South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

August 29, 2008

Bill Pfanner, Project Manager
California Energy Commission
1516 9th Street
Sacramento, CA 95814-5512

Subject: Final Determination of Compliance (FDOC) for CPV Sentinel (CPV) Proposed 850 Megawatt Power Plant Project (Facility ID No. 152707), to be located at 62575 Power Line Rd, Desert Hot Springs, CA 92440; (07-AFC-3)

Dear Mr. Pfanner:

This is in reference to CPV Sentinel, LLC (CPV) 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 (AQMD), respectively. As you know, CPV has proposed to construct an 850 megawatt (MW) power plant, located at 62575 Power Line Rd., Desert Hot Springs, CA 92440.

On May 7, 2008 the AQMD issued the Preliminary Determination of Compliance (PDOC) to the CPV project. At this time AQMD has conducted further analysis of the project and considered all comments received during the comment period. Based on our evaluation, AQMD is issuing a Final Determination of Compliance (FDOC) indicating CPV complies with all applicable air quality Rules and Regulations and other AQMD requirements, except for emissions offsets requirements of AQMD Rule 1303(b)(2). Prior to issuance of the final Permits to Construct, CPV will have to provide the appropriate and adequate emissions offsets. The purpose of this letter is to transmit our evaluation and the FDOC to CEC and to list the revisions which will be made to the to the PDOC issued on May 7, 2008, based on our further analysis and comments the AQMD has received from both USEPA and CPV.

In addition, please note that Attachment A is a summary of the additional minor revisions, based on comments received, which are accordingly reflected in the FDOC conditions.

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. Michael D. Mills, Senior Manager at (909) 396-2578 mmills@aqmd.gov.

Sincerely,

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

MN:rdo
cc: Mark Turner, CPV Sentinel, LLC
Mike Carroll, Latham & Watkins, LLP
Barry Wallerstein, AQMD (w/o enclosures)
Kurt Wiese, AQMD (w/o enclosures)
Barbara Baird, AQMD (w/o enclosures)
Mike Mills, AQMD (w/o enclosures)

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

ATTACMENT A

COMMENTS/RESPONSE TO THE PRELIMNARY DETERMINATION OF COMPLIANCE (PDOC) ISSUED ON MAY 7, 2008

Comment No. 1 from EPA
EPA wanted additional conditions to be added for the oxidization catalyst to address VOC CAM requirements.

AQMD Response:
AQMD revised the Uncontrolled R1 VOC emissions from each Turbine. The resulting R1 VOC emissions are less than 10 tons per year per each turbine (see appendix K of the evaluation). Thus VOC CAM conditions does not apply.

Comment No. 2 from EPA
EPA has indicated there are NESHAPS for area sources (applies to equipment emitting less than major source emissions thresholds). EPA list new NESHAPS (40 CFR 63 subpart ZZZZ) for spark-ignited combustion engines for area sources.

AQMD Response:
The applicant proposes to install two compression ignition engines at this Facility, thus the new area sources NESHAPS does not apply. EPA does propose future NESHAPS for compression ignition engines, but the proposed rule language is not available at this time and will be have to be evaluated at a later date.

Comment No. 3 from EPA
EPA wants to be sure there are sure the start-up and shut down requirements are consistent with established BACT levels for start-up and shut down.

AQMD Response:
During start-up operations for the turbines (see pages 23 and 24 for more information and see e-mail dated 6/13/08 from URS for the start-up emissions profile) , the control system will not be on line because the catalyst have a minimum inlet temp in order to reduce the pollutants the required BACT concentration limits. The turbine is equipped with water injection (limited NOx controls) and the NOx emissions during start-up are reduced to 25 ppmv. Condition A433.1 limits the NOx emissions during the first hour of operation (includes start-up emissions with water injection in operation) and limits the number of start-ups per year and length of each start-up. During start-up it is not practical to require a NOx ppmv limit, but to limit the emissions during the start-up hour as done in condition A433.1, thus BACT needs to be defined during start-up to include the following

- Limit start-up time-condition, A99.1, A99.2, A99.3, A99.4, A99.9, A99.10, A433.1 and A433.2
- Limit start-ups per year- conditions, A99.1, A99.2, A99.3, A99.4, A99.9, A99.10, A433.1 and A433.2
- Limit NOx emissions per start-up hours, requires water injection to be used to comply-condition A433.1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 72	PAGE 1
ENGINEERING AND COMPLIANCE DIVISION	APPLICATION NO. Master File	DATE 08-29-2008
ENGINEERING ANALYSIS / EVALUATION	PROCESSED BY: Roy Olivares	REVIEWED BY:

CPV SENTINEL, LLC; FINAL DETERMINATION OF COMPLIANCE (FDOC)[1] ENGINEERING ANALYSIS FOR A NEW 850 MW SIMPLE CYCLE POWER PLANT

COMPANY NAME AND ADDRESS

CPV Sentinel , LLC
55 Second Street
Suite 525
San Francisco, CA 94105
Contact: Mr. Mark Turner
AQMD Facility ID: 152707

EQUIPMENT LOCATION

62575 Power Line Rd.
Desert Hot Springs, CA 92440

EQUIPMENT DESCRIPTION

Section H of the Facility Permit

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES, POWER GENERATION					
GAS TURBINE, CTG 1, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472139 GENERATOR, 103 MW	D1	C3	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475] ~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX**: .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2**: (9) Acid Rain Provisions	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1, C1.1,C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2~~, E193.3, H23.1, I296.1, K40.1, K67.1

[1] Additions to the date PDOC are denoted underlined language, deletions to the PDOC are denoted by the strike through.

EQUIPMENT DESCRIPTION (continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES POWER GENERATION					
CO OXIDATION CATALYST NO. 1, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472140	C3	D1 C4			
SELECTIVE CATALYTIC REDUCTION NO. 1, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN; WITH NH3 INJECTION GRID A/N: 472140	C4	S6 C3		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 1, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472140	S6	C4			
GAS TURBINE, CTG 2, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472141 GENERATOR, 103 MW	D7	C9	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10**: 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10**: 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10**: 11 LB/HR (5B) [Rule 475] ~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX**: .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2**: (9) Acid Rain Provisions	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1, C1.1,C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2~~, E193.3, H23.1, I296.1, K40.1, K67.1

EQUIPMENT DESCRIPTION (continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES POWER GENERATION					
CO OXIDATION CATALYST NO. 2, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472142	C9	D7 C10			
SELECTIVE CATALYTIC REDUCTION NO. 2, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN;; WITH NH3 INJECTION GRID A/N: 472142	C10	S12 C9		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1; E193.3
STACK NO. 2, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472142	S12	C10			
GAS TURBINE, CTG. 3, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472143 GENERATOR, 103 MW	D13	C14	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475] ~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX:** .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2:** (9) Acid Rain Provisions	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1, C1.1,C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2~~, E193.3, H23.1, I296.1, K40.1, K67.1

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES POWER GENERATION					
CO OXIDATION CATALYST NO. 3, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472145	C15	D13 C16			
SELECTIVE CATALYTIC REDUCTION NO. 3, C CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN; WITH NH3 INJECTION GRID A/N: 472145	C16	S18 C15		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 3, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472145	S18	C16			
GAS TURBINE, CTG 4, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION, WITH A/N 472147 GENERATOR, 103 MW	D19	C21	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475] ~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX:** .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2:** (9) Acid Rain Provisions	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1, C1.1,C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2,~~ E193.3, H23.1, I296.1, K40.1, K67.1

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES POWER GENERATION					
CO OXIDATION CATALYST NO. 4, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472149	C21	D19 C22			
SELECTIVE CATALYTIC REDUCTION NO. 4, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN; WITH NH3 INJECTION GRID A/N: 472149	C22	S24 C21		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 4, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472149	S24	C22			
GAS TURBINE, CTG. 5, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472150 GENERATOR, 103 MW	D25	C27	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475]~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX:** .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2:** (9) Acid Rain Provisions	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1,C1.1,C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2,~~ E193.3, H23.1, I296.1, K40.1, K67.1

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES, POWER GENERATION					
CO OXIDATION CATALYST NO. 5, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472153	C27	D25 C28			
SELECTIVE CATALYTIC REDUCTION NO. 5, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN; WITH NH3 INJECTION GRID A/N: 472153	C28	S30 C27		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 5, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472153	S30	C28			
GAS TURBINE, CTG. 6, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472154 GENERATOR, 103 MW	D31	C33	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475] ~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX:** .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2:** (9) Acid Rain Provisions	A63.2, A99.2, A99.4, A99.5, A99.7, A99.10 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1, C1.7,C1.2, C1.3, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2,~~ E193.3, H23.1, I296.2, K40.1, K67.1

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES, POWER GENERATION					
CO OXIDATION CATALYST NO. 6, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472155	C33	D31 C21			
SELECTIVE CATALYTIC REDUCTION NO. 6, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN;; WITH NH3 INJECTION GRID A/N: 472155	C34	S36 C33		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 6, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472155	S36	C34			
GAS TURBINE, CTG. 7, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472156 GENERATOR, 103 MW	D37	C39	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475] ~~**PM10: .06 lb/MW-hr [Rule 1309.1]**~~ **SOX:** .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2:** (9) Acid Rain Provisions	A63.2, A99.2, A99.4, A99.5, A99.7, A99.10 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1,C1.7,C1.2, C1.3, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2~~, E193.3, H23.1, I296.2, K40.1, K67.1

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES, POWER GENERATION					
CO OXIDATION CATALYST NO. 7, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472157	C39	D37 C40			
SELECTIVE CATALYTIC REDUCTION NO. 7, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT 4 FT 2 IN WITH NH3 INJECTION GRID A/N: 472157	C40	S42 C39		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 7, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472157	S42	C40			
GAS TURBINE, CTG. 8, NATURAL GAS, GENERAL ELECTRIC MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F WITH WATER INJECTION, WITH A/N 472158 GENERATOR, 103 MW	D43	C45	NOX: MAJOR SOURCE	**CO:** 6.0 PPMV NATURAL GAS (4) [Rule 1703 (a)(2)-BACT]; **CO:** 2000 PPMV (5) [Rule 407] **NOX:** 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK];**NOX:** 19 LB/MMCF (1) [Rule 2012] **NOX** 2.209 LB/MMCF NATURAL GAS (1)[Rule 2012] **NOX** 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT, Rule 1703 (a)(2)-BACT]~~**NOX: 0.08 lb/MW-hr (1) [Rule 1309.1]**~~ **VOC:** 2.0 PPMV (4)[Rule 1303(a)(1)-BACT] **PM10:** 0.01 GRAIN/DSCF (5A) [Rule 475]; **PM10:** 0.1 GRAIN/DSCF (5) [Rule 409]; **PM10:** 11 LB/HR (5B) [Rule 475] ~~**PM10: 06 lb/MW-hr [Rule 1309.1]**~~ **SOX:** .06 lb/MMBTU (8) [40 CFR60 Subpart KKKK]; **SO2:** (9) Acid Rain Provisions	A63.2, A99.2, A99.4, A99.5, A99.7, A99.10 A195.1, A195.2, A195.3, A327.1, A443.1, B61.1,C1.7,C1.2, C1.3, D12.1, D29.1, D29.2, D29.3, ~~D29.4~~, D82.1, D82.2, E193.1, ~~E193.2,~~ E193.3, H23.1, I296.2, K40.1, K67.1

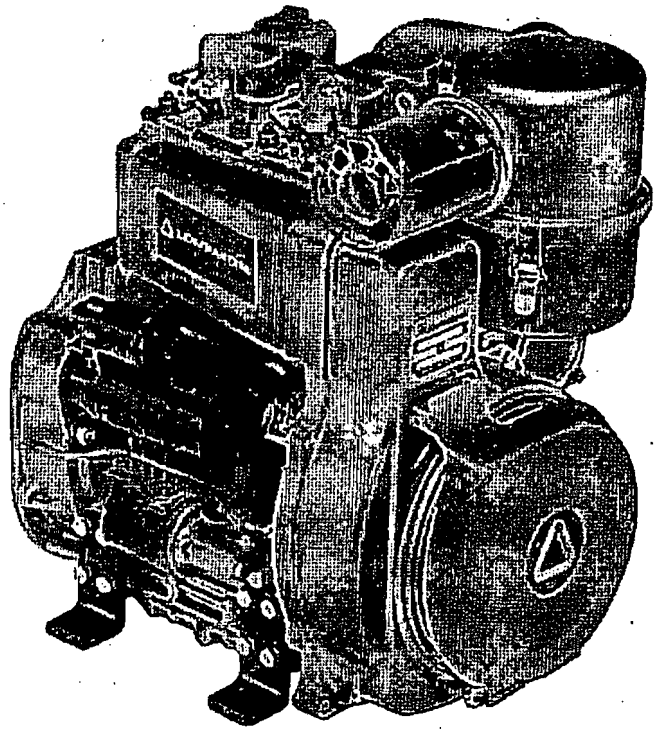
LOMBARDINI

SERIE 9LD

DIESEL

9LD 626/2

- 2 cylinders
- 1248 cm³
- 21 kW/28.5 HP
- 3000 r.p.m.
- Nm. 75@2000



Homologation

- EPA TIER 1
- 97/68/CE
- ECE R 24-03

Construction

- 4-stroke air cooled diesel engine
- Direct injection
- Air cooled by fan integral to the flywheel
- Mechanical fuel lift pump
- Forced lubrication with gear pump
- Full flow oil filtration with external cartridge filter
- Automatic extra fuel starting device
- Torque regulator
- Centrifugal speed governor
- Crankcase in die-cast aluminium
- Electric starting
- Counter-clockwise rotation (viewed from power take-off side)
- Aluminium alloy independent heads
- Re-borable independent cast-iron cylinders
- Power take-off on crankcase

Applications

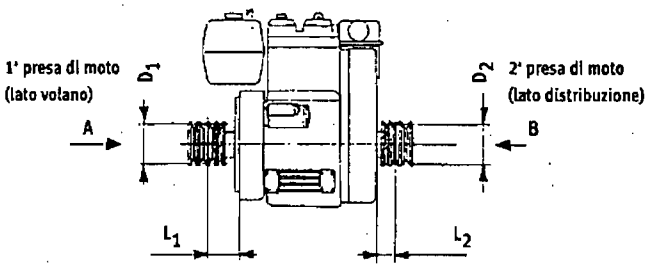
- Dumper
- Vibrating Roller
- Generating Set
- Welding Set
- High pressure cleaner
- Hydraulic power pack
- Agricultural pump
- Two-wheel tractor

SERIE 9LD

Specifications

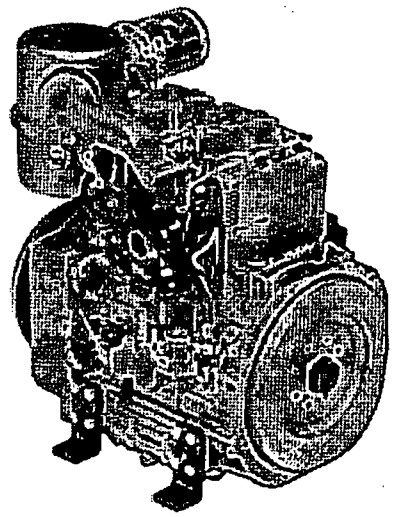
Cylinders	N.	2
Displacement	cm³	1248
Bore	mm	95
Stroke	mm	88
Compression ratio		17.5:1
Rating kW/HP	N (80/1269/CEE) ISO 1585	21.0/28.5
	NB ISO 3046 IFN	19.2/26.0
	NA ISO 3046 ICXN	17.7/24.0
Max. torque	Nm.	75@2000
Max. torque 3 P.T.O.	Nm.	30.0
Counterclockwise rotation		
Engine speed - 3 P.T.O. ratio		1:1
Minimum idling speed r.p.m.		1000÷1100
Fuel tank capacity	l	10
Oil consumption	kg/h.	0.013
Oil sump capacity	l	2.8
Min. allowable oil pressure	bar	1.5÷2.0
Max. allowable inclination for short periods of operation (peak values)		25° (35°)
Vol. of air required for correct combustion @ 3000 r.p.m.	l/min.	1870
Vol. of air required for correct cooling @ 3000 r.p.m.	l/min.	26300
Dry weight	kg	110
Recommended battery	V/Ah	12/66

Minimum pulley diameters for belt drive



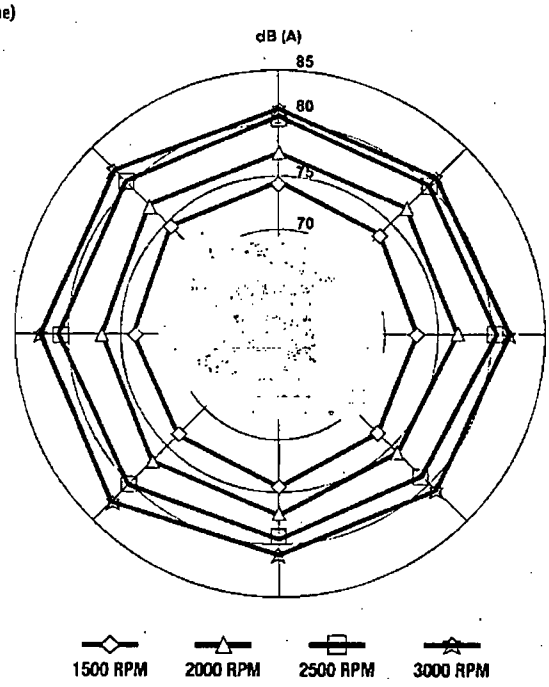
$$D_1 \text{ (mm)} \geq 136\,[162+L_1 \text{ (mm)}]\ \frac{N \text{ (kW)}}{n \text{ (RPM)}}$$

$$D_2 \text{ (mm)} \geq 204\,[260+L_2 \text{ (mm)}]\ \frac{N \text{ (kW)}}{n \text{ (RPM)}}$$



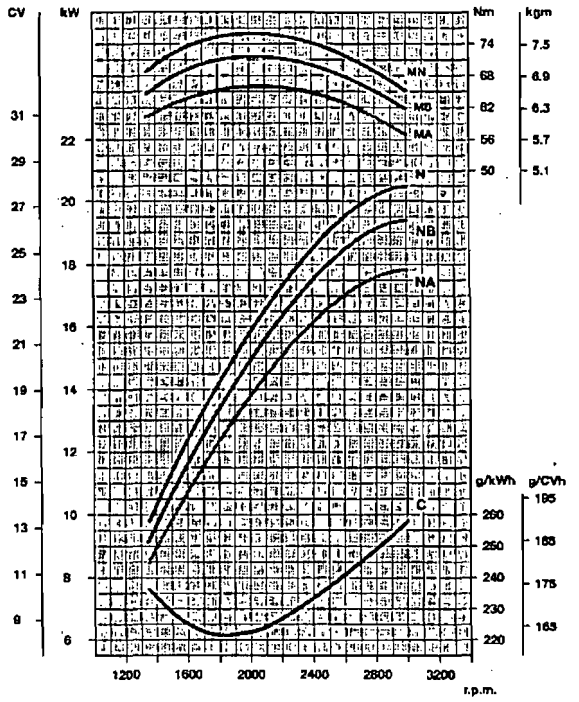
Sound pressure level dB (A)

Sound level polar diagram open field - 7 meters microphone - no load running engine.

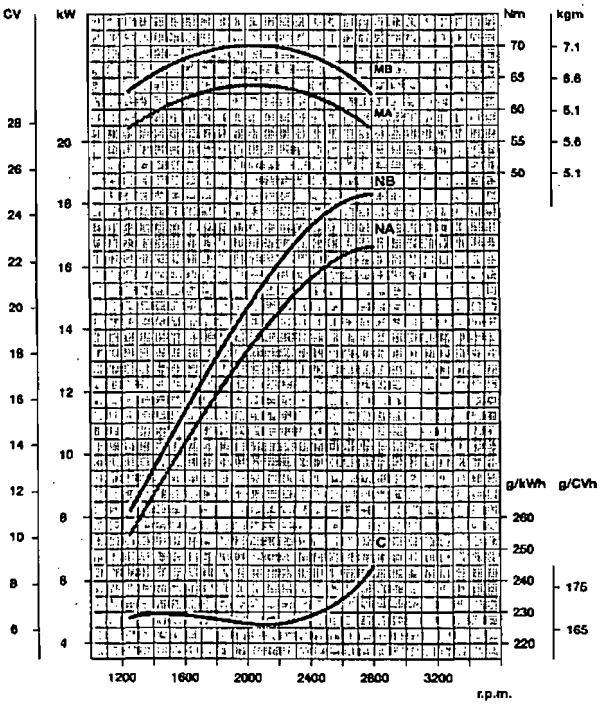


Curves

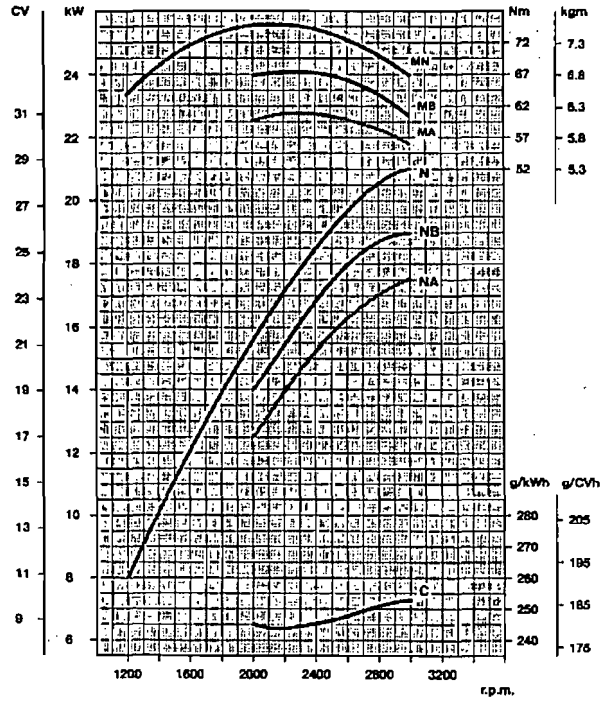
9LD626/2 NR @ 3000 r.p.m. ▣ ◍ ◬



9LD626/2 B2 NR @ 2800 r.p.m. □ ○ ◬



9LD626/2 @ 3000 r.p.m.



N	Power curve - 80/1269/CEE - ISO 1585 -
NB	Power curve - ISO 3046/1 - IFN -
NA	Power curve - ISO 3046/1 - ICXN -
MN	Torque curve - (N curve)
	MB (B curve - MA (A curve)
C	Specific fuel consumption - (NB curve)

Output power for fixed speed application (including generating sets)

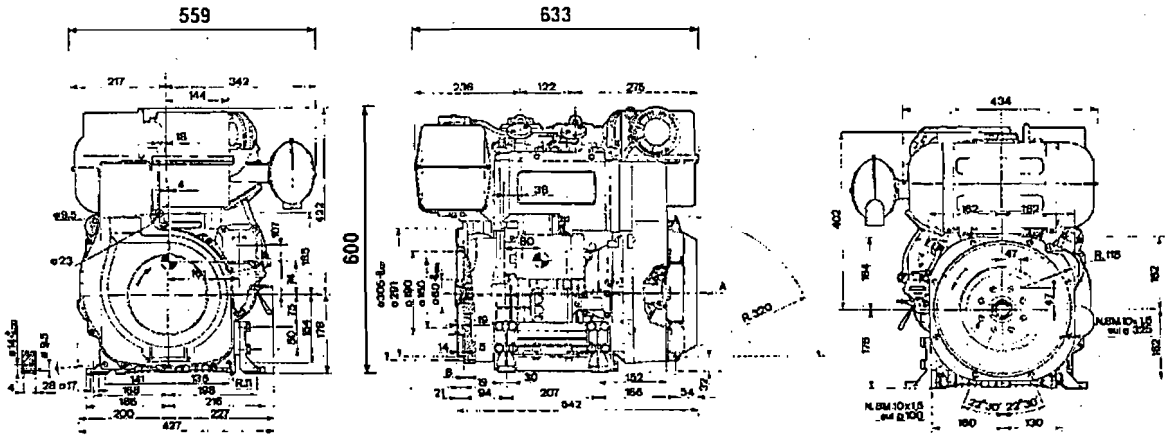
Engine power kW

r.p.m.	Intermittent (NB)	Continuous (NA)
3000	19.2	17.7
1800	13.5	12.0
1500	10.7	9.7

LOMBARDINI

SERIE 9LD

Technical drawings *



* More specific dimensions are available on www.lombardini.it (see table at the bottom of the page)

Standard equipment

Electric starting with 12V starter motor and alternator
Black paint on sheet metal parts
Manual control accelerator (fixed)
Oil bath air filter with cyclonic prefilter
External oil filter
Oil pressure switch
Combined manifold and exhaust muffler
Engine feet
Power take-off on flywheel
Keyswitch panel
Fuel lift pump
Counter-clockwise rotation on power take-off side
Fuel tank with filter
Automatic extra fuel device
Sound-proofing
Use, maintenance and spare parts booklet

Accessories

Different guards according to use
Range of alternative alternators
Compression release
Flanges
Clutches
Hydraulic pump adapters
Gear adapters
Range of fuel tanks of various sizes
Mufflers and exhaust pipes
Controls
Pulleys
Oil cooler
Crank starter
Varnishing

ISO 9001 Cert. n. 0446 - 1405
QS. 9000 Cert. n. 22310

Files for this product available on www.lombardini.it

Data sheet	9LD626DS.PDF
Owner manual	9LD626OM.PDF
Service manual	9LD626SM.PDF
Technical drawing	9LD626TD.DWG
Power curve	9LD626PC.PDF

mod. 50961/5

LOMBARDINI

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Tel. ++39 0522.3891 - Fax ++39 0522.389503
www.lombardini.it

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 1: INTERNAL COMBUSTION					
System 1: GAS TURBINES, POWER GENERATION					
CO OXIDATION CATALYST NO. 8, BASF, 150 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 472160	C45	D43 C46			
SELECTIVE CATALYTIC REDUCTION NO. 8, ICORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, LENGTH 11 FT 1 IN; WIDTH: 2 FT 2 IN; HEIGHT4 FT 2 WITH NH3 INJECTION GRID A/N: 472160	C46	S48 C45		**NH3:** 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2,E193.1, E193.3
STACK NO. 8, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT A/N: 472160	S48	C46			
System 2: EMERGENCY ENGINES					
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE, DIESEL FUEL, LEAN BURN, CLARKE, MODEL JU6H, 240 BHP WITH AFTERCOOLER, TURBOCHARGER, A/N: 472165	D49		NOX: PROCESS UNIT	**NOX+NMHC:** 4.9 GM/BHP-HR DIESEL (4) [RULE 1303; RULE 2005]; **NOX:** 246 LB/1000 GAL DIESEL (1) [RULE 2012] **CO:** 2.6 GM/BHP-HR DIESEL (4) [RULE 1303] **PM10:** 0.15 GM/BHP-HR DIESEL (4) [RULE 1303] **SOX:** 0.0055 GM/BHP-HR DIESEL (4) [RULE 2005];	B61.2,C1.4, D12.5, ~~E193.4~~, I296.3, K67.3
INTERNAL COMBUSTION ENGINE, EMERGENCY, BLACK START, DIESEL FUEL, LEAN BURN, CATERPILLAR, MODEL 3512CDITA, 2206 BHP WITH PM CONTROL, CLEAR AIR AFTERCOOLER, TURBOCHARGER, A/N: 472164 GENERATOR, 1500KW FILTER, DIESEL PARTICULATES, CLEANAIR SYSTEMS "PERMITS", WITH SIX 15" X15" PARALLEL OXIDIZING FILTER ELEMENTS	D50		NOX: PROCESS UNIT	**NOX+NMHC:** 4.9 GM/BHP-HR DIESEL (4) [RULE 1303; RULE 2005]; **NOX:** 216 LB/1000 GAL DIESEL (1) [RULE 2012] **CO:** 2.6 GM/BHP-HR DIESEL (4) [RULE 1303] **PM10:** 0.15 GM/BHP-HR DIESEL (4) [RULE 1303] **SOX:** 0.0055 GM/BHP-HR DIESEL (4) [RULE 2005];	B61.2, C1.5, D12.5, E193.5, E193.6, I296.4, K67.4

Equipment Description (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 2: STORAGE TANK					
STORAGE TANK, TK-1, FIXED ROOF, 29.4 PERCENT AQUEOUS AMMONIA, DIAMETER: 9'-4"; HEIGHT: 12'-0"; 12,000 GALLONS WITH PRV SET AT 25 PSIG WITH A/N: 472161	D52				C157.1, E144.1,E193.1
STORAGE TANK, TK-2, FIXED ROOF, 29.4 PERCENT AQUEOUS AMMONIA, DIAMETER: 9'-4"; HEIGHT: 12'-0"; 12,000 GALLONS WITH PRV SET AT 25 PSIG WITH A/N: 472162	D53				C157.1, E144.1,E193.1

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	E54			VOC: (9) [Rule 1113],	K67.5
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E55			VOC: (9) [Rule 1171]	

BACKGROUND

In order to pursue the development of a proposed natural gas fired peaker project, Competitive Power Ventues (CPV), Inc has organized a special purpose entity known as CPV Sentinel, LLC a limited liability company, to develop, own and operate the proposed peaker project. CPV Sentinel, LLC is a wholly-owned subsidiary of CPV.

CPV Sentinel, LLC is proposing to construct a new power plant which will consist of ~~five~~ eight (8) combustion-turbine-generators (CTGs) for a total rated peak generating capacity of 850 MW at 17°F (850 MW is from the initial interconnect application for the original Ocotillo Project which when originally proposed was 3x1 combined cycle. The 850 MW has been retained as capacity design of the electrical interconnect). The gas turbines will be General Electric LMS100 units. Each turbine will drive a generator rated at 103 MW at 17°F. The project is expected to have an annual capacity factor of approximately 30 to 37 percent, depending on weather-related customer demand, load growth, hydroelectric supplies, generating unit retirements, and other factors.

Each of the proposed CTGs will be configured in simple cycle, and therefore there will be no heat recovery steam generators (HRSG), duct burners, or steam turbines used at this plant. The net power generated (after taking away auxiliary power consumption) will be derived solely from the eight generators. Selective catalytic reduction (SCR) systems and CO oxidation catalysts will be utilized for control of NOx and CO emissions, respectively. Two 12,000 gallon ammonia (NH_3) storage tanks will be constructed for the

storage of 19% or 29.9% aqueous ammonia which is part of the SCR process. One 5-cell and one 3-cell ~~A 5-cell~~ mechanical ~~drift~~ draft cooling tower will provide heat removal for the gas turbine auxiliary cooling requirements. The site will also employ a 240 bhp diesel emergency fire pump engine and one 2206 bhp diesel blackstart emergency engine.

The California Energy Commission (CEC) has the statutory responsibility for certification of power plants rated at 50 MW and larger, including any related facilities such as transmission lines, fuel supply lines, and water pipelines. The CEC's 12-month, one-stop permitting process is a certified regulatory program under the California Environmental Quality Act (CEQA) and also includes several opportunities for public and inter-agency participation. The CEC's certification process subsumes all requirements of state, local, or regional agencies otherwise required before a new plant is constructed. The CEC coordinates its review of the facility with the federal agencies that will be issuing permits to ensure that the CEC certification incorporates conditions of certification that would be required by various federal agencies. Since the CPV Sentinel will be rated at greater than 50 megawatts, it is subject to the CEC's 12-month certification process. As part of this process, CPV Sentinel submitted an application for certification (07-AFC-3) to the CEC on July 26, 2007 seeking certification for the new power plant. In addition to the CEC certification process, CPV Sentinel submitted applications to AQMD seeking Permits to Construct for the new power plant. The following table shows the corresponding application numbers (A/Ns):

Table 1 - Applications for Permits to Construct Submitted to AQMD

Application Number	Equipment Description
472139	Gas Turbine No. 1
472141	Gas Turbine No. 2
472143	Gas Turbine No. 3
472147	Gas Turbine No. 4
472150	Gas Turbine No. 5
472154	Gas Turbine No. 6
472156	Gas Turbine No. 7
472158	Gas Turbine No. 8
472140	SCR/CO Catalyst for Turbine No. 1
472142	SCR/CO Catalyst for Turbine No. 2
472145	SCR/CO Catalyst for Turbine No. 3
472149	SCR/CO Catalyst for Turbine No. 4
472153	SCR/CO Catalyst for Turbine No. 5
472155	SCR/CO Catalyst for Turbine No. 6
472157	SCR/CO Catalyst for Turbine No. 7
472160	SCR/CO Catalyst for Turbine No. 8
472165	Emergency Fire Pump Engine
472164	Back start emergency Engine
472161	Aqueous Ammonia Storage Tank, No. 1
472162	Aqueous Ammonia Storage Tank, No. 2
472137	Initial Title V Application

Each of the applications were submitted to the AQMD on July 26, 2007. AQMD deemed the applications complete on August 10, 2007. Because CPV Sentinel will have the potential to generate electricity greater than 25 MW, it will be subject to the federal Acid Rain requirements and therefore the federal Title V permitting requirements apply. CPV Sentinel will also be included in the NOx RECLAIM program.

Processing Fee Summary

On July 26, 2007, AQMD received the twenty (20) applications shown in the table above along with a total processing fee of $89,368. The eight LMS100s are identical and therefore, but turbines one through five will be operated differently than turbines six through eight. Turbines 1 and 6 will pay full processing fee while the remaining turbines will receive a 50% discount off of the original processing fee of $13,884.29. In addition, the eight SCR/CO catalysts are identical and therefore, seven of these devices receive a 50% discount off of the original processing fee of $2949.92. A fee summary for CPV Sentinel is shown in the table below.

Table 2 - Summary of Processing Fees for CPV Sentinel

A/N	Submittal Date	Data Adequacy	Equipment	Schedule	Processing Fee
472139	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 1	G	$13884.29
472141	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 2	G	$6942.15
472143	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 3	G	$6942.15
472147	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 4	G	$6942.15
472150	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 5	G	$6942.15
472154	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 6	G	$13884.29
472156	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 7	G	$6942.15
472158	07-26-2007	08-10-2007	LMS100 Gas Turbine No. 8	G	$6942.15
472140	07-26-2007	08-10-2007	SCR/CO Catalyst No. 1	C	$2949.925
472142	07-26-2007	08-10-2007	SCR/CO Catalyst No. 2	C	$1474.96
472145	07-26-2007	08-10-2007	SCR/CO Catalyst No. 3	C	$1474.96
472149	07-26-2007	08-10-2007	SCR/CO Catalyst No. 4	C	$1474.96
472153	07-26-2007	08-10-2007	SCR/CO Catalyst No. 5	C	$1474.96
472155	07-26-2007	08-10-2007	SCR/CO Catalyst No. 6	C	$1474.96
472157	07-26-2007	08-10-2007	SCR/CO Catalyst No. 7	C	$1474.96
472160	07-26-2007	08-10-2007	SCR/CO Catalyst No. 8	C	$1474.96
472165	07-26-2007	08-10-2007	Emergency Fire Pump	B	$1865.02
472164	07-26-2007	08-10-2007	Emergency Black start ice	B	$1865.02
472161	07-26-2007	08-10-2007	Ammonia Storage Tank	A	$967.11
472162	07-26-2007	08-10-2007	Ammonia Storage Tank	A	$967.11
472137	07-26-2007	08-10-2007	Title V Application	N/A	$1.007.60
			CPV Sentinel TOTAL PROCESSING FEE		$89368.00

Additional Processing Fee Summary

Application no. 472139

Per Unit Senior, turbine no. 1 (a/n 472139) will have the following additional fees

- T&M total hours per Rule 301(l)(1)(B)
- Air Quality Analysis fee (Reg 13 and Rule 1401 modeling) per Table IIA of Rule 301

T&M fees	$14,882.78
Air Quality analysis fees	$10,784.07
Total	$25,666.85

See Appendix J for calculations details

Application no. 472137

Per Unit Senior, Title V application (a/n 472137) will have the following additional fees

- Public Notice fee
- Facility located in Riverside County
- Per Table IIB of Rule 301, fee based on Rule 212 (g), since there will be a Rule 212 (g) Public notice and Title V notice

Public notice fee	$1,053.57

See Appendix J for calculations details

Site Description

The proposed location of CPV Sentinel is on an 37 acre parcel located 8 miles northwest of the center of the city of Palm Springs (62575 Powerline Rd, Desert Hot Springs, 92240). The parcel is undeveloped and is next to the Devers substation. CPV Sentinel will be located in an area zoned for industrial uses in the unincorporated area of Riverside County.

COMPLIANCE RECORD

CPV Sentinel is a new facility and construction on the proposed power plant has not yet begun. No additional existing sources are presently operating under the above facility ID. As a confirmation, the AQMD's Compliance Tracking System database indicates no compliance activity for this facility ID.

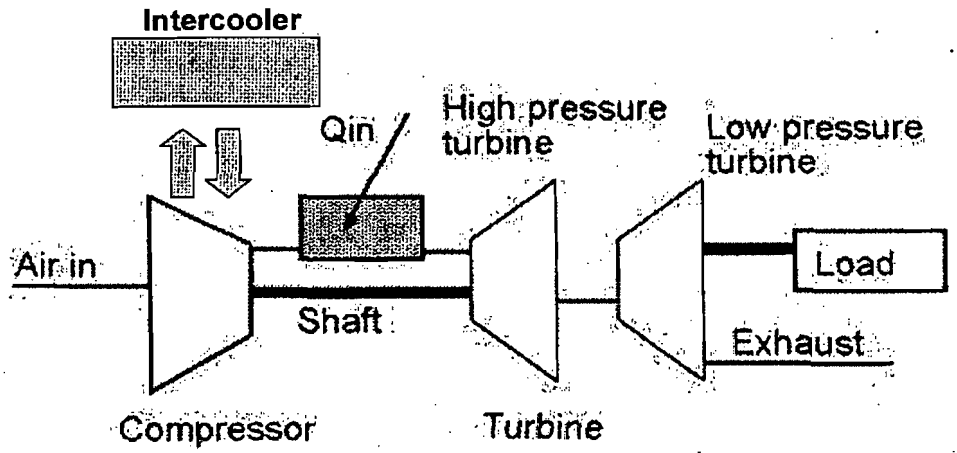
PROCESS DESCRIPTION

The proposed power plant will operate in simple cycle configuration and will employ eight (8) General Electric LMS100 combustion gas turbines, each of which employ off-engine intercooling technology with the use of water and an external heat exchanger for increased thermal efficiency. The LMS100 system includes a 3-spool gas turbine configured with an intercooler located between the low-pressure compressor (LPC) and the high-pressure compressor (HPC).

Intercooling

Intercooling provides significant benefits to the Brayton cycle by reducing the work of compression for the HPC, which allows for higher pressure ratios and thereby increasing overall efficiency. For the LMS100, the cycle pressure ratio is 42:1. The reduced inlet temperature for the HPC allows increased mass flow resulting in higher specific power. The lower resultant compressor discharge temperature provides colder cooling air to the turbines, which in turn allows increased firing temperatures equivalent to those of the LM6000, producing an overall cycle efficiency in excess of 46% in simple cycle configuration. This represents a 10% increase in the efficiency over the LM6000. The LMS100 can be configured with two different types of intercooling systems, with the first type being a wet intercooling system which uses an air-to-water heat exchanger (shell and tube design) and an evaporative cooling tower. The second system consisting of bellows expansion joints, moisture separator, variable bleed valve system, and associated piping and involves a dry intercooling system requiring no water. It uses an air-to-air heat exchanger constructed with panels of finned tubes mounted in an A-frame configuration. All eight LMS100s proposed for construction at CPV will be configured with a wet intercooling system. A general diagram of the LMS100 employing wet intercooling technology to be used at the CPV is shown in the diagram below.

LMS100 Gas Turbine with Intercooler



CPV Sentinel will connect to Southern California Edison's (SCE) electrical transmission system at the Devers Substation, which is located approximately 700 feet west of the proposed project site. This connection will require over 3250 feet of 230-kilovolt (kV) transmission line and two transmission towers to be located adjacent to the substation within SCE's transmission corridor. Interconnection at this specific substation minimizes downstream impacts to SCE's transmission system while providing efficient peaking power for use during peak demand as projected by SCE. The natural gas will be supplied by a 2.6 mile gas pipeline extension from the Indigo Energy Facility. The applicant proposes to use onsite wells to provide water for the cooling tower and evaporative cooler make-up, site landscape irrigation, and demineralized water make-up. The applicant did revise their Water Supply Plan with the CEC on 2/19/08 (copy in file), when fully implemented the Missions Creek Sub-basin will be recharged with imported water in quantities greater then the actual CPV Sentinel pumping of groundwater for cooling. To mitigate the facilities water use, the applicant will fund the installation of a recycled water line of 900 feet length that will allow the Palm Springs National Golf Course to use treated water instead of well water to irrigate the course. The applicant will fund installation of irrigation controllers of a portion of existing customers of the Desert Water Agency (DWA). The applicant would purchase water through DWA equal to 108 percent of the project's groundwater production. The purchased water will be recharged at the existing spreading grounds in the Mission Creek Sub-basin. The following table lists the technical specifications for the General Electric LMS100 CTG.

Table 3 - Combustion Turbine Generator Specifications[2]

[2] Values in this table are on a per-turbine basis

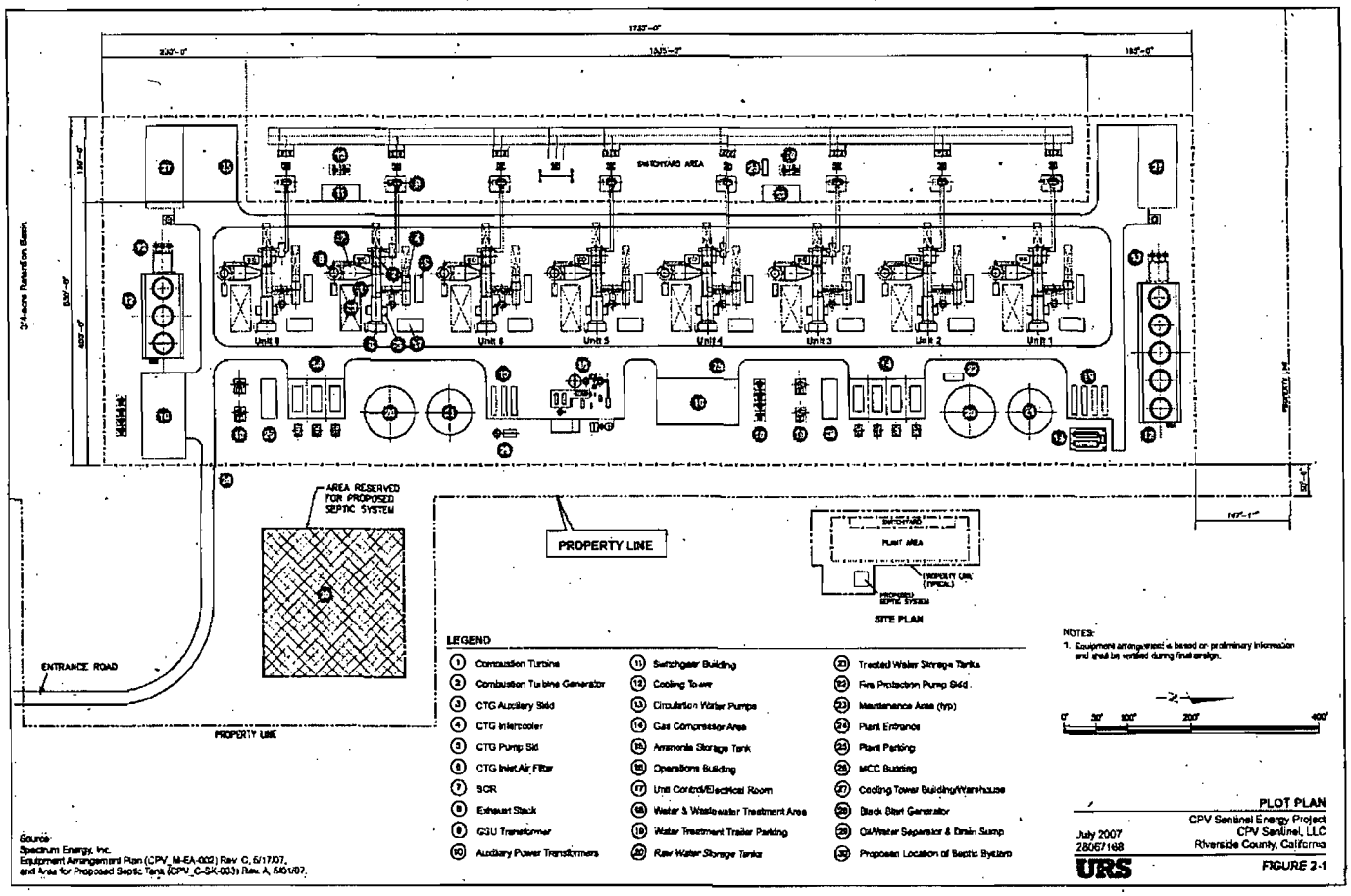
Parameter	Specifications
Manufacturer	General Electric
Model	LMS100PA[3]
Fuel Type	PUC[4] Quality Natural Gas
Natural Gas Heating Value	1,018 BTU/scf
Gas Turbine Heat Input (HHV)	875.7 MMBTU/hr at 17°F and 80% relative humidity
Fuel Consumption	0.861 MMSCF/hr[5]
Gas Turbine Exhaust Flow	366361 SCFM
Gas Turbine Exhaust Temperature	741°F
Exhaust Moisture	6-8%
Gas Turbine Power Generation	103 MW
Net Plant Heat Rate, LHV	7696 BTU/kW-hr

[3] GE Manufactures two versions of the LMS100 CTG. CPV Sentinel plans to install the LMS100PA. The PA model utilizes water injection for NOx abatement while the PB version utilizes dry low emission (DLE) combustors for NOx abatement.

[4] PUC is the acronym for the California Public Utilities Commission

[5] Represents the maximum possible fuel consumption of the CTG, based on 875.7 MMBTU/hr heat input and 1,018 BTU/scf fuel heat content. However, the emission calculations will be based on a worst-case operating scenario as identified by the applicant, which may result in a lower fuel usage depending on the ambient temperature, the employment and rate of intercooling, water injection rates, and electrical load generated.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 72	PAGE 16
ENGINEERING AND COMPLIANCE DIVISION	APPLICATION NO. Master File	DATE 08-29-2008
ENGINEERING ANALYSIS / EVALUATION	PROCESSED BY: Roy Olivares	REVIEWED BY:



The site plan shown above was prepared for CPV Sentinel by URS and shows the general layout of the proposed facility. The project site is located in an remote area surrounded by air turbines and an Edison substation to the west. To the southeast is the Indigo Energy Facility (1.8 miles). To the north, east and south are Wind Farms The site locale is an industrial portion of the unincorporated are of Riverside County. The nearest residence is 330 feet east of the Facility and the applicant has an option to acquire the property. The second group of nearest residence is located 2.5 km (8,800 ft) southeast of the Facility.

Definition of a Peaking Unit in Rule 2012

A traditional peaking unit is defined as a turbine which is used intermittently to produce energy on a demand basis and does not operate more than 1,300 hours per year. This definition is found in Rule 2012-Requirements for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, Attachment A-F as amended December 5, 2003. CPV Sentinel will have the potential to operate for about 2,953 hours/year inclusive of start-up, shutdown, commissioning, maintenance, (if any) and normal operations for turbines one though five and 3,554 hours/year inclusive of start-up, shutdown, commissioning, maintenance, (if any) and normal operations for turbines six though eight. Since the annual hours of operation will exceed that which is allowed for a traditional peaking unit under Rule 2012, the

LMS100s will not be classified as official peaking units in the equipment descriptions. The CTGs will be listed as a NOx Major Source under Rule 2012.

Air Pollution Control (APC) System

All eight CTGs will utilize two primary means for the reduction of NOx emissions. On the front end, CPV Sentinel will rely on the use of demineralized water for water injection directly into the CTGs. The demineralized water will be produced by reverse osmosis (RO) and an ion exchange system and will be stored in two 804,000 gallon demineralized water storage tanks. The use of demineralized water injection will reduce the 1-hour average NOx concentration to 25 ppmv on a dry basis at 15% O_2 prior to entry to the selective catalytic reduction (SCR) units. On the back end, and SCR catalyst with ammonia injection will be used downstream of each CTG for further reduction of NOx emissions and a CO oxidation catalyst will be used downstream of each CTG for CO emissions reduction. As a result, the NOx emissions will be limited to 2.5 ppmv, 1-hour average, dry basis at 15% O_2. CO emissions will be limited to 6.0 ppmv, 1-hour average, dry basis, at 15% O_2. ROG emissions will be limited to 2.0 ppmv, dry basis at 15% O_2. SOx and PM_{10} emissions will be mitigated through the use of PUC quality natural gas. Detailed descriptions of the air pollution control system are given in the next section. The CO catalyst is permitted together with the SCR catalyst.

Selective Catalytic Reduction/CO Catalyst Systems (A/Ns 472140, 472142, 472145, 472149, 472153, 472155, 472157 and 472156)

Table 4 below shows the specifications for the SCR manufacturer to be used for the simple cycle CTGs.

Table 4 - Selective Catalytic Reduction

Catalyst Properties	Specifications
Manufacturer	Cormetech, Inc
Catalyst Description	Ti V honeycomb single layer structure
Catalyst Model No.	CHMt-2
Catalyst Volume	812 ft^3
Guaranteed Life	Earliest of 20,000 hrs from first gas-in or 5 yrs from contracted delivery.
Space Velocity	27,500 hr^{-1}
Ammonia Injection Rate	225 lb/hr starts at exhaust temp of 540 F (density = 7.48 lb/gal)
NOx removal efficiency	>90%
NOx at stack outlet	2.5 ppmv at 15% O_2
Exhaust Temperature	740-840°F
Pressure drop	12 inches water column

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 (N_2) and water, resulting in NOx concentrations in the exhaust gas at no greater than 2.5 ppmvd at 15% O_2 on a 1-hour average.

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 6 ppmvd at 15% O_2, on a 1-hour average. The exhaust from each catalyst housing will be discharged from individual 90-foot tall, 13.5 foot diameter exhaust stacks. Each CTG will have its own individual stack.

CPV Sentinal has indicated that the CO catalyst manufacturer is to be BASF Catalyst formerly Englehard. The following table lists the specifications for the CO catalyst. The operating temperature window is between 500°F and 1,250°F.

Table 5 - CO Oxidation Catalyst

Catalyst Properties	Specifications
Manufacturer	BASF
Model	
Catalyst Type	Pt on Al single layer metal monolith
Catalyst Life	20,000 hours or 5 years
Space Velocity	158,000 hr^{-1}
Volume	150 ft^3
CO removal efficiency	90%
CO at stack outlet	6.0 ppmvd at 15% O_2
Exhaust gas velocity	11.5 ft/s
Pressure drop	1.8 inches water column

Aqueous Ammonia Storage Tank (A/N 472161 and 472162)

The ammonia will be transported to the site in aqueous form and will have a maximum concentration of 29.4% by weight. The ammonia will be stored in a specially designated tank with a capacity of 12,000 U.S. gallons with a maximum design pressure of 25 psig, and will be constructed to ASME Section VIII specifications. A vapor return line will be used during receiving operations to control filling losses.

Heated Ammonia Vaporization Skid

The ammonia vaporization skids will be used to vaporize the 29.4% aqueous ammonia so that it can be transferred to the ammonia injection grids. The ammonia vaporization equipment will be shop-assembled and skid mounted for easy field installation. During cold start-up of the turbine, it will take some time (~10 minutes) before the ammonia injection chamber is hot enough to heat the ammonia for injection. Therefore, each ammonia injection chamber is equipped with an electric pre-heater unit which can be initiated prior to the cold start-ups to ensure that the ammonia is adequately heated prior to injection. The ammonia vaporization skids are typically configured with two dilution air fans (one operating and one spare) and two pre-heater elements (one operating and one spare) housed in a common heater box. In addition, the aqueous ammonia is typically atomized in the ammonia injection chamber and is then fed to the ammonia distribution header.

Ammonia Distribution Header

A carbon steel ammonia distribution header will be used to receive the hot ammonia/air mixture from the ammonia vaporization skid and deliver it evenly to the ammonia injection grid piping. Typically, the injection grid supply piping is equipped with manual butterfly valves and flow instrumentation used for adequate balancing of ammonia flow.

Performance Warranties

Performance warranties for the CO/oxidation and SCR catalysts have been included with the application package and are part of the engineering file. According to the performance warranty[6] for the CO/oxidation catalyst, it will be able to achieve approximately 90% CO reduction from inlet levels of CO. The SCR catalyst will be able to achieve approximately 90% reduction efficiency from inlet levels of NOx and the

[6] The performance warranty does not explicitly state an expected conversion efficiency for VOC. However, based on experience with similar turbines, it is expected that at least a 50% reduction efficiency for VOC can result such that VOC emissions at the catalyst outlet can be expected to meet 2.0 ppmvd @ 15% O_2. Therefore, uncontrolled VOC emissions are assumed to be 4.0 ppmvd at 15% O_2, dry basis.

maximum ammonia slip is warranted to not exceed 5.0 ppmvd at 15% O_2. The table below shows the warranted emissions for NOx, CO, VOC and NH_3 slip.

Table 6 - Warranted Emissions for APC System

Pollutant	Warranted Emissions
Outlet NOx emissions	2.5 ppmv at 15% O_2, dry basis
Outlet CO emissions	6.0 ppmv at 15% O_2, dry basis
Outlet VOC emissions	2.0 ppmv at 15% O_2, dry basis
Ammonia Slip	5.0 ppmv at 15% O_2, dry basis

Cooling Tower System

There are two cooling towers, both mechanical draft, one of five cells (for the first 5 turbines) and one with three cells for the final 3 turbines. The towers will operate whenever one or more of their respective turbines are. The circulating water rate will be 39,000 gallons per minute (GPM) for the first cooling tower and 24,000 gpm for the second cooling tower . The closed-cooling water heat exchangers will provide high-quality cooling water to a GE provided pump skid for each CTG. The pump skid will then provide cooling water to the CT compressor intercooler and to the lubrication system. Drift is water entrained by and carried with the air as unevaporated fine droplets. PM_{10} matter is released from a cooling tower through drift. Any solids that are dissolved in the cooling water will be carried out of the tower with the water droplets that are entrained in the air. The water droplet will ultimately evaporate and leave the dissolved solid as PM_{10}. The rate of PM_{10} that is discharged to the atmosphere depends significantly on the drift factor for the cooling tower. The drift factor is the percentage of coolant that leaves through drift with respect to the total flow rate of coolant through the tower. Typical drift rates based on the age of the cooling tower are shown in Table 7 below.

Table 7 - Typical Drift Rates Based on the Age of the Cooling Tower

Year of Construction	Drift Rate as a Percentage of Circulating Water Flow Rate
1970s	0.01%
Early 1980's	0.008%
Mid 1980's	0.005%
1990's	0.002%
2000	0.001%
Current Technology	0.0005%

In keeping with current technology, maximum drift loss will be limited to 0.0005% of the circulating water flow. The following table lists the specifications for the cooling tower. The Rule 1401 emissions were determined for this equipment to verify the equipment will be exempt from AQMD permit per Rule 219, see Appendix I for emissions calculations.

Emergency Fire Pump Engine (A/N 472165)

The fire pump engine will be a diesel fueled Clarke unit, model no. JW6H-UF50. It has a power rating of 340 bhp at 2,100 rpm. The specifications are listed in the table below.

Table 8 - Emergency Fire Pump Specifications

Emergency Fire Pump Parameters	Specifications
Manufacturer	Clarke
Power output	240 bhp at 2,100 rpm
Fuel Consumption	16.0 gal/hr

Exhaust temperature	891°F
Exhaust flow	1227 ACFM
Stack height	50 ft
Stack diameter	0.373 ft

Emergency Blackstart Engine (A/N 472164)

The blackstart engine will be a diesel fueled Caterpillar, model no. 3512. It has a power rating of 2200 bhp at 2,100 rpm and will be equipped with PM control system. The specifications are listed in the table below.

Table 9 - Emergency Blackstart ICE Specifications

Emergency Fire Pump Parameters	Specifications
Manufacturer	Caterpillar
Power output	2200 bhp at 2,100 rpm
Fuel Consumption	16.0 gal/hr
Exhaust temperature	763°F
Exhaust flow	11071 ACFM
Stack height	50 ft
Stack diameter	0.67 ft

CRITERIA POLLUTANT EMISSIONS

The total emissions from the power plant will include the summation of all eight CTGs, the emergency fire pump engine, the black start engine and the fire pump engine. The emissions from the gas turbines are based on the following formula and assumptions:

Emissions for NOx, CO and VOC

$$EF(lb/hr) = ((ppmvd/1E06)/O2) \times (1 - H2O\%)/100) \times (MW/28lb/blb\text{-}mole \times ER$$

where,

ppmvd = Uncontrolled (or controlled) concentration at 15% O_2, dry basis
MW = Molecular weight, lb/lb-mol
O2 = O2 correction factor = (20.9-15)/(20.19-O2)
H20 =percent water in the exhaust
ER = exhaust mass rate in lb/hr
The values for O2, water percentage, mass rate were provided by GE (worst case operating scenario)

Emissions for SOx

$$EF(lb/hr) = (0.25g/100ft3) \times (1lb/7000gr)(mmbt/hr)(1E06btu/mmbtu)/918btu/ft3)(64lbSOx/32lbS)$$

where,

Sulfur content	= 0.25 lb grains/100 scf
Mmbtu/hr	=789.8 mm/btu/hr
Heating value (LLH)	= 918 btu/ft3
MW S	= 32 lb/mole
MW SOx	= 64.2 lb/mole

Emissions for PM_{10}

GE guarantees 6 lb/hr at maximum operating conditions

Assumptions:

1. Emissions are based on the worst case operating scenario
2. PM_{10} emissions are based on 0.0076 lb/MMBTU (GE guarantee)
3. SO_2 to SO_3 conversion in APC equipment is accounted for in the PM_{10} AP-42 emission factor
4. SOx emissions are based on 0.25 grains S/100 scf
5. 30-Day Averages are based on 485 hours/month of operation for turbines 1-5 and 695 hours per month for turbines 6-8.
6. Emissions are based on total fuel consumption rather than total hours of operation

The applicant has identified eleven possible operating scenarios. The eleven scenarios are listed as operating conditions (OC) 100 through 110 in Section 7.1 table 7.1-13 and 7.1-21 of the applicant's submittal and are summarized in the table below (water rates per GE in Appendix B provided by the applicant) :

Table 10 - Operating Scenarios

	Ambient Temp °F	H_2O Injection, lb/hr	Relative Humidity (%)	Intercooler (on/off)	Compressor Inlet Temp °F
OC100	17	34407(100%)	80	Off	17
OC101	17	24526 (75%)	80	Off	17
OC102	17	15,618 (50%)	80	Off	17
OC103	72	31603 (100)	40	On	59.3
OC104	72	32072 (100)	40	Off	72
OC105	72	22056 (75%)	40	Off	72
OC106	72	13838 (50%)	40	Off	72
OC107	107	28441 (100%)	18	On	77.4
OC108	107	27730 (100%)	18	On	107
OC109	107	18956 (75)	18	On	107
OC110	107	11812 (50%)	18	On	107

Detail of Operating Conditions

Analysis of the applicant's operating scenarios reveals that GE ran the tests while varying the water injection rate, and compressor inlet temperature. Ambient temperature was allowed to vary from a minimum of 17°F to a maximum of 107°F. Note from the table above that for each ambient temperature, the load was varied between maximum (100%), average (75%), and minimum (50%) loads. The top five cases where fuel flow to the CTGs is the greatest (and therefore yielding the highest emissions) are shown in the table below.

Table 11 - Worst Case Operating Scenario

	Top 5 Operating Conditions				
	100	103	104	107	108
Ambient Temperature, °F	17	72	72	107	107
Ambient Pressure, psia	14.132	14.131	14.131	14.131	14.131
Fuel Consumption, MMBTU/hr	789.8	789.6	772.2	750	712.5
Fuel Consumption, lb/hr	38338	38331	37485	36409	34589
Exhaust Temperature, °F	744.1	785.9	794.8	799.7	813.6
Load, MW	102.6	100.81	97.65	92.24	87.68

Water Injection (on/off)	On	On	On	On	On
Water Injection, lb/hr	34407	31603	32072	28441	27730
Intercooler (on/off)	Off	On	off	On	On

Of the top five cases, the worst case scenario occurs during periods of maximum fuel consumption (789.8 MMBTU/hr), LHV at full load (102.6 MW), low ambient temperature (17°F), with water injection in full use, and the intercooler not in operation, as identified in the table above by operating condition no. 100. Therefore, to address the worst case scenario, the facility's NSR emissions will be based on the parameters listed in operating condition no. 100.

There are essentially four modes of operation for the CTGs. Emissions from the four operating modes are distinctly different and must be calculated independently. The following table gives more detail of the four operating modes.

Table 12 - Operating Modes of the CTGs

Mode	Description
Commissioning	The process of fine-tuning each of the CTGs. Facility follows a systematic approach to optimize performance of each of the CTGs and the associated control equipment. Emissions are expected to be greater during commissioning than during normal operation. This mode affects only the initial year of operation not to exceed 150 hours per turbine.
Start-up	The applicant has indicated that there will be up to two start-ups per day for each CTG, with each start-up lasting 25 minutes. Start up emissions are higher due to the fact that the control equipment has not reached optimal temperature to begin the chemical reactions needed to convert NOx to elemental nitrogen and water.
Normal Operation	Normal operation occurs after the CTGs and the control equipment are working optimally, at their designated levels, i.e. NOx emissions are controlled to 2.5 ppmvd at 15% O_2, CO emissions to 6.0 ppmv at 15% O_2, and VOC to 2.0 ppmvd at 15% O_2. Emissions may vary due to ambient conditions.
Shutdown	Shutdown occurs at the initiation of the turbine shutdown sequence and ends with the cessation of CTG firing, and will last approximately 10 minutes thereafter. Typically, the shutdown process will emit less than the start-up process but may emit slightly greater than during normal operation because both H_2O injection into the CTGs and NH_3 injection into the SCR reactor have ceased operation

Commissioning Period

Gas turbine commissioning consists of zero load, partial load and full load testing performed immediately after construction for the purposes of optimizing turbomachinery, gas turbine combustors, and optimizing and testing of the SCR/CO catalysts. Several parameters such as water injection rate and degree of SCR and CO control may be varied simultaneously during testing at the discretion of the applicant. Emissions during the commissioning year (usually the first year of operation) may be higher than those during a non-commissioning year due to the fact that the combustors may not be optimally tuned and the SCR/CO catalysts may be only partially operational or not operational at all. The applicant has allocated up to 150 hours (the previous commissioning time was listed at 104 hours, the applicant requested an increase in hours) of commissioning for each of the 8 CTGs. Each turbine commissioning time should be completed within month (ref section 3.2.4 from applicant submittal) and has further stated that all commissioning will be accomplished within the 8 months of the installation of the first turbine. The commissioning schedule will comprise 4 phases in which the CTGs will be operated at zero, minimum, average and maximum loads while varying the water injection rates and the degree of SCR reactor and CO catalyst control. There will be some cases where the 8 CTGs will be run simultaneously during the commissioning period, and some cases where only one unit may be tested at a time. It will be assumed that the commissioning of the units will be simultaneous to address the worst case scenario (off sets). The table below shows the applicant's proposed commissioning schedule along with the cumulative emissions for each of the 8 CTGs during the commissioning period.

Table 13 - Proposed Commissioning Schedule

Description	Power Level	Corrected Operating Hours	Estimated Fuel Rate (MMBtu/hr)	Total Estimated Emission per Event				
				NO_X (lbs)	CO (lbs)	VOC (lbs)	PM_{10} (lbs)	SO_X (lbs)
*** First fire the unit & then shutdown to check for leaks, etc**								
	Core/Sync Idle	23	73.5	257	1049	27	138	1.2
*** Synch & Check E-stop**								
	Sync Idle	17	73.5	192	786	20	104	0.9
*** Additional AVR Commissioning**								
	5%	17	92.8	362	524	13	104	1.1
*** Break-in Run**								
	5%	12	92.8	241	349	8	69	0.7
*** Dynamic Commissioning of AVR & Commission Water**								
Load Step 1	10.00%	6	166	96	400	30	35	0.7
Load Step 2	20.00%	6	246	142	261	15	35	1.0
Load Step 3	30.00%	6	319	185	261	15	35	1.3
Load Step 4	40.00%	6	389	225	231	15	35	1.6
Load Step 5	50.00%	6	457	265	190	16	35	1.8
Load Step 6	60.00%	6	525	304	260	19	35	2.1
Load Step 7	70.00%	6	591	342	356	24	35	2.4
Load Step 8	80.00%	6	659	382	503	30	35	2.7
Load Step 9	90.00%	6	728	421	744	43	35	2.9
Load Step 10	100.00%	6	798	463	1138	69	35	3.2
Subtoal		58		2826	4344	277	346	20
*** Base load AVR Commissioning**								
	100%	23	798	1850	4550	275	138	12.9
COMPLETE - TOTAL ESTIMATED FIRED HOURS								
		150		**5729**	**11603**	**620**	**900**	**37**

For modeling purposes only one turbine can operate during the Baseload automatic voltage regulation (AVR) testing and up to three turbines can operate during Dynamic AVR testing (ref page 7.1-18 of applicant's *applicant of certification submittal*)

Start-up / Shutdown of CTGs

The applicant has stated that there will be up to 300 start-ups/shutdowns per year for turbines 1 through 5 , with up to 2 start ups per day and up to 350 star-up/shut downs for turbines 6-8, with the balance of 2803 hours (turbines 1-5) and 3404 hours (turbines 6-8) left for and normal operations (includes start-up and shut-down time hours). According to the applicant, each start-up event is expected to last 25 minutes. During start-up operations, the turbine is assumed to operate at elevated NOx and CO average concentration rates due to the phased-in effectiveness of the SCR reactor and CO oxidation catalysts.

Start-ups begin with each turbine's initial firing and continue until each unit complies with the permitted emission concentration limits. The shut-down time per turbine will not exceed 10 minutes per event.

NOx levels are in the 50-100 ppmvd range from the first 3-8 minutes of start-up. Water is injected during the 8th minute of start-up and 25 ppmvd at 15% O_2 is achieved by minute 10 when the unit reaches full load. NOx emissions are further reduced from 25 ppmvd to 2.5 ppmvd over the 15 minute period after the CTG achieves full load. CO emissions are assumed to be in the 100-500 ppmvd range for minutes 3 through 10 of start-up. At full load (minute 10), the CO emissions are approximately 100 ppmvd. CO emissions are further reduced from 100 ppmvd to 6 ppmvd over a 30-60 minute period after the CTG achieves full load. GE has provided start-up estimates for the five CTGs and these numbers are included in Appendix A. Shutdowns begin with the initiation of the turbine shutdown sequence and end with the cessation of turbine firing. According to the applicant, each shutdown will last ten minutes. Upon initiation of the shutdown process, ammonia and water injection will be discontinued. Normal operating emission rates are assumed to occur during the preceding 50 minutes of the shutdown period, see emissions below

Normal Operations

The emissions during normal operations are assumed to be fully controlled to Best Available Control Technology (BACT) levels, and exclude emissions due to commissioning, start up and shutdown periods, which are not subject to BACT levels. Hourly, monthly, and annual emissions as well as the 30-day averages are calculated and shown in Appendices A through E. The emission calculations for the emergency fire pump are contained in Appendix D .

Emissions During A Non-Commissioning Year

The tables below shows the individual and cumulative emissions during a non-commissioning year from all8 gas turbines which includes, start-up, shutdown and normal operation, as well as the emissions from the emergency fire pump which is to operate for the designated maximum of 50 hours per year (permit limit), as well as the emissions from the blackstart engine which it to operate for the designated maximum of 12 hours per year.

A. Emissions per Turbine

Mass Emission Rates, lb/hr (Non-Commissioning Year)

	Emissions, lb/hr				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Normal Operations	7.92	11.58	2.21	0.61	6
Start up	59.76	38.15	10.32	0.42	6
Shutdown	34.95	203.88	17.48	0.12	6

Based on start-up time of 25 min per day, total time 50 minutes (0.83 hrs)
Based on 2 shut downs per day, total time 20 minutes (0.33 hr)
The start-up and shut down emissions for the purposes of calculations were assume to occur over one hour, then it makes the emissions calculations in the following tables easier to manage (data provide by GE)

Turbine 1-5 Mass Emission Rates per turbine, lb/dy (Non-Commissioning Year)

	Emissions, lb/dy				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	50	32	9	0.35	5

Normal operations	119	174	33	9	90
Shutdown	12	67	6	0.040	2
TOTALS	**180**	**273**	**47**	**10**	**97**

Turbines 1 through 5 will operate up to 15 hours per day (excluding start-up and shut down times)
Based on 2 start-ups per day, total time 50 minutes (0.83 hrs)
Based on 2 shut downs per day, total time 20 minutes (0.33 hr)

Turbine 6-8 Mass Emission Rates per turbine, lb/dy (Non-Commissioning Year)

	Emissions, lb/dy				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	50	32	9	0.35	5
Normal Operations	174	255	49	14	132
Shutdown	12	67	6	0.040	2
TOTALS	**236**	**354**	**63**	**14**	**139**

Turbines 6 through 8 will operate up to 22 hours per day (excluding start-up and shut-down times)
Based on 2 start-ups per day, total time 50 minutes (0.83 hrs)
Based on 2 shut downs per day, total time 20 minutes (0.33 hr)

Turbine 1-5 Mass Emission Rates per turbine, lb/month (Non-Commissioning Year)

	Emissions, lb/month				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	1494	954	258	11	150
Normal Operations	3565	5208	992	277	2700
Shutdown	350	2039	175	1	60
TOTALS	**5409**	**8201**	**1425**	**288**	**2910**

Turbines 1 through 5 will operate up to 15 hours per day, every day of the month
Up to 2 start-ups and shut downs per day

Turbine 6-8 Mass Emission Rates per turbine, lb/month (Non-Commissioning Year)

	Emissions, lb/month				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	1494	954	258	11	150
Normal Operations	5229	7639	1455	406	3960
Shutdown	350	2039	175	1	60
TOTALS	**7073**	**10631**	**1888**	**417**	**4170**

Turbines 6 through 8 will operate up to 22 hours per day, every day of the month
Up to 2 start-ups and shut downs per day

Total combines turbine Mass Emission Rates, lb/month (Non-Commissioning Year)

	Emissions, lb/month				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	11952	7630	2064	84	1200
Normal Operations	33513	48959	9325	2599	25380
Shutdown	2796	16310	1398	10	480
TOTALS	**48261**	**72899**	**12788**	**2693**	**27060**

Mass Emission Rates, lb/year (Non-Commissioning Year

	Emissions, lb/year				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	63495	40534	10965	446	6375
Normal Operations	180164	263196	50028	13975	136440
Shutdown	14854	86649	7429	51	2550
TOTALS	**258513**	**390379**	**68442**	**14772**	**145365**

Emissions During A Commissioning Year

The tables below show the emissions during a commissioning time per each gas turbines which includes commissioning, start-up, shutdown and normal operation,

Commissioning Emissions rate per Turbine and hours of operations per testing phase

Description		NOx	CO	VOC	SOx	PM10
	hrs	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
First fire	23	11.17	45.59	1.16	0.05	6.02
Synch & Check E-stop	17	11.29	46.24	1.18	0.05	6.11
Additional AVR	17	21.29	30.80	0.74	0.07	6.11
Break-in run	12	20.08	29.09	0.70	0.06	5.77
Dynamic AVR	58	48.72	74.90	4.77	0.34	5.97
Base load AVR	23	80.43	197.85	11.98	0.56	6.02
total- lb/hr	150					

Turbine emissions lb/hr per turbine, lb/mon and 30 day ave

Description	NOx	CO	VOC	SOx	PM10
	lb/mon	lb/mon	lb/mon	lb/mon	lb/mon
First fire	257	1048.56	26.68	1.19	138.46
Synch & Check E-stop	192	786.06	20.05	0.89	103.85
Additional AVR	362	523.56	12.55	1.12	103.85
Break-in run	241	349.04	8.37	0.75	69.23
Dynamic AVR	2826	4344.23	276.78	19.71	346.15
Base load AVR	1850	4550.48	275.48	12.90	138.46
total lb/hr ave	38.19	77.35	4.13	0.24	6.00
totals/mon	5728	11601.92	619.90	36.56	900.00
30 ave	**185**	**374**	**20**	**1**	**29**

Note the commissioning of each turbine will be conducted during one month period and after commissioning is completed for the month, then normal operation will not proceed until the following month.

Total Turbine monthly emissions (commissioning month-lb/month)

Turbine	CO lb/mon	NOX lb/mon	VOC lb/mon	PM10 lb/mon	SOx lb/mon
Unit 1	11,602	5,728	620	900	37

Unit 2	11,602	5,728	620	900	37
Unit 3	11,602	5,728	620	900	37
Unit 4	11,602	5,728	620	900	37
Unit 5	11,602	5,728	620	900	37
Unit 6	11,602	5,728	620	900	37
Unit 7	11,602	5,728	620	900	37
Unit 8	11,602	5,728	620	900	37
Total	92,815	45,824	4,959	7,200	292

Total combined Turbine (1-8) Mass Emission Rates, lb/year (Commissioning Year)

	Emissions, lb/year				
LMS100PA CTG	NOx	CO	VOC	SO_2	PM_{10}
Start-up	63495	40534	10965	446	6375
Normal Operations	180164	263196	50028	13975	136440
Shutdown	14854	86649	7429	51	2550
Commissioning	45824	92815	4959	292	7200
TOTALS	**304337**	**483195**	**73381**	**14764**	**152565**

The only difference between the lb/yr for commissioning year versus a non-commissioning year, is the additional 150 hrs per turbine of commissioning testing hours.

30-Day Averages

The 30 Day Average emissions are calculated in Appendix B for both a commissioning and non-commissioning year for the worst case operating scenario. The worst case operating scenario was defined as OC100 in Table 10 above. The values in the tables below are the cumulative 30 day averages for the entire facility (8 CTGs, the emergency fire pump and the cooling tower).

Cumulative 30-Day Averages, lb/day (Commissioning Year)

	30 Day Average, lb/day				
Eight LMS100PA CTGs	NOx[7]	CO	VOC	SOx	PM_{10}
Commissioning		2992	160	8	232
TOTALS		**2992**	**160**	**8**	**232**

The above table assumes all the turbines are commissioned in the same month for the worst case emissions scenario. Once the commissioning is completed for one turbine, then following month the turbine can commence normal operations (permit conditions will address this issue).

Cumulative 30-Day Averages, lb/day (Non-Commissioning Year)

	30 Day Average, lb/day				
Eight LMS100PA CTGs	NOx[6]	CO	VOC	SOx	PM_{10}
Total Operations		2354	413	84	875
TOTALS		**2354**	**413**	**84**	**875**

[7] CPV Sentinel has elected to enter RECLAIM. As such, RECLAIM Trading Credits (RTC) will be used to satisfy the NOx offsetting requirements of Rule 2005, and therefore the 30-Day Averages for NOx need not be calculated

The above table assumes all the turbines are in normal operations and providing electricity to the electrical grid in the same month for the worst case emissions scenario.

The following is a comparison of the cumulative 30-day averages for the entire facility (8-LMS100 PA gas turbines) for both a commissioning year and a non-commissioning year. The maximum 30-day averages for each pollutant, shown in bold.

	NOx[6]	CO	VOC	SOx	PM_{10}
Facility 30 Day Average (Commissioning Year)		**2992**	160	8	232
Facility 30 Day Average (Non-Commissioning Year)		2354	**413**	**84**	**875**

The following table shows the 30-day averages from one individual LMS100PA gas turbine for both a commissioning year and a non-commissioning year. The maximum 30-day averages for each pollutant are shown in bold.

Turbines 1 through 5 (per Turbine)

	NOx[6]	CO	VOC	SOx	PM_{10}
30 Day Average (Commissioning Year)		**374**	20	1	29
30 Day Average (Non-Commissioning Year)		265	**46**	**9**	**94**

Turbines 6 through 8 (per Turbine)

	NOx[6]	CO	VOC	SOx	PM_{10}
30 Day Average (Commissioning Year)		**374**	20	1	29
30 Day Average (Non-Commissioning Year)		343	**61**	**13**	**135**

Emissions from the Blackstart engine

	NOx	CO	VOC	SOx	PM_{10}
Lb/hr	**18.17**	**3.84**	1.07	0.02	0.029
Lb/dy	18.17	3.84	**1.07**	**0.02**	**0.029**
30-day ave	n/a	0	**0**	**0**	**0**
Lb/yt	218	46.06	**1.07**	**0.29**	**0.35**

Emissions from the Fire pump engine

	NOx	CO	VOC	SOx	PM_{10}
Lb/hr	**18.17**	**3.84**	1.07	0.02	0.029
Lb/dy	18.17	3.84	**1.07**	**0.02**	**0.029**
30-day ave	n/a	0	**0**	**0**	**0**
Lb/yt	218	46.06	**1.07**	**0.29**	**0.35**

PROHIBITORY RULE EVALUATION

RULE 212-Standards for Approving Permits

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 (1EE-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 (10EE-6) using the risk assessment procedures and toxic air contaminants specified under Rule 1402; or, ten in a million (10EE-6) during a lifetime (70 years) for facilities with a single permitted unit, source under Regulation XX, or equipment under Regulation XXX. The total facility wide residential MICR is expected to be less than 1EE-6. However, since the emissions of criteria pollutants for the facility exceed the thresholds in Rule 212(g), a public notice is required in accordance with the requirements of Rule 212. A public notice will be issued followed by a 30-day public comment period prior to issuance of a permit.

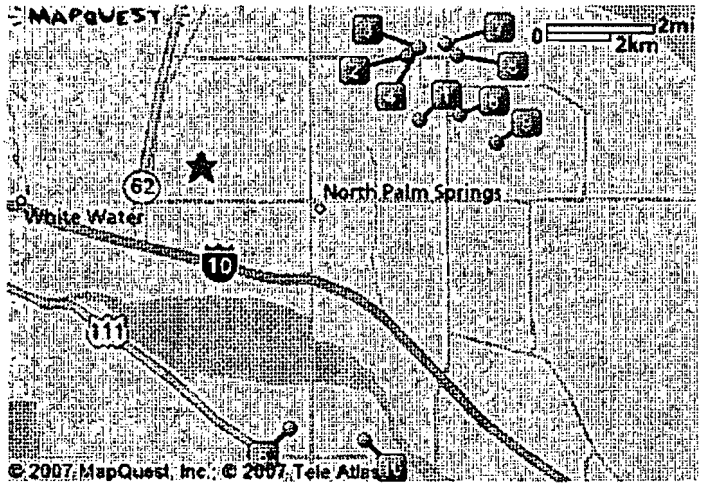
FACILITY / EQUIPMENT AND SCHOOL LOCATIONS

This proposed project is located at 62575 Powerline Rd, Desert Hot Springs. Schools located nearest to the facility are at least a minimum of 4.07 miles away from the proposed project site as measured by the Mapquest program found at http://www.google.com.

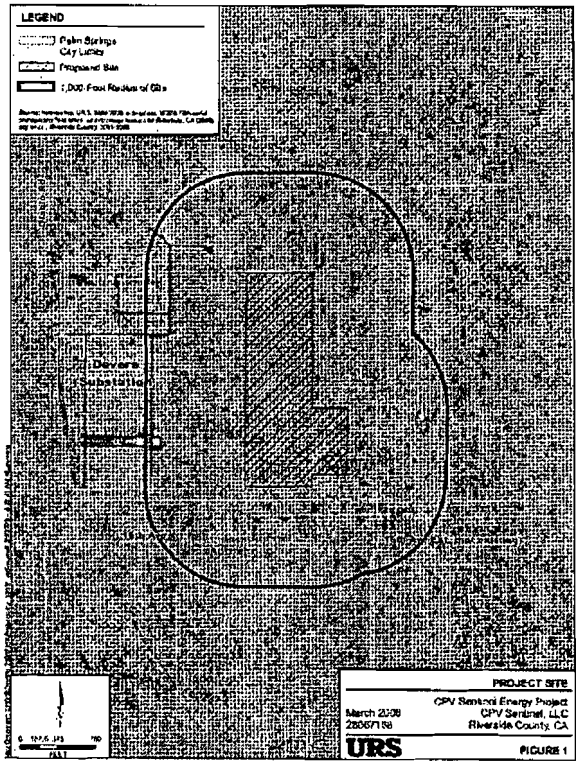
Name of School	Address	Mapquest Distance Miles (feet)
1.Two Bunch Palms Elementary School	14250 West Drive, Desert Hot Springs	4.07 (214,896)
2. Desert Hot Springs High School	65850 Pierson Blvd, Desert Hot Springs	4.27 (22,546)
3.Desert Hot Springs Latch key School	11625 West Dr., Desert Hot Springs	4.51 (23,813)
4. Wenzlaff Elementary School	11625 West Dr., Desert Hot Springs	4.51 (23,813)
5. Desert Springs Middle School	66755 Two Bunch Palms Tri, Desert Hot Springs	4.82 (25,449)
6. Desert Highlands Even Start	480 W. Tramview Rd, Palm Springs	4.85 (25,608)
7. Palm Springs Unified School Districtl	11555 Palm Dr, Desert Hot Springs	4.98 (26,136)
8. Palm Springs Christian School	66675 Pierson Blvd,, Desert Hot Springs	5.07 (26,769)
9. Bubbling Wells Elementary School	67501 Camino Campanero, Desert Hot Springs	5.40 (28,512)
10. Coyote Run Headstart	3701 N. Sunrise Way, Palm Springs	5.63 (29,726)

Each of the sensitive receptors are located at distances greater than 1,000 feet from the proposed CPV Sentinel site, as verified by both Mapquest.

The map below is a graphical representation of the surrounding vicinity of the proposed CPV site, which includes the locations of the sensitive receptors depicted in purple. The proposed project site is therefore not located within 1,000 feet of the outer boundary of a school.



Below is an aerial shot of the surrounding vicinity of the proposed CPV Sentinel Energy Project. The circle depicts the area within 1,000 feet from the proposed site.



Total Project emissions

	Emissions, lb/month					
Equipment	NOx	CO	VOC	SO_2	PM_{10}	NH3
LMS100PA CTG	~~48261~~	72899	12788	2693	27060	25,403
Fire pump engine	~~15~~ 13	2	0	0	0	
Blackstart engine	18	4	1	0	0	
TOTALS	~~48294~~ 48292	72905	12789	2693	27060	25403

NH3 = 5.86 b/hr

NH3 = ((450 hr/mon * 5 turbines) + (695 hr/mon * 3 turbines)) * 5.86 lb/hr = 25403

RULE 219-Exempt equipment not requiring permits

The Cooling tower is exempt from AQMD permit per section (d)(3) . The MICR from this equipment is less than one in one million risk (max 0.0399 in a million).MICR reviewed by District modeling staff and MICR is less than the threshold value of this Rule, thus the equipment is exempt from requiring a Permit to Operate.

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. It is unlikely, with the use of the SCR /CO catalyst configuration that there will be visible emissions. However, in the unlikely event that visible emissions do occur, anything greater than 20 percent opacity is not expected to last for greater than 3 minutes. During normal operation, no visible emissions are expected. Therefore, based on the above and on experience with other CTGs, compliance with this rule is expected.

RULE 402-Nuisance

This rule requires that a person 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 cause, or have a natural tendency to cause injury or damage to business or property. The new turbine is not expected to create a public nuisance based on experience with identical CTGs. Therefore, compliance with Rule 402 is expected.

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 installation and operation of the CTGs is expected to comply with this rule.

RULE 407-Liquid and Gaseous Air Contaminants

This rule limits CO emissions to 2,000 ppmvd and SO_2 emissions to 500 ppmvd, averaged over 15 minutes. For CO, the CTGs will meet the BACT limit of 6.0 ppmvd @ 15% O_2, 1-hr average, and the turbine will be conditioned as such. For SO_2, equipment which complies with Rule 431.1 is exempt from

the SO_2 limit in Rule 407. The applicant will be required to comply with Rule 431.1 and thus the SO_2 limit in Rule 407 will not apply.

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% CO_2, averaged over 15 minutes. The equipment is expected to meet this limit based on the calculations shown below:

Estimated exhaust gas	366361 SCFM = 21.87 mmscf/hr
Water content	10.8838
Estimated exhaust gas	366361 SCFM * (1-108838) = 326,487
Estimated exhaust gas	326,487 DSCFM * (60 min/hr) * (1mmcf/1E06 ft3)
Estimated exhaust gas	19.59 mmscf/hr
Maximum PM10 Emissions	6 lb/hr
Estimated CO2 in exhaust	3.8544%

$$\text{Grain Loading} = \frac{(6\ \text{lb/hr})(7000\ \text{gr/lb})}{19.59\text{EE6 scf/hr}} \times \frac{12}{3.8544} = 0.00667\ \text{gr/dscf} << 0.1\ \text{gr/dscf}$$

The fire pump engine and blackstart engine are not subject to this Rule.

RULE 431.1-Sulfur Content of Gaseous Fuels

CPV Sentinel will use pipeline quality natural gas which will comply with the 16 ppmv sulfur limit, calculated as H2S, specified in this rule. SCP Sentinel has provided a gas analysis which demonstrates the natural gas has a sulfur content of less than 0.25 gr/100scf, which is equivalent to a sulfur concentration of about 4 ppmv. It is also much less than the 1 gr/100scf limit typical of pipeline quality natural gas. Compliance is expected. In the applicant submittal package (Application for Certification), table 5.2-2, the sulfur content ranges from 0.051 to 0.119 grains per 100 scf. 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

CPV Sentinel will purchace diesel fuel for the two emergency engine and the fuel is required to have a sulfur content of less than 15 ppmv by wt.

RULE 474-Fuel Burning Equipment-Oxides of Nitrogen

Superseded by NOx RECLAIM.

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 turbine are estimated at 6.0 lbs/hr, and 0.0048 gr/scf during natural gas firing at maximum firing load (see calculations below). Therefore, compliance is expected. Compliance will be verified through the initial performance test.

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

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, 875.7 MMBtu/hr

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

Stack flow = 8710(20.9/17.9)*875.7 = 8.72 mmscf/hr

Combustion particulate = (6.0/8.72E+06)*7000 = 0.0048 gr/scf

RULE 1110.2 – Emissions from gaseous- and liquid fueled engines
This Rule applies to stationary engines. The blackstart and fire pump engines are considered emergency engines and are exempt from this Rule per subdivision (h)(2).

RULE 1134 – Emissions of NOx from Gas Turbines
This rule applies to gas turbines, 0.3 MW and larger, installed on or before August 4, 1989. Therefore, as a new installation, the proposed turbine is not subject to this Rule.

RULE 1135 – Emissions of NOx from Electric Power Generating Systems
This rule applies to the electric power generating systems of several of the major utility companies in the basin, including SCE Edison (CPV Sentinel is under contract to provide power to Edison). The plants which are included in the RECLAIM program are no longer subject to the requirements of this rule. However, the new simple cycle turbine does not fall under the definition of an "electric power generating system." Under the rule, an electric power generating system is defined as all boilers or replacement units and all alternative or advanced combustion devices. An advanced combustion device is further defined as a cogeneration, combined cycle, intercooled, chemically recuperated, or other advanced combustion turbine, while an alternative resource is solar, geothermal, wind generation, etc. Therefore, the proposed turbine is not subject to the requirements of Rule 1135.

NEW SOURCE REVIEW (NSR) ANALYSIS

The following section describes the NSR analysis for CPV Sentinel. The facility can comply with NSR either by qualifying for various exemptions from or by demonstrating compliance with the following rules. Since CPV Sentinel is a new facility, there are no exemptions from any portions of NSR. Therefore each of the following NSR rules will apply. Each piece of equipment at CPV Sentinel is evaluated for compliance with the rules in the table below.

Table 14 - Applicable NSR Rules for CPV Sentinel

Applicable NSR Rules for Non-RECLAIM Pollutants (CO, VOC, SOx, PM_{10})	Applicable NSR Rules for RECLAIM Pollutants (NOx)
Rule 1303(a)-BACT	Rule 2005(b)(1)(A)-BACT
Rule 1303(b)(1)-Modeling	Rule 2005(b)(1)(B)-Modeling
Rule 1303(b)(2)-Offsets	Rule 2005(b)(2)-Offsets
Rule 1303(b)(3)-Sensitive Zone Requirements	Rule 2005(e)-Trading Zone Restrictions

Rule 1303(b)(4)-Facilitywide Compliance	Rule 2005(g)-Additional Requirements
Rule 1303(b)(5)-Major Polluting Facilities	Rule 2005(h)-Public Notice
Rule 1703 (b)(1) BACT for NOx and CO	Rule 2005(i)-Rule 1401 Compliance
	Rule 2005(j)-Compliance with Fed/State NSR

RULE 1303(a), Rule 2005(b)(1)(A)-BACT and Rule 1701 (b)(1)– LMS100 CTGs

These rules state that 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. CPV Sentinel is a new source with a potential for an increase in emissions and therefore, BACT is required. Each of the LMS100 CTGs proposed for construction by CPV Sentinel will be operated on a simple cycle (no steam turbine, HRSG, or secondary electrical generator is associated with simple cycle configurations). As of the date of this evaluation, BACT for simple cycle gas turbines is shown in Table 15 below:

Table 15 - BACT Requirements for Simple Cycle Gas Turbines

NOx	CO	VOC	PM_{10}/SOx	NH_3
2.5 ppmvd, @ 15% O_2, 1-hour average	6.0 ppmvd, @ 15% O_2, 1-hour average	2.0 ppmvd, @ 15% O_2, 1-hour average	PUC quality natural gas w/ S content ≤ 1 grain/100 scf	5.0 ppmvd @ 15% O_2, 1-hour average

This information was based on a current BACT standards for this type of equipment

Table 16 - Proposed BACT for CPV Sentinel CTGs

NOx	CO	VOC	PM_{10}/SOx	NH_3
2.5 ppmvd, @ 15% O_2, 1-hour average	6.0 ppmvd, @ 15% O_2, 1-hour average	2.0 ppmvd, @ 15% O_2, 1-hour average	PUC quality natural gas w/ S content ≤ 1 grain/100 scf	5.0 ppmvd @ 15% O_2, 1-hour average

Natural gas provided by the Gas Company is limited to 16 ppmv in the South Coast by Rule 431.1, Generally , the actual sulfur content is 4 (4 ppmv corresponds to 0.25 gr/100 scf).

A NOx CEMS will be used to verify compliance with the NOx BACT limit and a CO CEMS will be used to verify compliance with the CO BACT limit. The proposed control levels in the table above will meet current BACT requirements for all criteria pollutants including NH_3. BACT is satisfied for each of the CTGs.

During start-up operations for the turbines (see pages 23 and 24 for more information and see e-mail dated 6/13/08 for the start-up emissions profile) , the control system will not be on line because the catalyst have a minimum inlet temp in order to reduce the pollutants the required BACT concentration limits. The turbine is equipped with water injection (limited NOx controls) and the NOx emissions during start-up is reduced to 25 ppmv. Condition A433.1 limits the NOx emissions during the first hour of operation (includes start-up emissions with water injection in operation) and limits the number of start-ups per year and length of each start-up. During start-up it is not practical to require a NOx ppmv limit, but to limit the emissions during the

start-up hour as done in condition A433.1, thus BACT needs to be defined during start-up to include the following

- Limit start-up time-condition, A99.1, A99.2, A99.3, A99.4, A99.9, A99.10, A433.1 and A433.2
- Limit start-ups per year- conditions, A99.1, A99.2, A99.3, A99.4, A99.9, A99.10, A433.1 and A433.2
- Limit NOx emissions per start-up hours, requires water injection to be used to comply- condition A433.1

RULE 1303(a) and Rule 2005(b)(1)(A)-BACT – Emergency Fire Pump Engine

The emergency fire pump is required to employ BACT because the maximum daily emissions from this source are expected to exceed 1 lb/day. As a starting point, the BACT Guidelines found in Part D – Non Major Polluting Facilities specify the following for emergency internal combustion engines:

EPA Tier II Certification Levels Required for Compression Ignition Engines

Rating/size	Deemed Complete After	NMHC+NOx (gm/BHP-hr)	CO (gm/BHP-hr)	PM_{10} (gm/BHP-hr)
175≤BHP<300	7/07/2006	3.0	2.6	0.15

The engine falls into the EPA Tier II BACT category highlighted in bold above. However, since CPV Sentinel will be Major Polluting Facility as defined in AQMDs BACT Guidelines, BACT for Major Sources applies. Four compression ignition emergency fire pump engines were permitted between 12/13/2000 and 12/9/2003, and the permits were issued to LA County (A/N 418342), East LA College (A/N 417691), Ultramar (A/N 395874), and Pharmavite (A/N 372822). Each of these engines drives an emergency fire pump rated between 110 bhp and 300 bhp. A closer search of AQMD's BACT Clearinghouse for each of these engines reveals no significant advancements in BACT determinations for this category of engine. As for PM_{10}, diesel fired engines are currently employing particulate traps to control PM_{10} emissions, there none currently installed for these types of engines, the main reason the engines must go through a UL certification. BACT for SOx emissions for compression ignition emergency fire pumps is diesel fuel with a sulfur content no greater than 0.0015% by weight. There are currently no Tier III fire pumps engines available. EPA will require the engines to meet the Tier III in 2009. A BACT summary for the emergency fire pump is shown below.

Proposed BACT for Emergency Fire Pump (A/N 472615)

Pollutant	EPA Tier II Levels	Proposed BACT	Comply (Yes/No)
NOx+NMHC	4.9 gm/BHP-hr	4.8 gm/BHP-hr	Yes
CO	2.6 gm/BHP-hr	0.59 gm/BHP-hr	Yes
PM_{10}	0.15 gm/BHP-hr	0.14 gm/BHP-hr	Yes
SOx	On or after June 1, 2004 the user may only purchase diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2)		Yes

The manufacturer has indicated that this engine can comply with the Tier II emission levels specified above, and the user will only purchase diesel fuel with a sulfur content of no greater than 0.0015% by weight. The emergency fire pump is expected to comply with BACT.

RULE 1303(a) and Rule 2005(b)(1)(A)-BACT – Blackstart Emergency Engine

The emergency fire pump is required to employ BACT because the maximum daily emissions from this source are expected to exceed 1 lb/day. As a starting point, the BACT Guidelines found in Part D – Non Major Polluting Facilities specify the following for emergency internal combustion engines:

EPA Tier III Certification Levels Required for Compression Ignition Engines

Rating/size	Deemed Complete After	NMHC+NOx (gm/BHP-hr)	CO (gm/BHP-hr)	PM_{10} (gm/BHP-hr)
>750 HP	7/07/2006	4.9	2.6	0.15

The engine falls into the EPA Tier II BACT category highlighted in bold above. However, since CPV Sentinel will be Major Polluting Facility as defined in AQMDs BACT Guidelines, BACT for Major Sources applies. There is one compression ignition emergency pump engine was permitted between 12/13/2000 and 03/012008 and is equipped with a PM filter. The permit was issued to Claremount Manor (A/N 387480)), The re is currently an blackstart engine installed at Mountain View Power Company (a/n 438716). The engine is equipped with a PM filter.

Proposed BACT for Emergency Blackstart engine (A/N 472614)

Pollutant	EPA Tier II Levels	Proposed BACT	Comply (Yes/No)
NOx+NMHC	4.9 gm/BHP-hr	3.96	Yes
CO	2.6 gm/BHP-hr	0.79	Yes
PM_{10}	0.15 gm/BHP-hr	PM filter	Yes
SOx	On or after June 1, 2004 the user may only purchase diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2)		Yes

The manufacturer has indicated that this engine can comply with the Tier II emission levels specified above, and the user will only purchase diesel fuel with a sulfur content of no greater than 0.0015% by weight. The Blackstart engine will be equipped with a PM control and the vender guarantees the R2 PM emission will be below 0.006 g/bhp-hr, the engine expected to comply with BACT.

RULE 1303(a)-BACT – Cooling Tower

Rule 219(e)(3) provides and exemption for water cooling towers and water cooling ponds not used for evaporative cooling of process water or not used for evaporative cooling of water from barometric jets or from barometric condensers and in which no chromium compounds are contained. The one 5-cell and one 3-cell cooling tower being proposed at CPV Sentinel will meet the requirements of Rule 219(e)(3) and is therefore exempt from NSR. BACT therefore does not apply. For more information on the cooling tower please refer to page 19 of this evaluation.

RULE 1303(a)-BACT – Ammonia Storage Tank

A pressure relief valve that will be set at no less than 25 psig will control ammonia emissions from the storage tank. In addition, a vapor return line will be used to control ammonia emissions during storage tank filling operations. Based on the above, compliance with BACT requirements is expected.

Based on the above BACT analysis for the entire project, the 8 CTGs, the emergency fire pump and the Blackstart engine will comply with the current BACT requirements found in Regulation XIII (for the non-RECLAIM pollutants) and in Regulation XX (for the RECLAIM pollutants). BACT for all equipment is satisfied.

RULE 1303(b)(1) and Rule 2005(b)(1)(B) - Modeling

The applicant has conducted air dispersion modeling using the EPA AERMOD model (version 04300). The Tier 4 Health Risk Assessment was conducted in accordance with guidelines set forth by the California Office of Environmental Health Hazard Assessment (OEHHA) and the California Air Resources Board (CARB). The OEHHA/CARB computer program (HARP) was used to determine the health risk assessment. The air dispersion model was run at a single normalized emission rate of 1.0 gram/sec. The applicant has submitted modeling results for both a commissioning and non-commissioning year which considered building downwash effects through the use of the EPA Building Profile Input Program, a program which is compatible with the ISCST3 model. Effects of terrain slope, aspect ratio, plume height, wind speed, wind direction and temperature were also accounted for in the analysis. The AERMOD model requires both surface and upper air meteorological data in the modeling applications. The National Weather Service (NWS) surface data at Dagget-Barstow station were used with wind data from the Wintec Wind Engery facility. The upper air data were obtained from the Desert Rock station in Nevada because it has the best data coverage for the modeling application. The analysis further accounted for flat, simple, intermediate, and complex terrain. Terrain features were taken from 1-second U.S. Geological Survey (USGS) data taken from its Digital Elevation Model (DEM). The DEM data provides terrain elevations with 1-meter vertical resolution and 10-meters horizontal resolution based on a UTM coordinate system. The EPA SCREEN3 model was used to estimate potential impacts due to fumigation. Potential fumigation impacts were estimated for NO_2, CO, and SO_2. Table A-2 shown below is found in Rule 1303 and lists the most stringent ambient air quality standards and allowable change in concentration for each air contaminant. The appropriate averaging times are also listed.

Table A-2
Most Stringent Ambient Air Quality Standard and
Allowable Change in Concentration
For Each Air Contaminant/Averaging Time Combination

Air Contaminant	Averaging Time	Most Stringent Air Quality Standard		Significant Change in Air Quality Concentration	
Nitrogen Dioxide	1-hour	25 pphm	470 $\mu g/m^3$	1 pphm	20 $\mu g/m^3$
	Annual	5.3 pphm	100 $\mu g/m^3$	0.05 pphm	1 $\mu g/m^3$
Carbon Monoxide	1-hour	20 ppm	23 $\mu g/m^3$	1 pphm	1.1 $\mu g/m^3$
	8-hour	9.0 ppm	10 $\mu g/m^3$	0.45 pphm	0.50 $\mu g/m^3$
Suspended Particulate Matter <10μm (PM_{10})	24-hour		50 $\mu g/m^3$		2.5 $\mu g/m^3$
	AGM[8]		30 $\mu g/m^3$		1 $\mu g/m^3$
SO2	24-hour		25 $\mu g/m^3$		1 $\mu g/m^3$

The applicant is required under Rule 1303(b)(1) to demonstrate compliance with one of the following requirements:

(a) The most stringent air quality standard shown in Table A-2 above, or
(b) The significant change in air quality concentration standards shown in Table A-2 above, if the most stringent air quality standards are exceeded

The applicant has submitted the following modeled maximum project impacts for CPV Sentinel. The numbers in the table below are per turbine.

Maximum individual Turbine Impacts for CPV Sentinel

Pollutant	Averaging Time	Turbine no.	Max Impact	Background ($\mu g/m^3$)	Total Impact	Most Stringent Standard	Significant Change in	Comply (Yes/No)

[8] AGM is the acronym for Annual Geometric Mean

			($\mu g/m^3$)		($\mu g/m^3$)	($\mu g/m^3$)	air quality concentration (ug/m³)	
NOx	1-hour	NO. 1	52.44	174.8	226.84	470	N/a	Yes
	Annual	No. 6	0.13774	24.5	24.64	100	N/a	Yes
SO2	24-hour	No. 1	0.15	39.4	39.55	105	n/a	Yes
	1 -hour	No. 1	0.40793	62.5	62.91	655	n/a	Yes
	3-hour	No. 3	0.35445	41.6	41.95	1300	n/a	Yes
	Annual	No. 6	0.00767	10.7	10.71	80	n/a	Yes
CO	1-hour	NO. 4	128.45	2645	2773.45	23,000	N/a	Yes
	8-hour	NO. 5	97.99	944.4	1042.3	10,000	N/a	Yes

Pollutant	Averaging Time	Turbine no.	Max Impact ($\mu g/m^3$)	Significant Change in air quality concentration (ug/m³)	Comply (Yes/No)
PM_{10}	24-hour	No. 2	2.4	2.5	Yes
	AGM	No. 7	0.13	1	Yes

As seen from the table above, both the 24-hour and AGM air quality standards for PM_{10} will be comply with the Significant Change in Air Concentration limit. The basin is non-attainment for PM10, the more stringent standard applies. Therefore, the applicant will be required to show compliance with the significant change in air quality standards for PM_{10}.

The CO and NOx emissions were based on commissioning of the turbines (max hourly emissions). The maximum hourly emissions of NOx and CO is 80 lb/hr and 197.85 lb/hr respectively (the applicant revised the commissioning emissions in March 2008). The PM10 emissions were based on 6 lb/hr. Note, CARB adopted new NOx standards of 338 ug/m3 (1 hour) and 56 ug/m3 (annual) and the standards will take effect in May 2008. Each turbine will comply with the revised NOx standards.

AQMD modeling staff reviewed the applicant's analyses for both air quality modeling and health risk assessment (HRA). Modeling staff provided their comments in a memorandum from Ms. Jill Whynot to Mr. Mike Mills dated April 11, 2008. A copy of this memorandum is contained in the engineering file. Staff's review of the modeling and HRA analyses concluded that the applicant used EPA AERMOD model version 04300 along with the appropriate model options in the analysis for NO_2, CO, PM_{10}, and SO_2. The applicant modeled both the cumulative and individual permit unit impacts for the project. The memorandum states that the ISCST3 modeling as performed by the applicant conforms to the District's dispersion modeling requirements. No significant deficiencies in methodology were noted.

Protection of Visibility. Net Increase in emissions from the proposed project exceed the 15 tons per year PM_{10} and 40 tons per year NOx thresholds, and the site is within the specified distance of the following Class I areas listed below.

On March 5, 2008 the AQMD sent full visibility analysis to FLM and ask them to provide comments on the Rule 1303 Visibility analysis (see letter dated 3/5/08, copy in file). No comments have been received to date from the FLMs.

Table 17
Distances to Class I Areas

Federal Class I Area	Threshold Distance (km)	Distance from the SGGS (km)
San Jacinto Wilderness Area	28	9
Joshua Tree National Park	29	10
San Gorgonio Wilderness Area	32	22

Modeling was performed to determine project impacts on visibility on all Class I areas. The applicant applied U.S. EPA PLUVUE II model (version 96170), the modeling results are listed in the table below. The total color contrast values (Delta-E) and the plume contrast values (C) for all modeling scenarios are less than the thresholds of 2.0 and 0.05, respectively.

Table 18
Summary of Results of PLUVUE II Plume Visibility Impact Simulations

Class I Area	Parameter	Autumn		Spring		Summer		Winter		Maximu For All Times
		Evening	Morning	Evening	Morning	Evening	Morning	Evening	Morning	
Joshua Tree National Park	contrast	0.014	0.005	0.013	0.004	0.0191	0.006	0.01	0.004	0.019
San Jacinto Wilderness Area	contrast	0.01	0.007	0.009	0.008	0.011	0.003	0.009	0.008	0.011
San Gorgonio Wilderness Area	contrast	0.009	0.006	0.007	0.007	0.005	0.006	0.005	0.008	0.009
Joshua Tree National Park	ΔE	0.292	0.309	0.268	0.356	0.924	0.314	0.204	0.356	0.924
San Jacinto Wilderness Area	ΔE	0.482	0.694	0.465	0.736	0.498	0.714	0.501	0.736	0.736
San Gorgonio Wilderness Area	ΔE	0.372	0.392	0.27	0.446	0.222	0.405	0.256	0.66	0.66

Note: Contrast predicted with a black background was excluded because the plume could only appear against sky background for this observer-target combination.

RULE 1303(b)(2) and Rule 2005(b)(2)-Offsets – LMS100 PA CTGs

Since CPV Sentinel is a new facility with an emissions increase, offsets will be required for all criteria pollutants. CPV Sentinel has opted into AQMD's NOx RECLAIM program and as such, NOx increases will be offset with RTCs at a 1.0 to1 ratio. Non-RECLAIM criteria pollutants (VOC, SOx, and PM_{10}) will be offset by either the purchase of Emission Reduction Credits (ERCs) and/or other means, as allowed under AQMD Rules and Regulations ~~Priority Reserve Credits (PRCs)~~ at a 1.2 to 1 ratio. The facility may elect to

offset emission increases using either purchased ERCs or other means ~~PRCs~~ or any combination thereof as allowed by AQMD Rules and Regulations. The required RTCs for NOx for the first and second years of operation are shown below. The values include start-ups, commissioning (first year only), normal operation, and shutdowns, see Appendix F for details. (The total emissions for the second year excludes commissioning).

Required NOx RTCs

Turbines one through five

Operating Condition 100	Hours per Year	NOx (lb/hr)	NOx (lb/year) per device	NOx (lb/year) cumulative
CTGs				
Startup	125	59.76	7,470.00	37,350.00
Shutdown	50	34.95	1,747.50	8,737.50
Normal Operation	2,628	7.92	20,821.06	104,105.32
Commissioning	150	38.19	5,728.00	28,640.00
CTG Totals	2,953		35,766.56	178,832.82

5

Turbines six through eight

Operating Condition 100	Hours per Year	NOx (lb/hr)	NOx (lb/year) per device	NOx (lb/year) cumulative
CTGs				
Startup	146	59.76	8,715.00	26,145.00
Shutdown	58	34.95	2,038.75	6,116.25
Normal Operation	3,200	7.92	25,352.89	76,058.68
Commissioning	150	38.19	5,728.00	17,184.00
CTG Totals	3,554		41,834.64	125,503.93

Operating Condition 100	Hours per Year	NOx (lb/hr)		NOx (lb/year) cumulative
CTG 1-5 Totals				178,832.82
CTG 6-8 Totals				125,503.93
Emergency Fire Pump	50	~~3.60~~ 2.54	~~179.75~~ 126.87	~~179.75~~ 126.87
Emergency blackstart ICE	12	18.17	218.08	218.08

Total 1st Year Emissions (lb/year)		304,734.57
Offset Ratio		1.00
1st year RTCs (lb/year)		304,734.57
2nd year RTCs (lb/year)		258,910.57

Table 18 shows the facility-wide 30-day averages for CO, VOC, PM_{10} and SOx for informational purposes only. Offsets are based upon 30-day averages from individual permit units. As mentioned above, CPV Sentinel may elect to use ~~both~~ ERCs or other means ~~and PRCs~~ to provide the required offsets. ~~as shown below, however, PRCs are only available for PM_{10}, and SOx, as depicted in the table below~~. The amounts in Table 18 are required to fully offset the facility increases and satisfy the requirements of Rule 1303(b)(2): Note maximum 30-day average for PM_{10} excludes the emissions from the cooling tower per Rule 219(e)(3).

Table 18 – 30-Day Averages for the Entire Facility, (lb/day)

	NOx	CO	VOC	SOx	PM_{10}
Maximum 30 Day Average		2992	413	84	875

Table 19 - Required Offsets for Non-RECLAIM Pollutants (per-turbine basis for turbines 1-5, lb/day)

	NOx	CO	VOC	SOx	PM_{10}
Maximum 30 Day Average		374	46	9	94
~~ERC~~ Offset Ratio		1.2	1.2	1.2	1.2
~~PRC Offset Ratio~~		~~1.2~~	~~N/A~~	~~1.2~~	~~1.2~~
Required Offsets ~~if ERCs are chosen~~			55	11	113
~~Required Offsets if PRCs are chosen~~			~~N/A~~	~~11~~	~~113~~

Table 20 - Required Offsets for Non-RECLAIM Pollutants (per-turbine basis for turbines 6-8, lb/day)

	NOx	CO	VOC	SOx	PM_{10}
Maximum 30 Day Average		374	61	13	135
~~ERC~~ Offset Ratio		1.2	1.2	1.2	1.2
~~PRC Offset Ratio~~		~~1.2~~	~~N/A~~	~~1.2~~	~~1.2~~
Required Offsets if ERCs are chosen			73	16	162
~~Required Offsets if PRCs are chosen~~			~~N/A~~	~~16~~	~~162~~

Offsets are not required for CO, since AQMD is in attainment with CO. The CO emissions are listed for informational purposes only in this section, however the analysis for attainment pollutants is intended under Regulation XXII.

The facility's maximum monthly and annual fuel usage (caps) for the simultaneous operation of the 8 CTGs will be 3,880 mmscf and 20,840 mmscf, respectively, based on operating condition 100. The annual fuel cap will be the basis for the facility's PTE. The monthly and annual fuel caps will correspond to 485 hours/month and 2803 hours/year of operation for Turbines one through five (each). The monthly and annual fuel caps will correspond to 695 hours/month and 3404 hours/year of operation for Turbines six through eight (each). These values were selected by CPV Sentinel.

The two emergency engines will have hours per year limitations. The calculations are shown below and a monthly fuel cap (ref Appendix G) will be included on the Facility Permit as a permit condition.

Commissioning period
CTG fuel/turbine = 301 mmcf

Non commissioning period Turbines 1 through 5 (per turbine)

Monthly:
CTGFuel =(485 hr/mon) * 875.7 mmbtu/hr * 1ft3/1018 btu
CTG Fuel = 418 mmcf/month

Annually:
CTG Fuel =(2803 hr/yr) * 875.7 mmbtu/hr * 1ft3/1018 btu
CTGFuel= 2,411 mmcf/yr

Non commissioning period Turbines 6 through 8 (per turbine)

Monthly:
CTGFuel =(695 hr/mon) * 875.7 mmbtu/hr * 1ft3/1018 btu
CTG Fuel = 598 mmcf/month

Annually:
CTG Fuel =(3404 hr/yr) * 875.7 mmbtu/hr * 1ft3/1018 btu
CTGFuel= 2,928 mmcf/yr

Non commissioning period Turbines 1 through 8 (total)

Monthly:
CTGFuel =((485 hr/mon * 5 turbines) +(695 hr/mon * 3 turbine)) * 875.7 mmbtu/hr * 1ft3/1018 btu
CTG Fuel = 3880 mmcf/month

Annually:
CTG Fuel =((2803 hr/yr * 5 turbines) +(3404 hr/yr * 3 turbine)) * 875.7 mmbtu/hr * 1ft3/1018 btu
CTGFuel= 20,840 mmcf/yr

Table 21 below shows the total amount of ERC's that CPV Sentinel has purchased as of August 29 2008. The table consists of ~~one~~ two ERC certificates for VOC (certificate no. see below ~~pending~~) purchased on 3/27/08 ~~(pending)~~, ~~2006~~ from Tenaska in the amount of 412 lb/day. Shaded areas in the table indicate that no ERC's for that pollutant have been acquired by CPV Sentinel as of ~~April~~ August 29, 2008.

Table 21 – Total Amount of Emission Reduction Credits currently held by CPV Sentinel

Pollutant	ERC Certificate No.	Date of Purchase	Name of Seller	Amount of ERC (lb/day)
VOC	AQ007877	03/27/08	Tenaska	348
	AQ007879	03/27/08	Tenaska	64
CO				
PM10				
SOx				

CPV Sentinel has indicated that the required amounts of offsets will be provided prior to issuance of the Facility Permit. Compliance with offset requirements of Rules 1303(b)(2) and 2005(b)(2) is ~~expected~~ required prior to issuance of the final Permits to Construct.

RULES 1303(b)(3)-Sensitive Zone Requirements and 2005(e)-Trading Zone Restrictions
Both rules state that credits must be obtained from the appropriate trading zone. In the case of Rule 1303(b)(3), ~~unless credits are obtained from the Priority Reserve,~~ facilities located in the South Coast Air Basin are subject to the Sensitive Zone requirements specified in Health & Safety Code Section 40410.5. CPV Sentinel is located in the Coachella Valley and is therefore eligible to obtain its ERCs from either Zone 1 or Zone 2a. Similarly in the case of Rule 2005(e), CPV Sentinel, because of its location may obtain RTCs from either Zone 1 or Zone 2, at its choosing. Therefore upon providing the adequate amount of emissions reductions credits or RTCs compliance is expected with both rules.

RULE 1303(b)(4)-Facility Compliance
The new facility will comply with all applicable Rules and Regulations of the AQMD.

RULE 1303(b)(5)-Major Polluting Facilities

Rule 1303(b)(5)(A) – Alternative Analysis
The applicant is required to conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for the CPV Sentinel and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project. CPV Sentinel has performed a comparative evaluation of alternative sites as part of the AFC process (see section 8 of AFC submittal package) and has concluded that the benefits of providing additional electricity and increased employment in the surrounding area will outweigh the environmental and social costs incurred in the construction and operation of the proposed facility.

Rule 1303(b)(5)(B) – Statewide Compliance
CPV Sentinel has submitted an email to the AQMD dated March 13, 2008 stating that "any and all facilities that CPV Sentinel owns or operates in the State of California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act. Therefore, compliance is expected.

Rule 1303(b)(5)(C) – Protection of Visibility
Modeling is required if the source is within a Class I area and the NOx and PM10 emissions exceed 40 TPY and 15TYP respectively. There are three Class I sites is located within the minimum distances to this facility. Modeling from plume visibility is required, however, the applicant has provided modeling impact data for the Class I areas and the data was reviewed by District's modeling staff and complies with this section of the Rule.

Rule 1303(b)(5)(D) – Compliance through CEQA
The California Energy Commission's (CEC) certification process is equivalent to CEQA. Since the applicant is required to receive a certification from the CEC, the applicable CEQA requirements and deficiencies will be addressed. Compliance is expected. A copy of the preliminary staff report will be sent to AQMD's CEQA group for comments and review.

~~*Rule 1309.1 Priority Reserve*~~

~~CPV Sentinel has requested Priority Reserve credits for PM10 and SOx emissions. The facility qualifies as an Electrical Generating Facility (EGF) as defined in the rule because it generates more than 50 MW per year for distribution in the state. CPV qualifies as an EGF due to its CEC submittal of a complete AFC on July 26, 2007 and AQMD applications deemed complete on August 10, 2007. The facility is located in Zone 1 and following requirements apply:~~

~~Table 22 – Rule 1309.1 Requirements and Compliance Determination~~	
~~REQUIREMENTS~~	~~COMPLIANCE (Yes/No)~~
~~Rule 1309.1(b)(5)(ii) – Permit condition requiring facility to comply with 0.060 lb/MW-hr for PM10 and 0.080 lb/MW-hr for NOx~~	~~(YES) the turbines will be tested for verify compliance with these emissions standards. The determinations are made based on gross plant output at ISO conditions.~~
~~Rule 1309.1(c)(1) – Permit condition requiring facility to comply with BARCT for pollutants received from Priority Reserve for all existing sources prior to operation of any new sources~~	~~(YES) Since there are no existing sources at this facility, BARCT is not applicable and the new equipment will be constructed using BACT for simple cycle power plants. These emission limits the lowest levels achieved in practice under federal LAER. Compliance is expected~~
~~Rule 1309.1(c)(2) – The applicant must pay a mitigation fee pursuant to subdivision (g)~~	~~(YES) The applicant will pay this fee for each pollutant upon securing PRCs.~~
~~Rule 1309.1(c)(3) – Conducts due diligence effort approved by the Executive Officer to secure ERCs for requested Priority Reserve pollutants~~	~~(PENDING) The applicant submitted to the District a due diligence report (dated 4/7/08). There are 17 companies interested in selling ROG ERCs. There are 2 companies interested in selling SOx ERCs. There are no companies interested in selling PM10 ERCs.~~
~~Rule 1309.1(c)(4) – Applicant must enter into a long term contract with the State of California to sell at least 50% of the portion of power which it has generated using PRCs~~	~~(YES) The State of CA is currently not entering into any long term contracts however, the applicant has secured two long term contracts with SCE to supply quick starting peaking capacity for the eight turbines~~
~~Rule 1309.1(c)(6) – Applicant has the new source fully and legally operational at rated capacity within 3 years following AQMD permit to Construct issuance or CEC certification, whichever is later~~	~~(YES) The applicant is scheduled to have the new facility fully operational at its rated capacity by August 2010. The applicant secured long term contracts for turbines 6 through eight in mid March 2008. The turbines should be on line by 2012. The applicant may ask the Governing Board to grant an extension to exceed the three year period~~
~~Rule 1309.1(c)(5)(A) – Applicant for an in-Basin EGF must purchase PRCs at an offset ratio of 1.2 to 1.0~~	~~(YES) The applicant has proposed to purchase both ERCs and PRC at an offset ration of 1.2 to 1.0.~~
~~Rule 1309.1(c)(5)(B) – Applicant for an in-Basin EGF must purchase PRCs at an offset ratio of 1.2 to 1.0~~	~~(YES) The applicant researched the feasibility of using renewable/alternative energy at this site. The use of this type of energy is not a viable option for this site, see additional information in the next section~~
~~Rule 1309.1(d)(6) – If Applicant holds an ERC, the ERC must be used before access to the Priority Reserve is allowed for that pollutant~~	~~(Pending) The applicant has not purchased any ERC's at this time. There are two companies interested in selling SOx ERCs. There are 17 companies interested in selling ROG ERCs.~~
~~Rule 1309.1(d)(14) – Release of Priority Reserve credits, once CEC certification is obtained and long term contracts with SCE is obtained~~	~~(Yes) Secures final Certification from CEC (pending) and long turn contract with Southern California Edison (done).~~
~~BASED ON THE INFORMATION IN THIS TABLE, CPV SENTINEL CAN COMPLY WITH THE APPLICABLE REQUIREMETS OF RULE 1309.1~~	

~~The facility is located in Zone 1 and the following more stringent requirements of Rule 1309.1 do not apply per this Rule.~~

- ~~Toxics requirements (cumulative)~~
- ~~PM10 concentration limits (24 hour and annual) (cumulative)~~
- ~~Limit on annual operating hours~~

~~RULE 1309.1(c)(5)(B) – Renewable/Alternative Energy~~

~~This rule requires that in order to have access to the Priority Reserve, the applicant must demonstrate to the satisfaction of the Executive Officer that 10% fo the total facility power or 85 MW, renewable/alternative energy consisting of hydropower, wind, wave, solar, geothermal, fossil fuel, and fuel cell technologies are not viable options for the power to be generated at the site. Wave, geothermal and hydropower options are not viable based on the location of the proposed plant. Therefore, CPV Sentinel provided an analysis on February 26, 2008 (see file) in which wind, solar, and fuel cell technologies were considered.~~

~~Hydropower~~

~~There is no moving surface water or potentially dammable water body at this site to support a hydroelectric installation; therefore hydroelectricity is not a viable option at this site.~~

~~Wind~~

~~Wind power is created by converting wind energy into electricity using wind turbines. An annual average wind speed of at least seven m/sec (15.7 mph) usually is needed for a site to be considered viable for an wind farm development. The average wind speed at the project site exceeds this threshold and, thus conditions at this site are adequate for producing electricity. Each turbine typically occupies an area of about 0.3 to 0.5 acres, and each turbine must be spaced three to ten rotor diameters apart in order to avoid inter-turbine wake effects that reduce the efficiency of the electricity production. Converting wind energy into electricity generally requires five to 10 acres of land for each MW of electrical energy produced . The proposed facility has 37 acres of land and would support 3.7 to 7.4 MW of wind power capacity. Therefore, wind technology at CPV Sentinel site is not a viable option.~~

~~Solar~~

~~Solar energy is the energy contained in sunlight which can be harnessed and converted into solar power. Common solar plants use either photovoltaic arrays or solar thermal systems (CTS) to generate electricity. Photovoltaic systems convert sunlight directly into energy while a CTS concentrates the sun's energy into a tight beam which is used to heat a working fluid which in turn transfers its heat to a power generation system to generate electricity.~~

~~According to CPV Sentinel, the least land intensive solar technology available at this time, STS uses about 5 acres per megawatt. The 37 acres of land available at the proposed site would allow for the construction of only about a 7.4 MW solar project, which is far less than 10% of the proposed plant capacity of about 850 MWs. Therefore, solar power is not a viable option at this site~~

~~Geothermal Energy~~

~~There are no geothermal steam or hot water reservoirs located at the proposed site. Thus generation of geothermal power is precluded by site conditions~~

~~Wave Power~~

~~The proposed SGGS site is not located on or adjacent to the Pacific Ocean; therefore wave power is not a viable option at this site.~~

~~Fuel Cell~~

~~CPV Sentinel stated in the October 15, 2007 letter that the only fuel cell available commercially today is the PureCell 200 built by UTC Power. The cost of the unit is approximately $4,000/kW. The installed cost of~~

~~the unit approaches $1.1 million. At a rated output of 200 kW, this translates to about $5,500/kW, installed. Other types of fuel cells are less developed. Based on the above, fuel cell technology is not a viable option.~~

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. Rule 1401 requirements are summarized as follows:

Table 23 – Rule 1401 Requirements

Parameters and Specifications	Rule 1401 Requirements
MICR, without T-BACT	$\leq 1x10^{-6}$
MICR, with T-BACT	$\leq 1x10^{-5}$
Acute Hazard Index	≤ 1.0
Chronic Hazard Index	≤ 1.0
Cancer Burden	≤ 0.5

The applicant performed a Tier 4 health risk assessment using the Hot Spots Analysis and Reporting Program (HARP, version 1.2a). The analysis included an estimate of the MICR for the nearest residential and commercial receptors, the acute and chronic hazard indices for the entire facility. PRA modeling staff reviewed the applicant's methodology and procedures used, and re-ran the HARP model and verified the health risk and hazard indices which were presented by the applicant. PRA staff concluded that each of the health risk values for MICR, HIA and HIC were appropriately estimated (see memorandum in file, dated April 11, 2008 from Ms. Jill Whynot to Mr. Mike Mills). Table 24 below is a summary of the modeled health risk assessment results (list largest MICR, HIA and HIC regardless of receptor location). The cancer burden is not calculated because the MICR is less than 1×10^{-6} for both residential and commercial receptors. See Appendix I for TAC emissions calculations.

Table 24 – Rule 1401 Modeled Results

Turbine 1

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0051×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0146	≤ 1.0	Yes
HIC	0.00015	≤ 1.0	Yes
Receptor UTMs	536911E / 3758410N		

Turbine 2

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0050×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0144	≤ 1.0	Yes
HIC	0.00015	≤ 1.0	Yes
Receptor UTMs	537011E / 3758310N		

Turbine 3

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0050×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0144	≤ 1.0	Yes
HIC	0.00015	≤ 1.0	Yes
Receptor UTMs	538511E / 3747210N		

Turbine 4

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0051×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0143	≤ 1.0	Yes
HIC	0.00016	≤ 1.0	Yes
Receptor UTMs	538511E / 3747210N		

Turbine 5

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0051×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0143	≤ 1.0	Yes
HIC	0.00016	≤ 1.0	Yes
Receptor UTMs	538511E / 3747210N		

Turbine 6

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0040×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0142	≤ 1.0	Yes
HIC	0.00020	≤ 1.0	Yes
Receptor UTMs	538511E / 3747210N		

Turbine 7

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0041×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0142	≤ 1.0	Yes
HIC	0.00020	≤ 1.0	Yes
Receptor UTMs	538511E / 3747210N		

Turbine 8

Risk Parameter	Cancer Risk	Rule 1401 Requirements	Compliance (Yes/No)
MICR	0.0040×10^{-06}	$\leq 1 \times 10^{-6}$	Yes
HIA	0.0141	≤ 1.0	Yes
HIC	0.00020	≤ 1.0	Yes
Receptor UTMs	538511E / 3747210N		

Table 24 shows that CPV Sentinel will comply with the applicable requirements of Rule 1401. The cancer burden is not computed because the highest MICR is less than 1×10^{-6}. The applicant use EPA ISCST3 (version 99155) in their modeling analysis (this is the version of ISCST3 used in HARP) The applicant performed the risk assessment with the Hot Spots Analysis and Reporting Program (HARP, version 1.3). Planning reviewed the See Appendix H for the actual TAC emissions.

The blackstart engine and fire pump are exempt per section (i)(1)(A). The cancer risk was calculated for this equipment and is listed below for informational purposes only.

Blackstart engine risk is 8.51E-07, but the applicant will install T-BACT and the revised risk will be reduced by 90%, the revised risk is 8.51E-08

Fire pump engine risk is 1.11E-07

The table below list the MICR/HIA/HIC at the residential and commercial receptor

Table 25 – Rule 1401 Modeled Results for nearest residential/commercial receptor

Source	Residential MICR	Commercial MICR	Residential HIC	Commercial HIC	Residential HIA	Commercial HIA
Gas Turbine No. 1	4.76E-11	1.99E-09	3.02E-05	4.27E-07	7.91E-04	1.60E-03
Gas Turbine No. 2	5.40E-11	2.34E-09	2.91E-05	2.77E-07	7.80E-04	1.55E-03
Gas Turbine No. 3	6.56E-11	2.44E-09	2.81E-05	2.20E-07	7.64E-04	1.40E-03
Gas Turbine No. 4	8.38E-11	2.24E-09	2.71E-05	2.00E-07	7.31E-04	1.45E-03
Gas Turbine No. 5	1.06E-10	1.84E-09	2.62E-05	1.99E-07	7.24E-04	1.47E-03
Gas Turbine No. 6	9.13E-11	1.08E-09	3.06E-05	2.48E-07	7.40E-04	1.56E-03
Gas Turbine No. 7	8.67E-11	8.02E-10	2.96E-05	2.53E-07	7.33E-04	1.58E-03
Gas Turbine No. 8	7.11E-11	5.91E-10	2.86E-05	2.65E-07	7.01E-04	1.46E-03
Total Project (includes turbines, fire pump, blackstart engine & cooling towers)	4.31E-08	2.01E-07	2.41E-04	2.63E-03	5.98E-03	1.21E-02

The nearest residential receptor that had the highest MICR was a farm located 0.5 KM east of the facility, the HIC was at Mountain View Manor and the HIA was at a residence located 1.5 km SW of the facility.

The nearest commercial receptor that had the highest MICR/HIA/HIC was from the Wintect Wind Farm

RULE 1470-Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines.

Rule 1470 imposes the following requirements on compression ignition engines:

Paragraph (c)(1) requires the use of CARB Diesel fuel. The use of No. 2 diesel fuel will satisfy this requirement. Paragraph (c)(2)(A) imposes operating requirements for engines located within 500 feet from a school. Since the engine is located greater than 500 feet to the nearest school, the requirements of this section are not applicable.

Paragraph (c)(2)(B) allows operation of this device during an impending rotating electric power outage only if:

1. The permit specifically allows this operation
2. The utility company has actually ordered the outage
3. The engine is in a specific location covered by the outage.
4. The engine is operated no more than 30 minutes prior to the outage, and

5. The engine operation is terminated immediately after the outage.

AQMD will require a condition to limit the maintenance and testing to less than 50 hours per year. This engine is expected to meet these requirements.

Paragraph (c)(2)(C) limits hours for maintenance and testing to 50 hours per year for PM_{10} emissions up to 0.15 gm/bhp-hr, and a maximum of 100 hours per year for PM_{10} emissions up to 0.01 gm/bhp-hr. Therefore, the engine will comply with paragraph (c)(2)(C). Also, part (iv) of paragraph (c)(2)(C) requires that the engine meet the standards for off road engines in Title 13, CCR section 2423. This engine will comply with the requirements for off road engines. Therefore, compliance with Rule1470 is expected.

RULE 1472- Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal engines

Per section (a) of this Rule only applies with facilities having three or more compression ignition engines, thus the Rule does not apply (two engines proposed for this Facility).

Rule 2005(g) – Additional Requirements

As with Rule 1303(b)(5) for the Non-RECLAIM pollutants, CPV Sentinel has addressed the alternative analysis, statewide compliance, protection of visibility, and CEQA compliance requirements of this rule for NOx. These requirements are essentially the same as those found in Rule 1303(b)(5), subparts A through D for non-RECLAIM pollutants, and are summarized below.

Rule 2005(g)(1) – Statewide Compliance

CPV Sentinel submitted an email to the AQMD dated March 13, 2008 stating that "any and all facilities that CPV Sentinel owns or operates in the State of California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act. Therefore, compliance is expected.

Rule 2005(g)(2) – Alternative Analysis

The applicant is required to conduct an analysis of alternative sites, sizes, production processes, environmental control techniques for the CPV Sentinel and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project. CPV Sentinel has performed a comparative evaluation of alternative sites as part of the AFC process and has concluded that the benefits of providing additional electricity and increased employment in the surrounding area will outweigh the environmental and social costs incurred in the construction and operation of the proposed facility.

Rule 2005(g)(3) – Compliance through CEQA

The California Energy Commission's (CEC) certification process is essentially equivalent to CEQA. Since the applicant is required to receive a certification from the CEC, the applicable CEQA requirements and deficiencies will be addressed. Compliance is expected

Rule 2005(g)(4) – Protection of Visibility

Modeling is required if the source is within a Class I area and the NOx emissions exceed 40 TPY. There are three Class I sites is located within the minimum distances to this facility. Modeling from plume visibility is required, however, the applicant has provided modeling impact data for the Class

I areas and the data was reviewed by District's modeling staff and complies with this section of the Rule.

Rule 2005(h) – Public Notice
CPV Sentinel 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.
CPV Sentinel will comply with Rule 1401 as demonstrated in the Tier 4 analysis and subsequently reviewed and found to be satisfactory by AQMD modeling staff. Compliance is expected.

Rule 2005(j) – Compliance with State and Federal NSR.
CPV Sentinel will comply with the provisions of this rule by having demonstrated compliance with AQMD NSR Regulations XIII and Rule 2005-NSR for RECLAIM.

Rule 2005 – Fire pump

2005 (c)(1)-BACT- NOx+VOC (combined) emissions less than 4.8 g/bhp-hr

Modeling 2005 (c)(1)(B)

Exempt per section (k)(5)

Offsets 2005 (c)(2)(A)

Applicant will have to provide the enough allocation credits for the allocation year. The amount of RTC's required for this equipment will be 180 pounds per year.

Offsets 2012 (e)(2)(C)

Engine is a process unit, per Rule 2002 Table 1, the equipment is allowed to use a emission factor based on the BACT NOx limit, see *below*

BACT limit (combined NOx+VOC) = 4.9 g/bhp-hr
Fuel rate = 10.3 gal/hr
For RECLAIM purposes, assume VOC is zero and max NOx = 4.9 g/bhp-hr

EF = (4.9 g/bhp-hr)*(1lb/454 g)*(1 hr/10.3 gal)*(1000 gal/1mgal)*240 hp

EF = 246 lb/mgal

Rule 2005 –Blackstart engine

2005 (c)(1)-BACT- NOx+VOC (combined) emissions less than 4.9 g/bhp-hr

Modeling 2005 (c)(1)(B)

Exempt per section (k)(5)

Offsets 2005 (c)(2)(A)

Applicant will have to provide the enough allocation credits for the allocation year. The amount of RTC's required for this equipment will be 218 pounds per year.

Offsets 2012 (e)(2)(C)

Engine is a process unit, per Rule 2002 Table 1, the equipment is allowed to use a emission factor based on the BACT NOx limit, see below

BACT limit (combined NOx+VOC) = 4.90 g/bhp-hr
Fuel rate = 110.3 gal/hr
For RECLAIM purposes, assume VOC is zero and max NOx = 4.9 g/bhp-hr

EF = (4.9 g/bhp-hr)*(1lb/454 g)*(1 hr/110.3 gal)*(1000 gal/1mgal)*2206 hp

EF = 216 lb/mgal

Rule 2012 – RECLAIM, Monitoring Recording and Recordkeeping Requirements
The turbines will be classified as major NOx sources under RECLAIM. As such, they are 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 AQMD on a daily basis. The CEMS system will be required to be installed within 90 days of start up. Compliance is expected.

The two emergency engines will be classified as a process unit under RECLAIM As a process unit, the equipment will be required to install a fuel or timer meter and accept an NOx emissions factor (based on the BACT limit-lb/mgal).

REGULATION XVII-Prevention of Significant Deterioration
The CO and NOx emissions during the commissioning year are below the 250 tons/yr threshold as specified in section (b)(2)(A), thus the facility is not subject to this Rule. Rule 1703 (b)(1) requires CO BACT be applied to the Turbines. The turbines will be vented to CO control and the CO emissions will be limited to 6 ppmv (permit condition).

INTERIM PERIOD EMISSION FACTORS
RECLAIM requires a NOx 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. The emission factor for the commissioning period is an average of for the entire 150 hour period. During this period, the turbines may be uncontrolled, partially controlled, or 100 percent controlled. The remaining interim reporting period at which controlled rates at BACT are assumed.

Since CPV Sentinel will be 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 derived below. There will be two interim period emission factors calculated for NOx.

The first factor will be for use during commissioning stage when the CTGs are assumed to be operating at uncontrolled levels and the second factor will be for use after commissioning is complete and the CTGs are assumed to operate at BACT levels. The specific calculations are shown in Appendix G and the results are shown in the tables below.

Commissioning Period

Pollutants	NOx	CO
Total emissions (lbs)	5728	11602
Total Fuel (mmscf)	301.48	301.48
Emission Factor (lb/mmscf)	**19.0**	**38.48**

Remaining Period (Non-Commissioning start-up)

Pollutants	NOx	CO
Total emissions (lbs)	258513	390379
Total Fuel (mmscf)	20840	20840
Emission Factor (lb/mmscf)	**12.40**	**18.73**

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The CEC is the lead agency for this project and CPV Sentinel filed an Application for Certification (07-AFC-3) for the project on July 25, 2007. CPV Sentinel will be subject to the CEC's 12-month energy facility licensing process which will address public issues and concerns involving zoning, biological resources, water resources, air quality, transmission, public health and safety, and their resolution. The CEC's 12-month licensing process is a certified regulatory program under CEQA and includes several opportunities for public participation. The CEC's license/certification subsumes all requirements of state, local, or regional agencies otherwise required before a new plant is constructed. The CEC coordinates its review of the facility with the federal, state, and local agencies that will be issuing permits to ensure that its certification incorporates the conditions that would be required by these various agencies. The AFC process is the functional equivalent of a traditional CEQA review and will address and resolve issues related to CEQA.

NSPS for Stationary Gas Turbines - 40CFR Part 60 Subpart KKKK

The turbine is subject to Subpart KKKK because the heat input is greater than 10.7 gigajoules per hour (10.14 MMBtu per hour) at peak load, based on the higher heating value of the fuel fired. Actual unit rating is 875.8+06 btu/hr (HHV) X 1055 joules/btu = 923.97 gigajoules/hr. The standards applicable for a turbine greater than 850 mmbtu/hr are as follows:

NOx: 15 ppm at 15% O2
SOx: 0.90 lbs/MWh discharge, or 0.060 lbs/mmbtu potential SO2 in the fuel

The proposed NOx limit will be 2.5 ppmv and should comply with concentration limit of this Rule.

SOx = 0.61 lb/hr / 102.611 MW = 0.0059 lb/MWh

The SOx emissions of 0.0059/lb/MWhr are below the emissions limits of this Rule

Monitoring

The regulation requires that the fuel consumption and water to fuel ratio be monitored and recorded on a continuous basis, or alternatively, that a NOx and O2 CEMS be installed. For the SOx requirement, either a fuel meter to measure input, or a watt-meter to measure output is required, depending on which limit is selected. Also, daily monitoring of the sulfur content of the fuel is required if the fuel limit is selected. However, if the operator can provide supplier data showing the sulfur content of the fuel is less than 20 grains/100cf (for natural gas), then daily fuel monitoring is not required.

In the applicant submittal package (Application for Certification), table 5.2-2, the sulfur content ranges from 0.051 to 0.119 grains per 100 scf

Testing
An initial performance test is required for both NOx and SO2. For units with a NOx CEMS, a minimum of 9 RATA reference method runs is required at an operating load of +/- 25 percent of 100 percent load. For SO2, either a fuel sample methodology or a stack measurement can be used, depending on the chosen limit. Annual performance tests are also required for NOx and SO2.

Compliance with the requirements of this rule is expected.

NESHAPS for Stationary Gas Turbines - 40CFR Part 63 Subpart YYYY
This regulation applies to gas turbines located at major sources of HAP emissions. A major source is defined as a facility with emissions of 10 tpy or more of a single HAP or 25 tpy or more of a combination of HAPs. The largest single HAP emission from the turbine or engine is formaldehyde from the turbine at 1070 lbs/yr, or 0.535 tpy. The total combined HAPs from both sources at CPV Sentinel are less than 25 tpy (reference Appendix ~~E~~ H). Therefore, the CPV Sentinel facility is not a major source, and the requirements of this regulation do not apply. Ammonia is not defined as an HAP pollutant per this Rule.

EPA has indicated there are NESHAPS for area sources (applies to equipment emitting less than major source emissions thresholds). EPA list new NESHAPS (40 CFR 63 subpart ZZZZ) for spark-ignited combustion engines for area sources, the applicant proposes to install two compression ignition engines at this Facility, thus the new area sources NESHAPS does not apply. EPA does propose future NESHAPS for compression ignition engines, but the proposed rule language is not available at this time and will be have to be evaluated at a later date.

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. Based on the emission calculations shown in Appendix ~~K~~ C, the CPV Sentinel facility is a major source of NOx, CO, VOC, and PM10, and the turbines will be subject to an emission limit for each of these pollutants.

NOx
- ➢ Emission Limit – NOx is subject to a 2.0 ppm 1 hour BACT limit.
- ➢ Control Equipment – NOx is controlled with the SCR
- ✓ Requirement - As a NOx Major Source under Reclaim, the turbines are required to have CEMS under Rule 2012. The use of a continuous monitor to show compliance with an emission limit is exempt from CAM under 64.2(b)(vi).

CO

- ➢ Emission Limit – CO is subject to a 6.0 ppm 1 hour BACT limit.
- ➢ Control Equipment – CO is controlled with the oxidation catalyst.
- ✓ Requirement – The turbines will be required to use a CO CEMS under Rule 218. The use of a continuous monitor to show compliance with an emission limit is exempt from CAM under 64.2(b)(vi).

VOC

- ➢ Emission Limit – VOC is subject to a 2.0 ppm 1 hour BACT limit.
- ➢ Control Equipment – VOC is controlled with the oxidation catalyst.
- ➢ Uncontrolled emissions-R1 emissions per turbine 1-5 is 8 tons/yr and R1 emissions for turbines 6-8 is 9 tons per year (see Appendix K)
- ➢ The CAM rule applies to each pollutant specific emission units (PSEU) that meets a three-part test. The PSEU must:

  a. be subject to an emission limitation or standard, and
  b. use a control device to achieve compliance, and
  c. have pre-control emissions that exceed or are equivalent to the major source threshold.

  VOC emissions are subject to an emissions limit (2 ppmv)
  The oxidation catalyst will be used to reduce the R1 emissions below the compliance emissions limit The pre-control emissions does not exceed the 10 tons per year emissions threshold per turbine. Thus the CAM requirements for VOC does not apply for this equipment.

- ✓ Requirement – The oxidation catalyst is effective at operating temperatures above 300°F. The facility is required to maintain a temperature gauge in the exhaust (condition D12.3), which will measure the exhaust temperature on a continuous basis and record the readings on an hourly basis. The exhaust temperature is required to be at least 700°F, (with exceptions for start ups and shutdowns). This will insure that the oxidation catalyst is operating properly.

PM10

- ➢ Emission Limit – PM10 is subject to a 6 lbs/hr limit.
- ➢ Control Equipment – PM10 is not controlled by any specific control device.
- ✓ Requirement – Since there is no specific control device for PM10 emissions, there are no CAM requirements.

PM10

- ➢ Blackstart engine is equipped with PM control, the hours per year operation is severely restricted and the PM10 are well below the threshold limits of this provision, thus the are no CAM requirements for this equipment.

40CFR Part 72 – Acid Rain Provisions

CPV Sentinel is subject to the requirements of the federal Acid Rain program because the electricity generated will be rated at greater than 25 MW. This program is similar to RECLAIM in that facilities are required to cover SO_2 emissions with SO_2 allowances that are similar in concept to RTC's. SO_2 allowances are however, not required in any year when the unit emits less than 1,000 lbs of SO_2. Facilities with insufficient allowances are required to purchase SO_2 credits on the open market. In addition, both NOx and SO_2 emissions will be monitored and reported directly to USEPA. Based on the above, compliance

with this rule is expected.

Federal NSR program for PM 2.5, 40CFR Part 51 Appendix S

The proposed facility is located in the Coachella Valley and the valley is in attainment with the National Ambient Air Quality Standard for PM 2.5

The applications were deemed complete prior to 07/15/08 and the Facility is located in attainment area, this is not subject to Appendix S and will be subject to the current AQMD's Reg 13.

PSD-the PM10 emissions is 73 tons per year and the value is well below the 250 ton/yr limit required in an attainment area.

REGULATION XXX – Title V

CPV Sentinel is a Title V facility because the cumulative emissions will exceed the Title V major source thresholds and because it is also subject to the federal acid rain provisions. The initial Title V permit will be processed and the required public notice 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.

OVERALL EVALUATION / RECOMMENDATION(S)

Issue a Facility Permit to Construct with the following permit conditions.

PERMIT 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 maintain a copy of the MSDS on site
[Rule 431.2]

(LMS100PA CTGs) Devices D1,D7,D13,D19,D25, D31, D37 and D43

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

CONTAMINANT	EMISSION LIMIT
PM_{10}	2,910 LBS IN ANY ONE MONTH
CO	8,201 LBS IN ANY ONE MONTH
SOx	288 LBS IN ANY ONE MONTH
VOC	1425 LBS IN ANY ONE MONTH

The above emissions are per one turbine. The operator shall calculate the monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors: VOC: 2.189 lb/mmcf; PM10: 6.97 lb/mmcf; and SOx: 0.71 lb/mmcf.

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

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

Compliance with the CO emission limit shall be verified through valid CEMS data.

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):

(A) During the commissioning period and prior to CO catalyst installation - 38.48 lbs CO/mmcf

(B) After installation of the CO catalyst but prior to CO CEMS certification testing - 18.73 lb CO/mmcf. The emission rate shall be recalculated in accordance with Condition D82.1 if the approved CEMS certification test resulted in emission concentration higher than 6 ppmv.

(C) After CO CEMS certification testing - 18.73 lb/CO mmcf. After CO CEMS certification test is approved by the AQMD, the emissions monitored by the CEMS and calculated in accordance with condition D82.1 shall be used to calculate emissions.

For the purposes of this condition, the limit(s) shall be based on the emissions from a single turbine. During commissioning, the CO emissions shall not exceed 11,602 lbs in any one month. During commissioning, the VOC emissions shall not exceed 620 lbs in any one month.

The operator shall provide the AQMD 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 turbine 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 ~~not commence until the following calendar month after the commissioning period has been completed~~.

The operator shall calculate the commissioning emissions for VOC, SOx and PM10 for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emission factors: VOC: 2.06 lb/mmcf; PM10: 2.99 lb/mmcf; and SOx: 0.12 lb/mmcf.

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

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

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

For the purpose of this condition, normal operations is defined as the turbine is able to supply electrical energy to the power grid as required under contract with SCE or other entity.
[Rule 1303 - Offsets]
Turbines 1-5

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

CONTAMINANT	EMISSION LIMIT
PM_{10}	4,170 LBS IN ANY ONE MONTH
CO	10,631 LS IN ANY ONE MONTH
SOx	417 LBS IN ANY ONE MONTH
VOC	1,888 LBS IN ANY ONE MONTH

The above emissions are per one turbine. The operator shall calculate the normal operations monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors: VOC: 2.189 lb/mmcf; PM10: 6.97 lb/mmcf; and SOx: 0.71 lb/mmcf.

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

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

Compliance with the CO emission limit shall be verified through valid CEMS data.

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):

(A) During the commissioning period and prior to CO catalyst installation - 38.48 lbs CO/mmcf

(B) After installation of the CO catalyst but prior to CO CEMS certification testing - 18.73 lb CO/mmcf. The emission rate shall be recalculated in accordance with Condition D82.1 if the approved CEMS certification test resulted in emission concentration higher than 6 ppmv.

(C) After CO CEMS certification testing - 18.73 lb/CO mmcf. After CO CEMS certification test is approved by the AQMD, the emissions monitored by the CEMS and calculated in accordance with condition 82.1 shall be used to calculate emissions.

For the purposes of this condition, the limit(s) shall be based on the emissions from a single turbine. During commissioning, the CO emissions shall not exceed 11,602 lbs in any one month. During commissioning, the VOC emissions shall not exceed 620 lbs in any one month.

The operator shall provide the AQMD 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 turbine 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 ~~not commence until the following calendar month after the commissioning period has been completed~~.

The operator shall calculate the commissioning emissions for VOC, SOx and PM10 for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emission factors: VOC: 2.06 lb/mmcf; PM10: 2.99 lb/mmcf; and SOx: 0.12 lb/mmcf.

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

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

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

For the purpose of this condition, normal operations is defined as the turbine is able to supply electrical energy to the power grid as required under contract with SCE or other entity.
[Rule 1303 - Offsets]
Turbines 6-8

A99.1 The 2.5 PPM NOx emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 300 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour ~~35 minutes~~. The NOx emissions limited to 29.52 pounds per hour as listed in condition A433.1

The operator shall keep records of aborted turbine start-ups and make the records available to District personnel upon request.

[Rule 2005]
Turbine 1 through 5

A99.2 The 2.5 PPM NOx emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 350 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour ~~35 minutes~~. The NOx emissions limited to 29.52 pounds per hour as listed in condition A433.1

The operator shall keep records of aborted turbine start-ups and make the records available to District personnel upon request.
[Rule 2005]
Turbines 6 through 8

A99.3 The 6.0 PPM CO emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 300 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and

the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour ~~35 minutes~~.
[Rule 1303(a) - BACT]
Turbine 1 through 5

A99.4 The 6.0 PPM CO emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 350 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour ~~35 minutes~~.
[Rule 1303(a)]
Turbines 6 through 8

A99.5 The 19 LBS/MMCF NOx emission 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]
Each Turbine

A99.7 The 12.40 LBS/MMCF NOx emission limits shall only apply during the interim reporting period after 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]
Each turbine

A99.9 The 2.0 PPM VOC emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 300 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour. ~~35 minutes~~
[Rule 1303(a) - BACT]
Turbine 1 through 5

A99.10 The 2.0 PPM VOC emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 350 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and

the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour. ~~35 minutes~~
Rule 1303(a)]
Turbines 6 through 8

A195.1 The 6.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.
[Rule 1703(a)(2)- PSD-BACT]
Each Turbine

A195.2 The 2.5 PPMV NOX emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.
[Rule 2005, Rule 1703(a)(2)- PSD-BACT]
Each Turbine

A195.3 The 2.0 ppmv VOC emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.
[Rule 1303(a) - BACT]
Each Turbine

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]
Each Turbine

A433.1 The operator shall comply at all times with the 2.5 ppm 1-hour 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 hour	29.52lb/hr	NOx emissions not to exceed 29.52lbs total per start-up per turbine. Each turbine shall be limited to 300 start-ups per year, with each start-up not to exceed 25 minutes.

[Rule 1703(a)(2)-PSD-BACT, Rule 2005]
Turbine 1 through 5

A433.2 The operator shall comply at all times with the 2.5 ppm 1-hour 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 hour	29.52 lb/hr	NOx emissions not to exceed 29.52 lbs total per start-up per turbine. Each turbine shall be limited to 350 start-ups per year, with each start-up not to exceed 25 minutes.

[Rule 1703(a)(2)-PSD-BACT, Rule 2005]
Turbine 6 through 8

B61.1 The operator shall not use natural gas containing the following specified compounds:

Compound	Grains per 100 scf
H2S	Greater than 0.25

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]
Each Turbine

C1.1 The operator shall limit the fuel usage to no more than 418 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 turbine during a non-commissioning month.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.
[Rule 1303(b)(2) - Offset]
For turbines 1 -5

C1.2 The operator shall limit the fuel usage to no more than 598 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 turbine during a non-commissioning month.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.
[Rule 1303(b)(2) - Offset]
For turbines 6-8

C1.3 The operator shall limit the fuel usage to no more than 301 mmcf.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single turbine during a commissioning period. The max fuel usage shall not exceed 301 mmcf per month

~~For the purpose of this condition, the operator can not proceed with normal operations (non-commissioning period), until the following month after commissioning period has been completed.~~

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.
[Rule 1303(b)(2) - Offset]
Each Turbine

C1.6 The operator shall limit the fuel usage to no more than 2411 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 turbine during a non-commissioning ~~month~~ year.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.
[Rule 1401, Rule Rule 1701 (b)]
For turbines 1 -5

C1.7 The operator shall limit the fuel usage to no more than 2928 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 turbine during a non-commissioning ~~month~~ year.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[Rule 1401, Rule Rule 1701(b)]
For turbines 6 -8

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

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

[Rule 1303(b)(2) - Offset, Rule 2012]
Each Turbine

D29.1 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	1 hour	Outlet of the SCR
CO emissions	District Method 100.1	1 hour	Outlet of the SCR
SOX emissions	AQMD Laboratory Method 307-91	Not applicable	Fuel Sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR
PM10 emissions	District Method 5	4 Hours	Outlet of the SCR
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after initial start-up. The AQMD 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 (CFH), the flue gas flow rate, and the turbine generating output in 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 maximum, average, and minimum loads.

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 are 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 pre concentration) 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.

Because the VOC BACT level was set using data derived from various source test results, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits.

For the purpose of this condition, alternative test method may be allowed for each of the above pollutants upon concurrence of AQMD,EPA and CARB.
[Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Rule 2005, Reg 1703(a-PSD-BACT]
Each Turbine

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	1 hour	Outlet of the SCR

The test shall be conducted and the results submitted to the District 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 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.

<u>If the turbine is not in operation during one quarter, then no testing is required during that quarter</u>

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

D29.3 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
SOX emissions	AQMD Laboratory Method 307-91	Not applicable	Fuel Sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR
PM10 emissions	District Method 5	4 hours	Outlet of the SCR

The test shall be conducted at least once every three years.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output in 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 maximum, average, and minimum 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 are 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 pre concentration) 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.

Because the VOC BACT level was set using data derived from various source test results, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits.

For the purpose of this condition, alternative test method may be allowed for each of the above pollutants upon concurrence of AQMD, EPA and CARB.
[Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Reg 1703(a-PSD-BACT]
Each Turbine

~~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~~	~~1 Hour~~	~~Outlet of the SCR serving this equipment~~
~~PM10 emissions~~	~~District method 5~~	~~4 Hours~~	~~Outlet of the SCR serving this equipment~~

~~The test shall be conducted after AQMD approval of the source test protocol, but no later than 1,000 hours after initial start up.~~

~~The test shall be conducted at full load to demonstrate compliance with the 0.080 lb/MW hr NOx and 0.060 lb/MW hr PM10 requirements set forth in Rule 1309.1. If the actual measurements is within the accuracy of the electrical power measuring meters, the results will be acceptable.~~

~~The lb/MW hr emissions rate of each electrical generating unit shall be determined by dividing (a) the lb/hr emissions rate measured a the location and in accordance with the test method specified above, by (b)the adjusted gross electrical output of each electrical generating unit.~~

~~The adjusted gross electrical outputr of each electrical generating unit shall be determined by making the following adjustments to the measured gross electrical output.~~

~~1] Apply the manufacturer's standard correction factors to calculated the gross electrical output at ISO conditions~~

~~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.~~

~~For the purpose of this condition, alternative test method may be allowed for each of the above pollutants upon concurrence of AQMD, EPA and CARB.~~
~~[Rule 1309.1]~~
~~Each Turbine~~

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

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis
The CEMS shall be installed and operated no later than 90 days after initial start-up of the turbine, and in accordance with an approved AQMD Rule 218 CEMS plan application. The operator shall not install the CEMS prior to receiving initial approval from AQMD. Within two weeks of the turbine 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.

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% - %O2 d)][(Qg * HHV)/10^6], 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

$\%O_2$ d = Hourly ave. % by vol. O_2 dry, corresponding to Cco

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

HHV = Gross high heating value of fuel gas, BTU/scf

[Rule 1303(a)(1) - BACT, Rule 218]

Each Turbine

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

NOx concentration in ppmv

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

The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine 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 turbine 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 turbine.

[Rule 2005; Rule 2012, Rule 1703]

Each Turbine

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 07-AFC-3 project.

[CEQA]

~~E193.2 The operator shall install this equipment according to the following requirement.~~

~~PM10 emissions rates from this equipment shall not exceed 0.060 lb/MW-hr~~
~~NOx emissions rates from this equipment shall not exceed 0.080 lb/mw-hr~~

~~Compliance with the PM10 and NOx emissions rates shall be demonstrated once over the lifetime of the project in accordance with condition D29.4~~

~~*[Rule 1309.1]*~~

~~*Each Turbine*~~

E193.3 The operator shall install this equipment according to the following requirement:

Devices D1, D72, D13, D194, D25, D31, D37 and D43 shall be fully operational within three years of issuance of the Permit to Construct

[Rule 1309.1]

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

Contaminant	Rule	Rule/Subpart
NOx	40CFR60, SUBPART	KKKK
SOX	40CFR60, SUBPART	KKKK

[40CFR 60 SUBPART KKKK]

Each turbine

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emission increase.

To comply with this condition, the operator shall prior to the 1st compliance year hold a minimum NOx RTCs of 35767 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the gas turbine.

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 30,038 lbs/yr of NOx RTCs for operation of the gas turbine.

In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

This condition shall apply to each turbine individually.
[Rule 2005]
Turbines 1 though 5

I296.2 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emission increase.

To comply with this condition, the operator shall prior to the 1st compliance year hold a minimum NOx RTCs of 41835 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the gas turbine.

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 36,107 lbs/yr of NOx RTCs for operation of the gas turbine.

In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

This condition shall apply to each turbine individually.
[Rule 2005]
Turbines 6 through 8

K40.1 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 (lb/hr), and lb/MMCF. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains/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), heating content of the fuel, the flue gas temperature, and the generator power output (MW) under which the test was conducted.
[Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Rule 1702(a)(2)-PSD-BACT, Rule 2005]
Each Turbine

K67.1 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]
Each Turbine

(SCR/CO Catalyst)

A195.4 The 5 ppmv NH3 emission limit is averaged over 60 minutes at 15% O2, dry basis. The operator shall calculate and continuously record the NH3 slip concentration using the following:

NH3 (ppmv) = [a-b*c/1EE+06]*1EE+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 15% 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]

D12.2 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 AQMD 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 540 degrees F. at the inlet to the SCR reactor.
[Rule 1303(a)(1) - BACT, Rule 2005]

D12.3 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 catalyst temperature range shall be remain between 740 degree F and 840 degree F.
The catalyst inlet temperature shall not exceed 840 degrees F.
The temperature range requirement of this condition does not apply during start-up operations of the turbine not to exceed 25 minutes per start-up.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed 35 minutes.
[Rule 1303(a)(1) - BACT, Rule 2005, 1702 (a)(2)-PSD-BACT]

D12.4 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 pressure drop across the catalyst shall not exceed 12 inches water column
[Rule 1303(a)(1) - BACT, Rule 2005, Rule 1702 (a)(2)-PSD-BACT]

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 D12.2
Condition Number D12.3
[Rule 1303(a)(1) - BACT, Rule 2005-BACT, Rule 1702(a)(2)-PSD-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: D12.4
[Rule 1303(a)(1) - BACT, Rule 1702(a)(2)-PSD-BACT]

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 07-AFC-3 project.
[CEQA]

(Ammonia Storage Tank)

C157.1 The operator shall install and maintain a pressure relief valve with a minimum pressure set at 25 psig.
[Rule 1303(a)(1) - BACT]

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]

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 07-AFC-3 project.
[CEQA]

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

The operator shall document an inspection each time the tank is filled to insure the vapor recovery equipment is consistently and properly used
[Rule 1303(a)(1) - BACT]

(Emergency Fire Pump)

C1.4 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 1470, Rule 2012]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine.
[Rule 1304, Rule 1470, Rule 2012]

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]

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 07-AFC-3 project.

~~B193.4 The operator shall operate and maintain this equipment according to the following requirements:~~

~~1. This equipment shall only operate if utility electricity is not available.~~
~~1. This equipment shall only be operated for the primary purpose of providing a backup source of power to drive an emergency fire pump.~~
~~2. This equipment shall only be operated for maintenance and testing, not to exceed 50 hours in any one year.~~
~~*[Rule 1470, Rule 1110.2]*~~

I296.3 This equipment shall not be operated unless the operator demonstrates to the Executive Officer the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall, prior to each compliance year hold a minimum NOx RTCs of ~~180~~ 127 lbs.

In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.
[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:

Emergency use hours of operation

Maintenance and testing hours

Other operating hours (describe the reason for operation)

In addition, each time the engine is started manually, the log shall include the date of operation and the timer reading in hours at the beginning and end of operation. the log shall be kept for a minimum of five calendar years prior to the current year and made available to district personnel upon request. the total hours of operation for the previous calendar year shall be recorded sometime during the first 15 days of January of each year.
[Rule 1110.2, Rule 1470]

(Blackstart Emergency engine)

B61.2 The operator shall only use diesel fuel containing th3 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]

C1.5 The operator shall limit the operating time to no more than 12 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]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine.
[Rule 1304, Rule 1470, Rule 2012]

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 07-AFC-3 project.

E193.5 The operator shall operate and maintain this equipment according to the following requirements:

1. This equipment shall only operate if utility electricity is not available.
2. This equipment shall only be operated for the primary purpose of providing a backup source of power to start one turbine.
3. This equipment shall only be operated for maintenance and testing, not to exceed 12 hours in any one year.

[Rule 1470, Rule 1110.2]

I296.4 This equipment shall not be operated unless the operator demonstrates to the Executive Officer the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall, prior to each compliance year hold a minimum NOx RTCs of 218 lbs.

In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.
[Rule 2005]

The Cleanair Systems "PERMIT" filter system install for the equipment shall be operated according to the following criteria: (1) The maximum consecutive minutes at idle shall not exceed 240 minutes; (2) The number of 10-minute idle session before regeneration is required shall be after 24 consecutive sessions; (3) The minimum temperature/load/time for regeneration shall not be less than 40% load or 300 deg. C for 30% of operating time or 2 hours, whichever is longer.

The Cleanair Systems "PERMIT" filter system installed for the equipment shall be provided with a data logging and alarm system to record and monitor the equipment's exhaust backpressure and temperature during operation.
[Rule 1303(a)(1)-BACK, Rule 1470]

K67.4 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:

Emergency use hours of operation

Maintenance and testing hours

Other operating hours (describe the reason for operation)

The operator shall keep monthly records of exhaust temperature, backpressure, and date and time for the duty cycle of the engine as downloaded from the Hiback data logging system. These monthly records shall be kept in a format approved by the Executive Officer and maintained on file for a minimum of five years. The records shall be made available to district personnel upon request.

In addition, each time the engine is started manually, the log shall include the date of operation and the timer reading in hours at the beginning and end of operation. the log shall be kept for a minimum of five calendar years prior to the current year and made available to district personnel upon request. The total hours of operation for the previous calendar year shall be recorded sometime during the first 15 days of January of each year.
[Rule 1110.2, Rule 1470]

(Section D; Device E54)

K67.5 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.

CPV SENTINEL ENERGY PROJECT
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11. Appendix K- Uncontrolled VOC emissions for each turbine

Appendix A - CPV SENTINAL ENERGY PROJECT
LMS100 PA Hourly Emissions - Normal Operations

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Data:
Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit
Uncontrolled Emissions from the CTG:
NOx = 25 ppm @ 15% O2, CO = 100 ppm @ 15% O2, VOC = 4 ppm, PM10 = 0.0076 lbs/MMBTU; SOx = 0.25 grains/100 scf
Controlled Emissions from the CTG:
NOx = 2.5 ppm @ 15% O2, CO = 6 ppm @ 15% O2, VOC = 2 ppm, PM10 = 0.0066 lbs/MMBTU; SOx = 0.25 grains/100 scf

CO Emissions

Operating Condition Number	Heat Input (MMBTU/hr)	Pollutant Conc. Uncontrolled (ppmvd)	Pollutant Conc. Controlled (ppmvd)	Molecular Weight (lbs/lb-mole)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	789.8	111	6	28	214.12	11.57
103	789.6	92	6	28	176.66	11.52
104	772.2	78	6	28	147.99	11.38
107	750.0	73	6	28	133.05	10.94
108	712.5	68	6	28	117.89	10.40
Average	762.8					

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Appendix A - CPV SENTINAL ENERGY PROJECT
LMS100 PA Hourly Emissions - Normal Operations

NOx Emissions

Operating Condition Number	Heat Input (MMBTU/hr)	Pollutant Conc. Uncontrolled (ppmvd)	Pollutant Conc. Controlled (ppmvd)	Molecular Weight (lb/lb-mol)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	789.8	25	2.5	46	79.23	7.92
103	789.6	25	2.5	46	78.87	7.89
104	772.2	25	2.5	46	77.92	7.79
107	750.0	25	2.5	46	74.86	7.49
108	712.5	25	2.5	46	71.21	7.12
Average	762.8					7.64

Appendix A - CPV SENTINAL ENERGY PROJECT
LMS100 PA Hourly Emissions - Normal Operations

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VOC Emissions

Operating Condition Number	Heat Input (MMBTU/hr)	Pollutant Conc. Uncontrolled (ppmvd)	Pollutant Conc. Controlled (ppmvd)	Molecular Weight (lb/lb-mol)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	789.8	5	2.0	16	5.51	2.20
103	789.6	3	2.0	16	3.29	2.19
104	772.2	4	2.0	16	4.34	2.17
107	750.0	3	2.0	16	3.12	2.08
108	712.5	3	2.0	16	2.97	1.98
Average	762.8					

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Appendix A - CPV SENTINAL ENERGY PROJECT
LMS100 PA Hourly Emissions - Normal Operations

PM10 Emissions

Operating Condition Number	Heat Input (MMBTU/hr)	Emission Factor[1] (lb/MMBTU)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	789.8	0.0076	6.00	6.00
103	789.6	0.0076	6.00	6.00
104	772.2	0.0078	6.00	6.00
107	750.0	0.0080	6.00	6.00
108	712.5	0.0084	6.00	6.00
Average	762.8		6.00	6.00

SOx Emissions

Operating Condition Number	Heat Input (MMBTU/hr)	Emission Factor[2] (lb/MMBTU)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	789.8	0.00078	0.615	0.615
103	789.6	0.00078	0.614	0.614
104	772.2	0.00078	0.601	0.601
107	750.0	0.00078	0.584	0.584
108	712.5	0.00078	0.554	0.554
Average	762.8		0.594	0.594

[1] Based on a manufacturer guarantee of 6 lb/hr at 789.8 MMBTU/hr = 0.0076 lb/MMBTU

[2] Based on a maximum sulfur content of 0.25 grains/100 scf fuel; 918 BTU/scf natural gas (LHV); and 7,000 grains/lb, and 1 mole S for mole SO_2

SOx emissions = 0.25 g/scr)*(1lb/7000 g)*(1/100)*(789.8 Mmbtu/hr)*(1.0E06 btu/mmbtu)/918 btu/scf *(64 lb SO2/32 lb S)

Appendix A - CPV SENTINAL ENERGY PROJECT
LMS100 PA Hourly Emissions - Normal Operations

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NH3 Emissions

Operating Condition Number	Pollutant Conc. Controlled (ppmvd)	Molecular Weight (lb/lb-mol)	Emission Rate (lb/hr)
100	5	17	5.86
103	5	17	5.83
104	5	17	5.76
107	5	17	5.53
108	5	17	5.26
Average			5.65

Appendix A - CPV SENTINAL ENERGY PROJECT
LMS100 PA Hourly Emissions - Normal Operations

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Operating Condition Number	Heat Input (MMBTU/hr	Exhaust mass rate lb/hr	O2 correction factor (ppmvd)	exhaust mw (lb/lb-mol)	water content exhasust %
100	789.8	1,703,900	0.7838	28	10.9
103	789.6	1,636,078	0.7449	28	12.2
104	772.2	1,599,844	0.7465	28	11.1
107	750	1,556,054	0.7448	28	12.4
108	712.5	1,479,392	0.7471	28	12.1
Average	762.8				

The above data was provided by GE and will be used to determine emissions

Emissions = ((ppmv/1E06)/O2 correction factor)*(1-H2O%/100)*(MW/28 lb/lb-mole)*exhaust mass rate lb/hr

where

PPMv is the R1 or R2 concentration limit @ 15% oxygen of the given pollutant
O2 correction factor = 20.9-15/(20.19-O2%), where O2% is the content at the given operating condtiion
H2O is the percent water contect of the exhaust at the given operating condition
MW is the molecular wt of the given pollutant
28.12 lb exhaust per lb mole (conversion)
exhaust gas mass rate at a given operating condition

Appendix B - CPV SENTINEL ENERGY PROJECT
LMS100 PA Daily Emissions - Non-Commissioning Year

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BY RDO	DATE 2/28/08	

Operating Condition 100	Hours per day	CO (lb/hr)	NOx (lb/hr)	VOC (lb/hr)	PM10 (lb/hr)	SOx (lb/hr)	CO (lb/day)	NOX (lb/day)	VOC (lb/day)	PM10 (lb/day)	SOx (lb/day)
Unit 1 Start-Up	0.833	38.15	59.76	10.32	6.00	0.42	32	50	9	5	0.350
Unit 1 Normal Operations	15	11.57	7.92	2.20	6.00	0.61	174	119	33	90	9
Unit 1 Shutdown	0.33	203.88	34.95	17.48	6.00	0.12	67	12	6	2	0.040
Unit 1 Totals	16.00						273	180	47	97	9.61
Unit 8 Start-Up	0.833	38.15	59.76	10.32	6.00	0.42	32	50	9	5	0.350
Unit 8 Normal Operations	22	11.57	7.92	2.20	6.00	0.61	255	174	49	132	14
Unit 8 Shutdown	0.330	203.88	34.95	17.48	6.00	0.12	67	12	6	2	0.040
Unit 8 Totals	23						354	236	63	139	14

WORST MONTH	HR	start up	shut down	min	min
TUBINES 1-5	15	2	2	25	10
TUBINES 6-8	22	2	2		

Turbines 1-6 operate 16 hr/dys and Turbines 6-8 operate 22 hrs/dy
start up hour include start up emissions and normal operating emissions
shut down hour include shut down emissions and normal operating emissions

Appendix B - CPV SENTINEL ENERGY PROJECT
LMS100 PA Monthly Emissions - Non-Commissioning Year

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Operating Condition 100	Hours per Month	CO (lb/hr)	NOx (lb/hr)	VOC (lb/hr)	PM10 (lb/hr)	SOx (lb/hr)	CO (lb/month)	NOX (lb/month)	VOC (lb/month)	PM10 (lb/month)	SOx (lb/month)
Unit 1 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 1 Normal Operations	450	11.57	7.92	2.20	6.00	0.61	5,208	3,565	992	2,700	277
Unit 1 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 1 Totals	**485**						**8,201**	**5,409**	**1,425**	**2,910**	**288.24**
Unit 2 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 2 Normal Operations	450	11.57	7.92	2.20	6.00	0.61	5,208	3,565	992	2,700	277
Unit 2 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 2 Totals	**485**						**8,201**	**5,409**	**1,425**	**2,910**	**288**
Unit 3 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 3 Normal Operations	450	11.57	7.92	2.20	6.00	0.61	5,208	3,565	992	2,700	277
Unit 3 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 3 Totals	**485**						**8,201**	**5,409**	**1,425**	**2,910**	**288**
Unit 4 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 4 Normal Operations	450	11.57	7.92	2.20	6.00	0.61	5,208	3,565	992	2,700	277
Unit 4 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 4 Totals	**485**						**8,201**	**5,409**	**1,425**	**2,910**	**288**
Unit 5 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 5 Normal Operations	450	11.57	7.92	2.20	6.00	0.61	5,208	3,565	992	2,700	277
Unit 5 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 5 Totals	**485**						**8,201**	**5,409**	**1,425**	**2,910**	**288**
Unit 6 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 6 Normal Operations	660	11.57	7.92	2.20	6.00	0.61	7,639	5,229	1,455	3,960	406
Unit 6 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 6 Totals	**695**						**10,631**	**7,073**	**1,888**	**4,170**	**417**
Unit 7 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 7 Normal Operations	660	11.57	7.92	2.20	6.00	0.61	7,639	5,229	1,455	3,960	406
Unit 7 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 7 Totals	**695**						**10,631**	**7,073**	**1,888**	**4,170**	**417**

Unit 8 Start-Up	25	38.15	59.76	10.32	6.00	0.42	954	1,494	258	150	11
Unit 8 Normal Operations	660	11.57	7.92	2.20	6.00	0.61	7,639	5,229	1,455	3,960	406
Unit 8 Shutdown	10	203.88	34.95	17.48	6.00	0.12	2,039	350	175	60	1
Unit 8 Totals	695						10,631	7,073	1,888	4,170	417
Total Monthly Emissions (lb/month)							72,899	48,261	12,788	27,060	2,693

WORST MONTH	HR	start up	shut down		min	min
TUBINES 1-5	15	2	2		25	10
TUBINES 6-8	22	2	2			

start up hour include start up emissions and normal operating emissions
shut down hour include shut down emissions and normal operating emissions

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Appendix B - CPV SENTINEL ENERGY PROJECT
LMS100 PA - 30 Day Averages[1] - Non-Commissioning Year

Turbine	CO lb/mon	NOX lb/mon	VOC lb/mon	PM10 lb/mon	SOx lb/mon
Unit 1	8,201	5,409	1,425	2,910	288
Unit 2	8,201	5,409	1,425	2,910	288
Unit 3	8,201	5,409	1,425	2,910	288
Unit 4	8,201	5,409	1,425	2,910	288
Unit 5	8,201	5,409	1,425	2,910	288
Unit 6	10,631	7,073	1,888	4,170	417
Unit 7	10,631	7,073	1,888	4,170	417
Unit 8	10,631	7,073	1,888	4,170	417

	CO 30-ave	NOX 30-ave	VOC 30-ave	PM10 30-ave	SOx 30-ave
Unit 1	265	174	46	94	9
Unit 2	265	174	46	94	9
Unit 3	265	174	46	94	9
Unit 4	265	174	46	94	9
Unit 5	265	174	46	94	9
Unit 6	343	228	61	135	13
Unit 7	343	228	61	135	13
Unit 8	343	228	61	135	13
total	2,354	1,554	413	875	84

30 day ave is bases on worst case month of 31 days

Appendix B - CPV SENTINEL ENERGY PROJECT
LMS100 PA - 30 Day Averages[1] - Commissioning Month

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Operating Condition 100	Hours per Month	CO (lb/hr)	NOx (lb/hr)	PM10 (lb/hr)	VOC (lb/hr)	SOx (lb/hr)	NOX (lb/month)	CO (lb/month)	PM10 (lb/month)	VOC lb/month	SOx lb/month
Unit 1 Startup	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 1 Commissioning	150	77.35	38.19	6.00	4.13	0.244	5728	11,602	900	620	37
Unit 1 Normal Operations	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 1 Shutdown	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 2 Startup	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 2 Commissioning	150	77.35	38.19	6.00	4.13	0.244	5728	11,602	900	620	37
Unit 2 Normal Operations	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 2 Shutdown	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 3 Startup	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 3 Commissioning	150	77.35	38.19	6.00	4.13	0.244	5728	11,602	900	620	37
Unit 3 Normal Operations	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 3 Shutdown	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 4 Startup	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 4 Commissioning	150	77.35	38.19	6.00	4.13	0.244	5728	11,602	900	620	37
Unit 4 Normal Operations	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 4 Shutdown	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 5 Startup	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 5 Commissioning	150	77.35	38.19	6.00	4.13	0.244	5728	11,602	900	620	37
Unit 5 Normal Operations	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 5 Shutdown	0	0.00		0.00	0.00	0.000		0	0	0	0
Unit 6 Startup	0	0		0	0	0		0	0	0	0
Unit 6 Commissioning	150	77.35	38.19	6.00	4.133	0.24	5728	11,602	900	620	37
Unit 6 Normal Operations	0	0		0	0	0		0	0	0	0
Unit 6 Shutdown	0	0		0	0	0		0	0	0	0
Unit 7 Startup	0	0		0	0	0		0	0	0	0
Unit 7 Commissioning	150	77	38.19	6	4	0.24	5728	11,602	900	620	37
Unit 7 Normal Operations	0	0		0	0	0		0	0	0	0
Unit 7 Shutdown	0	0		0	0	0		0	0	0	0

Unit 8 Startup	0	0		0	0	0		0	0	0	0
Unit 8 Commissioning	150	77	38.19	6	4	0.24	5728	11,602	900	620	37
Unit 8 Normal Operations	0	0		0	0	0		0	0	0	0
Unit 8 Shutdown	0	0		0	0	0		0	0	0	0
							lb/month	lb/month	lb/month	lb/month	b/month
Total Monthly Emissions (lb/month)							45,824	92,815	7,200	4,959	292
								lb/day	lb/day	lb/day	lb/day
30-Day Average (lb/day)								2,994	232	160	9
30-Day Average (lb/day) per turbine								374	29	20	1

[1] CPV Sentinel will be in NOx RECLAIM. As such NOx will be offset with RTCs

The commissioing time for each turbine will be done within a one month period, not to exceed 150 hours per turbine
During the commissioning month the turbine will not proceed with normal operations unitl the following month (permit conditions)

Appendix B - CPV SENTINEL ENERGY PROJECT
LMS100 PA - 30 Day Averages - Commissioning Month

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Turbine	CO lb/mon	NOX lb/mon	VOC lb/mon	PM10 lb/mon	SOx lb/mon
Unit 1	11,602	5,728	620	900	37
Unit 2	11,602	5,728	620	900	37
Unit 3	11,602	5,728	620	900	37
Unit 4	11,602	5,728	620	900	37
Unit 5	11,602	5,728	620	900	37
Unit 6	11,602	5,728	620	900	37
Unit 7	11,602	5,728	620	900	37
Unit 8	11,602	5,728	620	900	37
Total	92,815	45,824	4,959	7,200	292

	CO 30-ave	NOx 30-ave	VOC 30-ave	PM10 30-ave	SOx 30-ave
Unit 1	374	185	20	29	1
Unit 2	374	185	20	29	1
Unit 3	374	185	20	29	1
Unit 4	374	185	20	29	1
Unit 5	374	185	20	29	1
Unit 6	374	185	20	29	1
Unit 7	374	185	20	29	1
Unit 8	374	185	20	29	1
total	2,992	1,480	160	232	8

30 day ave is bases on worst case month of 31 days

Appendix C - CPV SENTINEL ENERGY PROJECT
LMS100 PA Annual Emissions - Commissioning Year

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BY RDO	DATE 2/28/08	

Operating Condition 100	Hours per Year	CO (lbs/hr)	NOx (lbs/hr)	VOC (lbs/hr)	PM10 (lbs/hr)	SOx (lbs/hr)	CO (lbs/year)	NOX (lbs/year)	VOC (lbs/year)	PM10 (lbs/year)	SOx (lbs/year)
Unit 1 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 1 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 1 Normal Operation	2,628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 1 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 1 Totals	**2,953**						**56,982**	**35,767**	**8,566**	**17,718**	**1,710**
Unit 2 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 2 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 2 Normal Operation	2,628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 2 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 2 Totals	**2,953**						**56,982**	**35,767**	**8,566**	**17,718**	**1,710**
Unit 3 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 3 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 3 Normal Operation	2,628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 3 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 3 Totals	**2,953**						**56,982**	**35,767**	**8,566**	**17,718**	**1,710**
Unit 4 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 4 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 4 Normal Operation	2,628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 4 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 4 Totals	**2,953**						**56,982**	**35,767**	**8,566**	**17,718**	**1,710**
Unit 5 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 5 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 5 Normal Operation	2,628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 5 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 5 Totals	**2,953**						**56,982**	**35,767**	**8,566**	**17,718**	**1,710**
Unit 6 Start-Up	146	38.15	59.76	10.32	6.00	0.42	5,564	8,715	1,505	875	61
Unit 6 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 6 Normal Operation	3,200	11.57	7.92	2.20	6.00	0.61	37,037	25,353	7,040	19,200	1,967
Unit 6 Shutdown	58	203.88	34.95	17.48	6.00	0.12	11,893	2,039	1,020	350	7

Unit 6 Totals	3,554						66,096	41,835	10,185	21,325	2,071
Unit 7 Start-Up	146	38.15	59.76	10.32	6.00	0.42	5,564	8,715	1,505	875	61
Unit 7 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 7 Normal Operation	3,200	11.57	7.92	2.20	6.00	0.61	37,037	25,353	7,040	19,200	1,967
Unit 7 Shutdown	58	203.88	34.95	17.48	6.00	0.12	11,893	2,039	1,020	350	7
Unit 7 Totals	3,554						66,096	41,835	10,185	21,325	2,071
Unit 8 Start-Up	146	38.15	59.76	10.32	6.00	0.42	5,564	8,715	1,505	875	61
Unit 8 Commissioning	150	77.35	38.19	4.13	6.00	0.24	11,602	5,728	620	900	37
Unit 8 Normal Operation	3,200	11.57	7.92	2.20	6.00	0.61	37,037	25,353	7,040	19,200	1,967
Unit 8 Shutdown	58	203.88	34.95	17.48	6.00	0.12	11,893	2,039	1,020	350	7
Unit 8 Totals	3,554						66,096	41,835	10,185	21,325	2,071
Total Annual Emissions (lb/year)							483,195	304,337	73,381	152,565	14,764
Total Annual Emissions (tons/year)							242	152	37	76	7

Appendix C - CPV SENTINEL ENERGY PROJECT
LMS100 PA Annual Emissions - Non-Commissioning Year

PAGES	PAGE	A/N 472139
BY RDO	DATE 2/28/08	

Operating Condition 100	Hours per Year	CO (lbs/hr)	NOx (lbs/hr)	VOC (lbs/hr)	PM10 (lbs/hr)	SOx (lbs/hr)	CO (lbs/year)	NOX (lbs/year)	VOC (lbs/year)	PM10 (lbs/year)	SOx (lbs/year)
Unit 1 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 1 Normal Operations	2628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 1 Shutdown	50	203.88	34.95.	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 1 Totals	**2,803**						**45,380**	**30,039**	**7,946**	**16,818**	**1,673**
Unit 2 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 2 Normal Operations	2628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 2 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 2 Totals	**2,803**						**45,380**	**30,039**	**7,946**	**16,818**	**1,673**
Unit 3 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 3 Normal Operations	2628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 3 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 3 Totals	**2,803**						**45,380**	**30,039**	**7,946**	**16,818**	**1,673**
Unit 4 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 4 Normal Operations	2628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 4 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 4 Totals	**2,803**						**45,380**	**30,039**	**7,946**	**16,818**	**1,673**
Unit 5 Start-Up	125	38.15	59.76	10.32	6.00	0.42	4,769	7,470	1,290	750	53
Unit 5 Normal Operations	2628	11.57	7.92	2.20	6.00	0.61	30,417	20,821	5,782	15,768	1,615
Unit 5 Shutdown	50	203.88	34.95	17.48	6.00	0.12	10,194	1,748	874	300	6
Unit 5 Totals	**2,803**						**45,380**	**30,039**	**7,946**	**16,818**	**1,673**
Unit 6 Start-Up	146	38.15	59.76	10.32	6.00	0.42	5,564	8,715	1,505	875	61
Unit 6 Normal Operations	3,200	11.57	7.92	2.20	6.00	0.61	37,037	25,353	7,040	19,200	1,967
Unit 6 Shutdown	58	203.88	34.95	17.48	6.00	0.12	11,893	2,039	1,020	350	7
Unit 6 Totals	**3,404**						**54,494**	**36,107**	**9,565**	**20,425**	**2,035**
Unit 7 Start-Up	146	38.15	59.76	10.32	6.00	0.42	5,564	8,715	1,505	875	61
Unit 7 Normal Operations	3,200	11.57	7.92	2.20	6.00	0.61	37,037	25,353	7,040	19,200	1,967
Unit 7 Shutdown	58	203.88	34.95	17.48	6.00	0.12	11,893	2,039	1,020	350	7
Unit 7 Totals	**3,404**						**54,494**	**36,107**	**9,565**	**20,425**	**2,035**

Unit 8 Start-Up	146	38.15	59.76	10.32	6.00	0.42	5,564	8,715	1,505	875	61
Unit 8 Normal Operations	3,200	11.57	7.92	2.20	6.00	0.61	37,037	25,353	7,040	19,200	1,967
Unit 8 Shutdown	58	203.88	34.95	17.48	6.00	0.12	11,893	2,039	1,020	350	7
Unit 8 Totals	3,404						54,494	36,107	9,565	20,425	2,035
Total Annual Emissions (lb/year)							390,379	258,513	68,422	145,365	14,472
Total Annual Emissions (tons/year)							195	129	34	73	7

Appendix D - CPV SENTENAL ENERGY PROJECT
Emergency Black Start Emissions

PAGES	PAGE	A/N Master file
BY RDO	DATE 2/28/08	

Data:
Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit
Manufacturer: Caterpillar
Model No.: 3512C DITA
Type of Fuel: No. 2 Diesel 15 ppmw sulfur compounds by weight
Rated Power: 2206 bhp at 2,100 rpm
Engine Design: Lean Burn
Maximum Rated Fuel Consumption: 110.3 gph
No. of Cylinders: 12

Assumptions:
Maximum hours of operation 12 hr/yr
Steady speed, steady load operations

Pollutant	Emission Factor[7,11] (gm/BHP-hr)	Maximum Rated Power (BHP)	Conversion Factor (gm/lb)	Emission Rate (lb/hr)	Annual Emission Rate[8] (lb/year)	Monthly Emission Rate[9] (lb/month)	30 Day Average[10] (lb/day)
NOx	3.7400	2206	454	18.173	218.07	18.17	1
CO	0.79	2206	454	3.839	46.06	3.84	0
VOC	0.22	2206	454	1.069	12.83	1.07	0
PM10	0.0060	2206	454	0.029	0.35	0.03	0
SOx	0.2158	2206	454	0.0238	0.29	0.02	0

[7] Provided by the engine manufacturer (SCAQD REF A/N 449987)
SOx emissions factor in terms of lb/mgal, SOx emissions = EF *gal/hr * (1/1000)
[8] Emission rate (lb/hr) multiplied by max hours of operation provide by appliant
[9] Emission rate (lb/year) divided by 12
[10] Emission rate (lb/month) divided by 31

Appendix D - CPV SENTENAL ENERGY PROJECT
Emergency Black Start Emissions

PAGES	PAGE	A/N Master file
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[11]The engine will be equipped with PM control and the vender list the PM reduction at 93%, ref vendor submital

PM R2 = PM R1 * (100-93)/100
PM R1 - 0.084 gb/hpr-hr
PM R2 = 0.084 * 0.07 = 0.006 g/bhp-hr

Appendix D - CPV SENTINEL ENERGY PROJECT
Emergency Fire Pump Emissions

PAGES	PAGE	A/N 472139
BY RDO	DATE 2/28/08	

Data:
Standard Conditions: 29.92 inches Hg and 68 degrees Fahrenheit
Manufacturer: Clarke
Model No.: JW6H-UF50
Type of Fuel: No. 2 Diesel w/ 0.05% sulfur compounds by weight
Rated Power: 240 ~~340~~ bhp at 2,100 rpm
Engine Design: Lean Burn
Maximum Rated Fuel Consumption: 10.3 gph
No. of Cylinders: 6

Assumptions:
Maximum hours of operation 50.00 hr/yr
Steady speed, steady load operations

Pollutant	Emission Factor[7] (gm/BHP-hr)	Maximum Rated Power (BHP)	Conversion Factor (gm/lb)	Emission Rate (lb/hr)	Annual Emission Rate[8] (lb/year)	Monthly Emission Rate[9] (lb/month)	Worst Month Emission Rate[11] (lb/month)	30 Day Average[10] (lb/day)
NOx	4.8000	240	454	2.537	126.87	10.57	12.69	0
CO	0.59	240	454	0.312	15.59	1.30	1.56	0
VOC	0.10	240	454	0.053	2.64	0.22	0.26	0
PM10	0.14	240	454	0.074	3.70	0.31	0.37	0
SOx	0.2158	240	454	0.0022	0.11	0.01	0.01	0

[7] Provided by the engine manufacturer (Clarke)
SOx emissions factor in terms of lb/mgal, SOx emissions = EF *gal/hr * (1/1000)
[8] Emission rate (lb/hr) multiplied by max hours of operation provide by applicant
[9] Emission rate (lb/year) divided by 12
[10] Emission rate (lb/month) divided by 31

[11] the engine can be tested 1 dy/wk up to 5 wks/mon, depending on the month, Emission rate (lb/hr) times 5 (for Rule 212 g reporting)

Appendix E - CPV CENTINEL ENERGY PROJECT
LMS100 PA Comissioning Emissions

PAGES	PAGE	A/N 472139
BY RDO	DATE 2/28/08	

LMS100 PA Commissioning Emissions -

COMMISSIONSING Emissions per Turbine

Description		NOx	CO	VOC	SOx	PM10
	hrs	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
First fire	23	11.17	45.59	1.16	0.05	6.02
Synch & Check E-stop	17	11.29	46.24	1.18	0.05	6.11
Additional AVR	17	21.29	30.80	0.74	0.07	6.11
Break-in run	12	20.08	29.09	0.70	0.06	5.77
Dynamic AVR	58	48.72	74.90	4.77	0.34	5.97
Base laod AVR	23	80.43	197.85	11.98	0.56	6.02
total- lb/hr	150					

Description	NOx	CO	VOC	SOx	PM10
	lb/mon	lb/mon	lb/mon	lb/mon	lb/mon
First fire	257	1048.56	26.68	1.19	138.46
Synch & Check E-stop	192	786.06	20.05	0.89	103.85
Additional AVR	362	523.56	12.55	1.12	103.85
Break-in run	241	349.04	8.37	0.75	69.23
Dynamic AVR	2826	4344.23	276.78	19.71	346.15
Base laod AVR	1850	4550.48	275.48	12.90	138.46
totall lb/hr ave	38.19	77.35	4.13	0.24	6.00
totals/mon	5728	11601.92	619.90	36.56	900.00
30 ave	**185**	**374**	**20**	**1**	**29**

Commissioning emisssions provided by GE

Appendix E - CPV CENTINEL ENERGY PROJECT
LMS100 PA Comissioning Emissions

PAGES	PAGE	A/N 472139
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Description	Power Level	Corrected Operating Hours	Estimated Fuel Rate (MMBtu/hr)	Total Estimated Emission per Event					Exhaust Temperature (deg F)	Exhaust Flow (lb/sec)
				NO_X (lbs)	CO (lbs)	VOC (lbs)	PM_{10} (lbs)	SO_X (lbs)		
*** First fire the unit & then shutdown to check for leaks, etc**										
	Core/Sync Idle	23	73.5	257	1049	27	138	1.2	859	82
*** Synch & Check E-stop**										
	Sync Idle	17	73.5	192	786	20	104	0.9	859	82
*** Additional AVR Commissioning**										
	5%	17	92.8	362	524	13	104	1.1	864	113
*** Break-in Run**										
	5%	12	92.8	241	349	8	69	0.7	864	113
*** Dynamic Commissioning of AVR & Commission Water**										
Load Step 1	10.00%	6	166	96	400	30	35	0.7	868	144
Load Step 2	20.00%	6	246	142	261	15	35	1.0	827	195
Load Step 3	30.00%	6	319	185	261	15	35	1.3	806	238
Load Step 4	40.00%	6	389	225	231	15	35	1.6	785	278
Load Step 5	50.00%	6	457	265	190	16	35	1.8	770	316
Load Step 6	60.00%	6	525	304	260	19	35	2.1	760	351
Load Step 7	70.00%	6	591	342	356	24	35	2.4	752	385
Load Step 8	80.00%	6	659	382	503	30	35	2.7	752	415
Load Step 9	90.00%	6	728	421	744	43	35	2.9	758	443
Load Step 10	100.00%	6	798	463	1138	69	35	3.2	767	470
Subtoal		58		2826	4344	277	346	20		
*** Base load AVR Commissioning**										
	100%	23	798	1850	4550	275	138	12.9	767	470
COMPLETE - TOTAL ESTIMATED FIRED HOURS										
		150		**5729**	**11603**	**620**	**900**	**37**		

Detailed commissioning emissions provided by GE

Appendix F -CPV SENTINEL ENERGY PROJECT
NOx RTC Calculations

		A/N 472139
BY RDO	DATE 2/28/08	

Turbines 1 through 5

Data:
Operating Schedule (1st Year):
Startups = 350
Shutdowns = 350
Normal Operations = 2,634 hours/year
Commissioning Period =150 hours
Number of turbines =5

Operating Condition 100	Hours per Year	NOx (lb/hr)	NOx (lb/year) per device	NOx (lb/year) cumulative
CTGs				
Startup	125	59.76	7,470.00	37,350.00
Shutdown	50	34.95	1,747.50	8,737.50
Normal Operation	2,628	7.92	20,821.06	104,105.32
Commissioning	150	38.19	5,728.00	28,640.00
CTG Totals	2,953		35,766.56	178,832.82

Turbines 6 through 8

Data: ,
Operating Schedule (1st Year):
Startups = 350
Shutdowns = 350
Normal Operations = 3,200 hours/year
Commissioning Period =150 hours
Number of turbines= 3

Operating Condition 100	Hours per Year	NOx (lb/hr)	NOx (lb/year) per device	NOx (lb/year) cumulative
CTGs				
Startup	146	59.76	8,715.00	26,145.00
Shutdown	58	34.95	2,038.75	6,116.25

Normal Operation	3,200	7.92	25,352.89	76,058.68
Commissioning	150	38.19	5,728.00	17,184.00
CTG Totals	3,554		41,834.64	125,503.93

Total NOx emissions

				NOx (lb/year) cumulative
CTG 1-5 Totals				178,832.82
CTG 6-8 Totals				125,503.93
Emergency Fire Pump	50	2.54	126.85	126.85
Emergency blackstart ICE	12	18.17	218.08	218.08
Total 1st Year Emissions (lb/year)				304,681.67
Offset Ratio				1.00
1st year RTCs (lb/year)				304,681.67
2nd year RTCs (lb/year)				258,857.67

Appendix G - CPV SENTINEL ENERGY PROJECT
Emission Factors

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Total Hours of Commissioning = 150 hours

Fuel Consumption During the Commissioning Period per Turbine

Commissioning Schedule	Hours per Phase	Heat Input (MMBTU/hr)	Fuel Heating Value (BTU/scf)	Fuel Consumption (MMscf/hr)	Fuel Consumption per Phase (MMscf)	Cumulative Fuel Cons. during Comm. (MMscf)
Phase 1	23	74	1,018	0.0722	1.6606	1.6606
Phase 2	17	74	1,018	0.0722	1.2274	2.8880
Phase 3	17	93	1,018	0.0912	1.5497	4.4377
Phase 4	12	93	1,018	0.0912	1.0939	5.5316
Phase 5	58	4,878	1,018	4.7917	277.9214	283.4530
Phase 6	23	798	1,018	0.7839	18.0295	301.4825

Commissioning Period Emission Factor

Commissioning Schedule	Fuel Consumption per Phase (MMscf)	NOx Emissions per Phase (lb)	NOx EF lb/mmscf	CO Emissions per Phase (lb)	CO EF lb/mmscf
Phase 1	1.6606	257		1,049	
Phase 2	1.2274	192		786	
Phase 3	1.5497	362		524	
Phase 4	1.0939	241		349	
Phase 5	277.9214	2,826		4,344	
Phase 6	18.0295	1,850		4,550	
TOTALS	301.4825	5,728	19.00	11,602	38.48

Commissioning Period Emission Factor

Commissioning Schedule	Fuel Consumption per Phase (MMscf)	VOC Emissions per Phase (lb)	VOC EF lb/mmscf	SOx Emissions per Phase (lb)	SOx EF lb/mmscf
Phase 1	1.6606	27		1	
Phase 2	1.2274	20		1	
Phase 3	1.5497	13		1	
Phase 4	1.0939	8		1	
Phase 5	277.9214	277		20	
Phase 6	18.0295	275		13	
TOTALS	301.4825	620	2.06	37	0.12

Commissioning Period Emission Factor

Commissioning Schedule	Fuel Consumption per Phase (MMscf)	PM10 Emissions per Phase (lb)	PM10 EF lb/mmscf
Phase 1	1.6606	138	
Phase 2	1.2274	104	
Phase 3	1.5497	104	
Phase 4	1.0939	69	
Phase 5	277.9214	346	
Phase 6	18.0295	138	
TOTALS	301.4825	900	2.99

Appendix G - CPV SENTINEL ENERGY PROJECT
Emission Factors

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Annual fuel consumption (AFC) during non-commissioning is calculated as follows:
AFC = ((5 CTGs*2803 hr/yr)+(3CTG * 3404 hr/yr))*(875.7 MMBTU/hr)(1 scf/1,018 BTU) = 20,840 MMscf/yr

Emissions During the Non-Commissioning Period

Total NOx Emissions (lb/yr)	Total CO Emissions (lb/yr)	Total SOx Emissions (lb/yr)	AFC (MMscf/yr)	NOx EF lb/mmscf	CO EF lb/mmscf
258,513	390,379	14,472	20,840.0	12.4047	18.7322

The total NOx, CO and SOx emissions as well as the AFC are for all 8 CTGs

Emission Factor Determination for Condition A63.1

PM10 EF lb/MMBTU	SOx EF gr/100 scf	VOC EF lb/MMBTU	Grains/lb	Heat Content BTU/scf	PM10 lb/mmscf	SOx lb/mmscf	VOC lb/mmscf
0.0069	0.250	0.0025	7,000	1,018	6.97	0.7143	2.1890

Appendix H - CPV SENTINEL ENERGY PROJECT
TAC Emissions

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BY RDO	DATE 3/05/08	

Hazardous Air Pollutant Emissions from The Project

Source	Total Annual HAP Emissions (ton/yr)
Unit 1	0.816
Unit 2	0.816
Unit 3	0.816
Unit 4	0.816
Unit 5	0.816
Unit 6	0.990
Unit 7	0.990
Unit 8	0.990
Fire Pump	neg
Black Start Engine	neg
Cooling Tower 1-5	0.003
Cooling Tower 6-8	0.003
Total all sources	**7.055**

Pollutant	Total Annual HAP Emissions All Sources (ton/yr)
1,3-Butadiene	
Acetaldehyde	
Acrolein	
Benzene	
Ethylbenzene	
Formaldehyde	
Hexane	
Propylene Oxide	
Toluene	
Xylenes	
Naphthalene	
PAHs (other than naphthalene)	0.000
Total	**0.000**

Note: Ammonia and Diesel Particulate are not HAPs
For the CAA112 requirements the combination of all Polyaromatic Hydrocarbons (PAH) will be considered Polycylic Organic Matter (POM), each individual PAH is not a HAP.

Appendix H - CPV SENTINEL ENERGY PROJECT
TAC Emissions

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Toxic Air Contaminant Emissions from Each Turbine 1 - 5

Max Fuel Flow (HHV) **875.7 MMBtu/hr**
Maximum annual hours of operation **2805 hr/yr**
includes 2628 hours of normal operations plus 300 startups and 300 shutdowns
Operations Fuel Flow based on the maximum fuel flow (Case 103; 72°F ambient temperature; 100% load with evaporative cooling)

Pollutant	CAS	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMcf)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Ammonia *	7664417			max TBACT level	5.887	1.65E+04
1,3-Butadiene	106990	4.30E-07		AP-42	3.77E-04	1.06E+00
Acetaldehyde	75070	4.00E-05		AP-42	3.50E-02	9.82E+01
Acrolein	107028	3.62E-06		AP-42	3.17E-03	8.89E+00
Benzene	71432	3.26E-06		AP-42	2.85E-03	8.01E+00
Ethylbenzene	100414	3.20E-05		AP-42	2.80E-02	7.86E+01
Formaldehyde	50000	3.60E-04		AP-42	3.15E-01	8.84E+02
Propylene Oxide	75569	2.90E-05		AP-42	2.54E-02	7.12E+01
Toluene	108883	1.30E-04		AP-42	1.14E-01	3.19E+02
Xylenes	1330207	6.40E-05		AP-42	5.60E-02	1.57E+02
PAH						
Benzo(a)anthracene	56553	2.22E-08	2.26E-05	CATEF mean	1.94E-05	5.45E-02
Benzo(a)pyrene	50328	1.37E-08	1.39E-05	CATEF mean	1.20E-05	1.32E-01
Benzo(b)fluoranthene	205992	1.11E-08	1.13E-05	CATEF mean	9.72E-06	2.73E-02
Benzo(k)fluoranthene	207089	1.08E-08	1.10E-05	CATEF mean	9.46E-06	2.65E-02
Chrysene	218019	2.48E-08	2.52E-05	CATEF mean	2.17E-05	6.08E-02
Dibenz(a,h)anthracene	53703	2.31E-08	2.35E-05	CATEF mean	2.02E-05	5.67E-02
Indeno(1,2,3-cd)pyrene	193395	2.31E-08	2.35E-05	CATEF mean	2.02E-05	5.67E-02
Naphthalene	91203	1.63E-06	1.66E-03	CATEF mean	1.43E-03	4.01E+00
Total PAHs (other than naphthalene)					1.13E-04	4.15E-01
Total Annual HAP Emissions per Turbine (ton/yr)						**8.16E-01**

Notes:
- Emission factors obtained from US EPA AP-42 Table 3.1-3 for *uncontrolled natural gas-fired stationary turbines*. Formaldehyde, Benzene, and Acrolein emission factors are from the Background document for AP-42 Section 3.1, Table 3.4-1 for a natural gas-fired
combustion turbine with a CO catalyst.
- Emission factors obtained from the CATEF database for natural gas-fired combustion turbines with SCR and CO catalyst.
- Ammonia emission rate based on an exhaust NH_3 limit of 5 ppmv @ 15% O_2 provided by the turbine vendor.
- Used a HHV (Btu/scf) = 1018
* not a CAA112 HAP
note actual hours per year at 2803 hr/yr, the above emissions are slightly higher than maximum.

Toxic Air Contaminant Emissions from Each Turbine 6 - 8

Max Fuel Flow (HHV) **875.7 MMBtu/hr**
Maximum annual hours of operation **3406** *hr/yr*
includes 3200 hours of normal operations plus 350 startups and 350 shutdowns
Operations Fuel Flow based on the maximum fuel flow (Case 103; 72°F ambient temperature; 100% load with evaporative cooling)

Pollutant	CAS	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMcf)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Ammonia *	7664417			max TBACT level	5.887	2.00E+04
1,3-Butadiene	106990	4.30E-07		AP-42	3.77E-04	1.28E+00
Acetaldehyde	75070	4.00E-05		AP-42	3.50E-02	1.19E+02
Acrolein	107028	3.62E-06		AP-42	3.17E-03	1.08E+01
Benzene	71432	3.26E-06		AP-42	2.85E-03	9.72E+00
Ethylbenzene	100414	3.20E-05		AP-42	2.80E-02	9.54E+01
Formaldehyde	50000	3.60E-04		AP-42	3.15E-01	1.07E+03
Propylene Oxide	75569	2.90E-05		AP-42	2.54E-02	8.65E+01
Toluene	108883	1.30E-04		AP-42	1.14E-01	3.88E+02
Xylenes	1330207	6.40E-05		AP-42	5.60E-02	1.91E+02
PAH						
Benzo(a)anthracene	56553	2.22E-08	2.26E-05	CATEF mean	1.94E-05	6.62E-02
Benzo(a)pyrene	50328	1.37E-08	1.39E-05	CATEF mean	1.20E-05	4.07E-02
Benzo(b)fluoranthene	205992	1.11E-08	1.13E-05	CATEF mean	9.72E-06	3.31E-02
Benzo(k)fluoranthene	207089	1.08E-08	1.10E-05	CATEF mean	9.46E-06	3.22E-02
Chrysene	218019	2.48E-08	2.52E-05	CATEF mean	2.17E-05	7.38E-02
Dibenz(a,h)anthracene	53703	2.31E-08	2.35E-05	CATEF mean	2.02E-05	6.86E-02
Indeno(1,2,3-cd)pyrene	193395	2.31E-08	2.35E-05	CATEF mean	2.02E-05	6.88E-02
Naphthalene	91203	1.63E-06	1.66E-03	CATEF mean	1.43E-03	4.86E+00
Total PAHs (other than naphthalene)					1.13E-04	3.84E-01
Total Annual HAP Emissions per Turbine (ton/yr)						**9.80E-01**

Notes:
- Emission factors obtained from US EPA AP-42 Table 3.1-3 for uncontrolled natural gas-fired stationary turbines. Formaldehyde, Benzene, and Acrolein emission factors are from the Background document for AP-42 Section 3.1, Table 3.4-1 for a natural gas-fired
combustion turbine with a CO catalyst.
- Emission factors obtained from the CATEF database for natural gas-fired combustion turbines with SCR and CO catalyst.
- Ammonia emission rate based on an exhaust NH_3 limit of 5 ppmv @ 15% O_2 provided by the turbine vendor.
- Used a HHV (Btu/scf) = 1018
* not a CAA112 HAP
note actual hours per year at 2803 hr/yr, the above emissions are slightly higher than maximum.

Appendix H - CPV SENTINEL ENERGY PROJECT
TAC Emissions

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Toxic Air Contaminant Emissions from Emergency Diesel Firewater Pump

Rated Horsepower	**240**	**BHP**
Expected non-emergency usage	**52**	**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	0.14	Vendor guarantee	0.074	3.848

Toxic Air Contaminant Emissions from Black Start Engine

Rated Horsepower	**1500**	**kW**
Expected non-emergency usage	**12**	**hr/yr**

Pollutant	CAS	Emission Factor (Power Output) (g/kW-hr)	Emission factor source	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
Diesel Particulate (PM10)	9901	0.20	Vendor guarantee	0.661	7.930

Appendix I - CPV SENTINEL ENERGY PROJECT
TAC Emissions

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Toxic Air Contaminant Emissions from Cooling Tower Cells 1 - 5

design circulating water rate	39,300	gallons/min	7860
cycles of concentration	1		
Drift Eliminator Control	0.000005	=	0.0005 %
Operating hours per year	2,628		
Number of cells in the cooling tower	5		

Toxic Air Contaminant	CAS	TAC Concentration in water[1]		Total tower emissions		Emissions per cell	
		ug/liter	lb/(1000 gallon)	lb/hr	lb/yr	lb/hr	lb/yr
Antimony	7440360	0.34	0.000003	3.34E-08	8.79E-05	6.69E-09	1.76E-05
Arsenic	7440382	2.3	0.000019	2.26E-07	5.95E-04	4.53E-08	1.19E-04
Chlorine	7782505	27000	0.225299	2.66E-03	6.98E+00	5.31E-04	1.40E+00
Chromium	18540299	0.91	0.000008	8.95E-08	2.35E-04	1.79E-08	4.71E-05
Copper *	7440508	0.85	0.000007	8.36E-08	2.20E-04	1.67E-08	4.40E-05
Fluoride *	1101	570	0.004756	5.61E-05	1.47E-01	1.12E-05	2.95E-02
Lead	7439921	0.21	0.000002	2.07E-08	5.43E-05	4.13E-09	1.09E-05
Selenium	7782492	1.3	0.000011	1.28E-07	3.36E-04	2.56E-08	6.72E-05
Silica *	7631869	11000	0.091789	1.08E-03	2.84E+00	2.16E-04	5.69E-01
Sulfate *	9960	8300	0.069259	8.17E-04	2.15E+00	1.63E-04	4.29E-01
Vanadium *	7440622	38.3	0.000320	3.77E-06	9.90E-03	7.54E-07	1.98E-03
Zinc *	7440666	70	0.000584	6.89E-06	1.81E-02	1.38E-06	3.62E-03
Total Annual HAP Emissions (ton/yr)					**3.49E-03**		

Note:
The maximum concentration for each TAC as determined from water samples collected from the existing onsite well.
* not a CAA112 HAP

Toxic Air Contaminant Emissions from Cooling Tower Cells 6 - 8

design circulating water rate	23,580	gallons/min	
cycles of concentration	1		
Drift Eliminator Control	0.000005	=	0.0005 %
Operating hours per year	3200		
Number of cells in the cooling tower	3		

Toxic Air Contaminant	CAS	TAC Concentration in water[1]		Total tower emissions		Emissions per cell	
		ug/liter	lb/(1000 gallon)	lb/hr	lb/yr	lb/hr	lb/yr
Antimony	7440360	0.34	0.000003	2.01E-08	6.42E-05	6.69E-09	2.14E-05
Arsenic	7440382	2.3	0.000019	1.36E-07	4.34E-04	4.53E-08	1.45E-04
Chlorine	7782505	27000	0.225299	1.59E-03	5.10E+00	5.31E-04	1.70E+00
Chromium	18540299	0.91	0.000008	5.37E-08	1.72E-04	1.79E-08	5.73E-05
Copper *	7440508	0.85	0.000007	5.02E-08	1.61E-04	1.67E-08	5.35E-05
Fluoride *	1101	570	0.004756	3.36E-05	1.08E-01	1.12E-05	3.59E-02
Lead	7439921	0.21	0.000002	1.24E-08	3.97E-05	4.13E-09	1.32E-05
Selenium	7782492	1.3	0.000011	7.67E-08	2.46E-04	2.56E-08	8.19E-05
Silica *	7631869	11000	0.091789	6.49E-04	2.08E+00	2.16E-04	6.93E-01
Sulfate *	9960	8300	0.069259	4.90E-04	1.57E+00	1.63E-04	5.23E-01
Vanadium *	7440622	38.3	0.000320	2.26E-06	7.23E-03	7.54E-07	2.41E-03
Zinc *	7440666	70	0.000584	4.13E-06	1.32E-02	1.38E-06	4.41E-03
Total Annual HAP Emissions (ton/yr)					**2.55E-03**		

Note:
The maximum concentration for each TAC as determined from water samples collected from the existing onsite well.
* not a CAA112 HAP

Appendix J - CPV SENTINEL ENERGY PROJECT
Additional fees calculations

PAGES	PAGE	A/N 450894
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CPV Sentinel additional fees

A. *application no.472139*
Turbine no. 1 master file

free hours	8	Per Rule 301(l)(3)(B)
project hours	229	Engineering review time
billed hours	221	review time-8 hrs
fee rate	$ 121.91	Per Rule 301(l)(3)(B)
fee amount	$ 26,942.11	
Max fee per Rule	$ 14,882.78	Per Rule 301(l)(3)(B)
fee due	**$ 14,882.78**	Per Rule 301(l)(3)(B)

Air Quality Analysisi/healt risk assement fees

fee schedule	G	
fee rate	$ 3,771.87	
modeling hrs	100	hours-staff review time
fee rate	$ 107.88	
free hours	35	
billed hours	65	review time- 35 hrs
fee billed	$ 7,012.20	Table IIA, Rule 301
total fee due	**$ 10,784.07**	Table IIA, Rule 301

Title V	$ 14,882.78
modeling/rule 1401	$ 10,784.07
total	**$ 25,666.85**

B. *application no.472137*
Title V application

Public Notic Fees

Riverside county	**$1,053.57**	Table IIB, Rule 301

Appendix K - CPV SENTINEL ENERGY PROJECT
LMS100 PA Annual Emissions - Non-Commissioning Year

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Operating Condition 100	Hours per Year	VOC (lbs/hr)	VOC (lbs/year)
Unit 1 Start-Up	125	10.32	1,290
Unit 1 Normal Operations	2628	5.02	13,193
Unit 1 Shutdown	50	17.48	874
Comissioing VOC emissions			620
Unit 1 Totals	2,803		15,977
Unit 6 Start-Up	146	10.32	1,505
Unit 6 Normal Operations	3,200	5.02	16,064
Unit 6 Shutdown	58	17.48	1,020
Comissioing VOC emissions			620
Unit 6 Totals	3,404		19,209

Uncontrolled VOC emissions is listed at 5.02 lb/day, per GE

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
System 1 : GAS TURBINES, POWER GENERATION					
GAS TURBINE, CTG-1, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D1	C3	NOX: MAJOR SOURCE**	CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; CO: 6 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988] NOX: 9.209 LBS/MMSCF (1) [RULE 2012,5-6-2005] ; NOX: 2.5 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988;RULE 2005,4-20-2001] NOX: 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; NOX: 19 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM10: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475,10-8-1976;*RULE 475,8-7-1978*] ; PM10: 11 LBS/HR NATURAL GAS (5B) [RULE 475,10-8-1976 *RULE 475,8-7-1978*] ; PM10: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409,8-7-1981] ; SO2: (9) [40CFR 72 - Acid Rain Provisions,11-24-1997]	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9, A195.1, A195.2, A195.3, A327.1, A433.1, B61.1, C1.1, C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, E193.3, H23.1, I296.1, K40.1, K67.1

* (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
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				SOX: 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996 *RULE 1303(a)(1)-BACT,12-6-2002*]	
CO OXIDATION CATALYST, NO. 1, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C3	D1 C4 E54 E55			
SELECTIVE CATALYTIC REDUCTION, NO. 1, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C4	C3 S6		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3
STACK, NO. 1, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S6	C4			

* (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

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FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GAS TURBINE, CTG-2, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D7	C9	NOX: MAJOR SOURCE**	**CO:** 2000 PPMV NATURAL GAS (5) **[RULE 407,4-2-1982]** ; **CO:** 6 PPMV NATURAL GAS (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988]** **NOX:** 9.209 LBS/MMSCF (1) **[RULE 2012,5-6-2005]** ; **NOX:** 2.5 PPMV NATURAL GAS (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988;RULE 2005,5-6-2005]** **NOX:** 15 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]** ; **NOX:** 19 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** **PM10:** 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475,10-8-1976;*RULE 475,8-7-1978*]** ; **PM10:** 11 LBS/HR NATURAL GAS (5B) **[RULE 475,10-8-1976** *RULE 475,8-7-1978*] ; **PM10:** 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409,8-7-1981]** ; **SO2:** (9) **[40CFR 72 - Acid Rain Provisions,11-24-1997]**	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9, A195.1, A195.3, A327.1, A433.1, B61.1, C1.1, C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, E193.3, I296.1, K40.1, K67.1

* (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
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				SOX: 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996 *RULE 1303(a)(1)-BACT,12-6-2002*]	
CO OXIDATION CATALYST, NO. 2, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C9	D7 C10			
SELECTIVE CATALYTIC REDUCTION, NO. 2, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C10	C9 S12		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3
STACK, NO. 2, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S12	C10			

* (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
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GAS TURBINE, GTG 3, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D13	C15	NOX: MAJOR SOURCE**	**CO:** 20000 PPMV NATURAL GAS (5) **[RULE 407,4-2-1982]** ; **CO:** 6 PPMV NATURAL GAS (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988]** **NOX:** 19 LBS/MMSCF (1) **[RULE 2012,5-6-2005]** ; **NOX:** 2.5 PPMV NATURAL GAS (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988;RULE 2005,5-6-2005]** **NOX:** 15 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]** ; **NOX:** 9.209 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** **PM10:** 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475,10-8-1976;*RULE 475,8-7-1978*]** ; **PM10:** 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409,8-7-1981]** **SO2:** (8) **[40CFR 72 - Acid Rain Provisions,11-24-1997]** ; **SOX:** 0.06 LBS/MMSCF NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]**	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9, A195.1, A195.2, A195.3, A327.1, A433.1, B61.1, C1.1, C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, E193.3, H23.1, I296.1, K40.1, K67.1

* (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
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	
CO OXIDATION CATALYST, NO. 3, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C15	D13 C16			
SELECTIVE CATALYTIC REDUCTION, NO.3, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N:	C16	C15 S18		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1
AMMONIA INJECTION, GRID		C28			
STACK, NO. 3, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S18	C16			
GAS TURBINE, GTG 4, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D19	C21	NOX: MAJOR SOURCE**	CO: 2000 PPMV NATURAL GAS (5) [RULE 409,8-7-1981] ; CO: 6 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988]	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9, A195.1, A195.2, A195.3, A433.1, B61.1, C1.1, C1.3,

* (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
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				**NOX:** 19 LBS/MMSCF (1); **NOX:** 2.5 PPMV (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988;RULE 2005,5-6-2005]** ; **NOX:** 15 PPMV (8) **[40CFR 60 Subpart KKKK,7-6-2006]** **NOX:** 9.209 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** ; **PM10:** 0.01 GRAINS/SCF NATURAL GAS (5B) **[RULE 475,10-8-1976;*RULE 475,8-7-1978*]** **SO2:** (9) **[40CFR 72 - Acid Rain Provisions,11-24-1997]** ; **SOX:** 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]** **VOC:** 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]**	C1.6, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, E193.3, H23.1, I296.1, K67.1
CO OXIDATION CATALYST, NO. 4, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C21	D19 C22			

* (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
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
SELECTIVE CATALYTIC REDUCTION, NO.4, CORMETCH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C22	C21 S24		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3
STACK, NO. 4, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S24	C22			
GAS TURBINE, GTG 5, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D25	C27	NOX: MAJOR SOURCE**	CO: 2000 PPMM NATURAL GAS (5) [RULE 407,4-2-1982] ; CO: 6 PPMM NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988] NOX: 19 LBS/MMSCF (1) [RULE 2012,5-6-2005] ; NOX: 2.5 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988;RULE 2005,5-6-2005] NOX: 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; NOX: 9.209 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005]	A63.1, A99.1, A99.3, A99.5, A99.7, A99.9, A195.1, A195.2, A195.3, A327.1, A433.1, B61.1, C1.1, C1.3, C1.6, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, E193.3, H23.1, I296.1, K40.1, K67.1

* (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

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FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				PM10: 0.01 GRAINS/SCF NATURAL GAS (5C) [RULE 475,10-8-1976;*RULE 475,8-7-1978*] ; SO2: (8) [40CFR 72 - Acid Rain Provisions,11-24-1997] SOX: 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; VOC: 2 PPMM NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996 *RULE 1303(a)(1)-BACT,12-6-2002*]	
CO OXIDATION CATALYST, NO.5, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C27	D25 C28			
SELECTIVE CATALYTIC REDUCTION, NO.5, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C28	B17 C27 S30		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3

* (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

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FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
STACK, NO. 5, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S30	C28			
GAS TURBINE, GTG 6, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D31	C33	NOX: MAJOR SOURCE**	**CO:** 2000 PPMV NATURAL GAS (5) **[RULE 407,4-2-1982]** ; **CO:** 6 PPMV NATURAL GAS (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988]** **NOX:** 19 LBS/MMSCF (1) **[RULE 2012,5-6-2005]** ; **NOX:** 15 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]** ; **NOX:** 9.209 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** **PM10:** 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475,10-8-1976;*RULE 475,8-7-1978*]** ; **PM10:** 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]** ; **SOX:** 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]**	A63.2, A99.2, A99.4, A99.5, A99.7, A99.10, A195.1, A195.2, A195.3, A327.1, A433.2, B61.1, C1.2, C1.3, C1.7, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, E193.3, H23.1, I296.2, K40.1, K67.1

* (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

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FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	
CO OXIDATION CATALYST, NO. 6, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C33	D31 C34			
SELECTIVE CATALYTIC REDUCTION, NO. 6, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C34	C33 S36		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3
STACK, NO.6, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S36	C34			
GAS TURBINE, GTG 7, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D37	C39	NOX: MAJOR SOURCE**	CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; CO: 6 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988]	A63.2, A99.2, A99.4, A99.5, A99.7, A99.10, A195.1, A195.2, A195.3, A327.1, A433.2, B61.1, C1.2,

* (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

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FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
				NOX: 19 LBS/MMSCF (1) [RULE 2012,5-6-2005] ; NOX: 2.5 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988;RULE 2005,5-6-2005] NOX: 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; NOX: 9.209 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM10: 11 LBS/HR NATURAL GAS (5B) [RULE 475,10-8-1976;*RULE 475,8-7-1978*] ; PM10: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475,10-8-1976 *RULE 475,8-7-1978*] ; SO2: (9) [40CFR 72 - Acid Rain Provisions,11-24-1997] ; SOX: 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	C1.3, C1.7, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I296.2, K40.1, K67.1

* (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

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FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW					
CO OXIDATION CATALYST, NO. 7, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C39	D37 C40			
SELECTIVE CATALYTIC REDUCTION, NO. 7, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C40	C39 S42		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3
GAS TURBINE, GTG8, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 875.7 MMBTU/HR AT 17 DEGREES F, WITH WATER INJECTION WITH A/N:	D43	C45	NOX: MAJOR SOURCE**	CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; CO: 6 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988] NOX: 19 LBS/MMSCF NATURAL GAS (1A) [RULE 2012,5-6-2005] ; NOX: 2.5 PPMV NATURAL GAS (4) [RULE 1703(a)(2) - PSD-BACT,10-7-1988	A63.2, A99.1, A99.2, A99.4, A99.5, A99.7, A99.10, A195.1, A195.2, A195.3, A327.1, A433.2, B61.1, C1.2, C1.3, C1.7, D12.1, D29.1, D29.2, D29.3, D82.1, D82.2, E193.3, H23.1, I296.2, K40.1, K67.1

* (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
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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 : INTERNAL COMBUSTION					
GENERATOR, 103 MW				**RULE 2005,5-6-2005]** ; **NOX:** 15 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]** ; **NOX:** 9.209 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** **PM10:** 11 LBS/HR NATURAL GAS (5B) **[RULE 475,10-8-1976;*RULE 475,8-7-1978*]** ; **PM10:** 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475,10-8-1976** *RULE 475,8-7-1978*] ; **SO2:** (9) **[40CFR 72 - Acid Rain Provisions,11-24-1997]** ; **SOX:** 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK,7-6-2006]** **VOC:** 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]**	
CO OXIDATION CATALYST, NO. 8, BASF, WITH 150 CUBIC FEET OF TOTAL CATALYST VOLUME. A/N:	C45	D43 C46			

* (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
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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 : INTERNAL COMBUSTION					
SELECTIVE CATALYTIC REDUCTION, NO. 8, CORMETECH CHMT-2, WITH 812 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 2 FT 2 IN; HEIGHT: 4 FT 2 IN; LENGTH: 10 FT 11 IN WITH A/N: AMMONIA INJECTION, GRID	C46	C45 S48		**NH3:** 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]**	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E179.3, E193.1, E193.3
STACK, NO.8, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S48	C46			
System 2 : EMERGENCY ENGINES					
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE, DIESEL FUEL, CLARKE, MODEL JU6H, DRIVING AN FIRE PUMP, WITH AFTERCOOLER, TURBOCHARGER, 240 HP A/N:	D49		NOX: PROCESS UNIT**	**CO:** 2.6 GRAM/BHP-HR DIESEL (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988]** ; **NOX:** 246 LBS/1000 GAL DIESEL (1) **[RULE 2012,5-6-2005]** **NOX + ROG:** 4.9 GRAM/BHP-HR DIESEL (4) **[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]**	B61.2, C1.4, D12.5, I296.3, K67.3

* (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
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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					
				PM10: 0.15 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]** ; **SOX:** 0.005 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)(1)-BACT,5-10-1996** *RULE 1303(a)(1)-BACT,12-6-2002*]	
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, CATERPILLAR, MODEL 3512CDITA, WITH AFTERCOOLER, TURBOCHARGER, 2206 HP WITH A/N:	D50		NOX: PROCESS UNIT**	**CO:** 2.6 GRAM/BHP-HR DIESEL (4) **[RULE 1703(a)(2) - PSD-BACT,10-7-1988]** ; **NOX:** 216 LBS/1000 GAL DIESEL (1) **[RULE 2012,5-6-2005]** **NOX + ROG:** 4.9 GRAM/BHP-HR DIESEL (4) **[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]** **PM10:** 0.006 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]** ; **SOX:** 0.005 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)-BACT,5-10-1996**	B61.2, C1.5, D12.5, E193.5, E193.6, I296.4, K67.4

* (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

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Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1 : INTERNAL COMBUSTION					
FILTER, DIESEL PARTICULATES, CLEANAIR SYSTEMS "PERMIT" WITH SIX 15"X" PARALLEL OXIDIZING FILTER ELEMENTS GENERATOR, 1500 KW				*RULE 1303(a), 12-6-2002]*	
Process 2 : INORGANIC CHEMICAL STORAGE					
STORAGE TANK, TK-1, 29.4% AQUEOUS AMMONIA, WITH PVR SET AT 25 PSIG, 12000 GALS; DIAMETER: 9 FT 4 IN; HEIGHT: 12 FT A/N:	D52				C157.1, E144.1, E193.1, K67.2
STORAGE TANK, TK-2, 29.4% AQUEOUS AMMONIA, WITH PVR SET AT 25 PSIG, 12000 GALS; DIAMETER: 9 FT 4 IN; HEIGHT: 12 FT A/N:	D53				C157.1, E144.1, E193.1, 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
CPV SENTINEL LLC

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
CPV SENTINEL LLC

SECTION H: DEVICE ID INDEX

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D52	17	2	0
D53	17	2	0

FACILITY PERMIT TO OPERATE
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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]

F14.1 The operator shall not purchase diesel fuel 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

A. Emission Limits

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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

CONTAMINANT	EMISSIONS LIMIT
PM10	Less than or equal to 2910 LBS IN ANY ONE MONTH
CO	Less than or equal to 8210 LBS IN ANY ONE MONTH
SOX	Less than or equal to 288 LBS IN ANY ONE MONTH
VOC	Less than or equal to 1425 LBS IN ANY ONE MONTH

The operator shall calculate the monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors: VOC: 2.189 lb/mmcf; PM10: 6.97 lb/mmcf; and SOx: 0.71 lb/mmcf.

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

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

Compliance with the CO emission limit shall be verified through valid CEMS data

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):

(A) During the commissioning period and prior to CO catalyst installation - 38.48 lbs CO/mmcf

(B) After installation of the CO catalyst but prior to CO CEMS certification testing - 18.73 lb CO/mmcf. The emission rate shall be recalculated in accordance with Condition D82.1 if the approved CEMS certification test resulted in emission concentration higher than 6 ppmv.

(C) After CO CEMS certification testing - 18.73 lb/CO mmcf. After CO CEMS certification test is approved by the AQMD, the emissions monitored by the CEMS and calculated in accordance with condition D82.1 shall be used to calculate emissions.

For the purposes of this condition, the limit(s) shall be based on the emissions from a single turbine. During commissioning, the CO emissions shall not exceed 11,602 lbs in any one month. During commissioning, the VOC emissions shall not exceed 620 lbs in any one month.

The operator shall provide the AQMD 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 turbine 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

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

operator follows the requirements listed below:

The operator shall calculate the commissioning emissions for VOC, SOx and PM10 for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emission factors: VOC: 2.06 lb/mmcf; PM10: 2.99 lb/mmcf; and SOx: 0.12 lb/mmcf

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

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

The commissioning emissions for VOC, SOx and PM10 shall be subtracted from the monthly emissions limits (listed in the table at the top of this condition) and the revised monthly emission limits will be the maximum emissions allowed for the remaining of the month

For the purpose of this condition, normal operations is defined as the turbine is able to supply electrical energy to the power grid as required under contract with SCE or other entity.

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

[Devices subject to this condition : D1, D7, D13, D19, D25]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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

CONTAMINANT	EMISSIONS LIMIT
PM10	Less than or equal to 4170 LBS IN ANY ONE MONTH
CO	Less than or equal to 10631 LBS IN ANY ONE MONTH
SOX	Less than or equal to 417 LBS IN ANY ONE MONTH
VOC	Less than or equal to 1888 LBS IN ANY ONE MONTH

The operator shall calculate the monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors: VOC: 2.189 lb/mmcf; PM10: 6.97 lb/mmcf; and SOx: 0.71 lb/mmcf.

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

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

Compliance with the CO emission limit shall be verified through valid CEMS data

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):

(A) During the commissioning period and prior to CO catalyst installation - 38.48 lbs CO/mmcf

(B) After installation of the CO catalyst but prior to CO CEMS certification testing - 18.73 lb CO/mmcf. The emission rate shall be recalculated in accordance with Condition D82.1 if the approved CEMS certification test resulted in emission concentration higher than 6 ppmv.

(C) After CO CEMS certification testing - 18.73 lb/CO mmcf. After CO CEMS certification test is approved by the AQMD, the emissions monitored by the CEMS and calculated in accordance with condition D82.1 shall be used to calculate emissions.

For the purposes of this condition, the limit(s) shall be based on the emissions from a single turbine. During commissioning, the CO emissions shall not exceed 11,602 lbs in any one month. During commissioning, the VOC emissions shall not exceed 620 lbs in any one month.

The operator shall provide the AQMD 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 turbine 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

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

operator follows the requirements listed below:.

The operator shall calculate the commissioning emissions for VOC, SOx and PM10 for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emission factors: VOC: 2.06 lb/mmcf; PM10: 2.99 lb/mmcf; and SOx: 0.12 lb/mmcf

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

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

The commissioning emissions for VOC, SOx and PM10 shall be subtracted from the monthly emissions limits (listed in the table at the top of this condition) and the revised monthly emission limits will be the maximum emissions allowed for the remaining of the month

For the purpose of this condition, normal operations is defined as the turbine is able to supply electrical energy to the power grid as required under contract with SCE or other entity.

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

[Devices subject to this condition : D31, D37, D43]

A99.1 The 2.5 PPM NOX emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 300 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, start-up shall be defined as start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up" In this case the start-up time shall not exceed one hour. The NOx emissions limited to 29.52 pounds per hour as listed in condition A433.1.

For the purposes of this condition, the aborted start-up shall be defined as not to exceed one hour.

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D43]

FACILITY PERMIT TO OPERATE
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SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

A99.2 The 2.5 PPM NOX emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 350 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up" . In this case the start-up time shall not exceed one hour. The NOx emissions limited to 29.52 pounds per hour as listed in condition A433.1.

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 : D31, D37, D43]

A99.3 The 6 PPM CO emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 300 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour.

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

[Devices subject to this condition : D1, D7, D13, D19, D25]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

A99.4 The 6 PPM CO emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 350 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour.

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

[Devices subject to this condition : D31, D37, D43]

A99.5 The 19.0 LBS/MMCF NOX emission limit(s) shall only apply 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, 5-6-2005]

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

A99.7 The 12.40 LBS/MMCF NOX emission limit(s) shall only apply during the interim reporting period after initial turbine 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, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

A99.9 The 2.0 PPM ROG emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 300 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour.

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

[Devices subject to this condition : D1, D7, D13, D19, D25]

A99.10 The 2.0 PPM ROG emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 150 hours. Start-up time shall not exceed 25 minutes for each start-up. Shutdown periods shall not exceed 10 minutes for each shutdown. The turbine shall be limited to a maximum of 350 start-ups per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer.

For the purposes of this condition, start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed one hour.

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

[Devices subject to this condition : D31, D37, D43]

A195.1 The 6.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

A195.2 The 2.5 PPMV NOX emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.

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

[Devices subject to this condition : D1, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
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The operator shall comply with the terms and conditions set forth below:

A195.3 The 2.0 PPMV ROG emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

A195.4 The 5 PPMV NH3 emission limit(s) is averaged over 60 minutes at 15% O2, dry basis. The operator shall calculate and continuously record the NH3 slip concentration using the following.

NH3 (ppmv) = [a*b*c/1EE+06]*1EE+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 15% 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, 5-10-1996**; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C4, C10, C16, C22, C28, C34, C40, C46]

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, D7, D13, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
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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 2.5 ppm 1-hour BACT liimit for NOx, except as defined in condition A99.1 and for the following scenario::

Operating Scenario	Maximum Hourly Emissions Limit	Operational Limit
Start-up hour	29.52	NOx emissions not to exceed 29.52lbs total per start-up per turbine. Each turbine shall be limited to 300 start-ups per year, with each start-up not to exceed 25 minutes.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 4-20-2001]

[Devices subject to this condition : D1, D7, D13, D19, D25]

A433.2 The operator shall comply at all times with the 2.5 ppm 1-hour BACT liimit for NOx, except as defined in condition A99.1 and for the following scenario::

Operating Scenario	Maximum Hourly Emissions Limit	Operational Limit
Start-up hour	29.52	NOx emissions not to exceed 29.52lbs total per start-up per turbine. Each turbine shall be limited to 350 start-ups per year, with each start-up not to exceed 25 minutes.

[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005, 4-20-2001]

[Devices subject to this condition : D31, D37, D43]

B. Material/Fuel Type Limits

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

B61.1 The operator shall not use natural gas containing the following specified compounds:

Compound	Grains per 100 scf
H2S	greater than 0.25

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]

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

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, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D49, D50]

C. Throughput or Operating Parameter Limits

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

C1.1 The operator shall limit the fuel usage to no more than 418 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 turbine during a non-commissioning month..

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

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

[Devices subject to this condition : D1, D7, D13, D19, D25]

C1.2 The operator shall limit the fuel usage to no more than 598 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 turbine during a non-commissioning month..

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

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

[Devices subject to this condition : D31, D37, D43]

C1.3 The operator shall limit the fuel usage to no more than 301 MM cubic feet.

For the purpose of this condition, fuel usage shall be defined as the total natural gas usage of a single turbine during a commissioning period. The max fuel usage shall not exceed 301 mmcf per month.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
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The operator shall comply with the terms and conditions set forth below:

C1.4 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 1110.2, 2-1-2008; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1470, 6-1-2007; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D49]

C1.5 The operator shall limit the operating time to no more than 12 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 1110.2, 2-1-2008; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1470, 6-1-2007; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D50]

C1.6 The operator shall limit the fuel usage to no more than 2411 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 turbine during a non-commissioning year..

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1401, 3-4-2005; **RULE 1703(a)(3) PSD Analysis, 10-7-1988**]

[Devices subject to this condition : D1, D7, D13, D19, D25]

FACILITY PERMIT TO OPERATE
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SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

C1.7 The operator shall limit the fuel usage to no more than 2928 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 turbine during a non-commissioning year..

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1401, 3-4-2005; **RULE 1703(a)(3) PSD Analysis, 10-7-1988**]

[Devices subject to this condition : D31, D37, D43]

C157.1 The operator shall install and maintain a pressure relief valve with a minimum pressure set at 25 psig.

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

[Devices subject to this condition : D52, D53]

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 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 : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

D12.2 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 calibrations records shall be kept on site and made available to AQMD 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 540 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]

[Devices subject to this condition : C4, C10, C16, C22, C28, C34, C40, C46]

D12.3 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the 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 catalyst temperature range shall remain between 740 degree F and 840 degrees F

The catalyst intlet temperature shall not exceed 840 degrees F.

The temperature range requirement of this condition does not apply during start-up operations of the turbine not to exceed 25 minutes per start-up.

For this condition start-up shall be defined as the start up process to bring the turbine in full successful operations. If during start-up the process is aborted and the start-up is restarted, then the start-up and restart is defined as "one start-up". In this case the start-up time shall not exceed 35 minutes

[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 : C4, C10, C16, C22, C28, C34, C40, C46]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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) 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

It shall be calibrated once every twelve months

The pressure drop across the catalyst shall not exceed 12 inches water column

[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 : C4, C10, C16, C22, C28, C34, C40, C46]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time from the engine.

[RULE 1110.2, 2-1-2008; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1470, 6-1-2007; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D49, D50]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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	1 hour	Outlet of the SCR serving this equipment
CO emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
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
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 after AQMD approval of the source test protocol, but no later than 180 days after initial start-up. The AQMD 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 (CFH), the flue gas flow rate, and the turbine generating output in 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 analyt

The test shall be conducted when this equipment is operating at maximum, average, and minimum loads.

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 are 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 pre concentration) and temperature of canisters when extracting samples for analysis is not below 7

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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.

Because the VOC BACT level was set using data derived from various source test results, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits.

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

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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 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 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.

If the turbine is not in operation during one quarter, then no testing is required during that quarter

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

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

D29.3 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

The test shall be conducted at least once every three years.

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

The test shall be conducted when this equipment is operating at maximum, average, and minimum loads.

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 are 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 pre concentration) and temperature of canisters when extracting samples for analysis is not below 7

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.

Because the VOC BACT level was set using data derived from various source test results, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits.

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

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, alternative test method may be allowed for each of the above pollutants upon concurrence of AQMD, EPA and CARB.

[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 : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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

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 CO concentrations over a 15 minute averaging time period.

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

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.

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% - %O2 d)][(Qg * HHV)/1.0^6], 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, 10-7-1988; RULE 218, 8-7-1981; RULE 218, 5-14-1999]

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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

NOx concentration in ppmv

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

The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine 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 turbine 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 turbine.

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

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

E. Equipment Operation/Construction Requirements

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]

[Devices subject to this condition : D52, D53]

E179.1 For the purpose of the following condition number(s), 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- 4

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

[Devices subject to this condition : C4, C10, C16, C22, C28, C34, C40, C46]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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.

Condition Number D 12- 2

Condition Number D 12- 3

[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 : C4, C10, C16, C22, C28, C34, C40, C46]

E179.3 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- 2

[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 : C4, C10, C16, C22, C28, C34, C40, C46]

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 07-AFC-3 project

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D1, C4, D7, C10, D13, C16, D19, C22, D25, C28, D31, C34, D37, C40, C46, D52, D53]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

E193.3 The operator shall operate and maintain this equipment according to the following specifications:

Devices D1, D72, D13, D194, D25, D31, D37 and D43 shall be fully operational within three years of issuance of the Permit to Construct

[RULE 1309.1, 5-3-2002; RULE 1309.1, 8-3-2007]

[Devices subject to this condition : D1, C4, D7, C10, D13, D19, C22, D25, C28, D31, C34, C40, D43, C46]

E193.5 The operator shall operate and maintain this equipment according to the following requirements:

This equipment shall only operate if utility electricity is not available.

This equipment shall only be operated for the primary purpose of providing a backup source of power one turbine

This equipment shall only be operated for maintenance and testing, not to exceed 12 hours in any one year

[RULE 1110.2, 2-1-2008; RULE 1470, 6-1-2007]

[Devices subject to this condition : D50]

E193.6 The operator shall operate and maintain this equipment according to the following specifications:

The Cleanair Systems "PERMIT" filter system install for the equipment shall be operated according to the following criteria: (1) The maximum consecutive minutes at idle shall not exceed 240 minutes; (2) The number of 10-minute idle session before regeneration is required shall be after 24 consecutive sessions; (3) The minimum temperature/load/time for regeneration shall not be less than 40% load or 300 deg. C for 30% of operating time or 2 hours, whichever is longer.

The Cleanair Systems "PERMIT" filter system installed for the equipment shall be provided with a data logging and alarm system to record and monitor the equipment's exhaust backpressure and temperature during operation.

[RULE 1303(a)-BACT, 5-10-1996; RULE 1303(a), 12-6-2002; RULE 1470, 6-1-2007]

[Devices subject to this condition : D50]

H. Applicable Rules

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
NOX	40CFR60, SUBPART	KKKK
SOX	40CFR60, SUBPART	KKKK

[40CFR 60 Subpart KKKK, 7-6-2006]

[Devices subject to this condition : D1, D13, D19, D25, D31, D37, D43]

I. Administrative

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall prior to the 1st compliance year hold a minimum NOx RTCs of 35767 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the gas turbine.

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 30,039 lbs/yr of NOx RTCs for operation of the gas turbine

In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

This condition shall apply to each turbine individually.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D1, D7, D13, D19, D25]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

I296.2 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall prior to the 1st compliance year hold a minimum NOx RTCs of 41835 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the gas turbine.

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 36,107 lbs/yr of NOx RTCs for operation of the gas turbine

In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

This condition shall apply to each turbine individually.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D31, D37, D43]

I296.3 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall prior to the 1st compliance year hold a minimum NOx RTCs of 127 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the fire pump

In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D49]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

I296.4 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year 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 first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall prior to the 1st compliance year hold a minimum NOx RTCs of 218 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the blackstart engine

In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D50]

K. Record Keeping/Reporting

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

K40.1 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 (lb/hr), and lb/MMCF. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains/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),heating content of the fuel, the flue gas temperature, and the generator power output (MW) under which the test was conducted

[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 1309.1, 5-3-2002**; RULE 1309.1, 8-3-2007; **RULE 1703(a)(2) - PSD-BACT, 10-7-1988**; **RULE 2005; 5-6-2005]**

[Devices subject to this condition : D1, D7, D13, D25, D31, D37, D43]

K67.1 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 2005, 5-6-2005]

[Devices subject to this condition : D1, D7, D13, D19, D25, D31, D37, D43]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

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

The operator shall document an inspection each time the tank is filled to insure the vapor recovery equipment is consistently and properly used.

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

[Devices subject to this condition : D52, D53]

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

Manual and automatic operation and shall list all engine operations in each of the following areas:

Emergency use hours of operation

Maintenance and testing hours

Other operating hours (describe the reason for operation)

In addition, each time the engine is started manually, the log shall include the date of operation and the timer reading in hours at the beginning and end of operation. the log shall be kept for a minimum of five calendar years prior to the current year and made available to district personnel upon request. the total hours of operation for the previous calendar year shall be recorded sometime during the first 15 days of January of each year.

[RULE 1110.2, 2-1-2008; RULE 1470, 6-1-2007]

[Devices subject to this condition : D49]

FACILITY PERMIT TO OPERATE
CPV SENTINEL LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

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

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Manual and automatic operation and shall list all engine operations in each of the following areas:

Emergency use hours of operation

Maintenance and testing hours

Other operating hours (describe the reason for operation)

The operator shall keep monthly records of exhaust temperature, backpressure, and date and time for the duty cycle of the engine as downloaded from the Hiback data logging system. These monthly records shall be kept in a format approved by the Executive Officer and maintained on file for a minimum of five years. The records shall be made available to district personnel upon request.

In addition, each time the engine is started manually, the log shall include the date of operation and the timer reading in hours at the beginning and end of operation. the log shall be kept for a minimum of five calendar years prior to the current year and made available to district personnel upon request. the total hours of operation for the previous calendar year shall be recorded sometime during the first 15 days of January of each year.

[RULE 1110.2, 2-1-2008; RULE 1470, 6-1-2007]

[Devices subject to this condition : D50]