non federally enforceable
RULE 1303(b)(1)-Modeling	5-10-1996	Federally enforceable
RULE 1303(b)(2)-Offset	12-6-2002	Non federally enforceable
RULE 1303(b)(2)-Offset	5-10-1996	Federally enforceable
RULE 1303(b)(3)	12-6-2002	Non federally enforceable
RULE 1303(b)(3)	5-10-1996	Federally enforceable
RULE 1304(c)-Offset Exemption	6-14-1996	Federally enforceable
RULE 1325	6-3-2011	Non federally enforceable

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 1401	9-10-2010	Non federally enforceable
RULE 1470	5-4-2012	Non federally enforceable
RULE 1703(a)(2) - PSD-BACT	10-7-1988	Federally enforceable
RULE 1714	11-5-2010	Non federally enforceable
RULE 2005	6-3-2011	Federally enforceable
RULE 2012	5-6-2005	Federally enforceable
RULE 2012(e)(1)(A)(i)-NOx Process Unit	12-7-1995	Federally enforceable
RULE 2012(e)(1)(A)(i)-NOx Process Unit	4-11-1997	Non federally enforceable
RULE 218	5-14-1999	Federally enforceable
RULE 3002	11-14-1997	Federally enforceable
RULE 3002	11-5-2010	Non federally enforceable
RULE 3003	11-14-1997	Federally enforceable
RULE 3003	11-5-2010	Non federally enforceable
RULE 3004	12-12-1997	Federally enforceable
RULE 3004(a)(4)-Periodic Monitoring	12-12-1997	Federally enforceable
RULE 3005	11-14-1997	Federally enforceable
RULE 3005	11-5-2010	Non federally enforceable
RULE 3006	11-14-1997	Federally enforceable
RULE 3006	11-5-2010	Non federally enforceable
RULE 3007	10-8-1993	Federally enforceable
RULE 301	6-1-2012	Non federally enforceable
RULE 401	11-9-2001	Non federally enforceable
RULE 401	3-2-1984	Federally enforceable
RULE 403	4-2-2004	Federally enforceable
RULE 403	6-3-2005	Federally enforceable
RULE 407	4-2-1982	Federally enforceable
RULE 409	8-7-1981	Federally enforceable
RULE 431.1	6-12-1998	Federally enforceable
RULE 431.2	5-4-1990	Federally enforceable

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

SECTION K: TITLE V Administration

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 431.2	9-15-2000	Non federally enforceable
RULE 475	10-8-1976	Federally enforceable
RULE 475	8-7-1978	Non federally enforceable
CA PRC CEQA	11-23-1970	Non federally enforceable
40CFR 60 Subpart Db	1-28-2009	Federally enforceable
40CFR 60 Subpart Db	11-16-2006	Federally enforceable
40CFR 60 Subpart Db	2-27-2006	Federally enforceable
40CFR 60 Subpart Db	9-7-1990	Federally enforceable
40CFR 60 Subpart Dc	10-4-1991	Federally enforceable
40CFR 60 Subpart Dc	2-27-2006	Federally enforceable
40CFR 60 Subpart IIII	6-28-2011	Federally enforceable
40CFR 63SubpartJJJJJ	3-21-2011	Federally enforceable
40CFR 63SubpartZZZZ	3-9-2011	Federally enforceable
40CFR 72 - Acid Rain Provisions	11-24-1997	Federally enforceable

**FACILITY PERMIT TO OPERATE
PALEN SOLAR ELECTRIC GENERATING STATION**

APPENDIX A: NOX AND SOX EMITTING EQUIPMENT EXEMPT FROM WRITTEN
PERMIT PURSUANT TO RULE 219

NONE

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 06-03-2011]

- (1) Except as provided in paragraphs (c)(3), (c)(4), and designated coatings averaged under (c)(6) of Rule 1113, no person shall supply, sell, offer for sale, market, manufacture, blend, repackage, apply, store at a worksite, or solicit the application of any architectural coating within the District:
 - (A) That is listed in the Table of Standards 1 and contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified; or
 - (B) That is not listed in the Table of Standards 1, and contains VOC (excluding any colorant added to tint bases) in excess of 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, until January 1, 2014, at which time the limit drops to 50 grams of VOC per liter of coating, less water, less exempt compounds (0.42 pounds per gallon).
- (2) No person within the District shall add colorant at the point of sale that is listed in the Table of Standards 2 and contains VOC in excess of the corresponding VOC limit specified in the Table of Standards 2, after the effective date specified.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 06-03-2011]

TABLE OF STANDARDS 1 VOC LIMITS

**Grams of VOC Per Liter of Coating,
 Less Water and Less Exempt Compounds**

COATING CATEGORY	Ceiling Limit ¹	Current Limit ²	Effective Date		
			7/1/08	1/1/12	1/1/14
Bond Breakers		350			
Clear Wood Finishes		275			
Varnish	350	275			
Sanding Sealers	350	275			
Lacquer		275			
Concrete-Curing Compounds		100			
Concrete-Curing Compounds For Roadways and Bridges ³		350			
Concrete Surface Retarder		250			50
Driveway Sealer		100		50	
Dry-Fog Coatings		150			50
Faux Finishing Coatings					
Clear Topcoat		350		200	
Decorative Coatings		350			100
Glazes		350			
Japan		350			
Trowel Applied Coatings		350		150	50
Fire-Proofing Coatings		350			150
Flats	250	50	50		
Floor Coatings	100	50			
Form Release Compound		250			100
Graphic Arts (Sign) Coatings		500			150
Industrial Maintenance (IM) Coatings	420	100			
High Temperature IM Coatings		420			
Non-Sacrificial Anti-Graffiti Coatings		100			
Zinc-Rich IM Primers	340	100			
Magnesite Cement Coatings		450			
Mastic Coatings		300			100
Metallic Pigmented Coatings	500	500			150
Multi-Color Coatings		250			
Nonflat Coatings	150	50			
Pre-Treatment Wash Primers		420			
Primers, Sealers, and Undercoaters	200	100			
Reactive Penetrating Sealers		350			
Recycled Coatings		250			
Roof Coatings	250	50			
Roof Coatings, Aluminum		100			

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 06-03-2011]

Roof Primers, Bituminous	350	350		
Rust Preventative Coatings	400	100		
Stone Consolidant		450		
Sacrificial Anti-Graffiti Coatings		100		50
Shellac				
Clear		730		
Pigmented		550		
Specialty Primers	350	100		
Stains		100		

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 06-03-2011]

COATING CATEGORY	Ceiling Limit ¹	Current Limit ²	Effective Date		
			7/1/08	1/1/12	1/1/14
Stains, Interior	250	250			
Swimming Pool Coatings					
Repair		340			
Other		340			
Traffic Coatings		100			
Waterproofing Sealers	250	100			
Waterproofing Concrete/Masonry Sealers	400	100			
Wood Preservatives		350			

1. The specified ceiling limits are applicable to products sold under the Averaging Compliance Option.
2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.
3. Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.

TABLE OF STANDARDS 1 (cont.) VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

TABLE OF STANDARDS 2 VOC LIMITS FOR COLORANTS

Grams of VOC Per Liter of Colorant Less Water and Less Exempt Compounds

COLORANT	Limit ⁴
Architectural Coatings, excluding IM Coatings	50
Solvent-Based IM	600
Waterborne IM	50

4. Effective January 1, 2014.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 07-13-2007]

- (1) Except as provided in paragraphs (c)(2), (c)(3), (c)(4), and specified coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage any architectural coating for use in the District which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, and no person shall apply or solicit the application of any architectural coating within the District that exceeds 250 grams of VOC per liter of coating as calculated in this paragraph.

- (2) Except as provided in paragraphs (c)(3), (c)(4), and designated coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified, and no person shall apply or solicit the application of any architectural coating within the District that exceeds the VOC limit as specified in this paragraph. No person shall apply or solicit the application within the District of any industrial maintenance coatings, except anti-graffiti coatings, for residential use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings; or of any rust-preventative coating for industrial use, unless such a rust preventative coating complies with the Industrial Maintenance Coating VOC limit specified in the Table of Standards.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 07-13-2007]

TABLE OF STANDARDS VOC LIMITS

Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	Ceiling Limit*	Current Limit	Effective Date					
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Bond Breakers	350							
Clear Wood Finishes	350					275		
Varnish	350					275		
Sanding Sealers	350					275		
Lacquer	680	550			275			
Clear Brushing Lacquer	680				275			
Concrete-Curing Compounds	350						100	
Concrete-Curing Compounds For Roadways and Bridges**	350							
Dry-Fog Coatings	400						150	
Fire-Proofing Exterior Coatings	450	350						
Fire-Retardant Coatings***								
Clear	650							
Pigmented	350							
Flats	250	100						50
Floor Coatings	420		100			50		
Graphic Arts (Sign) Coatings	500							
Industrial Maintenance (IM) Coatings	420			250		100		
High Temperature IM Coatings			420					
Zinc-Rich IM Primers	420		340			100		
Japans/Faux Finishing Coatings	700	350						
Magnesite Cement Coatings	600	450						
Mastic Coatings	300							
Metallic Pigmented Coatings	500							
Multi-Color Coatings	420	250						
Nonflat Coatings	250		150			50		

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 07-13-2007]

COATING CATEGORY	Ceiling Limit*	Current Limit	Effective Date					
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Nonflat High Gloss	250		150				50	
Pigmented Lacquer	680	550			275			
Pre-Treatment Wash Primers	780		420					
Primers, Sealers, and Undercoaters	350		200			100		
Quick-Dry Enamels	400		250			150	50	
Quick-Dry Primers, Sealers, and Undercoaters	350		200			100		
Recycled Coatings			250					
Roof Coatings	300		250		50			
Roof Coatings, Aluminum	500				100			
Roof Primers, Bituminous	350		350					
Rust Preventative Coatings	420		400			100		
Shellac								
Clear	730							
Pigmented	550							
Specialty Primers	350					250	100	
Stains	350		250				100	
Stains, Interior	250							
Swimming Pool Coatings								
Repair	650		340					
Other	340							
Traffic Coatings	250	150					100	
Waterproofing Sealers	400		250			100		
Waterproofing	400					100		
Concrete/Masonry Sealers								
Wood Preservatives								
Below-Ground	350							
Other	350							

* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.

** Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.

*** The Fire-Retardant Coating category will be eliminated on January 1, 2007 and subsumed by the coating category for which they are formulated.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 07-13-2007]

TABLE OF STANDARDS (cont.) VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 02-01-2008]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		
(iii) Medical Devices & Pharmaceuticals	800 (6.7)		
(B) Repair and Maintenance Cleaning			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 02-01-2008]

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(iii) Medical Devices & Pharmaceuticals			
(A) Tools, Equipment, & Machinery	800 (6.7)		
(B) General Work Surfaces	600 (5.0)		
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)		
(D) Cleaning of Ink Application Equipment			
(i) General	25 (0.21)		
(ii) Flexographic Printing	25 (0.21)		
(iii) Gravure Printing			
(A) Publication	100 (0.83)		
(B) Packaging	25 (0.21)		
(iv) Lithographic (Offset) or Letter Press Printing			
(A) Roller Wash, Blanket Wash, & On-Press Components			
(I) Newsprint	100 (0.83)		

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 02-01-2008]

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(II) Other Substrates	500 (4.2)	100 (0.83)	
(B) Removable Press Components	25 (0.21)		
(v) Screen Printing	500 (4.2)	100 (0.83)	
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)		
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)		

* The specified limits remain in effect unless revised limits are listed in subsequent columns.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 05-01-2009]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

	CURRENT LIMITS*	EFFECTIVE 1/1/2010
SOLVENT CLEANING ACTIVITY	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application		
(i) General	25 (0.21)	
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)	
(iii) Medical Devices & Pharmaceuticals	800 (6.7)	
(B) Repair and Maintenance Cleaning		
(i) General	25 (0.21)	
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)	

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 05-01-2009]

	CURRENT LIMITS*	EFFECTIVE 1/1/2010
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(iii) Medical Devices & Pharmaceuticals		
(A) Tools, Equipment, & Machinery	800 (6.7)	
(B) General Work Surfaces	600 (5.0)	
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)	
(D) Cleaning of Ink Application Equipment		
(i) General	25 (0.21)	
(ii) Flexographic Printing	25 (0.21)	
(iii) Gravure Printing		
(A) Publication	100 (0.83)	
(B) Packaging	25 (0.21)	
(iv) Lithographic (Offset) or Letter Press Printing		
(A) Roller Wash, Blanket Wash, & On-Press Components	100 (0.83)	

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 05-01-2009]

	CURRENT LIMITS*	EFFECTIVE 1/1/2010
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(B) Removable Press Components	25 (0.21)	
(v) Screen Printing	100 (0.83)	
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)	
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)	

* The specified limits remain in effect unless revised limits are listed in subsequent columns.

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]

1. A Title V permit revision is not required for emission increases that are authorized by allowances acquired under the Acid Rain Program, provided that the increases do not trigger a Title V permit revision under any other applicable requirement. [70.6 (a)(4)(ii)]

Monitoring Requirements

2. The owners and operators and, to the extent applicable, the designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR Parts 74, 75, and 76. [40 CFR 72.50, 72.31, 72.9(b)(1)]
3. The emissions measurements recorded and reported in accordance with 40 CFR Part 75 shall be used to determine compliance by the unit with the acid rain emissions limitations and emissions reduction requirements for sulfur dioxide (SO₂) under the Acid Rain Program. [40 CFR 72.9(b)(2), 40 CFR 75.2]
4. The requirements of 40 CFR Parts 74 and 75 shall not affect the responsibility of the operator to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements and other provisions of this permit. [40 CFR 72.9(b)(3), 40 CFR 72.5]

Sulfur Dioxide Requirements

5. The owners and operators of each source and each affected unit at the source shall:
 - (A) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR Part 73, Section 73.34(C)) not less than the total annual emissions of SO₂ for the previous calendar year from the unit; and, [40 CFR 72.9(c)(i)],
 - (B) Comply with the applicable acid rain emissions limitations for SO₂. [40 CFR 72.9(c)(ii)]
6. Each ton of SO₂ emitted in excess of the acid rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 72.9(g)(7)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]

7. SO₂ allowances shall be held in, deducted from, or transferred among allowance tracking system accounts in accordance with the Acid Rain Program. [40 CFR 72.9(g)(4)]
8. A SO₂ allowance shall not be deducted in order to comply with the requirements under paragraph 41(A) of the SO₂ requirements prior to the calendar year for which the allowance was allocated. [40 CFR 72.9(g)(5)]
9. An affected unit shall be subject to the SO₂ requirements under the Acid Rain Program as follows:[40 CFR 72.6(a)]
 - (A) Starting January 1, 2000, an affected unit under 40 CFR Part 72, Section 72.6(a)(2); or [40 CFR 72.6(a)(2)]
 - (B) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR Part 75, an affected unit under 40 CFR Part 72, Section 72.6(a)(3). [40CFR 72.6(a)(3)]
10. An allowance allocated by the EPA administrator under the Acid Rain Program is a limited authorization to emit SO₂ in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the acid rain permit application, the acid rain permit, or the written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14, and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72.9 (c)(6)]
11. An allowance allocated by the EPA Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72.9(c)(7)]

Excess Emissions Requirements

12. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77. [40 CFR 72.9(e)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]

13. The owners and operators of an affected unit that has excess emissions in any calendar year shall: [40 CFR 72.9(e)(2)]
- (A) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR Part 77; and [40 CFR 72.9(e)(2)(i)]
- (B) Comply with the terms of an approved offset plan, as required by 40 CFR Part 77. [40 CFR 72.9(e)(2)(ii)]

Recordkeeping and Reporting Requirements

14. Unless otherwise provided, the owners and operators of the source and each affected unit at the source that are subject to the acid rain provisions under Title IV shall keep on site at the source each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the EPA Administrator or the Executive Officer: [40 CFR 72.9(f)(1)]
- (A) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such five year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative; [40 CFR 72.9(f)(1)(i)]
- (B) All emissions monitoring information, in accordance with 40 CFR Part 75; [40 CFR 72.9(f)(1)(ii)]
- (C) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and, [40 CFR 72.9(f)(1)(iii)]
- (D) Copies of all documents used to complete an acid rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program. [40 CFR 72.9(f)(1)(iv)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]

15. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR Part 72 Subpart I and 40 CFR Part 75. [40 CFR 72.9(f)(2)]

Liability

16. Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete acid rain permit application, an acid rain permit, or a written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to Section 113(c) of the Act. [40 CFR 72.9 (g)(1)]
17. Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to Section 113(c) of the Act and 18 U.S.C. 1001. [40 CFR 72.9 (g)(2)]
18. No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect. [40 CFR 72.9 (g)(3)]
19. Each affected source and each affected unit shall meet the requirements of the Acid Rain Program. [40 CFR 72.9 (g)(4)]
20. Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source. [40 CFR 72.9 (g)(5)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]

21. Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR Part 72, Section 72.44 (Phase II repowering extension plans) and 40 CFR Part 76, Section 76.11 (NO_x averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR Part 75 (including 40 CFR Part 75, Sections 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative. [40 CFR 72.9 (g)(6)]
22. Each violation of a provision of 40 CFR Parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act. [40 CFR 72.9 (g)(7)]

Effect on Other Authorities

23. No provision of the Acid Rain Program, an acid rain permit application, an acid rain permit, or a written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14 shall be construed as: [40 CFR 72.9 (h)]
 - (A) Except as expressly provided in Title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of Title I of the Act relating to applicable National Ambient Air Quality Standards or state implementation plans; [40 CFR 72.9 (h)(1)]
 - (B) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act; [40 CFR 72.9 (h)(2)]

FACILITY PERMIT TO OPERATE PALEN SOLAR ELECTRIC GENERATING STATION

APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]

(C) Requiring a change of any kind in any state law regulating electric utility rates and charges, affecting any state law regarding such state regulation, or limiting such state regulation, including any prudence review requirements under such state law; [40 CFR 72.9 (h)(3)]

(D) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or, [40 CFR 72.9 (h)(4)]

(E) Interfering with or impairing any program for competitive bidding for power supply in a state in which such program is established. [40 CFR 72.9 (h)(5)]