

DOCKETED

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Project Title:	El Segundo Power Redevelopment Project Compliance
TN #:	203415
Document Title:	South Coast Air Quality Management District Title V Administrative Permit Revision
Description:	N/A
Filer:	Dee Hutchinson
Organization:	Locke Lord LLP
Submitter Role:	Applicant Representative
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South Coast Air Quality Management District

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

November 25, 2014

Mr. George Piantka
Director of Environmental Business
NRG West
5790 Fleet Street, Suite 200
Carlsbad, CA 92008

SUBJECT: El Segundo Power, LLC (SCAQMD ID No. 115663) – Title V Administrative Permit Revision

Dear Mr. Pinatka:

Please find attached the revised Title Page, Table of Contents, Section D and Section H of your Title V Facility Permit. The revised sections reflect the approval of the administrative permit revision for issuing Permits to Operate for the following equipment that were previously issued Permits to Construct, and the inclusion of such equipment in Section D of your Facility Permit:

A/N	Action	P/O No.	Equipment Description
470652	P/O	G33559	Gas Turbine No. 5
470656	P/O	G33558	Gas Turbine No. 7
470653	P/O	G33557	SCR/CO Catalyst No. 5
470654	P/O	G33556	SCR/CO Catalyst No. 7

Please review the attached sections carefully. Insert the enclosed sections into your Title V Facility Permit and discard the earlier versions. Questions concerning changes to your permit should be directed to Mr. Kenneth L. Laird at (909) 396-2527.

Sincerely,

Andrew Lee, P.E.
Senior AQ Engineering Manager
Energy/Public Services/Waste Management/Terminals
Engineering and Compliance

Attachment

cc: Ed Pupka, SCAQMD Compliance
Wenjun Qian, California Energy Commission



FACILITY PERMIT TO OPERATE

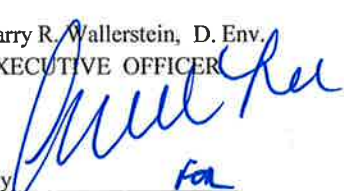
**EL SEGUNDO POWER, LLC
301 VISTA DEL MAR
EL SEGUNDO, CA 90245**

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
EL SEGUNDO POWER, LLC**

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**FACILITY PERMIT TO OPERATE
EL SEGUNDO POWER, LLC**

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 1: INTERNAL COMBUSTION					
System 2: GAS TURBINE POWER GENERATION					

* (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
EL SEGUNDO POWER, LLC**

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 1: INTERNAL COMBUSTION					
GENERATOR, 219 MW					
CO OXIDATION CATALYST, UNIT NO. 5, BASF, 290 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 470653	C75	D67 C76			
SELECTIVE CATALYTIC REDUCTION, UNIT NO. 5, CORMETECH, MODEL CM21HT, WITH 2,050 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 25 FT ; HEIGHT: 70 FT ; LENGTH: 24 FT 3 IN WITH A/N:	C76	C75 S78		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.11, D12.11, D12.12, D12.13, E179.5, E179.6, E193.2
AMMONIA INJECTION, GRID					
STACK, NO. 5, HEIGHT: 210 FT ; DIAMETER: 20 FT 11 IN A/N: 470652	S78	C76			

* (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
EL SEGUNDO POWER, LLC**

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 1: INTERNAL COMBUSTION					
GENERATOR, 219 MW					
CO OXIDATION CATALYST, UNIT NO. 7, BASF, 290 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 470654	C79	D68 C80			
SELECTIVE CATALYTIC REDUCTION, UNIT NO. 7, CORMETECH, MODEL CM21HT, WITH 2,050 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 25 FT ; HEIGHT: 70 FT ; LENGTH: 24 FT 3 IN WITH A/N: AMMONIA INJECTION, GRID	C80	C79 S82		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.11, D12.11, D12.12, D12.13, E179.5, E179.6, E193.2
STACK, NO. 7, HEIGHT: 210 FT ; DIAMETER: 20 FT 11 IN A/N: 470656	S82	C80			
Process 2: EXTERNAL COMBUSTION					
System 2: BOILER, POWER GENERATION					

- * (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 EL SEGUNDO POWER, LLC

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 2: EXTERNAL COMBUSTION					
BOILER, UNIT NO. 4, NATURAL GAS, COMBUSTION ENGINEERING, WITH 24 COMBUSTION ENGINEERING BURNERS, 3350 MMBTU/HR WITH A/N: 528832 STEAM TURBINE, STEAM GENERATOR, 335 MW	D13	C31	NOX: MAJOR SOURCE**	CO: 300 PPMV NATURAL GAS (5) [RULE 1303(b)(2) -Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]; CO: 2000 PPMV (5A) [RULE 407, 4-2-1982]; NOX: 7 PPMV (5B) [RULE 2009, 5-11-2001]; PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.7, D28.2
SELECTIVE CATALYTIC REDUCTION, NORTH AND SOUTH DUCTS, VANADIUM/TITANIUM CATALYST BED, WITH 4058 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 28 FT 6 IN; HEIGHT: 17 FT ; LENGTH: 68 FT WITH A/N: 464316 AMMONIA INJECTION, GRID, WITH 300 NOZZLES	C31 C32	D13		NH3: 20 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.4, D12.2, D12.3, D28.1, E73.2, E179.1, K48.2, K67.3
Process 5: INORGANIC CHEMICAL STORAGE					

* (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
EL SEGUNDO POWER, LLC**

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 5: INORGANIC CHEMICAL STORAGE					
STORAGE TANK, UNDERGROUND, TK-001, AQUEOUS AMMONIA, CARBON STEEL, DOUBLE WALLED, WITH 3 TRANSFER PUMPS AND A PRV SET AT 50 PSIG, 20000 GALS; DIAMETER: 10 FT 2 IN; LENGTH: 37 FT 10 IN A/N: 379904	D30				C157.1, E144.1
Process 6: R219 EXEMPT EQUIPMENT SUBJECT TO SOURCE-SPECIFIC RULE					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E38			ROG: (9) [RULE 1113, 9-6-2013; RULE 1171, 2-1-2008; RULE 1171, 5-1-2009]	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
EL SEGUNDO POWER, LLC**

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
EL SEGUNDO POWER, LLC**

SECTION D: DEVICE ID INDEX

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D30	7	5	0
C31	6	2	2
C32	6	2	2
E38	7	6	0
D67	3	1	2
D68	5	1	2
C75	3	1	2
C76	3	1	2
S78	3	1	2
C79	5	1	2
C80	5	1	2
S82	5	1	2



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F2.1 The operator shall limit emissions from this facility as follows:

CONTAMINANT	EMISSIONS LIMIT
PM	Less than 100 TONS IN ANY ONE YEAR

For the purpose of this condition, the PM emission limit shall be applicable to particulate matter with an aerodynamic diameter less than 2.5 microns.

For the purpose of this condition any one year shall be defined as a period of twelve (12) consecutive months determined on a rolling basis with a new twelve month period beginning on the first day of each calendar month. The operator shall calculate the emissions using the calendar monthly fuel use data and the following emission factors: PM2.5: 4.66 lb/mmcf for Gas Turbines No. 5 and No. 7 and 5.15 lb/mmcf for Boiler No. 4.

[RULE 1325, 6-3-2011; 40CFR 51 Subpart S, 3-8-2007]

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]



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

F18.1 Acid Rain SO2 Allowance Allocation for affected units are as follows:

Device ID	Boiler ID	Contaminant	Tons in any year
13	Boiler No. 4	SO2	363

a). The allowance allocation(s) shall apply to calendar years 2010 and beyond.

b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO2 allowance allocations identified in this permit (see 40 CFR 72.84)

[40CFR 73 Subpart B, 1-11-1993]

F21.1 Acid Rain SO2 Allowance Allocation for retired units are as follows:

Boiler ID	Contaminant	Tons in year
Boiler No. 1	SO2	357
Boiler No. 2	SO2	62
Boiler No. 3	SO2	171



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- a). The allowance allocation(s) shall apply to calendar years 2010 and beyond.
- b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO₂ allowance allocations identified in this permit (see 40 CFR 72.84).
- c). A unit exempted under 40CFR72.8 shall not emit any sulfur dioxide starting on the date it is exempted.
- d). The owners and operators of a unit exempted under 40CFR72.8 shall comply with monitoring requirements in accordance with part 75 and will be allocated allowances in accordance with 40CFR73.
- e). A unit exempted under 40CFR73 shall not resume operation unless the designated representative of the source that includes the unit submits an Acid Rain permit application for the unit not less than 24 months prior to the later of January 1, 2000, or the date the unit is to resume operation. On the earlier of the date the written exemption expires or the date an Acid Rain permit application is submitted or is required to be submitted under this paragraph, the unit shall no longer be exempted and shall be subject to all requirements of 40CFR72.

[40CFR 73 Subpart B, 1-11-1993]



**FACILITY PERMIT TO OPERATE
EL SEGUNDO POWER, LLC**

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

F24.1 Accidental release prevention requirements of Section 112(r)(7):

- a). The operator shall comply with the accidental release prevention requirements pursuant to 40 CFR Part 68 and shall submit to the Executive Officer, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and submission of a risk management plan (RMP).
- b). The operator shall submit any additional relevant information requested by the Executive Officer or designated agency.

[40CFR 68 - Accidental Release Prevention, 5-24-1996]

DEVICE CONDITIONS

A. Emission Limits

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

CONTAMINANT	EMISSIONS LIMIT
PM10	Less than or equal to 6935 LBS IN ANY ONE MONTH
SOX	Less than or equal to 1065 LBS IN ANY ONE MONTH
VOC	Less than or equal to 4930 LBS IN ANY ONE MONTH



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The operator shall calculate the monthly emissions for VOC, PM10, and SO_x, using the equation below and the following emission factors: VOC 2.93 lb/mmcf; PM10 4.66 lb/mmcf; and SO_x 0.71lb/mmcf

Monthly Emissions, lb/month = X * (EF)

where X = monthly fuel usage, mmcf/month; and EF = emission factor indicated above

[**RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002**]

[Devices subject to this condition : D67, D68]

- A99.7 The 2.0 PPM NO_x emission limit(s) shall not apply during start-up and shutdown periods. Start-up periods shall not exceed 60 minutes for each start-up. Shutdown periods shall not exceed 60 minutes for each shutdown. The turbine shall be limited to a maximum of 200 start-ups per year. Written records of start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, the beginning of start-up occurs at initial fire in the combustor and the end of start-up occurs when the BACT levels are achieved. If during start-up the process is aborted and the turbine is restarted, then the start-up and restart will count as one start-up, provided the total time for the start-up does not exceed 60 minutes. The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[**RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005**]

[Devices subject to this condition : D67, D68]



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- A99.8 The 2.0 PPM CO emission limit(s) shall not apply during start-up and shutdown periods. Start-up periods shall not exceed 60 minutes for each start-up. Shutdown periods shall not exceed 60 minutes for each shutdown. The turbine shall be limited to a maximum of 200 start-ups per year. Written records of start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, the beginning of start-up occurs at initial fire in the combustor and the end of start-up occurs when the BACT levels are achieved. If during start-up the process is aborted and the turbine is restarted, then the start-up and restart will count as one start-up, provided the total time for the start-up does not exceed 60 minutes. The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]

[Devices subject to this condition : D67, D68]

- A99.9 The 2.0 PPM VOC emission limit(s) shall not apply during start-up and shutdown periods. Start-up periods shall not exceed 60 minutes for each start-up. Shutdown periods shall not exceed 60 minutes for each shutdown. The turbine shall be limited to a maximum of 200 start-ups per year. Written records of start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, the beginning of start-up occurs at initial fire in the combustor and the end of start-up occurs when the BACT levels are achieved. If during start-up the process is aborted and the turbine is restarted, then the start-up and restart will count as one start-up, provided the total time for the start-up does not exceed 60 minutes. The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D67, D68]



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A195.4 The 20 PPMV NH₃ emission limit(s) is averaged over 60 minutes at 3 percent oxygen, dry. This limit shall be determined and measured in the combined exhaust from the North and South ducts.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C31]

A195.7 The 7 PPMV NO_x emission limit(s) is averaged over 720 operating hours and is a heat input weighted average with consecutive, non-overlapping averaging periods, as detailed below.



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A data acquisition system shall be installed and maintained to continuously record the raw data necessary to calculate the heat input weighted average NO_x concentration (ppmv) and to calculate and record the heat input weighted average NO_x concentration for each averaging period.

The average shall be calculated based on emissions during all boiler operating hours, except start-ups, shutdowns, CEMS calibration and maintenance periods, Part 75 linearity testing, RATA testing, equipment breakdown periods as defined in Rule 2004, and periods of zero fuel flow

Start-ups are defined as whenever the unit is being brought up to normal operating temperature from an inactive status, and the exhaust temperature entering the SCR catalyst is less than 500 degrees F.

Shutdowns are defined as whenever the unit is allowed to cool from a normal operating temperature to inactive status and the exhaust temperature entering the SCR catalyst is less than 500 degrees F.

The heat input weighted NO_x concentration shall be calculated using the following equation, or other equivalent equation:

$PPMV(3\%O_2) = (Et/Qt) * K$; where $PPMV(3\%O_2)$ = the concentration of NO_x in PPMV corrected to 3% O₂; K=a conversion factor from lbs/MMBTU to ppm, which can be determined using EPA 40CFR60 Method 19 (the default value of K is 819); Et = total reported NO_x emissions during the averaging period including emissions reported as a result of missing data procedures pursuant to Rule 2012; and Qt = total heat input during the averaging period

[RULE 2009, 5-11-2001]

[Devices subject to this condition : D13]

A195.8 The 2.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis.



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]

[Devices subject to this condition : D67, D68]

A195.9 The 2.0 PPMV NOX emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(1)-Modeling, 5-10-1996; RULE 1303(b)(1)-Modeling, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988]

[Devices subject to this condition : D67, D68]

A195.10 The 2.0 PPMV VOC emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(1)-Modeling, 5-10-1996; RULE 1303(b)(1)-Modeling, 12-6-2002]

[Devices subject to this condition : D67, D68]

A195.11 The 5 PPMV NH₃ emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis. The operator shall calculate and continuously record the NH₃ slip concentration using the following:.



FACILITY PERMIT TO OPERATE EL SEGUNDO POWER, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

NH_3 (ppmv) = $[a-b*c/1EE+06]*1EE+06/b$; where

a = NH_3 injection rate (lb/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 15 percent O_2)

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; RULE 2012, 5-6-2005**]

[Devices subject to this condition : C76, C80]

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 : D67, D68]



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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A433.1 The operator shall comply at all times with the 2.0 ppm 1-hour BACT limit for NOx, except as defined in condition A99.7 and for the following scenario:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
Start-up	112 lb/hr	NOx emissions not to exceed 112 lbs total per start-up per turbine. Each turbine shall be limited to 200 start-ups per year, with each start-up not to exceed 60 minutes

For the purposes of this condition, the beginning of start-up occurs at initial fire in the combustor and the end of start-up occurs when the BACT levels are achieved. If during start-up the process is aborted and the turbine is restarted, then the start-up and restart will count as one start-up, provided the total time for the start-up does not exceed 60 minutes. The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005]

[Devices subject to this condition : D67, D68]

B. Material/Fuel Type Limits

B61.2 The operator shall not use natural gas containing the following specified compounds:

Compound	Range	grain per 100 scf
H2S	greater than	0.25



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The operator shall comply with the terms and conditions set forth below:

This concentration limit is an annual average based on monthly samples of natural gas composition or gas supplier documentation. The gaseous fuel sample 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]

[Devices subject to this condition : D67, D68]

C. Throughput or Operating Parameter Limits

C157.1 The operator shall install and maintain a pressure relief valve with a minimum pressure set at 50 psig.

[RULE 402, 5-7-1976]

[Devices subject to this condition : D30]

D. Monitoring/Testing Requirements

D12.2 The operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature at the inlet to the SCR reactor.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C31]

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 (NH₃).



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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.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C31]

D12.10 The operator shall install and maintain a(n) flow meter to accurately indicate the fuel usage of the turbine.

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

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 2012, 5-6-2005]

[Devices subject to this condition : D67, D68]

D12.11 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 12 months.

The ammonia injection rate shall remain between 1 gallon per hour and 75 gallons per hour



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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 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005]

[Devices subject to this condition : C76, C80]

D12.12 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the 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 12 months.

The temperature shall remain between 400 degrees F and 750 degrees F

The catalyst temperature shall not exceed 750 degrees F during the start-up period.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005]

[Devices subject to this condition : C76, C80]

D12.13 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.



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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.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The pressure drop across the catalyst shall remain between 1 inch of water column and 4 inches of water column

The pressure drop across the catalyst shall not exceed 4 inches of water during the start-up period.

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005**]

[Devices subject to this condition : C76, C80]

D28.1 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted at least annually.

The test shall be conducted to determine the NH₃ emissions at the outlet.

The test shall be conducted to determine the NH₃ emissions using District method 207.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002**]

[Devices subject to this condition : C31]



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The operator shall comply with the terms and conditions set forth below:

D28.2 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted at least annually.

The test shall be conducted to determine the CO emissions at the outlet.

The test shall be conducted to demonstrate compliance with Rule 1303 concentration limit.

The test shall be conducted when the equipment is operating under normal conditions. No test shall be required in any one year for which the equipment is not in operation.

The test shall be conducted to determine compliance with the CO emissions by either: (a) conducting a source test using District method 100.1 measured over a 30 minute averaging time, or (b) using a portable analyzer and a District-approved test method.

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D13]

D29.8 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	1 hour	Outlet of the SCR serving this equipment



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The operator shall comply with the terms and conditions set forth below:

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

The test shall be conducted annually. 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 determine compliance with the Rule 1303 BACT concentration limit.

If the equipment is not operated in any given quarter, the operator may elect to defer the required testing to a quarter in which the equipment is operated.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D67, D68]

D29.9 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
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM10 emissions	District Method 5	4 hours	Outlet of the SCR serving this equipment
PM2.5	EPA Method 201A and 202	District-approved averaging time	Outlet of the SCR serving this equipment



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The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least once every three years for SO_x, PM_{2.5}, and PM₁₀, and yearly for VOC.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output in megawatts (MW).

The test shall be conducted in accordance with AQMD approved test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine 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 when this equipment is operating at 100 percent load.

The test shall be conducted for compliance verification of the BACT VOC 2.0 ppmv limit.

For natural gas fired turbines only, VOC compliance shall be demonstrated as follows: a) Stack gas samples are extracted into Summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of canisters is done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) Analysis of canisters are per EPA method TO-12 (with preconcentration) and temperature of canisters when extracting samples for analysis is not below 70 deg F

The use of this alternative method for VOC compliance determination does not mean that it is more accurate than AQMD method 25.3, nor does it mean that it may be used in lieu of AQMD method 25.3 without prior approval except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines. The test results shall be reported with two significant digits.



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The operator shall comply with the terms and conditions set forth below:

For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence of AQMD and EPA

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988]

[Devices subject to this condition : D67, D68]

D82.4 The operator shall install and maintain a CEMS to measure the following parameters:



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The operator shall comply with the terms and conditions set forth below:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

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

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

CO Emission Rate, (lb/hr) = $K C_{co} F_d [20.9 / (20.9 - \%O_2)] [(Q_g * HHV) / 1000000]$,
where

$K = 7.267 \text{ EE-}8 \text{ (lb/scf)/ppm}$

C_{co} = Average of four consecutive 15 min avg CO concentrations, ppm

$F_d = 8710 \text{ dscf/MMBTU natural gas}$

$\%O_2$ = Hourly avg % by volume O₂, dry basis, 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 : D67, D68]

D82.5 The operator shall install and maintain a CEMS to measure the following parameters:



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The operator shall comply with the terms and conditions set forth below:

NOX concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS shall be installed and shall comply with the requirements of Rule 2012.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005; RULE 2012, 5-6-2005]

[Devices subject to this condition : D67, D68]

E. Equipment Operation/Construction Requirements

E73.2 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

the inlet exhaust temperature to the SCR reactor is 500 Deg F or less

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C31]

E144.1 The operator shall vent this equipment, during filling, only to the vessel from which it is being filled.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 402, 5-7-1976]

[Devices subject to this condition : D30]



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The operator shall comply with the terms and conditions set forth below:

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 12-3

[**RULE 2012, 5-6-2005**]

[Devices subject to this condition : C31]

E179.5 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 12-11

Condition Number D 12-12

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988**]

[Devices subject to this condition : C76, C80]

E179.6 For the purpose of the following condition number(s), 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 D 12-13

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703(a)(2) - PSD-BACT, 10-7-1988**]



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The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C76, C80]

E193.2 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all air quality mitigation measures stipulated in the final California Energy Commission decision for the 00-AFC-14C project

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D67, D68, C76, C80]

K. Record Keeping/Reporting

K40.4 The operator shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv) corrected to 15 percent oxygen (dry basis), mass rate (lbs/hr), and lbs/MM Cubic Feet. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include the oxygen levels in the exhaust, fuel flow rate (CFH), the flue gas temperature, and the generator power output (MW) under which the test was conducted.



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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 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1703 - PSD Analysis, 10-7-1988; RULE 2005, 6-3-2011]

[Devices subject to this condition : D67, D68]

K48.2 The operator shall maintain records in a manner approved by the District, to demonstrate compliance with the following condition number(s):

Condition no. 12-2

Condition no. 12-3

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C31]

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

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

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.



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The operator shall comply with the terms and conditions set forth below:

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E38]

K67.3 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

the total hourly amount of injected ammonia

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C31]

K67.5 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

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D67, D68]



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EL SEGUNDO POWER, LLC**

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

NONE



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