



# South Coast Air Quality Management District

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

**DOCKET**  
**07-AFC-8**

February 1, 2008

DATE FEB 01 2008

RECD. FEB 14 2008

Mr. Robert Worl  
Project Manager  
California Energy Commission  
1516 9<sup>th</sup> Street  
Sacramento, CA 95814-5512

Subject: Revised Preliminary Determination of Compliance (PDOC) for Edison Mission Energy's (EME's) Proposed Valle Del Sol Energy, LLC (VSE) Project (Facility ID No. 146534), to be located at 29500 Rouse Road, Romoland, CA 92585; (05-AFC-3)

Dear Mr. Worl:

This is in reference to Edison Mission Energy's (EME's) Proposed Valle Del Sol Energy, LLC (VSE) Power Plant Project and VSE's 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, VSE has proposed to construct a 500 megawatt (MW) power plant, Valle Del Sol Energy, LLC, at 29500 Rouse Road, Romoland, CA 92585. As part of this project, VSE has proposed to offset some of the emission increases from the VSE Project through accessing AQMD's Priority Reserve credits pursuant to Rule 1309.1.

On September 8, 2006 the AQMD Governing Board adopted amendments to Rule 1309.1 to allow Electric Generating Facilities (EGFs) access to the AQMD's Priority Reserve credits to offset some of their emission increases. However, due to significant public comments and concerns expressed at the September 8<sup>th</sup> adoption hearing, the AQMD Governing Board directed AQMD staff to propose further amendments to Rule 1309.1 in response to public concerns about emissions and public health impacts associated with the operation of EGFs. On January 23, 2007 the AQMD issued a Preliminary Determination of Compliance (PDOC) to the VSE Project under the September 8, 2006 version of Rule 1309.1.

On August 3, 2007, the AQMD Governing Board adopted further amendments to Rule 1309.1, and replaced the September 8, 2006 version of Rule 1309.1 with the August 3, 2007 version. As you are aware, the requirements of Rule 1309.1, as amended on August 3, 2007, have changed significantly since VSE originally requested access to the Priority Reserve and since AQMD issued a PDOC for this project. The August 3, 2007 amendments includes a set of new requirements for EGFs in order to be qualified to access the Priority Reserve (VSE must comply with this set of requirements before any Determination of Compliance (DOC) or Proposed Title V Permit to Construct can be issued) and additional new requirements for EGFs prior to AQMD releasing any of the Priority Reserve credits (VSE must comply with this set of requirements before a Final Title V Permit to Construct can be issued). Included in the requirements that VSE must meet prior to issuance of any DOC or Proposed Title V Permit are elements which require more stringent emission standards for Nitrogen Oxides, Fine Particulate Matter (PM10) and Toxics; consideration of the use of renewable/alternative energy; limitation on the number of annual

operating hours; and other requirements. In response to information requests from AQMD (Letters dated August 16 and October 16, 2007), VSE has provided additional information to demonstrate compliance with the appropriate set of new requirements of Rule 1309.1 necessary to demonstrate that the project is qualified to access the Priority Reserve.

At this time AQMD has completed its review of the additional information submitted by VSE and prepared a revised Preliminary Determination of Compliance (PDOC) indicating that upon AQMD's initial review, VSE complies with all of the requirements of Rule 1309.1, as amended on August 3, 2007, in order to qualify to access the Priority Reserve credits. However, since the Rule 1309.1 requirements have significantly changed, and the September 8, 2006 version of Rule 1309.1, which was the basis of the previously issued PDOC, has been replaced with the August 3, 2007 version of Rule 1309.1, AQMD has determined that it is necessary to issue a new public notice for the revised PDOC and the Proposed Title V Permit to Construct for VSE and provide for a 30-day public comment and a 45-day EPA review period pursuant to AQMD Rules 212 and 3006.

Enclosed please find a copy of the public notice, revised PDOC Analysis, and the draft Title V Facility Permit to Construct for the VSE project. The public notice is also being published in a newspaper of general circulation in the vicinity of the nearest affected area and is additionally being forwarded to other interested parties. Upon completion of the public comment and EPA review periods, AQMD will provide CEC with additional information to indicate whether or not any changes are being proposed to the revised PDOC and Proposed Title V Permit as a result of the comments received during the comment period. Such changes, if any, will then be evaluated and incorporated into a Final Determination of Compliance (FDOC).

Also please note that in addition to being required to offset all emission increases subject to offsets pursuant to AQMD Rules 1303(b)(2) and 2005(b)(2) and the emission standards and other requirements discussed in the attached revised PDOC Analysis, prior to AQMD releasing Priority Reserve credits to the VSE Project and issuing a Final Title V Permit, VSE must also demonstrate to the satisfaction of the Executive Officer that it has met all of the other applicable requirements of Rule 1309.1. These additional requirements are not intended to be satisfied prior to the release of the PDOC or FDOC, but only prior to actual release of the Priority Reserve credits and issuance of the Final Title V Permit and include, but not limited to, the following summarized list of requirements:

**Rule 1309.1(c)(2)**

VSE pays a mitigation fee pursuant to subdivision (g).

**Rule 1309.1(c)(3)**

VSE conducts a due diligence effort as approved by the Executive Officer, to secure available ERCs for requested Priority Reserve pollutants. Such efforts shall include securing available ERCs including those available through state emission banks or creating ERCs through SIP approved credit generation programs as available.

**Rule 1309.1(c)(4)**

VSE enters into a long-term contract (at least one year) with the State of California to sell at least 50 percent of the portion of power which it has generated using the Priority Reserve Credits and the Executive Officer determines at the time of permitting, and based on consultations with State power agencies that the State of California is both entering into such long term contract and that a need for such contract exists at the time of permitting, if the facility is a net generator.

**Rule 1309.1(d)(6)**

VSE must use any ERCs held first, before access to the Priority Reserve is allowed.

February 1, 2008

**Rule 1309.1(d)(14)**

VSE secures final certification and approval for this project from the CEC, and has entered into a long term contract with Southern California Edison Company or the San Diego Gas and Electric Company or the State of California to provide electricity in Southern California.

If you have any questions regarding this project, please contact Mr. Kenneth L. Coats at (909) 396-2527 [kcoats@aqmd.gov](mailto:kcoats@aqmd.gov) or Mr. John Yee at (909) 396-2531 [jyee@aqmd.gov](mailto:jyee@aqmd.gov). For any questions regarding this letter and the revised PDOC, please contact Mr. Michael D. Mills, Senior Manager at (909) 396-2578 [mmills@aqmd.gov](mailto:mmills@aqmd.gov).

Sincerely,



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

MN:klc

cc: Thomas J. McCabe, EME  
Lawrence J. Kostrzewa, EME  
Victor Yamada, VSE  
Mike Carroll, Latham & Watkins, LLP  
Scott Galati, Galati & Blek, LLP  
Barry Wallerstein, AQMD (w/o enclosures)  
Kurt Wiese, AQMD (w/o enclosures)  
Carol Coy, AQMD (w/o enclosures)  
Barbara Baird, AQMD (w/o enclosures)  
Mike Mills, AQMD (w/o enclosures)

Enclosures: Public Notice  
Proposed Title V Permit  
Engineering Analysis

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED



# South Coast Air Quality Management District

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

February 1, 2008

Mr. Thomas J. McCabe, Jr.  
Edison Mission Energy  
18101 Von Karman Suite 1700  
Irvine, CA 92612-1046

Subject: Revised Preliminary Determination of Compliance (PDOC) for Edison Mission Energy's (EME's) Proposed Valle Del Sol Energy, LLC (VSE) Project (Facility ID No. 146534), to be located at 29500 Rouse Road, Romoland, CA 92545; (05-AFC-3)

Dear Mr. McCabe:

This is in reference to Edison Mission Energy's (EME's) Proposed Valle Del Sol Energy, LLC (VSE) Power Plant Project and VSE's 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, VSE has proposed to construct a 500 megawatt (MW) power plant, Valle Del Sol Energy, LLC, at 29500 Rouse Road, Romoland, CA 92585. As part of this project, VSE has proposed to offset some of the emission increases from the VSE Project through accessing AQMD's Priority Reserve credits pursuant to Rule 1309.1.

On September 8, 2006 the AQMD Governing Board adopted amendments to Rule 1309.1 to allow Electric Generating Facilities (EGFs) access to the AQMD's Priority Reserve credits to offset some of their emission increases. However, due to significant public comments and concerns expressed at the September 8<sup>th</sup> adoption hearing, the AQMD Governing Board directed AQMD staff to propose further amendments to Rule 1309.1 in response to public concerns about emissions and public health impacts associated with the operation of EGFs. On January 23, 2007 the AQMD issued a PDOC to the VSE Project under the September 8, 2006 version of Rule 1309.1.

On August 3, 2007, the AQMD Governing Board adopted further amendments to Rule 1309.1, and replaced the September 8, 2006 version of Rule 1309.1 with the August 3, 2007 version. As you are aware, the requirements of Rule 1309.1, as amended on August 3, 2007, have changed significantly since VSE originally requested access to the Priority Reserve and since AQMD issued a PDOC for this project. The August 3, 2007 amendments includes a set of new requirements for EGFs to be qualified to access the Priority Reserve (VSE must comply with this set of requirements before any Determination of Compliance (DOC) or Proposed Title V Permit to Construct can be issued) and additional new requirements for EGFs prior to AQMD releasing any of the Priority Reserve credits (VSE must comply with this set of requirements before a Final Title V Permit to Construct can be issued). Included in the requirements that VSE must meet prior to issuance of any DOC or Proposed Title V Permit are elements which require more stringent emission standards for Nitrogen Oxides, Fine Particulate Matter (PM10) and Toxics; consideration of the use of renewable/alternative energy; limitation on the number of annual operating hours; and other requirements. In response to information requests from AQMD (Letters dated August 16 and October 16, 2007), VSE has provided additional information to demonstrate compliance with the appropriate set of new requirements of Rule 1309.1 necessary to demonstrate that the project is qualified to access the Priority Reserve.

At this time AQMD has completed its review of the additional information submitted by VSE and prepared a revised Preliminary Determination of Compliance indicating that upon AQMD's initial review, VSE complies with all of the requirements of Rule 1309.1, as amended on August 3, 2007, in order to qualify to access the Priority Reserve credits. However, since the Rule 1309.1 requirements have significantly changed, and the September 8, 2006 version of Rule 1309.1, which was the basis of the previously issued PDOC and FDOC, has been replaced with the August 3, 2007 version of Rule 1309.1, AQMD has determined that it is necessary to issue a new public notice for the revised PDOC and the Proposed Title V Permit to Construct for VSE and provide for a 30-day public comment and a 45-day EPA review period pursuant to AQMD Rules 212 and 3006.

As part of this public notice requirement, Rule 212(d) requires that the public notice must be distributed by the applicant to each address within a ¼ mile radius of the project, and that the applicant must provide verification to the Executive Officer that the public notice has been distributed. In addition to these requirements, you also need to provide us with a description of the method used to determine the addresses within the ¼-mile radius of the project. The notice will also be published (by AQMD) in a daily newspaper in the vicinity of your facility, and distributed to other interested parties as required by the referenced rule.

Enclosed is the public notice you are required to distribute to each address within a ¼-mile radius of the project. PRIOR TO COPYING AND DISTRIBUTING THE NOTICE, PLEASE FILL IN THE DATE THAT THE NOTICE WILL ACTUALLY BE DISTRIBUTED AT THE BOTTOM OF THE NOTICE, AND SEND A DATED COPY TO THE AQMD.

Written verification referencing your application numbers, proof of distribution, and the method of determining the addresses must be forwarded to us. Proof of distribution shall include post office receipts, receipts from mail service or distribution service agencies, or other methods approved by the AQMD, describing boundaries of notification and addresses included in the mailing. All correspondence regarding this notice must be forwarded to the AQMD, 21865 Copley Drive, Diamond Bar, CA 91765-4182, Attention: Mr. Kenneth L. Coats. The District files pertaining to the subject equipment will be available for public viewing at the AQMD's Diamond Bar office. The draft permit and our permit evaluation will also be available at the Sun City Branch Library, 26982 Cherry Hills Boulevard, Sun City, CA 92586 during the public notice period.

Also please note that in addition to being required to offset all emission increases subject to offsets pursuant to AQMD Rules 1303(b)(2) and 2005 (b)(2) and the emission standards and other requirements discussed in the attached Addendum DOC Analysis, prior to AQMD releasing Priority Reserve credits to the VSE Project and issuing a Final Title V Permit, VSE must also demonstrate to the satisfaction of the Executive Officer that it has met all of the other applicable requirements of Rule 1309.1. These additional requirements are not intended to be satisfied prior to the release of the DOCs, but only prior to actual release of the Priority Reserve credits and issuance of the Final Title V Permit and include, but not limited to, the following summarized list of requirements:

**Rule 1309.1(c)(2)**

VSE pays a mitigation fee pursuant to subdivision (g).

**Rule 1309.1(c)(3)**

VSE conducts a due diligence effort as approved by the Executive Officer, to secure available ERCs for requested Priority Reserve pollutants. Such efforts shall include securing available ERCs including those available through state emission banks or creating ERCs through SIP approved credit generation programs as available.

**Rule 1309.1(c)(4)**

VSE enters into a long-term contract (at least one year) with the State of California to sell at least 50 percent of the portion of power which it has generated using the Priority Reserve Credits and the Executive Officer determines at the time of permitting, and based on consultations with State power agencies that the State of California is both entering into such long term contract and that a need for such contract exists at the time of permitting, if the facility is a net generator.

**Rule 1309.1(d)(6)**

VSE must use any ERCs held first, before access to the Priority Reserve is allowed.

**Rule 1309.1(d)(14)**

VSE secures final certification and approval for this project from the CEC, and has entered into a long term contract with Southern California Edison Company or the San Diego Gas and Electric Company or the State of California to provide electricity in Southern California.

If you have any questions regarding this project, please contact Mr. Kenneth L. Coats at (909) 396-2527 [kcoats@aqmd.gov](mailto:kcoats@aqmd.gov) or Mr. John Yee at (909) 396-2531 [jyee@aqmd.gov](mailto:jyee@aqmd.gov). For any questions regarding this letter and the Addendum to the DOC, please contact me at (909) 396-2578 [mmills@aqmd.gov](mailto:mmills@aqmd.gov).

Sincerely,

*Michael D. Mills*

Michael D. Mills, P.E.  
Senior Manager  
General Commercial & Energy Team  
Engineering & Compliance

Enclosures:  
Public Notice  
Proposed Title V Permit  
Engineering Analysis

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

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## NOTICE OF INTENT TO ISSUE PERMIT PURSUANT TO AQMD RULES 212 AND 3006

This notice is to inform you that the South Coast Air Quality Management District (AQMD) has received and reviewed permit applications for the proposed Valle Del Sol Energy, LLC (VSE) power plant project and intends to issue a Title V Facility Permit 1) at the end of the 30-day public comment and review period and after all pertinent comments have been considered and all other requirements have been complied with, 2) upon U.S. Environmental Protection Agency approval of the proposed Title V permit, and 3) upon VSE demonstrating compliance with the additional requirements of AQMD Rule 1309.1 – Priority Reserve.

The AQMD is the air pollution control agency for the four county-region including Orange County and parts of Los Angeles, Riverside and San Bernardino counties. Anyone wishing to install or modify equipment that could control or be a source of air pollution within this region must first obtain a permit from the AQMD. Under certain circumstances, before a permit is granted, a public notice, such as this, is prepared by the AQMD and distributed.

The AQMD has evaluated the permit applications listed below for the following facility and determined that the project meets or will meet all applicable AQMD rules and regulations based upon the evaluation described below:

**FACILITY:** Valle Del Sol Energy, LLC  
29500 Rouse Road  
Romoland, CA 92585  
Facility ID No: 146534

**CONTACT:** Mr. Thomas J. McCabe, Regional Vice President  
Edison Mission Energy  
18101 Von Karman Avenue  
Irvine, CA 92612

### AQMD APPLICATION NUMBERS

Application Number	Equipment Description
450931	Combustion Engine, Gas Turbine No. 1
450932	Combustion Engine, Gas Turbine No. 2
450933	Combustion Engine, Gas Turbine No. 3
450935	Combustion Engine, Gas Turbine No. 4
450936	Combustion Engine, Gas Turbine No. 5
450937	Air Pollution Control Equipment, SCR/CO Catalyst for Turbine No. 1
450938	Air Pollution Control Equipment, SCR/CO Catalyst for Turbine No. 2
450939	Air Pollution Control Equipment, SCR/CO Catalyst for Turbine No. 3
450940	Air Pollution Control Equipment, SCR/CO Catalyst for Turbine No. 4
450942	Air Pollution Control Equipment, SCR/CO Catalyst for Turbine No. 5
450943	Emergency Fire Pump Engine
451184	Aqueous Ammonia Storage Tank
450866	Initial Title V Application

### PROJECT DESCRIPTION

The project consists of construction and operation of a new power plant with the capability of generating a total of 500 megawatts (MW) of electrical power consisting of five (5) new, simple cycle GE LMS100 gas turbines with associated air pollution control systems, one (1) 340 brake horsepower diesel fuel fired emergency fire pump, and a 16,000 gallon capacity

DISTRIBUTION DATE: FEBRUARY 8, 2008

*Cleaning the air that we breathe...*

aqueous ammonia storage tank. Since the above equipment has the potential to emit pollutants in excess of the emission levels specified in AQMD Rule 212(g), a public notice is required.

#### **PROJECTED EMISSIONS**

After the initial commissioning period, the total maximum monthly emissions from the operation of the proposed equipment in conjunction with the use of air pollution control systems is not expected to exceed the following:

Pollutant	Maximum Monthly Emissions, (pounds per month)
Nitrogen Oxides	20,179
Carbon Monoxide	32,663
Volatile Organic Compounds	4,439
Particulate Matter (diameter less than 10 microns)	14,019
Sulfur Dioxide	1,404
Ammonia	11,625

As a result of the burning of natural gas in the gas turbines, emissions from the proposed project also contains some pollutants that are considered toxic under AQMD Rule 1401-New Source Review of Toxic Air Contaminants. Therefore, a health risk assessment was performed for this project. The health risk assessment uses health protective assumptions in estimating actual risk to an individual person. Even assuming this health protective condition, the evaluation shows that the maximum individual cancer risk increase from the project is less than one-in-one-million. Also, acute and chronic indices, which measure non-cancer health impacts, are less than one. These levels of estimated risk are below the threshold limits of AQMD Rule 1401 (d) established for new or modified sources and below AQMD Rule 1309.1(b)(5)(A) for power plants. The health risk assessment (HRA) results are shown in the table below:

#### **HRA Results**

	Residential MICR	Commercial MICR	Residential HIA	Commercial HIA	Residential HIC	Commercial HIC
Gas Turbine No. 1	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00057	0.00123	0.0000175	0.00000074
Gas Turbine No. 2	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00056	0.00124	0.0000174	0.00000074
Gas Turbine No. 3	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00056	0.00123	0.0000175	0.00000074
Gas Turbine No. 4	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00055	0.00122	0.0000174	0.00000074
Gas Turbine No. 5	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00056	0.00122	0.0000174	0.00000074
Total Project	$7.10 \times 10^{-11}$	$3.34 \times 10^{-10}$	0.00280	0.00614	0.0000872	0.00000370

Also, based on the engineering evaluation for this project, the AQMD has determined that the project complies with all of the applicable requirements to be qualified to access Priority Reserve credits pursuant to AQMD Rule 1309.1. However, the project must comply with additional requirements prior to the AQMD's release of the Priority Reserve credits and issuance of the Final Title V Permit.

**This facility is a new Federal Title V and Title IV (Acid Rain) facility. Pursuant to AQMD Title V Permits Rule 3006 – Public Participation, any person may request a proposed permit hearing on an application for an Initial Title V, a Permit Renewal or significant permit revision by filing with the Executive Officer a complete Hearing Request Form (Form 500G) for a proposed hearing within 15 days of the date of publication of this notice. This form is available on the AQMD website at <http://www.aqmd.gov/permit/Formspdf/TitleV/AQMDForm500-G.pdf>, or alternatively, the form can be made available upon request by contacting Mr. Kenneth L. Coats at the e-mail and telephone number listed below. On or before the date the request is filed, the person requesting a proposed permit hearing must also send by first class a copy of the request to the facility address and contact person listed above.**

#### **THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH PRIOR TO THE ISSUANCE OF FINAL TITLE V PERMIT**

In order for AQMD to be able to release any Priority Reserve credits and issue a Final Title V permit to this project, the applicant must comply with additional requirements of AQMD Rules and Regulations, including but not limited to the following:

DISTRIBUTION DATE: FEBRUARY 8, 2008



**Rule 1303(b)(2)**

VSE must provide emission offsets for NO<sub>x</sub>, VOC, SO<sub>x</sub>, and PM<sub>10</sub> emissions. Emission offsets for PM<sub>10</sub>, SO<sub>x</sub>, and VOC will be provided in the form of Emission Reduction Credits (ERCs). Some or all of the emission offsets for PM<sub>10</sub>, and SO<sub>x</sub> may also be obtained from the AQMD's Priority Reserve pursuant to AQMD Rule 1309.1.

**Rule 2005(b)(2)**

Emission offsets for NO<sub>x</sub> will be in the form of RECLAIM Trading Credits (RTCs).

**Rule 1309.1(c)(2)**

VSE pays a mitigation fee pursuant to subdivision (g).

**Rule 1309.1(c)(3)**

VSE conducts a due diligence effort [based on an ERC cost not to exceed the applicable mitigation fee for that pollutant at the location of the electrical generating facility (EGF) and as specified in subdivision (g) of Rule 1309.1] approved by the Executive Officer to secure available ERCs for requested Priority Reserve pollutants. Such efforts shall include securing available ERCs including those available through state emission banks or creating ERCs through SIP approved credit generation programs as available.

**Rule 1309.1(c)(4)**

VSE enters into a long-term contract (at least one year) with the State of California to sell at least 50 percent of the portion of power which it has generated using the Priority Reserve Credits and the Executive Officer determines at the time of permitting, and based on consultations with State power agencies that the State of California is both entering into such long term contract and that a need for such contract exists at the time of permitting, if the facility is a net generator.

**Rule 1309.1(d)(6)**

VSE must use any ERCs held first, before access to the Priority Reserve is allowed.

**Rule 1309.1(d)(14)**

VSE secures final certification and approval for this project from the California Energy Commission, and has entered into a long term contract with Southern California Edison Company or the San Diego Gas and Electric Company or the State of California to provide electricity in Southern California.

The proposed permit and other information are available for public review at the AQMD's headquarters in Diamond Bar, and at the Sun City Branch Library, 26982 Cherry Hills Boulevard, Sun City, CA 92586. Additional information including the facility owner's compliance history submitted to the AQMD pursuant to Section 42336, or otherwise known to the AQMD, based on credible information, is available at the AQMD for public review by contacting Mr. Kenneth L. Coats ([kcoats@aqmd.gov](mailto:kcoats@aqmd.gov)), Engineering and Compliance, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4182, (909) 396-2527. A copy of the draft Permit to Construct can also be viewed at <http://www.aqmd.gov/webappl/PublicNotices/Search.aspx>.

Anyone wishing to comment on the air quality elements of this permit must submit comments in writing to the AQMD at the above address, attention Mr. Michael D. Mills. **Comments must be received within 30 days of the distribution/publication date of this notice, as shown below.** If you are concerned primarily about zoning decisions and the process by which the facility has been sited in this location, contact your local city or county planning department or the California Energy Commission at (916) 654-4640. For your general information, anyone experiencing air quality problems such as dust or odor can telephone in a complaint to the AQMD 24 hours a day by calling 1-800-CUT-SMOG (1-800-288-7664).

DISTRIBUTION DATE: FEBRUARY 8, 2008

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## **FACILITY PERMIT TO OPERATE**

**VALLE DEL SOL ENERGY, LLC  
29500 ROUSE RD  
ROMOLAND, CA 92585**

### **NOTICE**

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Barry R. Wallerstein, D. Env.  
EXECUTIVE OFFICER

By \_\_\_\_\_  
Carol Coy  
Deputy Executive Officer  
Engineering & Compliance



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

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## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

### SECTION A: FACILITY INFORMATION

LEGAL OWNER &/OR OPERATOR: VALLE DEL SOL ENERGY, LLC

LEGAL OPERATOR (if different than owner):

EQUIPMENT LOCATION: 29500 ROUSE RD  
ROMOLAND, CA 92585-9509

MAILING ADDRESS: 18101 VON KARMAN AVE STE 1700  
IRVINE, CA 92612-0178

RESPONSIBLE OFFICIAL: MR. THOMAS J. MCCABE

TITLE: REGIONAL VICE PRESIDENT

TELEPHONE NUMBER: (949) 798-6803

CONTACT PERSON: MR. THOMAS J. MCCABE

TITLE: REGIONAL VICE PRESIDENT

TELEPHONE NUMBER: (949) 798-6803

TITLE V PERMIT ISSUED: February 01, 2008

TITLE V PERMIT EXPIRATION DATE: January 31, 2013

TITLE V		RECLAIM	
YES	NOx:	YES	
	SOx:	NO	
	CYCLE:	1	
	ZONE:	INLAND	



**FACILITY PERMIT TO OPERATE  
VALLE DEL SOL ENERGY, LLC**

**SECTION C: FACILITY PLOT PLAN**

(TO BE DEVELOPED)



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

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

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
<b>Process 3 : RULE 219 EXEMPT EQUIPMENT SUBJECT TO SOURCE SPECIFIC RULES</b>					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E32			<b>VOC:</b> (9) [RULE 1113,11-8-1996;RULE 1113,7-9-2004;RULE 1171,11-7-2003;RULE 1171,5-6-2005]	K67.3
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E33			<b>VOC:</b> (9) [RULE 1171,11-7-2003;RULE 1171,5-6-2005]	

- \* (1)(1A)(1B) Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B) Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits
- (2)(2A)(2B) Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS, etc.)  
(10) See Section J for NESHAP/MACT requirements
- \*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION D: DEVICE ID INDEX**

**The following sub-section provides an index  
to the devices that make up the facility  
description sorted by device ID.**

**FACILITY PERMIT TO OPERATE  
VALLE DEL SOL ENERGY, LLC**

**SECTION D: DEVICE ID INDEX**

Device Index For Section D			
Device ID	Section D Page No.	Process	System
E32	1	3	0
E33	1	3	0

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS**

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

#### **FACILITY CONDITIONS**

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

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

**[RULE 401, 3-2-1984; RULE 401, 11-9-2001]**

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

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

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

#### **DEVICE CONDITIONS**

#### **K. Record Keeping/Reporting**

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS**

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

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

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

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

**[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]**

[Devices subject to this condition : E32]



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION E: ADMINISTRATIVE CONDITIONS**

The operating conditions in this section shall apply to all permitted equipment at this facility unless superseded by condition(s) listed elsewhere in this permit.

1. The permit shall remain effective unless this permit is suspended, revoked, modified, reissued, denied, or it is expired for nonpayment of permit processing or annual operating fees. [201, 203, 209, 301]
  - a. The permit must be renewed annually by paying annual operating fees, and the permit shall expire if annual operating fees are not paid pursuant to requirements of Rule 301(d). [301(d)]
  - b. The Permit to Construct listed in Section H shall expire one year from the Permit to Construct issuance date, unless a Permit to Construct extension has been granted by the Executive Officer or unless the equipment has been constructed and the operator has notified the Executive Officer prior to the operation of the equipment, in which case the Permit to Construct serves as a temporary Permit to Operate. [202, 205]
  - c. The Title V permit shall expire as specified under Section K of the Title V permit. The permit expiration date of the Title V facility permit does not supercede the requirements of Rule 205. [205, 3004]
2. The operator shall maintain all equipment in such a manner that ensures proper operation of the equipment. [204]
3. This permit does not authorize the emissions of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the Rules and Regulations of the AQMD. This permit cannot be considered as permission to violate existing laws, ordinances, regulations, or statutes of other governmental agencies. [204]
4. The operator shall not use equipment identified in this facility permit as being connected to air pollution control equipment unless they are so vented to the identified air pollution control equipment which is in full use and which has been included in this permit. [204]
5. The operator shall not use any equipment having air pollution control device(s) incorporated within the equipment unless the air pollution control device is in full operation. [204]
6. The operator shall maintain records to demonstrate compliance with rules or permit conditions that limit equipment operating parameters, or the type or quantity of material processed. These records shall be made available to AQMD personnel upon request and be maintained for at least: [204]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION E: ADMINISTRATIVE CONDITIONS**

- a. Three years for a facility not subject to Title V; or
  - b. Five years for a facility subject to Title V.
7. The operator shall maintain and operate all equipment to ensure compliance with all emission limits as specified in this facility permit. Compliance with emission limits shall be determined according to the following specifications, unless otherwise specified by AQMD rules or permit conditions: [204]
- a. For internal combustion engines and gas turbines, measured concentrations shall be corrected to 15 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1110.2, 1134, 204]
  - b. For other combustion devices, measured concentrations shall be corrected to 3 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1146, 1146.1, 204]
  - c. For a large NO<sub>x</sub> source, compliance with a RECLAIM concentration limit shall be measured over a continuous 60 minutes for that source; [2012]
  - d. For non-combustion sources, compliance with emission limits shall be determined and averaged over a period of 60 minutes; [204]
  - e. For the purpose of determining compliance with Rule 407, carbon monoxide (CO) shall be measured on a dry basis and be averaged over 15 consecutive minutes, and sulfur compounds which would exist as liquid or gas at standard conditions shall be calculated as sulfur dioxide (SO<sub>2</sub>) and be averaged over 15 consecutive minutes; [407]
  - f. For the purpose of determining compliance with Rule 409, combustion contaminant emission measurements shall be corrected to 12 percent of carbon dioxide (CO<sub>2</sub>) at standard conditions and averaged over 15 consecutive minutes. [409]
  - g. For the purpose of determining compliance with Rule 475, combustion contaminant emission measurements shall be corrected to 3 percent of oxygen (O<sub>2</sub>) at standard conditions and averaged over 15 consecutive minutes or any other averaging time specified by the Executive Officer. [475]
8. All equipment operating under the RECLAIM program shall comply concurrently with all provisions of AQMD Rules and Regulations, except those listed in Table 1 of Rule 2001 for NO<sub>x</sub> RECLAIM sources and Table 2 of Rule 2001 for SO<sub>x</sub> RECLAIM sources. Those provisions listed in Tables 1 or 2 shall not apply to NO<sub>x</sub> or SO<sub>x</sub> emissions after the date the facility has demonstrated compliance with all monitoring and reporting requirements of Rules 2011 or 2012, as applicable. Provisions of the listed AQMD rules in Tables 1 or 2 which have initial implementation dates in 1994 shall not apply to a RECLAIM NO<sub>x</sub> or SO<sub>x</sub> source, respectively. [2001]



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION E: ADMINISTRATIVE CONDITIONS**

9. The operator shall, when a source test is required by AQMD, provide a source test protocol to AQMD no later than 60 days before the proposed test date. The test shall not commence until the protocol is approved by AQMD. The test protocol shall contain the following information: [204, 304]
  - a. Brief description of the equipment tested.
  - b. Brief process description, including maximum and normal operating temperatures, pressures, through-put, etc.
  - c. Operating conditions under which the test will be performed.
  - d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
  - e. Brief description of sampling and analytical methods used to measure each pollutant, temperature, flow rates, and moisture.
  - f. Description of calibration and quality assurance procedures.
  - g. Determination that the testing laboratory qualifies as an "independent testing laboratory" under Rule 304 (no conflict of interest).
10. The operator shall submit a report no later than 60 days after conducting a source test, unless otherwise required by AQMD Rules or equipment-specific conditions. The report shall contain the following information: [204]
  - a. The results of the source test.
  - b. Brief description of the equipment tested.
  - c. Operating conditions under which test will be performed.
  - d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
  - e. Field and laboratory data forms, strip charts and analyses.
  - f. Calculations for volumetric flow rates, emission rates, control efficiency, and overall control efficiency.
11. The operator shall, when a source test is required, provide and maintain facilities for sampling and testing. These facilities shall comply with the requirements of AQMD Source Test Method 1.1 and 1.2. [217]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION E: ADMINISTRATIVE CONDITIONS**

12. Whenever required to submit a written report, notification or other submittal to the Executive Officer, AQMD, or the District, the operator shall mail or deliver the material to: Deputy Executive Officer, Engineering and Compliance, AQMD, 21865 E. Copley Drive, Diamond Bar, CA 91765-4182.  
[204]



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS**

The Facility shall comply with all applicable monitoring and source testing requirements in Regulation XX. These requirements may include but are not limited to the following:

#### **I. NO<sub>x</sub> Monitoring Conditions**

A. The Operator of a NO<sub>x</sub> Major Source, as defined in Rule 2012, shall, as applicable:

1. Install, maintain, and operate an AQMD certified direct or time-shared monitoring device or an approved alternative monitoring device for each major NO<sub>x</sub> source to continuously measure the concentration of NO<sub>x</sub> emissions and all other applicable variables specified in Rule 2012, Table 2012-1 and Rule 2012, Appendix A, Table 2-A to determine the NO<sub>x</sub> emissions rate from each source. The time-sharing of CEMS among NO<sub>x</sub> sources may be allowed by the Executive Officer in accordance with the requirements for time sharing specified in Appendix A. [2012]
2. Install, maintain, and operate a totalizing fuel meter approved by the Executive Officer for each major source. [2012]
3. If the facility is operating existing CEMS and fuel meters, continue to follow recording and reporting procedures required by AQMD Rules and Regulations in effect prior to October 15, 1993 until the CEMS is certified pursuant to Rule 2012. [2012]
4. Use valid data collected by an AQMD certified or provisionally certified CEMS in proper operation that meets all the requirements of Appendix A of Rule 2012, unless final certification of the CEMS is denied, to determine mass emissions for all purposes, including, but not limited to, determining: [2012]
  - a. compliance with the annual Allocation;
  - b. excess emissions;
  - c. the amount of penalties; and
  - d. fees.
5. Follow missing data procedures as specified in Rule 2012 Appendix A whenever valid data is not available or collected to determine mass emissions for all purposes, including, but not limited to, determining: [2012]
  - a. compliance with the annual Allocation;
  - b. excess emissions;
  - c. the amount of penalties; and
  - d. fees.

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS**

B. The Operator of a NOx Large Source, as defined in Rule 2012, shall, as applicable:

Not Applicable

C. The Operator of a NOx Process Unit, as defined in Rule 2012, shall, as applicable:

1. Install, maintain, and operate a totalizing fuel meter or any device approved by the Executive Officer to measure quarterly fuel usage or other applicable variables specified in Rule 2012, Table 2012-1, and Rule 2012, Appendix A, Table 4-A. The sharing of totalizing fuel meters may be allowed by the Executive Officer if the fuel meter serves process units which have the same emission factor or emission rate. The sharing of totalizing meter shall not be allowed for process units which are required to comply with an annual heat input limit. [2012]

#### **II. NOx Source Testing and Tune-up Conditions**

1. The operator shall conduct all required NOx source testing in compliance with an AQMD-approved source test protocol. [2012]
2. The operator shall, as applicable, conduct source tests for every large NOx source no later than December 31, 1996 and every 3 years thereafter. The source test shall include the determination of NOx concentration and a relative accuracy audit of the exhaust stack flow determination (e.g. in-stack flow monitor or fuel flow monitor based F-factor calculation). Such source test results shall be submitted per the schedule described by APEP. In lieu of submitting the first source test report, the facility permit holder may submit the results of a source test not more than 3 years old which meets the requirements when conducted. [2012]
3. All NOx large sources and NOx process units shall be tuned-up in accordance with the schedule specified in Rule 2012, Appendix A, Chapter 5, Table 5-B. [2012]
4. Process Unit source testing



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION G: RECORDKEEPING AND REPORTING REQUIREMENTS FOR RECLAIM SOURCES**

The Facility shall comply with all applicable reporting and recordkeeping requirements in Regulation XX. These requirements may include but are not limited to the following:

#### **I. Recordkeeping Requirements for all RECLAIM Sources**

1. The operator shall maintain all monitoring data required to be measured or reported pursuant to Rule 2011 and Rule 2012, whichever is applicable. All records shall be made available to AQMD staff upon request and be maintained for at least:
  - a. Three years after each APEP report is submitted to AQMD for a facility not subject to Title V, unless a different time period is required in Rule 2011 or Rule 2012 [2011 & 2012]; or
  - b. Five years after each APEP report is submitted to AQMD for a facility subject to Title V. [3004(a)(4)(E)]
  - c. Notwithstanding the above, all data gathered or computed for intervals of less than 15 minutes shall only be maintained a minimum of 48 hours. [2011 & 2012]
2. The operator shall store on site and make available to the Executive Officer upon request: records used to determine emissions, maintenance records, sources test reports, relative accuracy test audit reports, relative accuracy audit reports and fuel meter calibration records. [2011 & 2012]

#### **II. Reporting Requirements for all RECLAIM Sources**

1. The operator shall submit a quarterly certification of emissions including the facility's total NO<sub>x</sub> or SO<sub>x</sub> emissions, whichever is applicable, for the quarter within 30 days after the end of the first three quarters and 60 days after the end of the fourth quarter of a compliance year. [2011 & 2012]

#### **NO<sub>x</sub> Reporting Requirements**

##### **A. The Operator of a NO<sub>x</sub> Major Source, as defined in Rule 2012, shall, as applicable:**

1. No later than 12 months after entry into the RECLAIM program or after the initial operation of a new major source, whichever is later, install, maintain, and operate a reporting device to electronically report everyday to the AQMD central station for each major NO<sub>x</sub> source, the total daily mass emissions of NO<sub>x</sub> and daily status codes. Such data

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION G: RECORDKEEPING AND REPORTING REQUIREMENTS FOR RECLAIM SOURCES**

shall be transmitted by 5:00 p.m. of the following day. If the facility experiences a power, computer, or other system failure that prevents the submittal of the daily report, the Facility Permit holder shall be granted 24 hours extension to submit the report. [2012]

2. Calculate NO<sub>x</sub> emissions pursuant to missing data procedures set forth in Appendix A, Chapter 2 of Rule 2012 if the Facility Permit holder fails to meet the deadline for submitting the daily report. [2012]
3. Submit an electronic report within 15 days following the end of each month totaling NO<sub>x</sub> emissions from all major NO<sub>x</sub> sources during the month. [2012]
4. For those facilities with existing CEMS and fuel meters as of October 15, 1993, continue to follow recording and reporting procedures required by AQMD Rules and Regulations in effect until the CEMS is certified pursuant to Rule 2011 and/or Rule 2012, as applicable. [2012]

B. The Operator of a NO<sub>x</sub> Large Source, as defined in Rule 2012, shall:

Not Applicable

C. The Operator of a NO<sub>x</sub> Process Unit, as defined in Rule 2012, shall:

1. Electronically report the calculated quarterly NO<sub>x</sub> emissions for each NO<sub>x</sub> process unit. The Operator shall comply with this requirement within 12 months of the date of entry to the RECLAIM Program. [2012]



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
<b>System 1 : GAS TURBINES, POWER GENERATION</b>					
GAS TURBINE, UNIT NO.1, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 904 MMBTU/HR AT 45 DEGREES F, WITH WATER INJECTION WITH A/N:	D1	C3	NOX: MAJOR SOURCE**	<b>CO:</b> 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; <b>CO:</b> 6 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988]  <b>NOX:</b> 10.29 LBS/MMSCF NATURAL GAS (1A) [RULE 2012,5-6-2005] ; <b>NOX:</b> 2.5 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988]  <b>RULE 2005,5-6-2005] ; NOX:</b> 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; <b>NOX:</b> 123.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005]  <b>NOX:</b> 0.08 LBS/MEGAWATT-HOUR NATURAL GAS (5) [RULE 1309.1,5-3-2002;RULE 1309.1,8-3-2007] ; <b>PM10:</b> 0.06 LBS/MEGAWATT-HOUR NATURAL GAS (5) [RULE 1309.1,5-3-2002	A63.1, A99.1, A99.2, A99.3, A99.4, A99.5, A195.1, A195.2, A195.3, A327.1, C1.1, D12.1, D29.1, D29.2, D29.3, D29.4, D82.1, D82.2, E193.1, E193.3, E193.5, H23.1, I296.1, K40.1, K67.1

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
GENERATOR, 104 MW				<p><i>RULE 1309.1, 8-3-2007</i> ;  <b>PM10:</b> 0.01 GRAINS/SCF  NATURAL GAS (5A) [<b>RULE 475,10-8-1976</b>; <i>RULE 475, 8-7-1978</i>]  ; <b>PM10:</b> 11 LBS/HR  NATURAL GAS (5B) [<b>RULE 475,10-8-1976</b>  <i>RULE 475, 8-7-1978</i>] ; <b>PM10:</b>  0.1 GRAINS/SCF (5C) [<b>RULE 409,8-7-1981</b>] ; <b>SO2:</b> (9)  [<b>40CFR 72 - Acid Rain Provisions, 11-24-1997</b>]</p> <p><b>SOX:</b> 0.06 LBS/MMBTU  NATURAL GAS (8) [<b>40CFR 60 Subpart KKKK, 7-6-2006</b>] ; <b>VOC:</b>  2 PPMV NATURAL GAS (4)  [<b>RULE 1303(a)(1)-BACT, 5-10-1996</b>  <i>RULE 1303(a)(1)-BACT, 12-6-2002</i>]</p>	
CO OXIDATION CATALYST, NO. 1, ENGLEHARD CAMET, WITH 72 CUBIC FEET OF TOTAL CATALYST VOLUME A/N:	C3	D1 C4			

\* (1)(1A)(1B) Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B) Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B) Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
SELECTIVE CATALYTIC REDUCTION, NO. 1, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 20 FT 3 IN; HEIGHT: 28 FT 8 IN; LENGTH: 1 FT 8 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, E193.1
STACK, NO. 1, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S6	C4			
GAS TURBINE, UNIT NO.2, NATURAL GAS, GENERAL ELECTRIC , MODEL LMS100PA, SIMPLE CYCLE, 904 MMBTU/HR AT 45 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 - PSD Analysis,10-7-1988]  NOX: 10.29 LBS/MMSCF NATURAL GAS (1A) [RULE 2012,5-6-2005] ; NOX: 2.5 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988  RULE 2005,5-6-2005] ; NOX: 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; NOX: 123.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005]	A63.1, A99.1, A99.2, A99.3, A99.4, A99.5, A195.1, A195.2, A195.3, A327.1, C1.1, D12.1, D29.1, D29.2, D29.3, D29.4, D82.1, D82.2, E193.1, E193.3, E193.5, H23.1, I296.1, K40.1, K67.1

\* (1)(1A)(1B)Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5)(5A)(5B)Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2)(2A)(2B)Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)

(10) See Section J for NESHAP/MACT requirements

\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
GENERATOR, 104 MW				<b>NOX:</b> 0.08 LBS/MEGAWATT-HOUR NATURAL GAS (5) [RULE 1309.1,5-3-2002;RULE 1309.1,8-3-2007] ; <b>PM10:</b> 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475,10-8-1976 RULE 475,8-7-1978] ; <b>PM10:</b> 11 LBS/HR NATURAL GAS (5A) [RULE 475,10-8-1976;RULE 475,8-7-1978] ; <b>PM10:</b> 0.1 GRAINS/SCF NATURAL GAS (5B) [RULE 409,8-7-1981]  <b>PM10:</b> 0.06 LBS/MEGAWATT-HOUR (5C) [RULE 1309.1,5-3-2002;RULE 1309.1,8-3-2007] ; <b>SO2:</b> (9) [40CFR 72 - Acid Rain Provisions,11-24-1997]  <b>SOX:</b> 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; <b>VOC:</b> 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996 RULE 1303(a)(1)-BACT,12-6-2002]	

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
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(2)(2A)(2B)Denotes RECLAIM emission rate  
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(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
CO OXIDATION CATALYST, NO. 2, ENGLEHARD CAMET, WITH 72 CUBIC FEET OF TOTAL CATALYST VOLUME A/N:	C9	D7 C10			
SELECTIVE CATALYTIC REDUCTION, NO. 2, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 20 FT 3 IN; HEIGHT: 28 FT 8 IN; LENGTH: 1 FT 8 IN WITH A/N: AMMONIA INJECTION, GRID	C10	C9 S12		<b>NH3:</b> 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, E193.1
STACK, NO. 2, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S12	C10			
GAS TURBINE, UNIT NO.3, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 904 MMBTU/HR AT 45 DEGREES F, WITH WATER INJECTION WITH A/N:	D13	C15	NOX: MAJOR SOURCE**	<b>CO:</b> 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; <b>CO:</b> 6 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988]  <b>NOX:</b> 10.29 LBS/MMSCF NATURAL GAS (1A) [RULE 2012,5-6-2005] ; <b>NOX:</b> 2.5 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988]	A63.1, A99.1, A99.2, A99.3, A99.4, A99.5, A195.1, A195.2, A195.3, A327.1, C1.1, D12.1, D29.1, D29.2, D29.3, D29.4, D82.1, D82.2, E193.1, E193.3, E193.5, H23.1, I296.1, K40.1, K67.1

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
				<b>RULE 2005,5-6-2005] ; NOX:</b> 15 PPMV NATURAL GAS (8) <b>[40CFR 60 Subpart KKKK, 7-6-2006] ; NOX:</b> 123.46 LBS/MMSCF NATURAL GAS (1) <b>[RULE 2012,5-6-2005]</b>  <b>NOX:</b> 0.08 LBS/MEGAWATT-HOUR NATURAL GAS (5) <b>[RULE 1309.1,5-3-2002;RULE 1309.1,8-3-2007] ; PM10:</b> 0.01 GRAINS/SCF NATURAL GAS (5) <b>[RULE 475,10-8-1976</b> <b>RULE 475,8-7-1978] ; PM10:</b> 11 LBS/HR NATURAL GAS (5A) <b>[RULE 475,10-8-1976;RULE 475,8-7-1978] ; PM10:</b> 0.1 GRAINS/SCF NATURAL GAS (5B) <b>[RULE 409,8-7-1981]</b>  <b>PM10:</b> 0.06 LBS/MEGAWATT-HOUR (5C) <b>[RULE 1309.1,5-3-2002;RULE 1309.1,8-3-2007] ;</b> <b>SO2:</b> (9) <b>[40CFR 72 - Acid Rain Provisions,11-24-1997]</b>	

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
GENERATOR, 104 MW				<b>SOX:</b> 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK, 7-6-2006] ; <b>VOC:</b> 2 PPMV NATURAL GAS (4) [ <b>RULE 1303(a)(1)-BACT, 5-10-1996</b>  <i>RULE 1303(a)(1)-BACT, 12-6-2002</i> ]	
CO OXIDATION CATALYST, NO. 3, ENGLEHARD CAMET, WITH 72 CUBIC FEET OF TOTAL CATALYST VOLUME A/N:	C15	D13 C16			
SELECTIVE CATALYTIC REDUCTION, NO. 3, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 20 FT 3 IN; HEIGHT: 28 FT 8 IN; LENGTH: 1 FT 8 IN WITH A/N:  AMMONIA INJECTION, GRID	C16	C15 S18		<b>NH3:</b> 5 PPMV NATURAL GAS (4) [ <b>RULE 1303(a)(1)- BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002</b> ]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, NO. 3, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S18	C16			

\* (1)(1A)(1B) Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B) Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B) Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
GAS TURBINE, UNIT NO.4, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 904 MMBTU/HR AT 45 DEGREES F, WITH WATER INJECTION WITH A/N:	D19	C21	NOX: MAJOR SOURCE**	<p><b>CO:</b> 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; <b>CO:</b> 6 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988]</p> <p><b>NOX:</b> 10.29 LBS/MMSCF NATURAL GAS (1A) [RULE 2012,5-6-2005] ; <b>NOX:</b> 2.5 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988</p> <p><b>RULE 2005,5-6-2005] ; NOX:</b> 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; <b>NOX:</b> 123.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005]</p> <p><b>NOX:</b> 0.08 LBS/MEGAWATT-HOUR NATURAL GAS (5) [RULE 1309.1,5-3-2002;RULE 1309.1,8-3-2007] ; <b>PM10:</b> 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475,10-8-1976</p>	A63.1, A99.1, A99.2, A99.3, A99.4, A99.5, A195.1, A195.2, A195.3, A327.1, C1.1, D12.1, D29.1, D29.2, D29.3, D29.4, D82.1, D82.2, E193.1, E193.3, E193.5, H23.1, I296.1, K40.1, K67.1

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits

(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements

\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
GENERATOR, 104 MW				<p><i>RULE 475, 8-7-1978</i>] ; <b>PM10:</b> 11 LBS/HR NATURAL GAS (5A) [<b>RULE 475,10-8-1976</b>;<i>RULE 475, 8-7-1978</i>] ; <b>PM10:</b> 0.1 GRAINS/SCF NATURAL GAS (5B) [<b>RULE 409,8-7-1981</b>]</p> <p><b>PM10:</b> 0.06 LBS/MEGAWATT-HOUR (5C) [<b>RULE 1309.1,5-3-2002</b>;<i>RULE 1309.1, 8-3-2007</i>] ; <b>SO2:</b> (9) [<b>40CFR 72 - Acid Rain Provisions,11-24-1997</b>]</p> <p><b>SOX:</b> 0.06 LBS/MMBTU NATURAL GAS (8) [<b>40CFR 60 Subpart KKKK,7-6-2006</b>] ; <b>VOC:</b> 2 PPMV NATURAL GAS (4) [<b>RULE 1303(a)(1)-BACT,5-10-1996</b>]  <i>RULE 1303(a)(1)-BACT,12-6-2002</i>]</p>	
CO OXIDATION CATALYST, NO. 4, ENGLEHARD CAMET, WITH 72 CUBIC FEET OF TOTAL CATALYST VOLUME A/N:	C21	D19 C22			

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements

\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
SELECTIVE CATALYTIC REDUCTION, NO. 4, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 20 FT 3 IN; HEIGHT: 28 FT 8 IN; LENGTH: 1 FT 8 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, E193.1
STACK, NO. 4, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S24	C22			
GAS TURBINE, UNIT NO.5, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 904 MMBTU/HR AT 45 DEGREES F, WITH WATER INJECTION WITH A/N:	D25	C27	NOX: MAJOR SOURCE**	CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; CO: 6 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988]  NOX: 10.29 LBS/MMSCF (1A) [RULE 2012,5-6-2005] ; NOX: 2.5 PPMV NATURAL GAS (4) [RULE 1703 - PSD Analysis,10-7-1988;RULE 2005,5-6-2005]  NOX: 15 PPMV NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; NOX: 123.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005]	A63.1, A99.1, A99.2, A99.3, A99.4, A99.5, A195.1, A195.2, A195.3, A327.1, C1.1, D12.1, D29.1, D29.2, D29.3, D29.4, D82.1, D82.2, E193.1, E193.3, E193.5, H23.1, I296.1, K40.1, K67.1

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
GENERATOR, 104 MW				<b>NOX:</b> 0.08 LBS/MEGAWATT-HOUR NATURAL GAS (5) [RULE 1309.1,5-3-2002;RULE 1309.1,8- 3-2007] ; <b>PM10:</b> 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475,10-8-1976 RULE 475,8-7-1978] ; <b>PM10:</b> 11 LBS/HR NATURAL GAS (5A) [RULE 475,10-8-1976;RULE 475,8-7-1978] ; <b>PM10:</b> 0.1 GRAINS/SCF NATURAL GAS (5B) [RULE 409,8-7-1981]  <b>PM10:</b> 0.06 LBS/MEGAWATT-HOUR NATURAL GAS (5C) [RULE 1309.1,5-3-2002;RULE 1309.1,8- 3-2007] ; <b>SO2:</b> (9) [40CFR 72 - Acid Rain Provisions,11-24-1997]  <b>SOX:</b> 0.06 LBS/MMBTU NATURAL GAS (8) [40CFR 60 Subpart KKKK,7-6-2006] ; <b>VOC:</b> 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10- 1996 RULE 1303(a)(1)-BACT,12-6- 2002]	

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
CO OXIDATION CATALYST, NO. 5, ENGLEHARD CAMET, WITH 72 CUBIC FEET OF TOTAL CATALYST VOLUME A/N:	C27	D25 C28			
SELECTIVE CATALYTIC REDUCTION, NO. 5, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 20 FT 3 IN; HEIGHT: 28 FT 8 IN; LENGTH: 1 FT 8 IN WITH A/N: AMMONIA INJECTION, GRID	C28	C27 S30		<b>NH3:</b> 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, E193.1
STACK, NO. 5, HEIGHT: 90 FT; DIAMETER: 13 FT 6 IN A/N:	S30	C28			
<b>System 2 : EMERGENCY FIRE PUMP</b>					
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE, LEAN BURN, DIESEL FUEL, CLARKE, MODEL JW6H-UF50, WITH AFTERCOOLER, TURBOCHARGER, 340 BHP A/N:	D34		NOX: PROCESS UNIT**	<b>CO:</b> 0.45 GRAM/BHP-HR DIESEL (4) [RULE 1703 - PSD Analysis,10-7-1988] ; <b>NOX:</b> 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005]  <b>NOX + ROG:</b> 4.65 GRAM/BHP-HR DIESEL (4) [RULE 1703 - PSD Analysis,10-7-1988;RULE 2005,5-6-2005] ; <b>PM10:</b> 0.09 GRAM/BHP-HR DIESEL (4) [RULE 1303(a)(1)-BACT,5-10-1996]	B61.1, C1.3, D12.5, D12.6, E193.1, E193.2, I296.2, K67.2

\* (1)(1A)(1B)Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5)(5A)(5B)Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits  
(2)(2A)(2B)Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)  
(10) See Section J for NESHAP/MACT requirements  
\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
<b>Process 1 : INTERNAL COMBUSTION</b>					
				<i>RULE 1303(a)(1)-BACT, 12-6-2002</i> ; <b>SOX:</b> 0.005 GRAM/BHP-HR DIESEL (4) <b>[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703 - PSD Analysis, 10-7-1988]</b>	
<b>Process 2 : INORGANIC CHEMICAL STORAGE</b>					
STORAGE TANK, FIXED ROOF, TK-1, AMMONIA, 19 PERCENT, WITH PRV SET AT A MINIMUM OF 25 PSIG, 16000 GALS; DIAMETER: 12 FT; HEIGHT: 12 FT A/N:	D31				C157.1, E144.1, E193.1

\* (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 VALLE DEL SOL ENERGY, 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 VALLE DEL SOL ENERGY, LLC**

## **SECTION H: DEVICE ID INDEX**

<b>Device Index For Section H</b>			
<b>Device ID</b>	<b>Section H Page No.</b>	<b>Process</b>	<b>System</b>
D1	1	1	1
C3	2	1	1
C4	3	1	1
S6	3	1	1
D7	3	1	1
C9	5	1	1
C10	5	1	1
S12	5	1	1
D13	5	1	1
C15	7	1	1
C16	7	1	1
S18	7	1	1
D19	8	1	1
C21	9	1	1
C22	10	1	1
S24	10	1	1
D25	10	1	1
C27	12	1	1
C28	12	1	1
S30	12	1	1
D31	13	2	0
D34	12	1	2

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **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]**

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

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

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

#### **DEVICE CONDITIONS**

##### **A. Emission Limits**



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 2,778 LBS IN ANY ONE MONTH
SOX	Less than or equal to 281 LBS IN ANY ONE MONTH
VOC	Less than or equal to 1106 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: 2.00 lb/mmcf; PM10: 6.93 lb/mmcf; and SOx: 0.71 lb/mmcf

Monthly emissions, lb/month = X (EF)

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

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

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

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

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 134 hours. Start-up time shall not exceed 60 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 made available upon request by the Executive Officer.

[**RULE 1703 - PSD Analysis, 10-7-1988**; **RULE 2005, 5-6-2005**]

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

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **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 6.0 PPM CO emission limit(s) shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 134 hours. Start-up time shall not exceed 60 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 made available upon request by the Executive Officer.

**[RULE 1703 - PSD Analysis, 10-7-1988]**

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

- A99.3 The 123.46 LBS/MMCF NOX emission limit(s) 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, 5-6-2005]**

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

- A99.4 The 10.86 LBS/MMSCF 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]

- A99.5 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 134 hours. Start-up time shall not exceed 60 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 made available upon request by the Executive Officer.

**[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]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

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

A195.1 The 2.5 PPMV NOX emission limit(s) is averaged over 60 minutes at 15% O2, dry.

**[RULE 1703 - PSD Analysis, 10-7-1988; RULE 2005, 5-6-2005]**

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

A195.2 The 6.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15% O2, dry.

**[RULE 1703 - PSD Analysis, 10-7-1988]**

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

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

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(1)-Modeling, 5-10-1996; RULE 1303(b)(1)-Modeling, 12-6-2002; RULE 1303(b)(2)-O set, 5-10-1996; RULE 1303(b)(2)-O set, 12-6-2002]**

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

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

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

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

A195.4 The 5 PPMV NH<sub>3</sub> emission limit(s) is averaged over 60 minutes at 15% O<sub>2</sub>, dry basis. The operator shall calculate and continuously record the NH<sub>3</sub> slip concentration using the following.

$NH_3 = (\text{ppmv}) [a \cdot b \cdot c / 1EE+06] \cdot 1EE+06 / b$ , where

a = NH<sub>3</sub> injection rate (lb/hr)/17 (lb/lb-mol)

b = dry exhaust gas flow rate (scf/hr)/385.3 scf/lb-mol

c = change in measured NO<sub>x</sub> across the SCR (ppmvd at 15% O<sub>2</sub>)

The operator shall install and maintain a NO<sub>x</sub> analyzer to measure the SCR inlet NO<sub>x</sub> ppmv accurate to plus or minus 5 percent calibrated at least once every twelve months

The NO<sub>x</sub> analyzer shall be installed and operated within 90 days of initial start-up

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

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

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2012, 5-6-2005]**

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

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, D19, D25]

### **B. Material/Fuel Type Limits**

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 only use diesel fuel containing the following specified compounds:

Compound	Range	ppm by weight
Sulfur	less than or equal to	15

[**RULE 1303(a)(1)-BACT, 5-10-1996**; **RULE 1303(a)(1)-BACT, 12-6-2002**; **RULE 431.2, 5-4-1990**; **RULE 431.2, 9-15-2000**]

[Devices subject to this condition : D34]

### C. Throughput or Operating Parameter Limits

C1.1 The operator shall limit the fuel usage to no more than 393 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.

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

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

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

C1.3 The operator shall limit the operating time to no more than 199.99 hour(s) in any one year.

For the purpose of this condition, operating time shall be defined as being inclusive of time allotted for maintenance and testing.

[**RULE 1110.2, 6-3-2005**; **RULE 1304(a)-Modeling and O set Exemption, 6-14-1996**; **RULE 1304(c)-O set Exemption, 6-14-1996**; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D34]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

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

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 : D31]

#### **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)-O set, 5-10-1996**; **RULE 1303(b)(2)-O set, 12-6-2002**; **RULE 2012, 5-6-2005**]

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

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 12 months.

The ammonia injection rate shall remain between 13.5 gallons per hour and 16.5 gallons per hour

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

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

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

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

- D12.3 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the exhaust at the inlet of the SCR reactor.

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

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

The catalyst temperature shall remain between 750 degrees F and 850 degrees F

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

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

- 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 12 months.

The pressure drop across the catalyst shall remain between 5 inches of water column and 7.6 inches of water column

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

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

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

**[RULE 1304(a)-Modeling and O set Exemption, 6-14-1996; RULE 1304(c)-O set Exemption, 6-14-1996; RULE 2012, 5-6-2005]**

[Devices subject to this condition : D34]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

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

- D12.6 The operator shall install and maintain a(n) non-resettable totalizing fuel flow meter to accurately indicate the fuel usage of the engine.

**[RULE 1304(a)-Modeling and O set Exemption, 6-14-1996; RULE 1304(c)-O set Exemption, 6-14-1996; RULE 2012, 5-6-2005]**

[Devices subject to this condition : D34]



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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
PM10 emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment
SOX emissions	Approved District method	District-approved averaging time	Fuel Sample
VOC emissions	Approved District method	1 hour	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 capacity 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, 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

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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.

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

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

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 seven days prior to the test.

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

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

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

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

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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	Approved District method	District-approved averaging time	Fuel sample
VOC emissions	Approved District method	1 hour	Outlet of the SCR serving this equipment
PM10 emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment

The test(s) 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 AQMD approved test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at 100 percent load.

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

For natural gas fired turbines, 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 cannisters 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.

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

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

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-O set, 5-10-1996; RULE 1303(b)(2)-O set, 12-6-2002]**

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

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

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

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

D29.4 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
PM10 emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment

The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial start-up. The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted at full load to demonstrate compliance with the 0.080 lb/MW-hr NO<sub>x</sub> and 0.060 lb/MW-hr PM<sub>10</sub> requirements set forth in Rule 1309.1. If the actual measurement is within the accuracy of the devices used for electrical power measurement, the result will be acceptable.

The lb/MW-hr emission rate of each electrical generating unit shall be determined by dividing (a) the lb/hr emission rate measured at 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 output 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 calculate gross electrical output at ISO conditions.
- 2) Apply the GE site-specific LMS100 power degradation curve to adjust measured gross electrical output, as corrected to ISO conditions, to undegraded electrical generating unit conditions as defined by the turbine manufacturer. The maximum power degradation adjustment shall not exceed 1 percent.

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

The test protocol shall include the proposed operating conditions of the electrical generating unit during the test, the correction and degradation factors and documentation of their validity, 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.

[**RULE 1309.1, 5-3-2002**; RULE 1309.1, 8-3-2007]

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

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 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 the CO concentrations over a 15 minute averaging time period.

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

CO Emission Rate, lb/hr =  $K C_{co} F_d [20.9/(20.9\% - \%O_2 d)] [(Q_g * HHV)/106]$ , where

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

$C_{co}$  = Average of four consecutive 15 minute average CO concentrations, ppm

$F_d$  = 8710 dscf/MMBTU natural gas

$\%O_2 d$  = Hourly average % by volume O2 dry, corresponding to  $C_{co}$

$Q_g$  = Fuel gas usage during the hour, scf/hr

HHV = Higher heating value of fuel gas, BTU/scf

**[RULE 1703 - PSD Analysis, 10-7-1988]**

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

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 AQMD 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 - PSD Analysis, 10-7-1988; RULE 2005, 5-6-2005; RULE 2012, 5-6-2005]**

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

### **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 : D31]

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 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 - PSD Analysis, 10-7-1988]**

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

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 month and shall be calculated 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; RULE 1703 - PSD Analysis, 10-7-1988]**

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

- 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 05-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, D34]

- E193.2 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 to drive an emergency fire pump.

This equipment shall only be operated for maintenance and testing, not to exceed 50 hours in any one year.

This equipment shall not be operated under a Demand Response Program (DRP).

An engine operating log shall be kept in writing, listing the date of operation, the elapsed time, in hours, and the reason for operation. The log shall be maintained for a minimum of five years and shall be made available to AQMD personnel upon request.

[RULE 1110.2, 6-3-2005; RULE 1470, 3-4-2005]

[Devices subject to this condition : D34]



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 requirements:

Devices D1, D7, D13, D19, and D25 shall be fully and legally operational within 3 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, D7, D13, D19, D25]

E193.5 The operator shall install this equipment according to the following requirements:

PM10 emission rates from this equipment shall not exceed 0.060 lb/MW-hr

NOx emission rates from this equipment shall not exceed 0.080 lb/MW-hr

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

[**RULE 1309.1, 5-3-2002**; RULE 1309.1, 8-3-2007]

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

### H. Applicable Rules

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, D7, D13, D19, D25]

### I. Administrative

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

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

- 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 38,664 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 first compliance year, hold a minimum of 30,222 lbs/yr of NOx RTCs for operation of the gas turbine. 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, 5-6-2005]**

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

- 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 each compliance year hold a minimum NOx RTCs of 2,097 lbs/yr.

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, 5-6-2005]**

[Devices subject to this condition : D34]

### **K. Record Keeping/Reporting**

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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 per DSCF.

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

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

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

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-O set, 5-10-1996; RULE 1303(b)(2)-O set, 12-6-2002; RULE 2005, 5-6-2005]**

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

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, 5-6-2005]**

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

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, 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):

Date of operation, the elapsed time, in hours, and the reason for operation

[RULE 1110.2, 6-3-2005]

[Devices subject to this condition : D34]



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION I: PLANS AND SCHEDULES**

This section lists all plans approved by AQMD for the purposes of meeting the requirements of applicable AQMD rules.

NONE

NOTE: This section does not list compliance schedules pursuant to the requirements of Regulation XXX - Title V Permits; Rule 3004(a)(10)(C). For equipment subject to a variance, order for abatement, or alternative operating condition granted pursuant to Rule 518.2, equipment specific conditions are added to the equipment in Section D or H of the permit.

**FACILITY PERMIT TO OPERATE  
VALLE DEL SOL ENERGY, LLC**

SECTION J: AIR TOXICS

NOT APPLICABLE

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

#### **GENERAL PROVISIONS**

1. This permit may be revised, revoked, reopened and reissued, or terminated for cause, or for failure to comply with regulatory requirements, permit terms, or conditions. [3004(a)(7)(C)]
2. This permit does not convey any property rights of any sort or any exclusive privilege. [3004(a)(7)(E)]

#### **Permit Renewal and Expiration**

3. (A) Except for solid waste incineration facilities subject to standards under Section 129(e) of the Clean Air Act, this permit shall expire five years from the date that the initial Title V permit is issued. The operator's right to operate under this permit terminates at midnight on this date, unless the facility is protected by an application shield in accordance with Rule 3002(b), due to the filing of a timely and complete application for a Title V permit renewal, consistent with Rule 3003. [3004(a)(2), 3004(f)]  
  
(B) A Title V permit for a solid waste incineration facility combusting municipal waste subject to standards under Section 129(e) of the Clean Air Act shall expire 12 years from the date of issuance unless such permit has been renewed pursuant to this regulation. These permits shall be reviewed by the Executive Officer at least every five years from the date of issuance. [3004(f)(2)]
4. To renew this permit, the operator shall submit to the Executive Officer an application for renewal at least 180 days, but not more than 545 days, prior to the expiration date of this permit. [3003(a)(6)]

#### **Duty to Provide Information**

5. The applicant for, or holder of, a Title V permit shall furnish, pursuant to Rule 3002(d) and (e), timely information and records to the Executive Officer or designee within a reasonable time as specified in writing by the Executive Officer or designee. [3004(a)(7)(F)]

#### **Payment of Fees**

6. The operator shall pay all required fees specified in Regulation III - Fees. [3004(a)(7)(G)]

#### **Reopening for Cause**

7. The Executive Officer will reopen and revise this permit if any of the following circumstances occur:  
  
(A) Additional regulatory requirements become applicable with a remaining permit term of three or more years. Reopening is not required if the effective date of the requirement is later than the expiration date of this permit, unless the permit or any of its terms and conditions has been extended pursuant to paragraph (f)(4) of Rule 3004.



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

- (B) The Executive Officer or EPA Administrator determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
- (C) The Executive Officer or EPA Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements. [3005(g)(1)]

### **COMPLIANCE PROVISIONS**

- 8. The operator shall comply with all regulatory requirements, and all permit terms and conditions, except:
  - (A) As provided for by the emergency provisions of condition no. 17 or condition no. 18, or
  - (B) As provided by an alternative operating condition granted pursuant to a federally approved (SIP-approved) Rule 518.2.

Any non-compliance with any federally enforceable permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or denial of a permit renewal application. Non-compliance may also be grounds for civil or criminal penalties under the California State Health and Safety Code. [3004(a)(7)(A)]

- 9. The operator shall allow the Executive Officer or authorized representative, upon presentation of appropriate credentials to:
  - (A) Enter the operator's premises where emission-related activities are conducted, or records are kept under the conditions of this permit;
  - (B) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
  - (C) Inspect at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
  - (D) Sample or monitor at reasonable times, substances or parameters for the purpose of assuring compliance with the facility permit or regulatory requirements. [3004(a)(10)(B)]
- 10. All terms and conditions in this permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the EPA Administrator and citizens under the federal Clean Air Act, unless the term or condition is designated as not federally enforceable. Each day during any portion of which a violation occurs is a separate offense. [3004(g)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

11. A challenge to any permit condition or requirement raised by EPA, the operator, or any other person, shall not invalidate or otherwise affect the remaining portions of this permit. [3007(b)]
12. The filing of any application for a permit revision, revocation, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition. [3004(a)(7)(D)]
13. It shall not be a defense for a person in an enforcement action, including those listed in Rule 3002(c)(2), that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit, except as provided for in "Emergency Provisions" of this section. [3004(a)(7)(H)]
14. The operator shall not build, erect, install, or use any equipment, the use of which, without resulting in a reduction in the total release of air contaminants to atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Chapter 3 (commencing with Section 41700) of Part 4, of Division 26 of the California Health and Safety Code or of AQMD rules. This rule shall not apply to cases in which the only violation involved is of Section 41700 of the California Health and Safety Code, or Rule 402 of AQMD Rules. [408]
15. Nothing in this permit or in any permit shield can alter or affect:
  - (A) Under Section 303 of the federal Clean Air Act, the provisions for emergency orders;
  - (B) The liability of the operator for any violation of applicable requirements prior to or at the time of permit issuance;
  - (C) The applicable requirements of the Acid Rain Program, Regulation XXXI;
  - (D) The ability of EPA to obtain information from the operator pursuant to Section 114 of the federal Clean Air Act;
  - (E) The applicability of state or local requirements that are not "applicable requirements", as defined in Rule 3000, at the time of permit issuance but which do apply to the facility, such as toxics requirements unique to the State; and
  - (F) The applicability of regulatory requirements with compliance dates after the permit issuance date. [3004(c)(3)]
16. For any portable equipment that requires an AQMD or state permit or registration, excluding a) portable engines, b) military tactical support equipment and c) AQMD-permitted portable equipment that are not a major source, are not located at the facility for more than 12 consecutive months after

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

commencing operation, and whose operation does not conflict with the terms or conditions of this Title V permit: 1) the facility operator shall keep a copy of the AQMD or state permit or registration; 2) the equipment operator shall comply with the conditions on the permit or registration and all other regulatory requirements; and 3) the facility operator shall treat the permit or registration as a part of its Title V permit, subject to recordkeeping, reporting and certification requirements. [3004(a)(1)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

#### **EMERGENCY PROVISIONS**

17. An emergency<sup>1</sup> constitutes an affirmative defense to an action brought for non-compliance with a technology-based emission limit only if:
- (A) Properly signed, contemporaneous operating records or other credible evidence demonstrate that:
    - (1) An emergency occurred and the operator can identify the cause(s) of the emergency;
    - (2) The facility was operated properly (i.e. operated and maintained in accordance with the manufacturer's specifications, and in compliance with all regulatory requirements or a compliance plan), before the emergency occurred;
    - (3) The operator took all reasonable steps to minimize levels of emissions that exceeded emissions standard, or other requirements in the permit; and,
    - (4) The operator submitted a written notice of the emergency to the AQMD within two working days of the time when the emissions limitations were exceeded due to the emergency. The notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
  - (B) The operator complies with the breakdown provisions of Rule 430 - Breakdown Provisions, or subdivision (i) of Rule 2004 - Requirements, whichever is applicable. [3002(g), 430, 2004(i)]
18. The operator is excused from complying with any regulatory requirement that is suspended by the Executive Officer during a state of emergency or state of war emergency, in accordance with Rule 118 - Emergencies. [118]

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<sup>1</sup> "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the operator, including acts of God, which: (A) requires immediate corrective action to restore normal operation; and (B) causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency; and (C) is not caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

#### **RECORDKEEPING PROVISIONS**

19. In addition to any other recordkeeping requirements specified elsewhere in this permit, the operator shall keep records of required monitoring information, where applicable, that include:
  - (A) The date, place as defined in the Title V permit, and time of sampling or measurements;
  - (B) The date(s) analyses were performed;
  - (C) The company or entity that performed the analyses;
  - (D) The analytical techniques or methods used;
  - (E) The results of such analyses; and
  - (F) The operating conditions as existing at the time of sampling or measurement. [3004(a)(4)(B)]
20. The operator shall maintain records pursuant to Rule 109 and any applicable material safety data sheet (MSDS) for any equipment claimed to be exempt from a written permit by Rule 219 based on the information in those records. [219(t)]
21. The operator shall keep all records of monitoring data required by this permit or by regulatory requirements for a period of at least five years from the date of the monitoring sample, measurement, report, or application. [3004(a)(4)(E)]

#### **REPORTING PROVISIONS**

22. The operator shall comply with the following requirements for prompt reporting of deviations:
  - (A) Breakdowns shall be reported as required by Rule 430 - Breakdown Provisions or subdivision (i) of Rule 2004 - Requirements, whichever is applicable.
  - (B) Other deviations from permit or applicable rule emission limitations, equipment operating conditions, or work practice standards, determined by observation or by any monitoring or testing required by the permit or applicable rules that result in emissions greater than those allowed by the permit or applicable rules shall be reported within 72 hours (unless a shorter reporting period is specified in an applicable State or Federal Regulation) of discovery of the deviation by contacting AQMD enforcement personnel assigned to this facility or otherwise calling (800) CUT-SMOG.

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

- (C) A written report of such deviations reported pursuant to (B), and any corrective actions or preventative measures taken, shall be submitted to AQMD, in an AQMD approved format, within 14 days of discovery of the deviation.
  - (D) All other deviations shall be reported with the monitoring report required by condition no. 23. [3004(a)(5)]
23. Unless more frequent reporting of monitoring results are specified in other permit conditions or in regulatory requirements, the operator shall submit reports of any required monitoring to the AQMD at least twice per year. The report shall include a) a statement whether all monitoring required by the permit was conducted; and b) identification of all instances of deviations from permit or regulatory requirements. A report for the first six calendar months of the year is due by August 31 and a report for the last six calendar months of the year is due by February 28. [3004(a)(4)(F)]
24. The operator shall submit to the Executive Officer and to the Environmental Protection Agency (EPA), an annual compliance certification. For RECLAIM facilities, the certification is due when the Annual Permit Emissions Program (APEP) report is due and shall cover the same reporting period. For other facilities, the certification is due on March 1 for the previous calendar year. The certification need not include the period preceding the date the initial Title V permit was issued. Each compliance certification shall include:
- (A) Identification of each permit term or condition that is the basis of the certification;
  - (B) The compliance status during the reporting period;
  - (C) Whether compliance was continuous or intermittent;
  - (D) The method(s) used to determine compliance over the reporting period and currently, and
  - (E) Any other facts specifically required by the Executive Officer to determine compliance.
- The EPA copy of the certification shall be sent to: Director of the Air Division Attn: Air-3 USEPA, Region IX 75 Hawthorne St. San Francisco, CA 94105 [3004(a)(10)(E)]
25. All records, reports, and documents required to be submitted by a Title V operator to AQMD or EPA shall contain a certification of accuracy consistent with Rule 3003(c)(7) by a responsible official (as defined in Rule 3000). [3004(a)(12)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **SECTION K: TITLE V Administration**

#### **PERIODIC MONITORING**

26. All periodic monitoring required by this permit pursuant to Rule 3004(a)(4)(c) is based on the requirements and justifications in the AQMD document "Periodic Monitoring Guidelines for Title V Facilities" or in case-by-case determinations documented in the Title V application file. [3004(a)(4)]

## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

### SECTION K: TITLE V Administration

#### *FACILITY RULES*

*This facility is subject to the following rules and regulations:*

With the exception of Rule 402, 473, 477, 1118 and Rules 1401 through 1420, the following rules that are designated as non-federally enforceable are pending EPA approval as part of the state implementation plan. Upon the effective date of that approval, the approved rule(s) will become federally enforceable, and any earlier versions of those rules will no longer be federally enforceable.

<b>RULE SOURCE</b>	<b>Adopted/Amended Date</b>	<b>FEDERAL Enforceability</b>
RULE 109	5-2-2003	Federally enforceable
RULE 1110.2	6-3-2005	Non federally enforceable
RULE 1113	11-8-1996	Federally enforceable
RULE 1113	7-9-2004	Non federally enforceable
RULE 1171	11-7-2003	Federally enforceable
RULE 1303(a)(1)-BACT	12-6-2002	Non federally enforceable
RULE 1303(a)(1)-BACT	5-10-1996	Federally enforceable
RULE 1303(b)(1)-Modeling	12-6-2002	Non federally enforceable
RULE 1303(b)(1)-Modeling	5-10-1996	Federally enforceable
RULE 1303(b)(2)-O set	12-6-2002	Non federally enforceable
RULE 1303(b)(2)-O set	5-10-1996	Federally enforceable
RULE 1304(a)-Modeling and O set Exemption	6-14-1996	Federally enforceable
RULE 1304(c)-O set Exemption	6-14-1996	Federally enforceable
RULE 1309.1	5-3-2002	Federally enforceable
RULE 1309.1	8-3-2007	Non federally enforceable
RULE 1309.1	9-8-2006	Non federally enforceable
RULE 1470	3-4-2005	Non federally enforceable
RULE 1703 - PSD Analysis	10-7-1988	Federally enforceable
RULE 2005	5-6-2005	Federally enforceable
RULE 2012	12-5-2003	Federally enforceable
RULE 2012	5-6-2005	Federally enforceable
RULE 3002	11-14-1997	Federally enforceable
RULE 3003	11-14-1997	Federally enforceable
RULE 3003	3-16-2001	Non federally enforceable
RULE 3004(a)(4)-Periodic Monitoring	12-12-1997	Federally enforceable
RULE 3005	11-14-1997	Federally enforceable
RULE 3005	3-16-2001	Non federally enforceable
RULE 3007	10-8-1993	Federally enforceable
RULE 401	11-9-2001	Non federally enforceable



## FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC

### SECTION K: TITLE V Administration

<b>RULE SOURCE</b>	<b>Adopted/Amended Date</b>	<b>FEDERAL Enforceability</b>
RULE 401	3-2-1984	Federally enforceable
RULE 405	2-7-1986	Federally enforceable
RULE 407	4-2-1982	Federally enforceable
RULE 408	5-7-1976	Federally enforceable
RULE 409	8-7-1981	Federally enforceable
RULE 430	7-12-1996	Non federally enforceable
RULE 431.2	5-4-1990	Federally enforceable
RULE 431.2	9-15-2000	Non federally enforceable
RULE 475	10-8-1976	Federally enforceable
RULE 475	8-7-1978	Non federally enforceable
40CFR 60 Subpart KKKK	7-6-2006	Federally enforceable
40CFR 68 - Accidental Release Prevention	5-24-1996	Federally enforceable
RULE 701	6-13-1997	Federally enforceable
40CFR 72 - Acid Rain Provisions	11-24-1997	Federally enforceable
CA PRC CEQA	11-23-1970	Non federally enforceable



**FACILITY PERMIT TO OPERATE  
VALLE DEL SOL ENERGY, LLC**

**APPENDIX A: NOX AND SOX EMITTING EQUIPMENT EXEMPT FROM WRITTEN  
PERMIT PURSUANT TO RULE 219**

NONE

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

- (1) Except as provided in paragraphs (c)(2), (c)(3), and (c)(4) of Rule 1113, the operator shall not supply, sell, offer for sale, apply, or solicit the application of, any architectural coating which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, or manufacture, blend, or repackage such a coating for use within the District.
- (2) Except as provided in paragraphs (c)(3) and (c)(4) of Rule 1113, the operator shall not supply, sell, offer for sale, apply, solicit the application of, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified.

### TABLE OF STANDARDS

#### VOC LIMITS

#### Grams of VOC Per Liter of Coating, Less Water And Less Exempt Compounds

COATING	Limit*	Effective Date of Adoption	Effective 1/1/1998	Effective 1/1/1999	Effective 7/1/2001	Effective 1/1/2005	Effective 7/1/2008
Bond Breakers	350						
Clear Wood Finishes							
Varnish	350						
Sanding Sealers	350						
Lacquer	680		550			275	
Concrete-Curing Compounds	350						
Dry-Fog Coatings	400						
Fire-proofing Exterior Coatings	350	450		350			
Fire-Retardant Coatings							
Clear	650						
Pigmented	350						
Flats	250						
Graphic Arts (Sign) Coatings	500					100	50
Industrial Maintenance							

## FACILITY PERMIT TO OPERATE

### VALLE DEL SOL ENERGY, LLC

#### APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

Primers and Topcoats							
Alkyds	420						
Catalyzed Epoxy	420						
Bituminous Coatings	420						
Materials							
Inorganic Polymers	420						
Vinyl Chloride Polymers	420						
Chlorinated Rubber	420						
Acrylic Polymers	420						
Urethane Polymers	420						
Silicones	420						
Unique Vehicles	420						
Japans/Faux Finishing	350	700		350			
Coatings							
Magnesite Cement Coatings	600			450			
Mastic Coatings	300						
Metallic Pigmented Coatings	500						
Multi-Color Coatings	420		250				
Pigmented Lacquer	680		550			275	
Pre-Treatment Wash Primers	780						
Primers, Sealers, and	350						
Undercoaters							
Quick-Dry Enamels	400						
Roof Coatings	300						
Shellac							
Clear	730						
Pigmented	550						
Stains	350						
Swimming Pool Coatings							
Repair	650						
Other	340						
Traffic Coatings	250		150				
Waterproofing Sealers	400						
Wood Preservatives							
Below-Ground	350						
Other	350						

\* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards

**FACILITY PERMIT TO OPERATE**  
**VALLE DEL SOL ENERGY, LLC**

**APPENDIX B: RULE EMISSION LIMITS**  
**[RULE 1113 11-8-1996]**

**TABLE OF STANDARDS (cont.)**

**VOC LIMITS**

**Grams of VOC Per Liter of Material**

COATING	Limit
Low-Solids Coating	120

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **APPENDIX B: RULE EMISSION LIMITS [RULE 1113 7-9-2004]**

- (1) Except as provided in paragraphs (c)(2), (c)(3), (c)(4), and specified coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage any architectural coating for use in the District which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, and no person shall apply or solicit the application of any architectural coating within the District that exceeds 250 grams of VOC per liter of coating as calculated in this paragraph.
- (2) Except as provided in paragraphs (c)(3), (c)(4), and designated coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified, and no person shall apply or solicit the application of any architectural coating within the District that exceeds the VOC limit as specified in this paragraph. No person shall apply or solicit the application within the District of any industrial maintenance coatings for residential use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings; or of any rust-preventative coating for industrial use, unless such a rust preventative coating complies with the Industrial Maintenance Coating VOC limit specified in the Table of Standards.

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1113 7-9-2004]

#### TABLE OF STANDARDS VOC LIMITS

**Grams of VOC Per Liter of Coating,  
 Less Water and Less Exempt Compounds**

COATING	Limit *	Effective Date								
		1/1/98	1/1/99	7/1/01	1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Bond Breakers	350									
Clear Wood Finishes										
Varnish	350							275		
Sanding Sealers	350							275		
Lacquer	680	550					275			
Clear Brushing Lacquer	680						275			
Concrete-Curing Compounds	350									
Dry-Fog Coatings	400									
Fire-Proofing Exterior Coatings	450		350							
Fire-Retardant Coatings										
Clear	650									
Pigmented	350									
Flats	250			100						50
Floor Coatings	420				100			50		
Graphic Arts (Sign) Coatings	500									
Industrial Maintenance (IM) Coatings	420					250		100		
High Temperature IM Coatings**					420					
Zinc-Rich IM Primers	420				340			100		
Japans/Faux Finishing Coatings	700		350							
Magnesite Cement Coatings	600		450							
Mastic Coatings	300									
Metallic Pigmented Coatings	500									
Multi-Color Coatings	420	250								
Non-Flat Coatings	250				150			50		
Pigmented Lacquer	680	550					275			
Pre-Treatment Wash Primers	780				420					



# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1113 7-9-2004]

COATING	Limit *	Effective Date								
		1/1/98	1/1/99	7/1/01	1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Primers, Sealers, and Undercoaters	350				200			100		
Quick-Dry Enamels	400				250			50		
Quick-Dry Primers, Sealers, and Undercoaters	350				200			100		
Recycled Coatings					250					
Roof Coatings	300				250		50			
Roof Coatings, Aluminum	500						100			
Roof Primers, Bituminous	350				350					
Rust Preventative Coatings	420				400			100		
Shellac										
Clear	730									
Pigmented	550									
Specialty Primers	350							100		
Stains	350				250				100	
Stains, Interior	250									
Swimming Pool Coatings										
Repair	650				340					
Other	340									
Traffic Coatings	250	150								
Waterproofing Sealers	400				250			100		
Waterproofing Concrete/Masonry Sealers	400							100		
Wood Preservatives										
Below-Ground	350									
Other	350									

\* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards

\*\* The National VOC Standard at 650 g/l is applicable until 1/1/2003

**FACILITY PERMIT TO OPERATE**  
**VALLE DEL SOL ENERGY, LLC**

**APPENDIX B: RULE EMISSION LIMITS**  
**[RULE 1113 7-9-2004]**

**TABLE OF STANDARDS (cont.)**  
**VOC LIMITS**

**Grams of VOC Per Liter of Material**

COATING	Limit
Low-Solids Coating	120

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1171 11-7-2003]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS
	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application	
(i) General	25 (0.21)
(ii) Electrical Apparatus Components & Electronic Components	500 (4.2)
(iii) Medical Devices & Pharmaceuticals	800 (6.7)
(B) Repair and Maintenance Cleaning	
(i) General	25 (0.21)
(ii) Electrical Apparatus Components & Electronic Components	900 (7.5)
(iii) Medical Devices & Pharmaceuticals	
(A) Tools, Equipment, & Machinery	800 (6.7)
(B) General Work Surfaces	600 (5.0)

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1171 11-7-2003]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS
	VOC g/l (lb/gal)
(C) Cleaning of Coatings or Adhesives Application Equipment	550 (4.6)
(D) Cleaning of Ink Application Equipment	
(i) General	25 (0.21)
(ii) Flexographic Printing	25 (0.21)
(iii) Gravure Printing	
(A) Publication	750 (6.3)
(B) Packaging	25 (0.21)
(iv) Lithographic or Letter Press Printing	
(A) Roller Wash – Step 1	600 (5.0)
(B) Roller Wash-Step 2, Blanket Wash, & On-Press Components	800 (6.7)
(C) Removable Press Components	25 (0.21)
(v) Screen Printing	750 (6.3)
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	800 (6.7)

**FACILITY PERMIT TO OPERATE**  
**VALLE DEL SOL ENERGY, LLC**

**APPENDIX B: RULE EMISSION LIMITS**  
**[RULE 1171 11-7-2003]**

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS
	VOC g/l (lb/gal)
(vii) Specialty Flexographic Printing	600 (5.0)
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1171 5-6-2005]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS*	Effective 7/1/2005*	Effective 7/1/2006
	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	500 (4.2)	100 (0.83)	
(iii) Medical Devices & Pharmaceuticals	800 (6.7)		
(B) Repair and Maintenance Cleaning			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	900 (7.5)	100 (0.83)	
(iii) Medical Devices & Pharmaceuticals			

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1171 5-6-2005]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS*	Effective 7/1/2005*	Effective 7/1/2006
	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Tools, Equipment, & Machinery	800 (6.7)		
(B) General Work Surfaces	600 (5.0)		
(C) Cleaning of Coatings or Adhesives Application Equipment	550 (4.6)	25 (0.21)	
(D) Cleaning of Ink Application Equipment			
(i) General	25 (0.21)		
(ii) Flexographic Printing	25 (0.21)		
(iii) Gravure Printing			
(A) Publication	750 (6.3)	100 (0.83)	
(B) Packaging	25 (0.21)		
(iv) Lithographic or Letter Press Printing			
(A) Roller Wash – Step 1	600 (5.0)	500 (4.2)	100 (0.83)

# FACILITY PERMIT TO OPERATE

## VALLE DEL SOL ENERGY, LLC

### APPENDIX B: RULE EMISSION LIMITS [RULE 1171 5-6-2005]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS*	Effective 7/1/2005*	Effective 7/1/2006
	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(B) Roller Wash-Step 2, Blanket Wash, & On-Press Components	800 (6.7)	500 (4.2)	100 (0.83)
(C) Removable Press Components	25 (0.21)		
(v) Screen Printing	750 (6.3)	500 (4.2)	100 (0.83)
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	800 (6.7)	500 (4.2)	100 (0.83)
(vii) Specialty Flexographic Printing	600 (5.0)	100 (0.83)	
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)		

\* The specified limits remain in effect unless revised limits are listed in subsequent columns.



## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]**

1. A Title V permit revision is not required for emission increases that are authorized by allowances acquired under the Acid Rain Program, provided that the increases do not trigger a Title V permit revision under any other applicable requirement. [70.6 (a)(4)(ii)]

#### **Monitoring Requirements**

2. The owners and operators and, to the extent applicable, the designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR Parts 74, 75, and 76. [40 CFR 72.50, 72.31, 72.9(b)(1)]
3. The emissions measurements recorded and reported in accordance with 40 CFR Part 75 shall be used to determine compliance by the unit with the acid rain emissions limitations and emissions reduction requirements for sulfur dioxide (SO<sub>2</sub>) under the Acid Rain Program. [40 CFR 72.9(b)(2), 40 CFR 75.2]
4. The requirements of 40 CFR Parts 74 and 75 shall not affect the responsibility of the operator to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements and other provisions of this permit. [40 CFR 72.9(b)(3), 40 CFR 72.5]

#### **Sulfur Dioxide Requirements**

5. The owners and operators of each source and each affected unit at the source shall:
  - (A) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR Part 73, Section 73.34(C)) not less than the total annual emissions of SO<sub>2</sub> for the previous calendar year from the unit; and, [40 CFR 72.9(c)(i)],
  - (B) Comply with the applicable acid rain emissions limitations for SO<sub>2</sub>. [40 CFR 72.9(c)(ii)]
6. Each ton of SO<sub>2</sub> emitted in excess of the acid rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 72.9(g)(7)]
7. SO<sub>2</sub> allowances shall be held in, deducted from, or transferred among allowance tracking system accounts in accordance with the Acid Rain Program. [40 CFR 72.9(g)(4)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]**

8. A SO<sub>2</sub> allowance shall not be deducted in order to comply with the requirements under paragraph 41(A) of the SO<sub>2</sub> requirements prior to the calendar year for which the allowance was allocated. [40 CFR 72.9(g)(5)]
9. An affected unit shall be subject to the SO<sub>2</sub> requirements under the Acid Rain Program as follows:[40 CFR 72.6(a)]
  - (A) Starting January 1, 2000, an affected unit under 40 CFR Part 72, Section 72.6(a)(2); or [40 CFR 72.6(a)(2)]
  - (B) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR Part 75, an affected unit under 40 CFR Part 72, Section 72.6(a)(3). [40CFR 72.6(a)(3)]
10. An allowance allocated by the EPA administrator under the Acid Rain Program is a limited authorization to emit SO<sub>2</sub> in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the acid rain permit application, the acid rain permit, or the written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14, and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72.9 (c)(6)]
11. An allowance allocated by the EPA Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72.9(c)(7)]

#### **Excess Emissions Requirements**

12. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77. [40 CFR 72.9(e)]
13. The owners and operators of an affected unit that has excess emissions in any calendar year shall: [40 CFR 72.9(e)(2)]
  - (A) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR Part 77; and[40 CFR 72.9(e)(2)(i)]
  - (B) Comply with the terms of an approved offset plan, as required by 40 CFR Part 77. [40 CFR 72.9(e)(2)(ii)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]**

#### **Recordkeeping and Reporting Requirements**

14. Unless otherwise provided, the owners and operators of the source and each affected unit at the source that are subject to the acid rain provisions under Title IV shall keep on site at the source each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the EPA Administrator or the Executive Officer: [40 CFR 72.9(f)(1)]
  - (A) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such five year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative; [40 CFR 72.9(f)(1)(i)]
  - (B) All emissions monitoring information, in accordance with 40 CFR Part 75; [40 CFR 72.9(f)(1)(ii)]
  - (C) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and, [40 CFR 72.9(f)(1)(iii)]
  - (D) Copies of all documents used to complete an acid rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program. [40 CFR 72.9(f)(1)(iv)]
15. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR Part 72 Subpart I and 40 CFR Part 75. [40 CFR 72.9(f)(2)]

#### **Liability**

16. Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete acid rain permit application, an acid rain permit, or a written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to Section 113(c) of the Act. [40 CFR 72.9 (g)(1)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]**

17. Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to Section 113(c) of the Act and 18 U.S.C. 1001. [40 CFR 72.9 (g)(2)]
18. No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect. [40 CFR 72.9 (g)(3)]
19. Each affected source and each affected unit shall meet the requirements of the Acid Rain Program. [40 CFR 72.9 (g)(4)]
20. Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source. [40 CFR 72.9 (g)(5)]
21. Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR Part 72, Section 72.44 (Phase II repowering extension plans) and 40 CFR Part 76, Section 76.11 (NO<sub>x</sub> averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR Part 75 (including 40 CFR Part 75, Sections 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative. [40 CFR 72.9 (g)(6)]
22. Each violation of a provision of 40 CFR Parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act. [40 CFR 72.9 (g)(7)]

#### **Effect on Other Authorities**

23. No provision of the Acid Rain Program, an acid rain permit application, an acid rain permit, or a written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14 shall be construed as: [40 CFR 72.9 (h)]

## **FACILITY PERMIT TO OPERATE VALLE DEL SOL ENERGY, LLC**

### **APPENDIX B: RULE EMISSION LIMITS [40CFR 72 - Acid Rain Provisions 11-24-1997]**

(A) Except as expressly provided in Title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of Title I of the Act relating to applicable National Ambient Air Quality Standards or state implementation plans; [40 CFR 72.9 (h)(1)]

(B) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act; [40 CFR 72.9 (h)(2)]

(C) Requiring a change of any kind in any state law regulating electric utility rates and charges, affecting any state law regarding such state regulation, or limiting such state regulation, including any prudence review requirements under such state law; [40 CFR 72.9 (h)(3)]

(D) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or, [40 CFR 72.9 (h)(4)]

(E) Interfering with or impairing any program for competitive bidding for power supply in a state in which such program is established. [40 CFR 72.9 (h)(5)]

REVIEW ED BY:

VALLE DEL SOL ENERGY, LLC; PRELIMINARY DETERMINATION OF COMPLIANCE (PDOC) REPLACING PDOC DATED JANUARY 31, 2007

GENERATOR, 104 MW



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	PROCESSED BY: Ken Coats	REVIEWED BY:

## EQUIPMENT DESCRIPTION (continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 1: INTERNAL COMBUSTION</b>					
<b>System 1: GAS TURBINES, POWER GENERATION</b>					
CO OXIDATION CATALYST NO. 2, ENGELHARD CAMET, 72 CUBIC FEET OF TOTAL CATALYST VOLUME, WITH A/N: 450938	C9	D7 C10			
SELECTIVE CATALYTIC REDUCTION NO. 2, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, HEIGHT: 28 FT 8 IN; WIDTH: 20 FT 3 IN; LENGTH: 1 FT 8 IN; WITH  NH3 INJECTION GRID A/N: 450938	C10	C9 S12		<b>NH3:</b> 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2 E193.1
STACK NO. 2, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT  A/N: 450932	S12	C10			
GAS TURBINE, UNIT NO. 3, NATURAL GAS, GENERAL ELECTRIC, MODEL LMS100PA, SIMPLE CYCLE, 904 MMBTU/HR AT 45 DEGREES F WITH WATER INJECTION,  WITH A/N 450933          GENERATOR, 104 MW	D13	C15	NOX: MAJOR SOURCE	<b>CO:</b> 6.0 PPMV NATURAL GAS (4) [Rule 1703-PSD]; <b>CO:</b> 2000 PPMV NATURAL GAS (5) [Rule 407]  <b>NOX:</b> 15 PPMV NATURAL GAS (8) [40CFR60 Subpart KKKK] <b>NOX:</b> 123.46 LB/MMCF NATURAL GAS(1) [Rule 2012] <b>NOX:</b> 10.29 LB/MMCF NATURAL GAS (1A) [Rule 2012] <b>NOX:</b> 2.5 PPMV NATURAL GAS (4)[Rule 2005-BACT; Rule 1703-PSD] <b>NOX:</b> 0.080 LB/MW-hr [Rule 1309.1]  <b>VOC:</b> 2.0 PPMV (4) NATURAL GAS [Rule 1303(a)(1)-BACT]  <b>PM10:</b> 0.01 GRAIN/DSCF NATURAL GAS (5A) [Rule 475]; <b>PM10:</b> 0.1 GRAIN/DSCF NATURAL GAS(5) [Rule 409]; <b>PM10:</b> 11 LB/HR NATURAL GAS (5B) [Rule 475] <b>PM10:</b> 0.060 LB/MW-hr (5C) [Rule 1309.1]  <b>SOX:</b> 0.060 LB/MMBTU NATURAL GAS (8) [40 CFR60 Subpart KKKK]  <b>SO2:</b> (9) Acid Rain Provisions	A63.1, A99.1, A99.2, A99.3, A99.4, A195.1, A195.2, A195.3, A327.1, C1.1, D12.1, D29.1, D29.2, D29.3, D29.4, D82.1, D82.2, E193.1, E193.3, E193.4, E193.5, H23.1, I296.1, K40.1, K67.1



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## EQUIPMENT DESCRIPTION (Continued)

[illegible]

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## EQUIPMENT DESCRIPTION (Continued)

[illegible]

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EQUIPMENT DESCRIPTION (Continued)

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 1: INTERNAL COMBUSTION</b>					
<b>System 1: GAS TURBINES, POWER GENERATION</b>					
CO OXIDATION CATALYST NO. 5, ENGELHARD CAMET, 72 CUBIC FEET OF TOTAL CATALYST VOLUME, WITH A/N: 450942	C27	D25 C28			
SELECTIVE CATALYTIC REDUCTION NO. 5, HALDOR-TOPSOE DNX-920, WITH 718 CUBIC FEET OF TOTAL CATALYST VOLUME, HEIGHT: 28 FT 8 IN; WIDTH: 20 FT 3 IN; LENGTH: 1 FT 8 IN; WITH  NH3 INJECTION GRID A/N: 450942	C28	C27 S30		NH3: 5.0 PPMV (4) [Rule 1303(a)(1)-BACT]	A195.4 D12.2 D12.3 D12.4 E179.1 E179.2 E193.1
STACK NO. 5, DIAMETER: 13 FT 6 IN, HEIGHT: 90 FT  A/N: 450936	S30	C28			
<b>System 2: EMERGENCY FIRE PUMP</b>					
INTERNAL COMBUSTION ENGINE, EMERGENCY FIRE, DIESEL FUEL, LEAN BURN, CLARKE, MODEL JW6H-UF50, 340 BHP  AFTERCOOLER, TURBOCHARGER  A/N: 450943	D34		NOX: PROCESS UNIT	<b>NOX+NMHC:</b> 4.65 GM/BHP-HR DIESEL (4) [Rule 2005; Rule 1703-PSD]; <b>NOX:</b> 469 LB/1000 GAL DIESEL (1) [Rule 2012]  <b>CO:</b> 0.45 GM/BHP-HR DIESEL (4) [Rule 1703-PSD]  <b>PM10:</b> 0.09 GM/BHP-HR DIESEL (4) [Rule 1303-BACT]  <b>SOX:</b> 0.0055 GM/BHP-HR DIESEL (4) [Rule 1303-BACT, Rule.1703-PSD]	B61.1, C1.3, D12.5, D12.6, E193.1, E193.2, I296.2, K67.2
<b>Process 2: INORGANIC CHEMICAL STORAGE</b>					
STORAGE TANK, TK-1, FIXED ROOF, AMMONIA, 19 PERCENT, DIAMETER: 12'-0"; HEIGHT: 12'-0"; 16,000 GALLONS, WITH PRV SET AT 25 PSIG  WITH  A/N: 451184	D31				C157.1, E144.1, E193.1

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#### Section D of the Facility Permit

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 3: RULE 219 EXEMPT EQUIPMENT SUBJECT TO SOURCE SPECIFIC RULES</b>					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATING	E32			VOC: (9) [Rule 1113], [Rule 1171]	K67.3
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E33			VOC: (9) [Rule 1171]	

#### BACKGROUND

In order to pursue the development of a proposed natural gas fired peaker project, Edison Mission Energy (EME) has organized a special purpose entity known as Valle Del Sol Energy, LLC a Delaware limited liability company, to develop, own and operate the proposed peaker project. Valle Del Sol Energy, LLC is a wholly-owned subsidiary of EME.

Valle Del Sol Energy, LLC is proposing to construct a new power plant which will consist of five (5) combustion-turbine-generators (CTGs) for a total rated peak generating capacity of 520 MW at 45°F. The gas turbines will be General Electric LMS100 units. Each turbine will drive a generator rated at 104 MW at 45°F. The project is expected to have an annual capacity factor of approximately 20 to 40 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 five generators. Selective catalytic reduction (SCR) systems and CO oxidation catalysts will be utilized for control of NOx and CO emissions, respectively. One 16,000 gallon ammonia (NH<sub>3</sub>) storage tank will be constructed for the storage of 19% aqueous ammonia which is part of the SCR process. A 5-cell mechanical drift cooling tower will provide heat removal for the gas turbine auxiliary cooling requirements. The site will also employ a 340 bhp diesel emergency fire pump 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 Valle Del Sol Energy Project (VSE) will be rated at greater than 50 megawatts, it is subject to the CEC's 12-month certification process. As part of this process, VSE submitted an application for certification (05-AFC-3) to the CEC on December 1, 2005 seeking certification for the new power plant. In addition to the CEC certification process, VSE submitted applications to AQMD seeking Permits to Construct for the new power plant. The following table shows the corresponding application numbers (A/Ns):

REVIEW ED BY:

Table 1 Applications for Permits to Construct Submitted to AQMD

## Final Title Page

Each of the applications were submitted to the AQMD on November 30, 2005, except for the application for the NH<sub>3</sub> storage tank, which was submitted on December 9, 2005. AQMD deemed the applications complete on December 13, 2005. Because VSE 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. VSE has opted to be included in the NO<sub>x</sub> RECLAIM program upon initial permit issuance.

### Processing Fee Summary

On November 30, 2005, AQMD received the thirteen (13) applications shown in the table above along with a processing fee of \$58,309.40. The applicant also included a signed form 400-XPP and the appropriate fees for expedited permit processing. The five LMS100s are identical and therefore, four of these devices receive a 50% discount off of the original processing fee of \$9,459.62. In addition, the five SCR/CO catalysts are identical and therefore, four of these devices receive a 50% discount off of the original processing fee of \$2,437.95. The total fees include the normal processing fees multiplied by 1.5 for expedited processing. A fee summary is shown in the table below.

### Table 2 Summary of Processing Fees for VSE

<b>TOTAL PROCESSING FEE</b>	<b>\$58,309.40</b>
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#### Site Description

The proposed location of VSE is approximately 0.34 mile north of Rouse Road on the east side of the northerly extension of Junipero Road. The new power plant will be located on an approximately 20-acre parcel (Assessor's Parcel Nos. 331-250-019 and 331-250-020) in Township 5S, Range 3W, Section 14, in Romoland, in an unincorporated parcel of Riverside County. Although the project site is currently in agricultural use, the land is presently zoned for industrial use, with the nearest residence located approximately 0.31 miles from the proposed project site. The site lies southwest of and adjacent to the Burlington Northern Santa Fe (BNSF) rail line which traverses the area in a northwest to southeast direction. The site lies in the area bounded by Matthews Road on the north, Menifee on the east, Palomar Road on the west, and McCall Boulevard to the south. Other residential areas lie to the west, north, and south of the site, with the area to the east of the site being sparsely populated, however new housing tracts are now being built.

#### COMPLIANCE RECORD

VSE 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

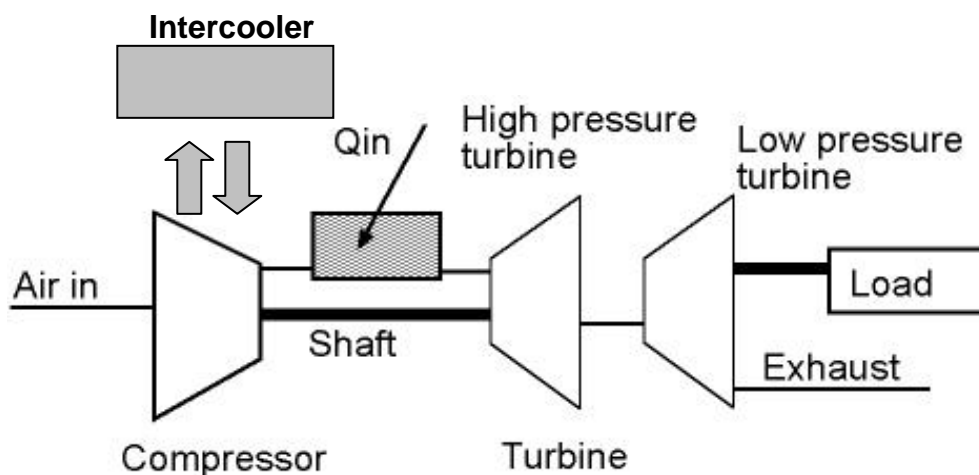
The proposed power plant will operate in simple cycle configuration and will employ five (5) General Electric LMS100 combustion gas turbines, each of which employ off-engine intercooling technology with the use of water and an external heat exchanger for increased thermal efficiency. The LMS100 system 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 five LMS100s proposed for construction at VSE will be configured with a wet intercooling system. A general diagram of the LMS100 employing wet intercooling technology to be used at VSE is shown in the diagram below.

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### LMS100 Gas Turbine with Intercooler



VSE will connect to Southern California Edison's (SCE) electrical transmission system using a 115kV transmission line. The connection will be made at the Valley Substation, which is located approximately 600 feet north of the proposed project site. Reclaimed water for the cooling tower and evaporative cooler make-up will be supplied by a 12 inch diameter direct connection to a reclaimed water pipeline in a utility easement directly north of the proposed project site. The Eastern Municipal Water District will supply approximately 851 acre-feet/year (ac-ft/yr) of reclaimed water for the project. The following table lists the technical specifications for the General Electric LMS100 CTG.

Table 3 Combustion Turbine Generator Specifications<sup>1</sup>

Parameter	Specifications
Manufacturer	General Electric
Model	LMS100PA <sup>2</sup>
Fuel Type	PUC <sup>3</sup> Quality Natural Gas
Natural Gas Heating Value	1,050 BTU/scf
Gas Turbine Heat Input (HHV)	904 MMBTU/hr at 45°F and 60% relative humidity
Fuel Consumption	0.861 MMSCF/hr <sup>4</sup>
Gas Turbine Exhaust Flow	364,419 DSCFM
Gas Turbine Exhaust Temperature	762°F
Exhaust Moisture	6-8%
Gas Turbine Power Generation	104 MW
Net Plant Heat Rate, LHV	8,061 BTU/kW-hr

<sup>1</sup> Values in this table are on a per-turbine basis

<sup>2</sup> GE manufactures two versions of the LMS100 CTG. VSE 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.

<sup>3</sup> PUC is the acronym for the California Public Utilities Commission

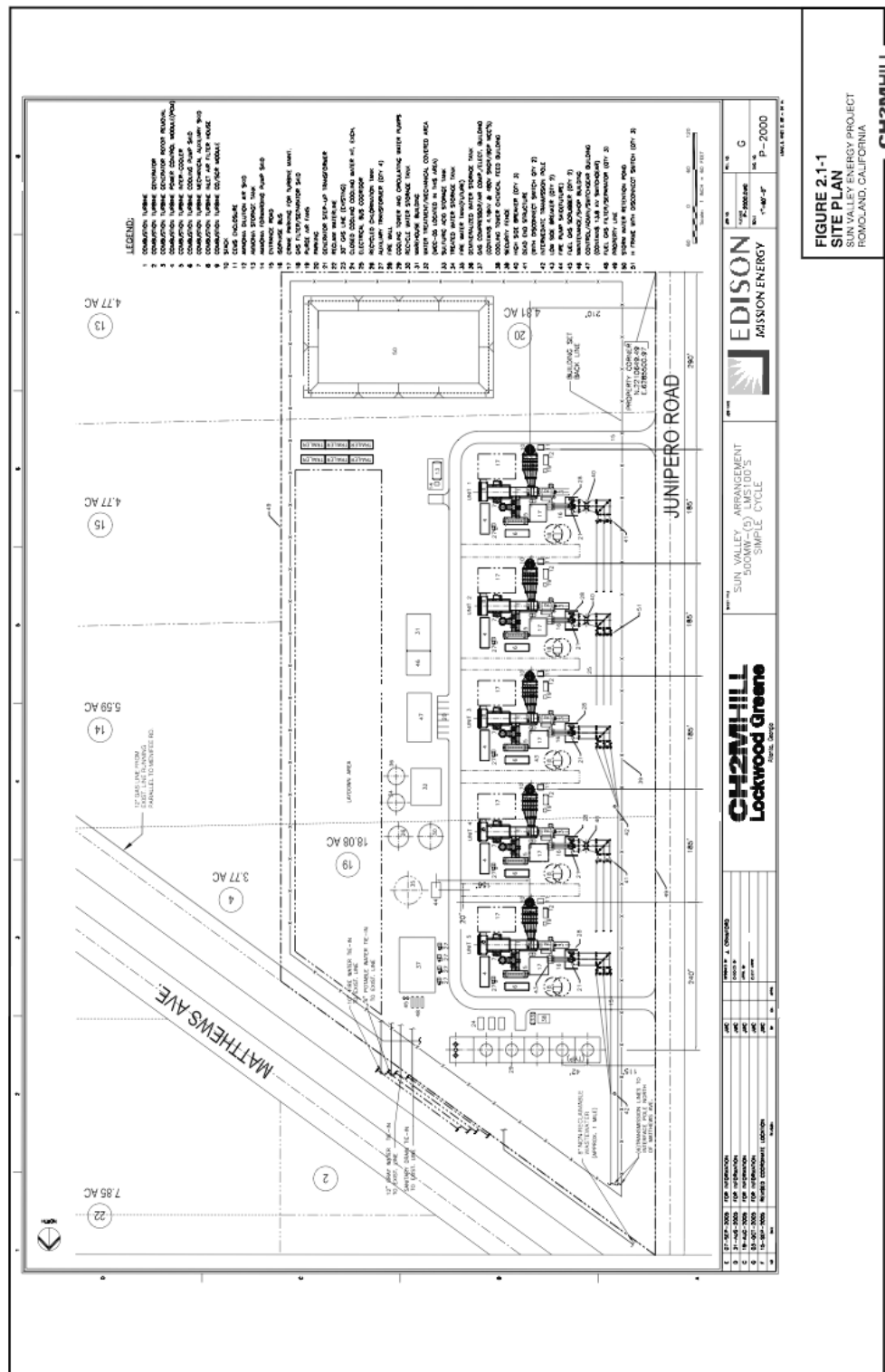
<sup>4</sup> Represents the maximum possible fuel consumption of the CTG, based on 904 MMBTU/hr heat input and 1,050 BTU/scf fuel heat content. However, the emission calculations will be based on a worst-case operating scenario as identified by the applicant, which may result in a lower fuel usage depending on the ambient temperature, the employment and rate of intercooling, water injection rates, and electrical load generated.

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The site plan shown on the previous page was prepared for VSE by CH2MHILL and shows the general layout of the proposed facility. The five LMS100 CTGs can be seen in the center of the page while the 5-cell cooling tower and circulating water pumps are located to the left of the CTGs. The diagonal line running parallel to Matthews Avenue represents the 12 inch diameter natural gas line which will provide the fuel for the CTGs. The potable water, fire water, and sanitary drain lines are shown in the center of the layout, just to the left of the CTGs.

#### 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. VSE will have the potential to operate for about 3,468 hours/year inclusive of start-up, shutdown, commissioning, maintenance, (if any) and normal operations. 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 NOx Major Sources under Rule 2012.

#### Air Pollution Control (APC) System

All five CTGs will utilize two primary means for the reduction of NOx emissions. On the front end, VSE 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 a 100,000 gallon demineralized water storage tank. The use of demineralized water injection will reduce the 1-hour average NOx concentration to 25 ppmv on a dry basis at 15% O<sub>2</sub> prior to entry to the selective catalytic reduction (SCR) units. On the back end, an 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<sub>2</sub>. CO emissions will be limited to 6.0 ppmv, 1-hour average, dry basis, at 15% O<sub>2</sub>. VOC emissions will be limited to 2.0 ppmv, dry basis at 15% O<sub>2</sub>. SOx and PM<sub>10</sub> 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/N 450937, 450938, 450939, 450940, & 450942)

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

Table 4 - Selective Catalytic Reduction

Catalyst Properties	Specifications
Manufacturer	Haldor-Topsoe
Catalyst Description	Ti V honeycomb single layer structure
Catalyst Model No.	DNX 920
Catalyst Volume	850 ft <sup>3</sup>
Guaranteed Life	Earliest of 20,000 hrs from first gas-in or 51 months from contracted delivery
Space Velocity	23,580 hr <sup>-1</sup>
Ammonia Injection Rate	190 lb/hr
NOx removal efficiency	>90%
NOx at stack outlet	2.5 ppmv at 15% O <sub>2</sub>
Exhaust Temperature	740-800°F

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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<sub>2</sub>) and water, resulting in NOx concentrations in the exhaust gas at no greater than 2.5 ppmvd at 15% O<sub>2</sub> 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<sub>2</sub>, 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.

VSE has indicated that the CO catalyst manufacturer is to be Engelhard. 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	Engelhard
Model	Camet
Catalyst Type	Pt on Al single layer metal monolith
Catalyst Life	20,000 hours or 5 years
Space Velocity	125,000 hr <sup>-1</sup>
Volume	200 ft <sup>3</sup>
CO removal efficiency	90%
CO at stack outlet	6.0 ppmvd at 15% O <sub>2</sub>
Exhaust gas velocity	24 ft/s

#### Aqueous Ammonia Storage Tank (AN 451184)

The ammonia will be transported to the site in aqueous form and will have a maximum concentration of 19% by weight. The ammonia will be stored in a specially designated tank with a capacity of 16,000 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 19% 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

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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<sup>5</sup> 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 maximum ammonia slip is warranted to not exceed 5.0 ppmvd at 15% O<sub>2</sub>. The table below shows the warranted emissions for NOx, CO, VOC and NH<sub>3</sub> slip.

Table 6 - Warranted Emissions for APC System

Pollutant	Warranted Emissions
Outlet NOx emissions	2.5 ppmv at 15% O <sub>2</sub> , dry basis
Outlet CO emissions	6.0 ppmv at 15% O <sub>2</sub> , dry basis
Outlet VOC emissions	2.0 ppmv at 15% O <sub>2</sub> , dry basis
Ammonia Slip	5.0 ppmv at 15% O <sub>2</sub> , dry basis

#### Cooling Tower System

A 5-cell cooling tower will be included in the proposed design to provide for the gas turbine auxiliary cooling requirements. Two 50% capacity circulating water pumps will provide water to cool three closed-cooling water heat exchangers. The circulating water rate will be 35,500 gallons per minute (GPM). The heat exchangers are each rated at 33% capacity. 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<sub>10</sub> 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<sub>10</sub>. The rate of PM<sub>10</sub> 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%

<sup>5</sup> 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<sub>2</sub>. Therefore, uncontrolled VOC emissions are assumed to be 4.0 ppmvd at 15% O<sub>2</sub>, dry basis.

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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.

Table 8 - Cooling Tower Specifications

Cooling Tower Parameters	Specifications
Manufacturer	Marley
Number of Cells	5
Exhaust Fan Diameter (ft)	22
Exhaust Flow per Cell (ACFM)	860,100
Circulating Water Rate (GPM)	35,500
Circulating Water Rate (MMlb/hr)	17.74
Fan Exit Height (ft AGL)	39.09

#### Emergency Fire Pump Engine (A/N 450943)

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 9 - Emergency Fire Pump Specifications

Emergency Fire Pump Parameters	Specifications
Manufacturer	Clarke
Power output	340 bhp at 2,100 rpm
Fuel Consumption	16.0 gal/hr
Exhaust temperature	744°F
Exhaust flow	2,066 ACFM
Stack height	40 ft
Stack diameter	5 in

#### CRITERIA POLLUTANT EMISSIONS

The total emissions from the power plant will include the summation of all five CTGs, the emergency fire pump engine, and the PM<sub>10</sub> emissions from the cooling tower. The emissions from the gas turbines are based on the following formula and assumptions:

$$EF(\text{lb/MMBTU}) = \text{ppmvd} \times MW \times \left( \frac{1}{\text{SMV}} \right) \left( \frac{20.9}{5.9} \right) \times F_d$$

where,

ppmvd = Uncontrolled (or controlled) concentration at 15% O<sub>2</sub>, dry basis

MW = Molecular weight, lb/lb-mol

SMV = Specific molar volume at 68°F = 385.3 dscf/lb-mol

F<sub>d</sub> = Dry oxygen f-factor for natural gas at 68°F = 8,710 dscf/MMBTU

#### Assumptions:

1. Emissions are based on the worst case operating scenario
2. PM<sub>10</sub> emissions are based on 0.0067 lb/MMBTU
3. SO<sub>2</sub> to SO<sub>3</sub> conversion in APC equipment is accounted for in the PM<sub>10</sub> AP-42 emission factor

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4. SO<sub>x</sub> emissions are based on 0.25 grains/100 scf
5. 30-Day Averages are based on 463 hours/month of operation
6. Emissions are based on total fuel consumption rather than total hours of operation

The applicant has identified fifteen possible operating scenarios. The fifteen scenarios are listed as operating conditions (OC)100 through 114 in Section 5 of the applicant's submittal and are summarized in the table below:

Table 10 - Operating Scenarios

	Ambient Temp °F	H <sub>2</sub> O Injection, lb/hr	Relative Humidity (%)	Intercooler (on/off)	Compressor Inlet Temp °F
OC100	30	35,385 (100%)	60	On	30
OC101	30	24,795 (70%)	60	On	30
OC102	30	15,760 (45%)	60	On	30
OC103	59	32,449 (92%)	60	On	53
OC104	59	22,235 (63%)	60	On	53
OC105	59	13,945 (39%)	60	On	53
OC106	84	28,325 (80%)	53	On	73
OC107	84	18,872 (53%)	53	On	73
OC108	84	11,031 (31%)	53	On	73
OC109	90	28,389 (80%)	37	On	73
OC110	90	18,917 (53%)	37	On	73
OC111	90	11,074 (31%)	37	On	73
OC112	110	28,408 (80%)	10	On	74
OC113	110	18,932 (54%)	10	On	74
OC114	110	11,527 (33%)	10	On	74

#### 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 30°F to a maximum of 110°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	106	109	112
Ambient Temperature, °F	30	59	84	90	110
Ambient Pressure, psia	13.937	13.937	13.937	13.937	13.937
Fuel Consumption, MMBTU/hr	803.3	791.6	748.4	749.5	749.6
Fuel Consumption, lb/hr	38,941	38,373	36,277	36,330	36,337
Exhaust Temperature, °F	761.1	781.6	796.6	796.2	796.1
Load, MW	103.8	101.3	94.2	94.4	94.4
Water Injection (on/off)	On	On	On	On	On
Water Injection, lb/hr	35,385	32,449	28,325	28,389	28,408
Intercooler (on/off)	On	On	On	On	On

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Of the top five cases, the worst case scenario occurs during periods of maximum fuel consumption (803.3 MMBTU/hr) at full load (103.8 MW), low ambient temperature (30°F), with water injection in full use, and the intercooler 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 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.
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 35 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 <sub>2</sub> , CO emissions to 6.0 ppmv at 15% O <sub>2</sub> , and VOC to 2.0 ppmvd at 15% O <sub>2</sub> . 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 11 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 <sub>2</sub> O injection into the CTGs and NH <sub>3</sub> 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 134 hours of commissioning for each of the 5 CTGs and has further stated that all commissioning will be accomplished within the 9 months prior to initial operation. The commissioning schedule will comprise 6 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 5 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. The table below shows the applicant's proposed commissioning schedule along with the cumulative emissions for each of the 5 CTGs during the commissioning period.

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Table 13 - Proposed Commissioning Schedule

Commissioning Phase	1	2	3	4	5	6	Totals
Water Injection (% operation)	0	0	50%	100%	100%	100%	134
SCR Reactor (% operation)	0	0	0	0	50%	100%	
CO Catalyst (% operation)	0	0	0	0	100%	100%	
Hours per phase	20	14	24	12	24	40	
Average Load (%)	0%	5%	50%	100%	75%	100%	
NOx (lb/hr)	91	99	175	81	35	8.1	
CO (lb/hr)	55	60	168	255	9	12	
VOC (lb/hr)	2	2	3	5	4	2	
PM <sub>10</sub> (lb/hr)	1	1	3	6	5	6	
SOx (lb/hr)	0.051	0.061	0.170	0.306	0.238	0.306	
HHV (MMBTU/hr)	150	180	500	900.5	700	900.5	
NOx (lb/mmcf)	641	581	370	95	53	9	
CO (lb/mmcf)	387	352	355	299	14	14	
VOC (lb/mmcf)	14	12	6	6	6	2	
PM <sub>10</sub> (lb/MMBTU)	0.0066	0.0066	0.0066	0.0066	0.0066	0.0066	
SOx (lb/MMBTU)	0.00068	0.00068	0.00068	0.00068	0.00068	0.00068	
Total NOx lbs, (5 units)	9,100	6,930	21,000	4,860	4,200	1,620	47,710
Total CO lbs, (5 units)	5,500	4,200	20,160	15,300	1,080	2,400	48,640
Total VOC lbs, (5 units)	200	140	360	300	480	400	1,880
Total PM <sub>10</sub> lbs, (5 units)	100	70	360	360	600	1,200	2,690
Total SOx lbs, (5 units)	10.2	12.2	34.0	61.2	47.6	61.2	226.4

#### Start-up /Shutdown of CTGs

The applicant has stated that there will be 350 start-ups and 350 shutdowns per year, with up to 2 start ups per day, with the balance of 2,768 hours left for commissioning and normal operations. According to the applicant, each start-up event is expected to last 35 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.

NOx levels are in the 50-100 ppmvd range from the first 3-8 minutes of start-up. Water is injected during the 8<sup>th</sup> minute of start-up and 25 ppmvd at 15% O<sub>2</sub> is achieved by minute 10 when the unit reaches full load. NOx emissions are further reduced from 25 ppmvd to 2.5 ppmvd over a 30-60 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 eleven 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 48 minutes of the shutdown period. GE has provided shutdown estimates for the five CTGs and these numbers are included in **Appendix A**.

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#### 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, annual, and 30-day averages are calculated and shown in **Appendices A through C**. The emission calculations for the emergency fire pump and cooling tower are contained in **Appendices D and E**.

#### Emissions During A Commissioning Year

The tables below show the cumulative emissions during a commissioning year from all 5 gas turbines which includes commissioning, start-up, shutdown and normal operation, as well as the emissions from the emergency fire pump which is assumed to operate for the designated maximum of 199 hours per year, and the PM<sub>10</sub> emissions from the 5-cell cooling tower.

#### **Mass Emission Rates, lb/hr (Commissioning Year)**

	Emissions, lb/hr					
LMS100PA CTG	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NH <sub>3</sub>
Normal Operations	41.05	60.00	11.40	3.03	30.00	30.35
Start up	52.10	102.00	14.05	3.03	30.00	N/A
Shutdown	55.00	140.00	15.00	3.03	30.00	N/A
Commissioning	356.04	362.99	14.02	1.69	20.07	N/A
Emergency Fire Pump	10.54	0.337	0.112	0.0041	0.067	N/A
5-Cell Cooling Tower	N/A	N/A	N/A	N/A	0.443	N/A
<b>TOTALS</b>	<b>514.73</b>	<b>665.33</b>	<b>54.58</b>	<b>10.78</b>	<b>110.58</b>	<b>30.35</b>

#### **Mass Emission Rates, lb/month (Commissioning Year)**

	Emissions, lb/month					
LMS100PA CTG	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NH <sub>3</sub>
Normal Operations	15,105.00	22,080.00	4,195.00	1,115.00	11,040.00	11,168.80
Start up	2,084.00	4,080.00	562.00	120.00	1,200.00	N/A
Shutdown	2,200.00	5,600.00	600.00	120.00	1,200.00	N/A
Commissioning	5,340.00	5,445.00	210.75	25.50	300.00	N/A
Emergency Fire Pump	174.79	5.59	1.86	0.07	1.12	N/A
5-Cell Cooling Tower	N/A	N/A	N/A	N/A	128.30	N/A
<b>TOTALS</b>	<b>24,903.79</b>	<b>37,210.59</b>	<b>5,569.60</b>	<b>1,383.07</b>	<b>13,869.42</b>	<b>11,168.80</b>

#### **Mass Emission Rates, lb/year (Commissioning Year)**

	Emissions, lb/year					
LMS100PA CTG	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NH <sub>3</sub>
Normal Operations	108,125.00	158,040.00	30,030.00	7,980.00	79,020.00	79,939.42
Start up	18,235.00	35,700.00	4,920.00	1,060.00	10,500.00	N/A
Shutdown	19,250.00	49,000.00	5,250.00	1,060.00	10,500.00	N/A
Commissioning	47,710.00	48,640.00	1,880.00	228.00	2,690.00	N/A
Emergency Fire Pump	2,097.46	67.06	22.35	0.82	13.41	N/A
5-Cell Cooling Tower	N/A	N/A	N/A	N/A	1,539.60	N/A
<b>TOTALS</b>	<b>195,417.46</b>	<b>291,447.06</b>	<b>42,104.63</b>	<b>10,327.82</b>	<b>104,263.01</b>	<b>79,939.42</b>



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#### Emissions During A Non-Commissioning Year

The tables below show the cumulative emissions during a non-commissioning year from all 5 gas turbines which includes, start-up, shutdown and normal operation, as well as the emissions from the emergency fire pump which is assumed to operate for the designated maximum of 199 hours per year, and the PM<sub>10</sub> emissions from the 5-cell cooling tower.

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

	Emissions, lb/hr					
LMS100PA CTG	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NH <sub>3</sub>
Normal Operations	41.05	60.00	11.40	3.03	30.00	30.35
Start up	52.10	102.00	14.05	3.03	30.00	N/A
Shutdown	55.00	140.00	15.00	3.03	30.00	N/A
Emergency Fire Pump	10.54	0.337	0.112	0.0041	0.067	N/A
5-Cell Cooling Tower	N/A	N/A	N/A	N/A	0.443	N/A
<b>TOTALS</b>	<b>158.69</b>	<b>302.34</b>	<b>40.56</b>	<b>9.09</b>	<b>90.51</b>	<b>30.35</b>

#### **Mass Emission Rates, lb/month (Non-Commissioning Year)**

	Emissions, lb/month					
LMS100PA CTG	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NH <sub>3</sub>
Normal Operations	15,720.00	22,980.00	4,365.00	1,161.49	11,490.00	11,625.29
Start up	2,084.00	4,080.00	562.00	121.20	1,200.00	N/A
Shutdown	2,200.00	5,600.00	600.00	121.20	1,200.00	N/A
Emergency Fire Pump	174.79	5.59	1.86	0.07	1.12	N/A
5-Cell Cooling Tower	N/A	N/A	N/A	N/A	128.30	N/A
<b>TOTALS</b>	<b>20,178.79</b>	<b>32,665.59</b>	<b>5,528.00</b>	<b>1,403.96</b>	<b>14,019.42</b>	<b>11,625.29</b>

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

	Emissions, lb/year					
LMS100PA CTG	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NH <sub>3</sub>
Normal Operations	113,626.40	166,080.00	31,555.00	8,387.00	83,040.00	83,945.03
Start up	18,235.00	35,700.00	4,920.00	1,060.00	10,500.00	N/A
Shutdown	19,250.00	49,000.00	5,250.00	1,060.00	10,500.00	N/A
Emergency Fire Pump	2,097.46	67.06	22.35	0.82	13.41	N/A
5-Cell Cooling Tower	N/A	N/A	N/A	N/A	1,539.60	N/A
<b>TOTALS</b>	<b>153,208.86</b>	<b>250,847.06</b>	<b>41,747.35</b>	<b>10,507.82</b>	<b>105,593.01</b>	<b>83,945.03</b>

#### 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 11 above. The values in the tables below are the cumulative 30 day averages for the entire facility (5 CTGs, the emergency fire pump and the cooling tower).

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

	30 Day Average, lb/day				
Five LMS100PA CTGs	NOx <sup>6</sup>	CO	VOC	SOx	PM <sub>10</sub>
Normal Operations		736	140	37	368
Start up		136	19	4	40
Shutdown		187	20	4	40
Commissioning		181	7	1	10
One Emergency Fire Pump <sup>7</sup>		0	0	0	0
One 5-Cell Cooling Tower		N/A	N/A	N/A	(4) <sup>8</sup>
<b>TOTALS</b>		<b>1,240</b>	<b>186</b>	<b>46</b>	<b>458</b>

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

	30 Day Average, lb/day				
Five LMS100PA CTGs	NOx <sup>6</sup>	CO	VOC	SOx	PM <sub>10</sub>
Normal Operations		766	145	37	383
Start up		136	19	4	40
Shutdown		187	20	4	40
One Emergency Fire Pump <sup>7</sup>		0	0	0	0
One 5 Cell Cooling Tower		N/A	N/A	N/A	(4) <sup>8</sup>
<b>TOTALS</b>		<b>1,089</b>	<b>184</b>	<b>45</b>	<b>463</b>

The following is a comparison of the cumulative 30-day averages for the entire facility (5-LMS100 PA gas turbines, 1-emergency fire pump, and 1-cooling tower) for both a commissioning year and a non-commissioning year. The maximum 30-day averages for each pollutant, shown in bold.

	NOx <sup>6</sup>	CO	VOC	SOx	PM <sub>10</sub>
30 Day Average (Commissioning Year)		<b>1,240</b>	<b>186</b>	<b>46</b>	458
30 Day Average (Non-Commissioning Year)		1,089	184	45	<b>463</b>

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.

	NOx <sup>6</sup>	CO	VOC	SOx	PM <sub>10</sub>
30 Day Average (Commissioning Year)		<b>248</b>	<b>37</b>	<b>9</b>	92
30 Day Average (Non-Commissioning Year)		218	37	9	<b>93</b>

<sup>6</sup> VSE 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

<sup>7</sup> The emergency fire pump is exempt from offsets (and modeling) under Rule 1304(a)(4)-Emergency Equipment if operated < 200 hr/yr

<sup>8</sup> The cooling tower is exempt from requiring a permit under Rule 219(e)(3) and consequently it is exempt from NSR. Therefore, offsets are not required for the cooling tower

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## 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 29500 Rouse Road, Romoland, which is in an unincorporated part of Riverside County. Schools located nearest to the facility are at least a minimum of 0.37 miles away from the proposed project site as measured by the Mapquest program found at <http://www.mapquest.com>.

As an alternate means of determining the sensitive receptor distance from the proposed site, latitude/longitude coordinates were collected at the proposed site as well as the closest sensitive receptors using a digital camera equipped with a GPS receiver. The receptor coordinates were then converted to distances, measured in feet, from the proposed site. The following table shows the distance from VSE to each sensitive receptor as measured by (1) Mapquest and (2) using GPS coordinates (fenceline-to-fenceline)

Name of School	Address	Mapquest Distance Miles (feet)	GPS Distance (feet)
1. Romoland Elementary School	25800 Antelope Rd, Romoland	1.37 (7,234)	5,566
2. Harvest Valley Elementary School	29955 Watson Rd, Sun City	1.97 (10,402)	8,030
3. Freedom Crest Elementary School	29282 Meniffee Rd, Meniffee	2.06 (10,877)	12,174
4. Romoland School District	25900 Leon Rd, Homeland	2.58 (13,622)	Not Measured
5. Meniffee Elementary School	30205 Meniffee Rd, Meniffee	2.82 (14,890)	17,396
6. Simily's (Private School)	P.O. Box 514, Homeland	3.21 (16,949)	Not Measured
7. H&R Block (Private School)	30141 Antelope Rd, Meniffee	3.24 (17,107)	Not Measured
8. Tri-City SDA Elementary School	30141 Antelope Rd, Meniffee	3.26 (17,213)	Not Measured
9. Kirkpatrick Elementary School	28800 Reviere Dr, Meniffee	3.26 (17,213)	Not Measured
10. Tri-City Adventist School	29885 Bradley Rd, Sun City	3.38 (17,846)	Not Measured
11. Boulder Elementary School <sup>9</sup>	27327 Junipero Rd, Romoland	N/A	2,975

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

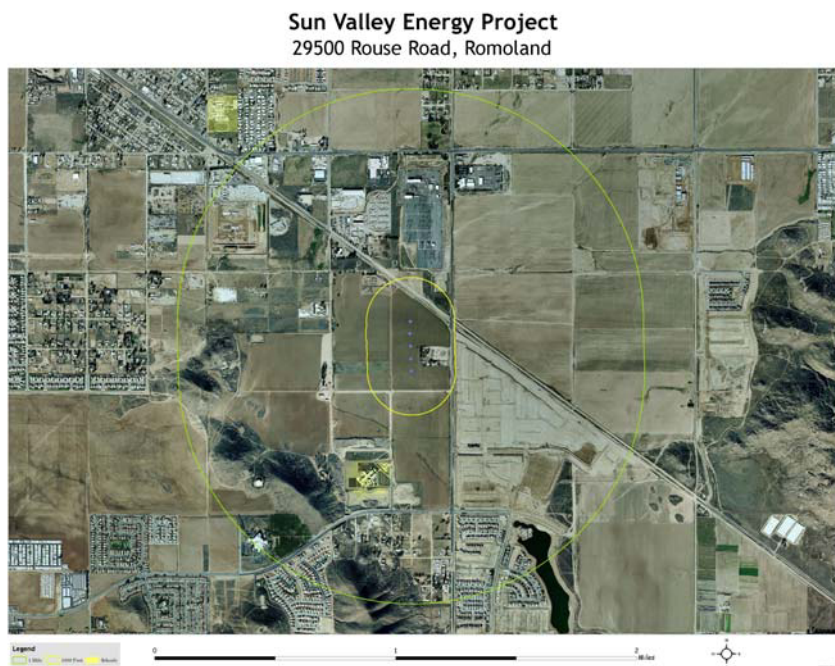
<sup>9</sup> This school is not depicted on Mapquest as of October 12, 2006.

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The map below is a graphical representation of the surrounding vicinity of the proposed VSE site, which includes the locations of the sensitive receptors enumerated 1-10 below. 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 Valle Del Sol Energy Project. The inner circle depicts the area within 1,000 feet from the proposed site. The larger circle represents an area within 1 mile of the proposed site.



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#### 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 will be operated in a fairly remote (non-residential) area of San Bernardino County and 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<sub>2</sub> emissions to 500 ppmvd, averaged over 15 minutes. For CO, the CTGs will meet the BACT limit of 6.0 ppmvd at 15% O<sub>2</sub>, 1-hr average, and the turbine will be conditioned as such. For SO<sub>2</sub>, equipment which complies with Rule 431.1 is exempt from the SO<sub>2</sub> limit in Rule 407. The applicant will be required to comply with Rule 431.1 and thus the SO<sub>2</sub> limit in Rule 407 will not apply.

#### RULE 409-Combustion Contaminants

This rule restricts the discharge of contaminants from the combustion of fuel to 0.23 grams per cubic meter (0.1 grain per cubic foot) of gas, calculated to 12% CO<sub>2</sub>, averaged over 15 minutes. The equipment is expected to meet this limit based on the calculations shown below:

Estimated exhaust gas        364,419 DSCFM = 21.87 mmscf/hr  
Maximum PM10 Emissions    6 lb/hr  
Estimated CO2 in exhaust    3%

$$\text{Grain Loading} = \frac{(6 \text{ lb/hr}) (7000 \text{ gr/lb})}{21.87 \text{ EE6 scf/hr}} \times \frac{12}{3} = 0.00768 \text{ gr/dscf} \ll 0.1 \text{ gr/dscf}$$

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#### RULE 431.1-Sulfur Content of Gaseous Fuels

VSE will use pipeline quality natural gas which will comply with the 16 ppmv sulfur limit, calculated as H<sub>2</sub>S, specified in this rule. VSE 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.

#### RULE 474-Fuel Burning Equipment Oxides of Nitrogen

Superseded by NO<sub>x</sub> RECLAIM.

#### RULE 475-Electric Power Generating Equipment

This rule applies to power generating equipment rated greater than 10 MW installed after May 7, 1976. Requirements specify that the equipment must comply with a PM<sub>10</sub> mass emission limit of 11 lb/hr or a PM<sub>10</sub> concentration limit of 0.01 grains/dscf. Compliance is demonstrated if either the mass emission limit or the concentration limit is met. The PM<sub>10</sub> mass emissions from the VSE turbines is estimated to be 6 lb/hr. The estimated grain loading is less than 0.01 grain/dscf (see calculations under Rule 409 analysis). Therefore, compliance is expected. Compliance will be verified through performance tests.

#### NEW SOURCE REVIEW (NSR) ANALYSIS

The following section describes the NSR analysis for VSE. The facility can comply with NSR either by qualifying for various exemptions from or by demonstrating compliance with the following rules. Since VSE 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 VSE is evaluated for compliance with the rules in the table below.

Table 14 - Applicable NSR Rules for VSE

Applicable NSR Rules for Non-RECLAIM Pollutants (CO, SO <sub>x</sub> , VOC, PM <sub>10</sub> )	Applicable NSR Rules for RECLAIM Pollutants (NO <sub>x</sub> )
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 1309.1 - Priority Reserve	Rule 2005(i)-Rule 1401 Compliance
	Rule 2005(j)-Compliance with Fed/State NSR

#### RULE 1303(a) and Rule 2005(b)(1)(A)-BACT - 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. VSE 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 VSE 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:

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**Table 15 - BACT Requirements for Simple Cycle Gas Turbines**

NOx	CO	VOC	PM <sub>10</sub> /SOx	NH <sub>3</sub>
2.5 ppmvd, at 15% O <sub>2</sub> , 1-hour rolling average	In Attainment. See PSD Analysis for BACT Requirements	2.0 ppmvd, at 15% O <sub>2</sub> , 1-hour rolling average	Pipeline quality natural gas w/ S content ≤ 1 grain/100 scf	5.0 ppmvd at 15% O <sub>2</sub> , 1-hour rolling average

This information was based on a search of the BACT Clearinghouse database and the latest information available is that for a permit issued to the City of Riverside, in April 2005. This unit is an LM6000 Sprint PC model operating on a simple cycle similar to the five CTGs being proposed by VSE. The unit was permitted at the above emission levels and has been in operation for over one year. Therefore, emission levels in Table 15 are now officially considered BACT for a simple cycle CTG. The applicant has provided a performance warranty which accompanied the initial application package which indicates that each LMS100 operating on a simple cycle can comply with and for NOx, even exceed the above BACT requirements. The warranty was provided by GE and is included in the engineering file. The applicant is proposing the BACT levels for this project shown in Table 16 below. Also, based on the Facility Permit issued to the City of Riverside (A/N 426694) in April 2005, the averaging times for NOx, and VOC in those permits were reduced from a 3-hour rolling average to a more restrictive 1-hour rolling average. AQMD now considers the more restrictive 1-hour averaging times to be Achieved in Practice and VSE will therefore be required to comply with the 1-hour averages for NOx, and VOC.

**Table 16 - Proposed BACT for VSE CTGs**

NOx	CO	VOC	PM <sub>10</sub> /SOx	NH <sub>3</sub>
2.5 ppmvd, @ 15% O <sub>2</sub> , 1-hour average	In Attainment. See PSD Analysis for BACT Requirements	2.0 ppmvd, @ 15% O <sub>2</sub> , 1-hour average	PUC quality natural gas w/ S content ≤ 1 grain/100 scf	5.0 ppmvd @ 15% O <sub>2</sub> , 1-hour average

A NOx CEMS will be used to verify compliance with the NOx BACT limit. The proposed control levels in the table above will exceed the current BACT requirements for NOx and will meet current BACT requirements for all remaining criteria pollutants including NH<sub>3</sub>. BACT is satisfied for each of the CTGs.

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

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 <sub>10</sub> (gm/BHP-hr)
50≤BHP<100	6/30/2008	3.5	3.7	0.30
100≤BHP<175	6/30/2007	3.0	3.7	0.22
175≤BHP<300	7/13/2006	3.0	2.6	0.15
300≤BHP<750	7/13/2006	3.0	2.6	0.15

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The engine falls into the EPA Tier III BACT category highlighted above. However, since VSE will be a 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<sub>10</sub>, some diesel fired engines are currently employing particulate traps to control PM<sub>10</sub> emissions. As such, EME will be required to evaluate the technological feasibility of using a particulate trap on the emergency fire pump. In the event that it is not technologically feasible to install a particulate trap to control PM<sub>10</sub> emissions, the Tier III BACT levels will apply to the emergency fire pump, unless it can be demonstrated, according to AQMD BACT Guidelines, that there are currently no UL listed fire pumps which can meet the Tier III emission standards. In that case, Tier II limits will apply.

EME has submitted a letter dated December 11, 2006 from Clarke, the engine manufacturer, which indicates the installation of after-treatment devices such as particulate traps will compromise reliability and performance and most importantly, safe operation of the fire pump, and that its installation would most likely void the fire pump's UL certification. EME submitted an email dated January 30, 2008 (see file) which indicates that the findings of the December 11, 2006 letter with regard to installation of after-treatment devices on fire pumps is still applicable. Therefore, EME proceeded to investigate the possibility of purchasing an engine which will comply with the Tier III emission standards. Currently, according to EME, in a letter dated December 18, 2006 from Clarke, fire pumps which are UL certified that can meet Tier III standards are currently not being provided or sold and are still in development. Therefore, the Tier II standards apply to this fire pump. BACT for SOx emissions for compression ignition emergency fire pumps is diesel fuel with a sulfur content no greater than 0.0015% by weight. A BACT summary for the emergency fire pump is shown below.

#### Proposed BACT for Emergency Fire Pump (A/N 450943)

Pollutant	EPA Tier II Levels	Proposed BACT	Comply (Yes/No)
NOx+NMHC	4.8 gm/BHP-hr	4.65 gm/BHP-hr	Yes
PM <sub>10</sub>	0.15 gm/BHP-hr	0.09 gm/BHP-hr or particulate trap	Yes (Will meet emission limit in lieu of particulate trap)
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 current BACT.

#### RULE 1303(a)-BACT - Cooling Tower

Rule 219(e)(3) provides an 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 5-cell cooling tower being proposed at VSE will meet the requirements of Rule 219(e)(3) and is therefore exempt from NSR. BACT therefore does not apply.



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#### 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, the 5 CTGs, the emergency fire pump, and the ammonia tank 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 Industrial Source Complex Short Term ISCST3 air dispersion model, Version 3. 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 data was collected at the AQMD's Riverside monitoring station. 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<sub>2</sub> and SO<sub>2</sub>. 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	500 µg/m <sup>3</sup>	1 pphm	20 µg/m <sup>3</sup>
	Annual	5.3 pphm	100 µg/m <sup>3</sup>	0.05 pphm	1 µg/m <sup>3</sup>
Carbon Monoxide	1-hour	20 ppm	23 µg/m <sup>3</sup>	1 pphm	1.1 µg/m <sup>3</sup>
	8-hour	9.0 ppm	10 µg/m <sup>3</sup>	0.45 pphm	0.50 µg/m <sup>3</sup>
Suspended Particulate Matter <10µm (PM <sub>10</sub> )	24-hour		50 µg/m <sup>3</sup>		2.5 µg/m <sup>3</sup>
	AGM <sup>10</sup>		30 µg/m <sup>3</sup>		1 µg/m <sup>3</sup>
Sulfate	24-hour		25 µg/m <sup>3</sup>		1 µg/m <sup>3</sup>

EPA has granted the State's request to re-designate South Coast as attainment for CO effective June 11, 2007. Therefore, based on this decision, and pursuant to New Source Review, there will be no modeling required for CO emission increases for permits issued on or after June 11, 2007. The applicant is required under Rule 1303(b)(1) to demonstrate compliance with one of the following requirements for NO<sub>x</sub> and SO<sub>2</sub>:

<sup>10</sup> AGM is the acronym for Annual Geometric Mean

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- (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 provided the following modeled maximum project impacts for each individual turbine at VSE. Therefore, the numbers in the table below are on a permit unit basis. Each individual turbine plus the background concentration is less than the most stringent standard.

Maximum Project Impacts for VSE for Attainment Pollutants

	Average	CTG No.1 ( $\mu\text{g}/\text{m}^3$ )	CTG No.2 ( $\mu\text{g}/\text{m}^3$ )	CTG No.3 ( $\mu\text{g}/\text{m}^3$ )	CTG No.4 ( $\mu\text{g}/\text{m}^3$ )	CTG No.5 ( $\mu\text{g}/\text{m}^3$ )	Bkgrnd ( $\mu\text{g}/\text{m}^3$ )	Most Stringent Standard ( $\mu\text{g}/\text{m}^3$ )	Comply (Yes/No)
NO <sub>x</sub>	1-hr	7.60	7.60	7.50	7.50	7.40	191.3	470	Yes
	Annual	0.18	0.18	0.18	0.18	0.18	45.9	100	Yes
SO <sub>2</sub>	1-hr	0.80	0.80	0.70	0.70	0.60	53.2	650	Yes
	3-hr	0.80	0.80	0.70	0.70	0.60	53.2	1,300	Yes
	24-hr	0.30	0.30	0.30	0.20	0.20	39.9	109	Yes
	Annual	0.016	0.016	0.016	0.016	0.016	8	80	Yes

Since PM<sub>10</sub> is a non-attainment pollutant, it is required to comply with the 24-hour and annual PM<sub>10</sub> significance levels in the table below. This table shows the 24-hour and the annual significance levels for turbines 1 through 5.

Significance Modeling for VSE for Non-Attainment Pollutants, ( $\mu\text{g}/\text{m}^3$ )

Equipment	24-hour PM <sub>10</sub> Concentration	24 hour PM <sub>10</sub> Significance Level	Annual PM <sub>10</sub> Concentration	Annual PM <sub>10</sub> Significance Level	Comply (Yes/No)
Turbine No. 1	2.245	2.5	0.156	1	Yes
Turbine No. 2	2.192	2.5	0.160	1	Yes
Turbine No. 3	2.143	2.5	0.162	1	Yes
Turbine No. 4	2.095	2.5	0.164	1	Yes
Turbine No. 5	2.049	2.5	0.166	1	Yes

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 November 30, 2006. 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 ISCST3 model version 02035 along with the appropriate model options in the analyses for NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>. 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 were reported.

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

Since VSE is a new facility with an emissions increase, offsets will be required for all criteria pollutants. VSE will be included in NO<sub>x</sub> RECLAIM and as such, NO<sub>x</sub> increases will be offset with RTCs at a 1.0 to 1 ratio. Non-RECLAIM criteria pollutants (VOC, SO<sub>x</sub>, and PM<sub>10</sub>) will be offset by either the purchase of Emission Reduction Credits (ERCs) and/or Priority Reserve Credits (PRCs) at a 1.2 to 1 ratio. The facility may elect to offset emission increases using either purchased ERCs or PRCs or any combination thereof as allowed by AQMD Rules and Regulations. The required RTCs for NO<sub>x</sub> for the first and second years

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of operation are shown below. The values include start-ups, commissioning (first year only), normal operation, and shutdowns. (The total emissions for the second year excludes commissioning).

#### Required NOx RTCs

Operating Condition 100	Hours per Year	NOx (lb/hr)	NOx (lb/year) per device	NOx (lb/year) cumulative
CTGs				
Startup	350	10.42	3,647.00	18,235.00
Shutdown	350	11.00	3,850.00	19,250.00
Normal Operation	2,634	8.21	21,625.14	108,125.70
Commissioning	134	71.21	9,542.14	47,710.70
CTG Totals	3,468		38,664.28	193,321.40
Emergency Fire Pump				
	199	10.54	2,097.46	2,097.46
Total 1st Year Emissions (lb/year)			40,761.74	195,418.86
Offset Ratio			1.00	1.00
1st year RTCs (lb/year)			40,761.74	195,418.86
2nd year RTCs (lb/year)			<b>32,319.74</b>	<b>153,208.86</b>

Table 17 shows the facility-wide 30-day averages for VOC, PM<sub>10</sub> and SOx. Offsets are based upon 30-day averages from individual permit units.

As mentioned above, VSE may elect to use both ERCs and PRCs to provide the required offsets, as shown below, however, PRCs are only available for PM<sub>10</sub> and SOx as depicted in the table below. ERCs will be purchased for the VOC offsets. 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<sub>10</sub> excludes the emissions from the cooling tower per Rule 219(e)(3). Since CO is in attainment, offsets for this pollutant are not required.

Table 17 – 30-Day Averages for the Entire Facility, (lb/day)

	NOx	CO	VOC	SOx	PM <sub>10</sub>
Maximum 30 Day Average			186	46	463

Table 18 - Required Offsets for Non-RECLAIM Pollutants (per-turbine basis, lb/day)

	NOx	CO	VOC	SOx	PM <sub>10</sub>
Maximum 30 Day Average			37	9	93
ERC Offset Ratio			1.2	1.2	1.2
PRC Offset Ratio			N/A	1.2	1.2
Required Offsets if ERCs are chosen			<b>44</b>	<b>11</b>	<b>112</b>
Required Offsets if PRCs are chosen			<b>N/A</b>	<b>11</b>	<b>112</b>

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The facility's maximum monthly and annual fuel usage for the simultaneous operation of the 5 CTGs will be 1,966 mmscf and 14,725 mmscf, respectively, based on operating condition 100. The monthly fuel cap will correspond to 463 hours/month of operation. This value was selected by VSE. The monthly and annual fuel usage for the emergency fire pump are 264 gallons and 3,200 gallons, respectively. The calculations are shown below and a monthly fuel cap will be included on the Facility Permit as a condition.

Monthly:

CTGFuel= (803.3 MMBTU/hr) (1.11) (1 scf/1,050 BTU) (463 hr/month) (5 CTGs) = 1,966 MMscf/month

ICEFuel= (16.0 gal/hr)\*16.5 hr/month = 264 gal/month

Annually:

CTGFuel= (803.3 MMBTU/hr) (1.11) (1 scf/1,050 BTU) (3,468 hr/year) (5 CTGs) = 14,725 MMscf/year

ICEFuel= (16.0 gal/hr)\*199.99 hr/year = 3,200 gal/year

Table 19 below shows the total amount of ERC's that EME has purchased as of January 29, 2008. The table consists of several ERC certificates for VOC as shown. Shaded areas in the table indicate that no ERC's for that particular pollutant have been acquired by EME as of January 29, 2008.

Table 19 - Total Amount of Emission Reduction Credits currently held by EME, Valle Del Sol Energy, LLC

Pollutant	ERC Certificate No.	Date of Purchase	Origin	Seller	Amount of ERC (lb/day)
VOC	AQ003679	10/23/2006	Electrofilm Manufacturing	Electrofilm Manufacturing	8
VOC	AQ002683	11/8/2006	Magnatek, Inc	Magnetek, Inc	1
VOC	AQ006303	11/13/2006	Scope Products	Greg K Environmental Fund	100
VOC	AQ004209	11/13/2006	Plastic Dress Up Co	Dart Container Corp	117
VOC	AQ006962	10/31/2007	Inland Gas & Electric GP LLC	Inland Gas & Electric GP LLC	20
VOC	AQ006930	11/6/2007	CE2 Environmental Markets, LP	CE2 Environmental Markets, LP	10
VOC	AQ007095	11/6/2007	Rep-LA1, LLC	Rep-LA1, LLC	21
VOC	AQ003916	12/18/2007	Jensen Industries	Jensen Industries	12
CO					
PM <sub>10</sub>					
SO <sub>x</sub>					

VSE 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.

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. VSE is located in Zone 2a and is therefore eligible to obtain its ERCs from either Zone 1 or Zone 2a. Similarly in the case of Rule 2005(e), VSE, because of its location may obtain RTCs from either Zone 1 or Zone 2, at its choosing. 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.

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#### RULE 1303(b)(5)-Major Polluting Facility

VSE has addressed the alternative analysis, statewide compliance, plume visibility, and CEQA requirements of this rule and based on experience with similar equipment recently permitted, it is expected that VSE will comply with the provisions of this rule.

##### 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 VSE and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project.

EME 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 1303(b)(5)(B) – Statewide Compliance

EME has certified in the 400-A form that all major sources under its ownership or control in the State of California are in compliance with all federal, state, and local air quality rules and regulations. In addition, EME has submitted an email to the AQMD dated October 19, 2006 stating that “any and all facilities that EME owns or operates in the State of California (including the proposed VSE) 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 NO<sub>x</sub> and PM<sub>10</sub> emissions exceed 40 TPY and 15 TYP respectively. Since the nearest Class I area is located well beyond the proposed VSE site, modeling from plume visibility is not required, however, the applicant has provided modeling impact data for the Class I areas as part of the AFC process. Compliance is expected.

##### Rule 1303(b)(5)(D) – 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 1309.1-Priority Reserve

This rule requires electrical generating facilities (EGF) seeking access to the Priority Reserve to comply with the requirements in R-1309.1. On September 8, 2006 the AQMD Governing Board adopted amendments to Rule 1309.1 to allow electric generating facilities (EGFs) access to the AQMD’s Priority Reserve credits to offset their emission increases. However, due to significant public comments and concerns expressed at the adoption hearing, the AQMD Governing Board directed AQMD staff to propose further amendments to Rule 1309.1 in response to public concerns about emission and public health impacts associated with the operation of EGFs. In addition, the Governing Board directed AQMD staff to hold a public meeting to inform interested parties about the specifics of the proposed project. The meeting was held on October 18, 2006.

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On August 3, 2007 the AQMD Governing Board replaced the September 8, 2006 version of Rule 1309.1 with the August 3, 2007 version. The requirements of Rule 1309.1 as replaced on August 3, 2007 have changed significantly since VSE originally requested access to the Priority Reserve. The August 3, 2007 amendments include a set of new requirements for EGFs in order to be qualified to access the Priority Reserve. Included in the requirements the VSE must meet prior to issuance of any DOC or Proposed Title V Permit are elements which require more stringent emission standards for nitrogen oxides (NO<sub>x</sub>), fine particulate matter (PM<sub>10</sub>), and toxics, consideration of the use of renewable/alternative energy, and other requirements.

Rule 1309.1(b)(5)(A)(i) defines three geographical zones within the jurisdiction of the South Coast Air Quality Management District based on the average PM<sub>2.5</sub> concentration for years 2003 through 2005, as shown in Table 20 below. Also defined in Rule 1309.1 (b)(5)(A)(i) is the Environmental Justice Area (EJA).

Table 20 - Rule 1309.1 Zone Definitions

Zone No.	Rule 1309.1 Definition
1	Areas within the AQMD with an average PM <sub>2.5</sub> concentration of less than 18 µg/m <sup>3</sup>
2	Areas within the AQMD with an average PM <sub>2.5</sub> concentration between 18 µg/m <sup>3</sup> and 20 µg/m <sup>3</sup>
3	Areas within the AQMD with an average PM <sub>2.5</sub> concentration of greater than 20 µg/m <sup>3</sup>
EJA	Area of grid cells where 10% of population lives in poverty, and cancer risk > 1 x 10 <sup>-3</sup> ; or PM <sub>10</sub> > 46 µg/m <sup>3</sup>

Rule 1309.1(b)(5)(A)(ii) states that an in-District power plant located in Zone 1 shall demonstrate compliance with the specific requirements of Rule 1309.1 (b)(5)(A)(ii)(a) and (b) in order to draw credits from the Priority Reserve. VSE is located at 29500 Rouse Road, Romoland, CA which is located in Zone 1 as defined in Rule 1309.1. Therefore VSE is required to demonstrate compliance with each of the following specific requirements of Rule 1309.1(b)(5)(A)(ii). The specific requirements for power plants proposed for construction in Zone 1 are summarized in Table 21 below:

Table 21 - Rule 1309.1 Zone 1 Specific Requirements

Rule Subpart	Specific Requirements
Rule 1309.1(b)(5)(A)(ii)(a)	Unit PM <sub>10</sub> emissions ≤ 0.060 lb/MW-hr
Rule 1309.1(b)(5)(A)(ii)(b)	Unit NO <sub>x</sub> emissions ≤ 0.080 lb/MW-hr

#### **Rule 1309.1(b)(5)(A)(ii)(a)& (b) – NO<sub>x</sub> and PM<sub>10</sub> Emissions:**

The NO<sub>x</sub> and PM<sub>10</sub> emissions from each gas turbine must not exceed 0.080 lb/MW-hr and 0.060 lb/MW-hr, respectively, as determined at ISO conditions of 14.7 psia, 60 degrees F, and 60% relative humidity. As shown in Table 22 below, the emissions from each of the five gas turbines will comply with Rule 1309.1(b)(5)(A)(ii)(a) and (b).

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Table 22 - NO<sub>x</sub> and PM<sub>10</sub> Emissions

Equipment	Pollutant	lb/MW-hr, at ISO conditions	Maximum Allowable lb/MW-hr	Comply (Yes/No)
Gas Turbine No. 1	NO <sub>x</sub>	0.078	0.080	Yes
	PM <sub>10</sub>	0.058	0.060	Yes
Gas Turbine No. 2	NO <sub>x</sub>	0.078	0.080	Yes
	PM <sub>10</sub>	0.058	0.060	Yes
Gas Turbine No. 3	NO <sub>x</sub>	0.078	0.080	Yes
	PM <sub>10</sub>	0.058	0.060	Yes
Gas Turbine No. 4	NO <sub>x</sub>	0.078	0.080	Yes
	PM <sub>10</sub>	0.058	0.060	Yes
Gas Turbine No. 5	NO <sub>x</sub>	0.078	0.080	Yes
	PM <sub>10</sub>	0.058	0.060	Yes

#### **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 the renewable/alternative energy consisting of but not limited to 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, EME provided an analysis on October 15, 2007 (see file) in which wind, solar, and fuel cell technologies were considered.

#### Wind

EME considered a state-of-the-art wind turbine generator with a hub height of 260 feet and rotor diameter of 295, placing the height of the structure at slightly over 400 feet. The closest that wind turbine generators can be spaced safely is 800 feet apart. The VSE site is approximately 500 x 1500 feet, leaving room for a single 2 MW at the widest part of the parcel. According to EME, this location would place the turbine at an unsafe clearance from neighboring structures and existing SCE power lines. Therefore, wind technology at WCE site is not a viable option.

#### Solar

According to EME, a 400 MW solar-only powerplant located in Ivanpah has applied to the CEC for certification. Each 100 MW phase would require 850 acres of land which includes all ancillary and heat rejection equipment, and would thus produce 0.12 MW per acre. VSE's entire site is only 20 acres in size and would only support 2-4 MW of power through solar generation. Therefore, the VSE site is too small to accommodate solar generation.

#### Fuel Cell

EME 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. By contrast, a diesel generator costs \$800 to \$1,500 per kilowatt, and a natural gas turbine can be \$400 per kilowatt or less. According to EME the largest fuel cell claimed to be commercially available by its manufacturer is a 2.4 MW unit and are not available in sufficient volume. Based on the above, fuel cell technology is not a viable option.

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Since the requirements of Rule 1309.1 as amended on August 3, 2007 have changed significantly since VSE originally requested access to the Priority Reserve, it has been determined by AQMD Management that a new 30-day Public Notice period pursuant to Rule 212(g) and Rule 3006(a) as well as a 45-day EPA review period are required prior to issuance of the permits to construct. In addition, prior to access to the Priority Reserve and issuance of the permits to construct, VSE must demonstrate to the satisfaction of the Executive Officer that it has met each of the following requirements:

**Rule 1309.1(c)(2)**

VSE pays a mitigation fee pursuant to subdivision (g)

**Rule 1309.1(c)(3)**

VSE conducts a due diligence effort [based on an ERC cost not to exceed the applicable mitigation fee for that pollutant at the location of the electrical generating facility (EGF) and as specified if subdivision (g) of Rule 1309.1] approved by the Executive Officer to secure available ERCs for requested Priority Reserve pollutants. Such efforts shall include securing available ERCs including those available through state emission banks or creating ERCs through SIP approved credit generation programs as available.

**Rule 1309.1(c)(4)**

VSE enters into a long-term contract (at least one year) with the State of California to sell at least 50 percent of the portion of power which it has generated using the Priority Reserve Credits and provided the Executive Officer determines at the time of permitting and based on consultations with State power agencies that the State of California is both entering into such long term contracts and that a need for such contract exists at the time of permitting, if the facility is a net generator.

**Rule 1309.1(d)(6)**

VSE must use any ERCs held first, before access to the Priority Reserve is allowed.

**Rule 1309.1(d)(14)**

VSE secures final certification and approval for this project from the California Energy Commission, and has entered into a long term contract with Southern California Edison Company or the San Diego Gas and Electric Company or the State of California to provide electricity in Southern California.

**REQUIRED OFFSETS**

Table 23 below shows the required offsets for PM10 and SOx. Note that VOC offsets will not be obtained from the Priority Reserve, but will be offset with emission reduction credits.



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Table 23 - Offsets Required for VSE

PM10	30 Day Ave lb/day	ERC Offset Factor	Required Offsets (lb/day)
CTG No. 1	93	1.2	112
CTG No. 2	93	1.2	112
CTG No. 3	93	1.2	112
CTG No. 4	93	1.2	112
CTG No. 5	93	1.2	112
TOTALS			560
Unit Cost \$/lb/day			92,000
Total PM10 Cost \$			\$51,520,000
SOx	30 Day Ave lb/day	ERC Offset Factor	Required Offsets (lb/day)
CTG No. 1	9	1.2	11
CTG No. 2	9	1.2	11
CTG No. 3	9	1.2	11
CTG No. 4	9	1.2	11
CTG No. 5	9	1.2	11
TOTALS			55
Unit Cost \$/lb/day			34,400
Total SOx Cost \$			\$1,892,000
Total Cost \$			\$53,412,000

#### 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 in Table 24:

Table 24 - Rule 1401 Requirements per Turbine

Parameters and Specifications	Rule 1401 Requirements
MICR, without T-BACT	$\leq 1 \times 10^{-6}$
MICR, with T-BACT	$\leq 1 \times 10^{-5}$
Acute Hazard Index	$\leq 1.0$
Chronic Hazard Index	$\leq 1.0$
Cancer Burden	$\leq 0.5$

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. 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. It was noted that a 15 percent fractional consumption rate for home grown produce for residential receptors was used in determining the risk. The AQMD's HRA procedures require the use of a 5.2 percent fractional consumption rate. It was further noted that the cancer risk for the commercial receptor was estimated by applying an adjustment factor to the residential cancer risk, when the "point estimate" risk calculation method should be used. The HARP model was re-run with the corrected fractional consumption rate and point estimate methodology. PRA staff determined that each of the health risk values for MICR, HIA and HIC were appropriately estimated (see memorandum in file, dated November 30, 2006 from Ms. Jill Whynto to Mr. Mike Mills, and subsequent email in file from Yi Huang to Ken Coats dated December 7, 2006).

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Table 25 below is a summary of the revised cancer and non-cancer risk assessment results on a permit-unit basis. The cancer burden is not calculated because the MICR is less than  $1 \times 10^{-6}$  for both residential and commercial receptors.

Table 25 - Rule 1401 Modeled Results

	Residential MICR	Commercial MICR	Residential HIA	Commercial HIA	Residential HIC	Commercial HIC
Gas Turbine No. 1	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00057	0.00123	0.0000175	0.00000074
Gas Turbine No. 2	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00056	0.00124	0.0000174	0.00000074
Gas Turbine No. 3	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00056	0.00123	0.0000175	0.00000074
Gas Turbine No. 4	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00055	0.00122	0.0000174	0.00000074
Gas Turbine No. 5	$1.42 \times 10^{-11}$	$6.68 \times 10^{-11}$	0.00056	0.00122	0.0000174	0.00000074
Total Project	$7.10 \times 10^{-11}$	$3.34 \times 10^{-10}$	0.00280	0.00614	0.0000872	0.00000370

Table 25 shows that VSE will comply with the applicable requirements of Rule 1401.

#### 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 Rule 1470 is expected.

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#### Rule 2005(g) – Additional Requirements

As with Rule 1303(b)(5) for the Non-RECLAIM pollutants, VSE has addressed the alternative analysis, statewide compliance, plume visibility, and CEQA requirements of this rule for NO<sub>x</sub> and SO<sub>x</sub> and based on experience with similar equipment recently permitted, it is expected that VSE will comply with the provisions of this rule.

#### Rule 2005(g) – Additional Requirements

As with Rule 1303(b)(5) for the Non-RECLAIM pollutants, VSE has addressed the alternative analysis, statewide compliance, protection of visibility, and CEQA compliance requirements of this rule for NO<sub>x</sub>. 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

EME has certified in the 400-A form that all major sources under its ownership or control in the State of California are in compliance with all federal, state, and local air quality rules and regulations. In addition, EME has submitted an email to the AQMD dated October 19, 2006 stating that “any and all facilities that EME owns or operates in the State of California (including the proposed VSE) 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 VSE and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project. EME 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 a CEQA certified process. 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 NO<sub>x</sub> emissions exceed 40 TPY. Since the nearest Class I area is located well beyond the proposed VSE site, modeling from plume visibility is not required, however, the applicant has provided modeling impact data for the Class I areas as part of the AFC process. Compliance is expected

#### Rule 2005(h) – Public Notice

VSE 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.

VSE 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.

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#### Rule 2005(j) – Compliance with State and Federal NSR.

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

#### REGULATION XVII-Prevention of Significant Deterioration

This regulation applies to the preconstruction review of major stationary sources that emit attainment air contaminants. For a simple cycle power plant, the applicable major stationary source threshold in Regulation XVII is 250 tons per year or more of any pollutant regulated by the Clean Air Act. Table 26 below shows the potential to emit for VSE.

Table 26 - VSE Potential to Emit

	NOx	CO	SO <sub>2</sub>
Facility PTE (tpy)	97.71	145.72	5.16
Threshold (tpy)	250	250	250

Rule 1703(a)(2) requires each permit unit be constructed using BACT for each attainment air contaminant for which there is a net emission increase. The BACT requirements for CO as well as the applicant's BACT proposals for the CTGs and the internal combustion engine are listed in Table 27 below:

Table 27 - CO BACT

Equipment	AQMD BACT	Proposed BACT	Compliance (Y/N)
LMS 100 CTGs	6.0 ppmvd at 15% O <sub>2</sub> , 1-hour rolling average	6.0 ppmvd at 15% O <sub>2</sub> , 1-hour rolling average	Yes
Internal Combustion Engine	2.6 gm/BHP-hr	0.45 gm/BHP-hr	Yes

As shown in Table 27, the equipment will comply with AQMD BACT requirements for major sources. The facility PTE is less than the major stationary source threshold of 250 tpy for each of the attainment pollutants in the South Coast Air Basin. Therefore air quality modeling provisions of Rule 1703(a)(3) are not applicable to this project.

#### INTERIM PERIOD EMISSION FACTORS

RECLAIM requires that a NOx emission factor be used for reporting emissions during the interim reporting period. The interim period is defined as a period, typically 12 months in duration, when the CEMS has not been certified. During this period, the emissions cannot be accurately quantified, 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<sup>11</sup> emission rate is assumed, and the remaining period at which controlled rates at BACT are assumed.

Since VSE will be included in NOx RECLAIM, an interim period emission factor for NOx will be determined. Although not a RECLAIM pollutant, a CO emission factor will also be calculated so that the applicant may use it to report emissions during the interim period when the CEMS is not yet certified for CO. In the event CEMS data is not available, NOx, CO, and SOx 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 and two interim period emission factors calculated for CO. The

<sup>11</sup> The emission factor for the commissioning period is an average for the entire 134 hour commissioning period. During this period, the turbines may be uncontrolled, partially controlled, or 100% controlled.

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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	NO <sub>x</sub>	CO
Total emissions (lbs)	47,710	48,640
Total Fuel (mmscf)	386.43	386.43
Emission Factor (lb/mmscf)	<b>123.46</b>	<b>125.87</b>

#### Remaining Period (Non-Commissioning)

Pollutants	NO <sub>x</sub>	CO
Total emissions (lbs)	145,610	242,740
Total Fuel (mmscf)	14,156.7	14,156.7
Emission Factor (lb/mmscf)	<b>10.29</b>	<b>17.15</b>

#### CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The CEC is the lead agency for this project and EME filed an Application for Certification (05-AFC-3) for the project on December 1, 2005. VSE 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.

#### 40CFR Part 60 Subpart GG – NSPPS for Stationary Gas Turbines

40CFR60 Subpart GG has been superseded by 40 CFR60 Subpart KKKK.

#### 40CFR Part 60 Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

Subpart KKKK establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input greater than 10 MMBTU/hr (10.7 gigajoules per hour), based on higher heating value, which commenced construction, modification or reconstruction after February 18, 2005.

§60.4320(a) The turbine is natural gas-fired and has a heat input > 850 MMBTU/hr, therefore, it is subject to a NO<sub>x</sub> emission limit of 15 ppmv @ 15% O<sub>2</sub> from Table 1 of this subpart. The turbine is required to comply with BACT for NO<sub>x</sub> which is officially at 2.5 ppmv at 15% O<sub>2</sub>, dry basis for a simple cycle plant. However, GE has submitted performance warranties which indicate the CTGs will meet a NO<sub>x</sub> level of 2.5 ppmv at 15% O<sub>2</sub> on a 1-hour average which is more stringent than this subpart. Therefore, compliance with this section is expected.

§60.4330(a)(2) Natural gas fuel burned in the turbine has a sulfur content of 0.0006 lb-SO<sub>2</sub>/MMBtu, which is less than 0.06 lb-SO<sub>2</sub>/MMBTU (26 ng-SO<sub>2</sub>/J) required by this section. Therefore, compliance with the sulfur dioxide limits of this section is expected.

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§60.4335 The LMS100PA turbines use water injection to help reduce NO<sub>x</sub> to compliance levels. Monitoring is required and will be accomplished with a CEMS; therefore, compliance with this section is expected with a certified CEMS.

§60.4345 The CEMS is required to be certified according to the Performance Specification 2 (PS 2) in appendix B to this part. SCE will be required to file a CEMS application package with Source Test Engineering to certify the CEMS to meet the requirements of Rule 218 or 40CFR60 appendix B. Therefore, compliance with this section is expected.

§60.4400(a) An initial source test will be required per §60.8. The annual source testing requirement for NO<sub>x</sub> will be satisfied through the annual RATAs performed on the CEMS. Compliance with the source testing requirements is expected.

#### 40CFR Part 72 – Acid Rain Provisions

VSE 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<sub>2</sub> emissions with SO<sub>2</sub> allowances that are similar in concept to RTC's. SO<sub>2</sub> allowances are however, not required in any year when the unit emits less than 1,000 lbs of SO<sub>2</sub>. Facilities with insufficient allowances are required to purchase SO<sub>2</sub> credits on the open market. In addition, both NO<sub>x</sub> and SO<sub>2</sub> emissions will be monitored and reported directly to USEPA. Based on the above, compliance with this rule is expected.

#### REGULATION XXX – Title V

VSE 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.

#### Combined Modeling Impacts on Local Community:

AQMD held a public meeting to inform the public about the specifics of the proposed project. The meeting was held on October 18, 2006. Topics discussed included facility emissions, local impacts on schools, and surrounding area. At this meeting, several audience members spoke in favor of constructing the proposed power plant to provide additional electricity during peak demand hours and to create much needed jobs, and some in opposition of the project expressing concerns about potential public health impacts. Most of the comments received were answered on-site during the meeting. However, one comment in particular expressed concerns about the cumulative emissions and public health impacts between the proposed Valle Del Sol Energy Project and the Inland Empire Energy Center (IEEC) located nearby. Based on this comment AQMD looked into the combined modeling and health risk impacts from both VSE and IEEC power plants on the local community.

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### Combined Modeling Impacts from VSE and IEEC on Local Community

		New Impacts, $\mu\text{g}/\text{m}^3$ (VSE)	Existing Impacts, $\mu\text{g}/\text{m}^3$ (IEEC)
PM <sub>10</sub>	24-hr	11.0	1.22
	Annual	0.80	1.04
NO <sub>2</sub>	1-hr	261.40	0
	Annual	1.14	1.67
CO	1-hr	55.15	18.22
	8-hr	64.51	7.06

### Combined Health Risk Impacts from VSE and IEEC on Local Community

New Impacts (VSE)	Health Effect	Receptor	Impact
	Cancer risk, $\mu\text{g}/\text{m}^3$	Uninhabited Area	0.03EE-6
		Residential	<0.01EE-6
		Commercial	<0.01EE-6
	Acute Hazard Index, (dimensionless)		0.01
Existing Impacts (IEEC)	Chronic Hazard Index, (dimensionless)		0.09
	Health Effect	Receptor	Impact
	Cancer Risk, $\mu\text{g}/\text{m}^3$	Uninhabited Area	2.29EE-6
		Residential	0.53EE-6
		Commercial	0.16EE-6
	Acute Hazard Index, (dimensionless)		0.05
	Chronic Hazard Index, (dimensionless)		0.09

The individual impacts of each project have been evaluated and addressed in the earlier analysis for VSE and in the application evaluation for the IEEC project and have both shown compliance with requirements of all applicable Rules and Regulations. The results of the combined analysis are shown in the above tables, and summarize the impacts of criteria pollutants and health risks on the local community. This analysis was strictly performed to provide additional information with respect to the comments received at the public meeting.

#### OVERALL EVALUATION /RECOMMENDATION(S)

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

#### PERMIT CONDITIONS

##### (LMS100PA CTGs)

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

CONTAMINANT	EMISSION LIMIT
PM <sub>10</sub>	2,778 LBS IN ANY ONE MONTH
SO <sub>x</sub>	281 LBS IN ANY ONE MONTH
VOC	1,106 LBS IN ANY ONE MONTH

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The operator shall calculate the monthly emissions for VOC, PM10 and SOx using the equation below and the following emission factors: VOC: 2.00 lb/mmcf; PM10: 6.93 lb/mmcf; and SOx: 0.71 lb/mmcf.

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

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

The operator shall provide the AQMD with written notification of the date of initial CO catalyst use within seven (7) days of this event.  
*[Rule 1303 - Offsets]*

- 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 134 hours. Start-up time shall not exceed 60 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.  
*[Rule 2005, Rule 1703 - PSD]*
- A99.2 The 6.0 PPM CO emission limits shall not apply during turbine commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 134 hours. Start-up time shall not exceed 60 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.  
*[Rule 1703 - PSD]*
- A99.3 The 123.46 LBS/MMCF NOx emission limit shall only apply during the interim reporting period during initial turbine commissioning to report RECLAIM emissions. The interim reporting period shall not exceed 12 months from entry into RECLAIM.  
*[Rule 2012 - Requirements for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen Emissions]*
- A99.4 The 10.29 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]*
- A195.1 The 2.5 PPMV NOX emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.  
*[Rule 2005, Rule 1703 - PSD]*
- A195.2 The 6.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.  
*[Rule 1703 - PSD]*
- A195.3 The 2.0 ppmv VOC emission limit(s) is averaged over 60 minutes at 15 percent O2, dry.  
*[Rule 1303(a) - BACT, Rule 1303(b)(1) - Modeling, Rule 1303(b)(2) - Offsets]*
- 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]*



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C1.1 The operator shall limit the fuel usage to no more than 393 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.

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

[Rule 1303(b)(2) - Offset]

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]

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	Approved District method	District approved averaging time	Fuel Sample
VOC emissions	Approved District method	1 hour	Outlet of the SCR
PM10 emissions	Approved District method	District approved averaging time	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

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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.

[Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Rule 2005, Rule 1703 - PSD]

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.

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

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

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	Approved District method	District approved averaging time	Fuel Sample
VOC emissions	Approved District method	1 hour	Outlet of the SCR
PM10 emissions	Approved District method	District approved averaging time	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

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proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at 100 percent load.

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

For natural gas fired turbines only, VOC compliance shall be demonstrated as follows: a) Stack gas samples are extracted into Summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of canisters 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.

[Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset]

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	District Method 100.1	1 hour	Outlet of the SCR
PM10	Approved District method	District approved averaging time	Outlet of the SCR

The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial start-up. District shall be notified of the date and time of the test at least 10 days prior to the test.

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 measurement is within the accuracy of the devices used for electrical power measurement, the result will be acceptable.

The lb/MW-hr emission rate of each electrical generating unit shall be determined by dividing (a) the lb/hr emission rate measured at 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 output of each electrical generating unit shall be determined by making the following adjustments to the measured gross electrical output:

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- 1) Apply the manufacturer's standard correction factors to calculate gross electrical output at ISO conditions.
- 2) Apply the GE site-specific LMS100 power degradation curve to adjust measured gross electrical output, as corrected to ISO conditions, to undegraded electrical generating unit conditions as defined by the turbine manufacturer. The maximum power degradation adjustment shall not exceed 1 percent.

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

The test protocol shall include the proposed operating conditions of the electrical generating unit during the test, the correction and degradation factors and documentation of their validity, 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.  
[Rule 1309.1]

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 =  $K C_{co} F_d [20.9 / (20.9\% - \%O_2 d)] [(Q_g * HHV) / 106]$ , where

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

$C_{co}$  = Average of four consecutive 15 min. ave. CO concentration, ppm

$F_d$  = 8710 dscf/MMBTU natural gas

$\%O_2 d$  = Hourly ave. % by vol.  $O_2$  dry, corresponding to  $C_{co}$

$Q_g$  = Fuel gas usage during the hour, scf/hr

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

[Rule 1703 - PSD]

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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 - PSD, Rule 2005, 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 05-AFC-3 project.  
[CEQA]

E193.3 The operator shall operate and maintain this equipment according to the following requirements:

Devices D1, D7, D13, D19, and D25 shall be fully and legally operational within three years of issuance of the Permit to Construct  
[Rule 1309.1]

E193.5 The operator shall install this equipment according to the following requirements:

PM10 emission rates from this equipment shall not exceed 0.060 lb/MW-hr

NOx emission rates from this equipment shall not exceed 0.080 lb/MW-hr

Compliance with the PM10 and NOx emission rates shall be demonstrated once over the lifetime of the project in accordance with condition D29.4  
[Rule 1309.1]

H23.1 This equipment is subject to the applicable requirements of the following rules and regulations:

CONTAMINANT	RULE	RULE/SUBPART
NOx	40CFR60 Subpart	KKKK
SOx	40CFR60 Subpart	KKKK

[40CFR60 Subpart KKKK]

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.

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To comply with this condition, the operator shall prior to the 1<sup>st</sup> compliance year hold a minimum NOx RTCs of 38,664 lbs/yr. This condition shall apply during the 1<sup>st</sup> 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 1<sup>st</sup> compliance year, hold a minimum of 30,222 lbs/yr of NOx RTC's 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 1<sup>st</sup> compliance year. This condition shall apply to each turbine individually.  
[Rule 2005]

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.

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

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

[Rule 1303(a)(1) - BACT, Rule 1303(b)(2) - Offset, Rule 2005]

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]

**(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:

$$\text{NH}_3 \text{ (ppmv)} = [a - b * c / 1\text{EE}+06] * 1\text{EE}+06 / b$$

where,

a = NH3 injection rate (lbs/hr)/17(lb/lb-mol)

b = dry exhaust gas flow rate (scf/hr)/385.3 scf/lb-mol)

c = change in measured 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.

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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, Rule 2012]

- 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.

[Rule 1303(a)(1) - BACT, Rule 2005, Rule 1703 - PSD]

- 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.

[Rule 1303(a)(1) - BACT, Rule 2005, Rule 1703 - PSD]

- 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.

[Rule 1303(a)(1) - BACT, Rule 2005, Rule 1703 - PSD]

- 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 1703 - PSD]

- 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 1703 - PSD]

- 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 05-AFC-3 project.

[CEQA]

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**(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 05-AFC-3 project.  
[CEQA]

**(Emergency Fire Pump)**

- C1.3 The operator shall limit the operating time to no more than 199.99 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]
- 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]
- D12.6 The operator shall install and maintain a(n) non-resettable totalizing fuel meter to accurately indicate the fuel usage of the engine.  
[Rule 1304, Rule 2012]
- B61.1 The operator shall only use diesel fuel containing the following specified compounds:
- | COMPOUND | Range                 | PPM BY WEIGHT |
|----------|-----------------------|---------------|
| Sulfur   | Less than or equal to | 15            |
- [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 05-AFC-3 project.  
[CEQA]
- E193.2 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 drive a fire pump.
  3. This equipment shall only be operated for maintenance and testing, not to exceed 50 hours in any one year.
  4. This equipment shall not be operated under a Demand Response Program (DRP).
  5. An engine operating log shall be kept in writing, listing the date of operation, the elapsed time, in hours, and the reason for operation. The log shall be maintained for a minimum of 5 years and made available to AQMD personnel upon request.
- [Rule 1110.2]



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I296.2 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 2,097 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 1<sup>st</sup> compliance year.

[Rule 2005]

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

Date of operation, the elapsed time, in hours, and the reason for operation

[Rule 1110.2]

**(Section D; Device E32)**

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

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

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

[Rule 3004-Periodic Monitoring]

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VALLE DEL SOL ENERGY PROJECT  
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NO<sub>x</sub> = 25 ppm @ 15% O<sub>2</sub>, CO = 100 ppm @ 15% O<sub>2</sub>, VOC = 4 ppm, PM<sub>10</sub> = 0.0066 lbs/MMBTU; SO<sub>x</sub> = 0.25 grains/100 scf

[illegible]

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[illegible][illegible]

**Appendix A - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA Hourly Emissions - Normal Operations**

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**PM10 Emissions**

Operating Condition Number	Heat Input (MMBTU/hr)	Emission Factor <sup>1</sup> (lb/MMBTU)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	891.7	0.0067	6.00	6.00
103	870.8	0.0067	5.86	5.86
106	823.2	0.0067	5.54	5.54
109	824.5	0.0067	5.55	5.55
112	824.6	0.0067	5.55	5.55
<b>Average</b>	<b>846.9</b>		<b>5.70</b>	<b>5.70</b>

**SOx Emissions**

Operating Condition Number	Heat Input (MMBTU/hr)	Emission Factor <sup>2</sup> (lb/MMBTU)	Emission Rate Uncontrolled (lb/hr)	Emission Rate Controlled (lb/hr)
100	891.7	0.00068	0.606	0.606
103	870.8	0.00068	0.592	0.592
106	823.2	0.00068	0.560	0.560
109	824.5	0.00068	0.561	0.561
112	824.6	0.00068	0.561	0.561
<b>Average</b>	<b>846.9</b>		<b>0.576</b>	<b>0.576</b>

<sup>1</sup> Based on manufacture guarantee of 6 lb/hr at 891.7 MMBTU/hr = 0.00673 lb/MMBTU

<sup>2</sup> Based on a maximum sulfur content of 0.25 grains/100 scf fuel; 1,050 BTU/scf natural gas; and 7,000 grains/lb, and 1 mole S for 2 moles SO<sub>2</sub>

**Appendix A - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA Hourly Emissions - Normal Operations**

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**NH3 Emissions**

Operating Condition Number	Heat Input (MMBTU/hr)	Pollutant Conc. Controlled (ppmvd)	Molecular Weight (lb/lb-mol)	Specific Molar Volume (dscf/lb-mol)	Dry Fuel Factor (dscf/MMBTU)	Emission Factor (lb/MMBTU)	Emission Rate (lb/hr)
100	891.7	5	17	385.3	8,710	0.0068	6.07
103	870.8	5	17	385.3	8,710	0.0068	5.93
106	823.2	5	17	385.3	8,710	0.0068	5.60
109	824.5	5	17	385.3	8,710	0.0068	5.61
112	824.6	5	17	385.3	8,710	0.0068	5.61
<b>Average</b>	<b>846.9</b>						<b>5.76</b>

**Appendix A - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA Hourly Emissions - Start-Up / Shutdown Operations**

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**Assumptions**

Start-up / shutdown events will not significantly affect SOx and PM10 emissions. Emission rates are assumed to be equal to normal operations  
 One start-up per hour

**Start-Up Emissions**

Pollutant	Start-Up Emission Factor (lb/event) <sup>1</sup>	Normal Operations (lb/hr) <sup>2</sup>	Normal Operations (lb/hr) <sup>3</sup>	Start-Up Emissions (lbs/hr)
CO	15.4	12.00	5.00	20.40
NOx	7.0	8.21	3.42	10.42
VOC	2.1	1.71	0.71	2.81
PM10	N/A	N/A	N/A	6.00
SOx	N/A	N/A	N/A	0.606

<sup>1</sup> A start-up event is defined as the first 35 minutes of start-up, per GE specs

<sup>2</sup> The emission rates in this column are assumed to occur for 1 full hour

<sup>3</sup> The emission rates in this column are prorated for the remaining 25 minutes of start-up by multiplying by 25/60

**Shutdown Emissions**

Pollutant	Shutdown Emission Factor (lb/event) <sup>4</sup>	Normal Operations (lb/hr) <sup>5</sup>	Normal Operations (lb/hr) <sup>6</sup>	Shutdown Emissions (lb/hr)
CO	18.2	12.00	9.80	28.00
NOx	4.3	8.21	6.70	11.00
VOC	1.6	1.71	1.40	3.00
PM10	N/A	6.00	N/A	6.00
SOx	N/A	0.606	N/A	0.606

<sup>4</sup> Emission rates in this column occur during the first 11 minutes of shutdown, per GE specs

<sup>5</sup> Emission rates in this column are assumed to occur for one full hour

<sup>6</sup> Emission rates in this column are pro-rated for the remaining 49 minutes of shutdown by multiplying by 49/60

**Appendix B - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA Monthly Emissions - Commissioning Year**

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Operating Condition 100	Hours per Month	CO (lbs/hr)	NOx (lbs/hr)	VOC (lbs/hr)	PM10 (lbs/hr)	SOx (lbs/hr)	CO (lbs/month)	NOX (lbs/month)	VOC (lbs/month)	PM10 (lbs/month)	SOx (lbs/month)
Unit 1 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 1 Commissioning <sup>1</sup>	15	72.60	71.21	2.81	4.01	0.34	1,089	1,068	42	60	5
Unit 1 Normal Operation	368	12.00	8.21	2.28	6.00	0.61	4,416	3,021	839	2,208	223
Unit 1 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 1 Totals</b>	<b>463</b>						<b>7,441</b>	<b>4,946</b>	<b>1,114</b>	<b>2,748</b>	<b>277</b>
Unit 2 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 2 Commissioning <sup>1</sup>	15	72.60	71.21	2.81	4.01	0.34	1,089	1,068	42	60	5
Unit 2 Normal Operation	368	12.00	8.21	2.28	6.00	0.61	4,416	3,021	839	2,208	223
Unit 2 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 2 Totals</b>	<b>463</b>						<b>7,441</b>	<b>4,946</b>	<b>1,114</b>	<b>2,748</b>	<b>277</b>
Unit 3 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 3 Commissioning <sup>1</sup>	15	72.60	71.21	2.81	4.01	0.34	1,089	1,068	42	60	5
Unit 3 Normal Operation	368	12.00	8.21	2.28	6.00	0.61	4,416	3,021	839	2,208	223
Unit 3 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 3 Totals</b>	<b>463</b>						<b>7,441</b>	<b>4,946</b>	<b>1,114</b>	<b>2,748</b>	<b>277</b>
Unit 4 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 4 Commissioning <sup>1</sup>	15	72.60	71.21	2.81	4.01	0.34	1,089	1,068	42	60	5
Unit 4 Normal Operation	368	12.00	8.21	2.28	6.00	0.61	4,416	3,021	839	2,208	223
Unit 4 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 4 Totals</b>	<b>463</b>						<b>7,441</b>	<b>4,946</b>	<b>1,114</b>	<b>2,748</b>	<b>277</b>
Unit 5 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 5 Commissioning <sup>1</sup>	15	72.60	71.21	2.81	4.01	0.34	1,089	1,068	42	60	5
Unit 5 Normal Operation	368	12.00	8.21	2.28	6.00	0.61	4,416	3,021	839	2,208	223
Unit 5 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 5 Totals</b>	<b>463</b>						<b>7,441</b>	<b>4,946</b>	<b>1,114</b>	<b>2,748</b>	<b>277</b>
<b>Total Monthly Emissions (lb/month)</b>							<b>37,205</b>	<b>24,731</b>	<b>5,568</b>	<b>13,741</b>	<b>1,383</b>

<sup>1</sup>From Table 12-Proposed Commissioning Schedule in analysis; totals divided by 5 turbines and divided by 134 hours



**Appendix B - VALLE DEL SOL ENERGY, LLC**  
**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	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 1 Normal Operations	383	12.00	8.21	2.28	6.00	0.61	4,596	3,144	873	2,298	232
Unit 1 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 1 Totals</b>	<b>463</b>						<b>6,532</b>	<b>4,001</b>	<b>1,106</b>	<b>2,778</b>	<b>281</b>
Unit 2 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 2 Normal Operations	383	12.00	8.21	2.28	6.00	0.61	4,596	3,144	873	2,298	232
Unit 2 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 2 Totals</b>	<b>463</b>						<b>6,532</b>	<b>4,001</b>	<b>1,106</b>	<b>2,778</b>	<b>281</b>
Unit 3 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 3 Normal Operations	383	12.00	8.21	2.28	6.00	0.61	4,596	3,144	873	2,298	232
Unit 3 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 3 Totals</b>	<b>463</b>						<b>6,532</b>	<b>4,001</b>	<b>1,106</b>	<b>2,778</b>	<b>281</b>
Unit 4 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 4 Normal Operations	383	12.00	8.21	2.28	6.00	0.61	4,596	3,144	873	2,298	232
Unit 4 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 4 Totals</b>	<b>463</b>						<b>6,532</b>	<b>4,001</b>	<b>1,106</b>	<b>2,778</b>	<b>281</b>
Unit 5 Start-Up	40	20.40	10.42	2.81	6.00	0.61	816	417	112	240	24
Unit 5 Normal Operations	383	12.00	8.21	2.28	6.00	0.61	4,596	3,144	873	2,298	232
Unit 5 Shutdown	40	28.00	11.00	3.00	6.00	0.61	1,120	440	120	240	24
<b>Unit 5 Totals</b>	<b>463</b>						<b>6,532</b>	<b>4,001</b>	<b>1,106</b>	<b>2,778</b>	<b>281</b>
<b>Total Monthly Emissions (lb/month)</b>							<b>32,660</b>	<b>20,006</b>	<b>5,528</b>	<b>13,890</b>	<b>1,403</b>

**Appendix B - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA - 30 Day Averages<sup>1,2</sup> - Commissioning Year**

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/8/06	

Operating Condition 100	Hours per Month	CO (lb/hr)	PM10 (lb/hr)	VOC (lb/hr)	SOx (lb/hr)	CO (lb/month)	PM10 (lb/month)	VOC (lb/month)	SOx (lb/month)
Unit 1 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 1 Commissioning	15	72.60	4.01	2.81	0.338	1,089	60	42	5
Unit 1 Normal Operations	368	12.00	6.00	2.28	0.606	4,416	2,208	839	223
Unit 1 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 2 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 2 Commissioning	15	72.60	4.01	2.81	0.338	1,089	60	42	5
Unit 2 Normal Operations	368	12.00	6.00	2.28	0.606	4,416	2,208	839	223
Unit 2 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 3 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 3 Commissioning	15	72.60	4.01	2.81	0.338	1,089	60	42	5
Unit 3 Normal Operations	368	12.00	6.00	2.28	0.606	4,416	2,208	839	223
Unit 3 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 4 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 4 Commissioning	15	72.60	4.01	2.81	0.338	1,089	60	42	5
Unit 4 Normal Operations	368	12.00	6.00	2.28	0.606	4,416	2,208	839	223
Unit 4 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 5 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 5 Commissioning	15	72.60	4.01	2.81	0.338	1,089	60	42	5
Unit 5 Normal Operations	368	12.00	6.00	2.28	0.606	4,416	2,208	839	223
Unit 5 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
						<b>lb/month</b>	<b>lb/month</b>	<b>lb/month</b>	<b>lb/month</b>
Total Monthly Emissions (lb/month)						37,205	13,741	5,568	1,383
						<b>lb/day</b>	<b>lb/day</b>	<b>lb/day</b>	<b>lb/day</b>
30-Day Average (lb/day)						1,240	458	186	46

<sup>1</sup> SVEP will be in NOx RECLAIM. As such NOx will be offset with RTCs, and therefore no entries for NOx are included in the table below

**Appendix B - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA - 30 Day Averages<sup>1,2</sup> - Non-Commissioning Year**

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/8/06	

Operating Condition 100	Hours per Month	CO (lb/hr)	PM10 (lb/hr)	VOC (lb/hr)	SOx (lb/hr)	CO (lb/month)	PM10 (lb/month)	VOC (lb/month)	SOx (lb/month)
Unit 1 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 1 Commissioning	0	72.60	4.01	2.81	0.606	0	0	0	0
Unit 1 Normal Operations	383	12.00	6.00	2.28	0.606	4,596	2,298	873	232
Unit 1 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 2 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 2 Commissioning	0	72.60	4.01	2.81	0.606	0	0	0	0
Unit 2 Normal Operations	383	12.00	6.00	2.28	0.606	4,596	2,298	873	232
Unit 2 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 3 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 3 Commissioning	0	72.60	4.01	2.81	0.606	0	0	0	0
Unit 3 Normal Operations	383	12.00	6.00	2.28	0.606	4,596	2,298	873	232
Unit 3 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 4 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 4 Commissioning	0	72.60	4.01	2.81	0.606	0	0	0	0
Unit 4 Normal Operations	383	12.00	6.00	2.28	0.606	4,596	2,298	873	232
Unit 4 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
Unit 5 Startup	40	20.40	6.00	2.81	0.606	816	240	112	24
Unit 5 Commissioning	0	72.60	4.01	2.81	0.606	0	0	0	0
Unit 5 Normal Operations	383	12.00	6.00	2.28	0.606	4,596	2,298	873	232
Unit 5 Shutdown	40	28.00	6.00	3.00	0.606	1,120	240	120	24
						<b>lb/month</b>	<b>lb/month</b>	<b>lb/month</b>	<b>lb/month</b>
Total Monthly Emissions (lb/month)						32,660	13,890	5,528	1,403
						<b>lb/day</b>	<b>lb/day</b>	<b>lb/day</b>	<b>lb/day</b>
30-Day Average (lb/day)						1,089	463	184	45

<sup>1</sup> SVEP will be in NOx RECLAIM. As such NOx will be offset with RTCs, and therefore no entries for NOx are included in the table below

**Appendix C - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA Annual Emissions - Commissioning Year**

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/8/06	

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	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 1 Commissioning <sup>1</sup>	134	72.60	71.21	2.81	4.01	0.34	9,728	9,542	377	537	45
Unit 1 Normal Operation	2,634	12.00	8.21	2.28	6.00	0.61	31,608	21,625	6,006	15,804	1,596
Unit 1 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 1 Totals</b>	<b>3,468</b>						<b>58,276</b>	<b>38,664</b>	<b>8,416</b>	<b>20,541</b>	<b>2,066</b>
Unit 2 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 2 Commissioning <sup>1</sup>	134	72.60	71.21	2.81	4.01	0.34	9,728	9,542	377	537	45
Unit 2 Normal Operation	2,634	12.00	8.21	2.28	6.00	0.61	31,608	21,625	6,006	15,804	1,596
Unit 2 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 2 Totals</b>	<b>3,468</b>						<b>58,276</b>	<b>38,664</b>	<b>8,416</b>	<b>20,541</b>	<b>2,066</b>
Unit 3 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 3 Commissioning <sup>1</sup>	134	72.60	71.21	2.81	4.01	0.34	9,728	9,542	377	537	45
Unit 3 Normal Operation	2,634	12.00	8.21	2.28	6.00	0.61	31,608	21,625	6,006	15,804	1,596
Unit 3 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 3 Totals</b>	<b>3,468</b>						<b>58,276</b>	<b>38,664</b>	<b>8,416</b>	<b>20,541</b>	<b>2,066</b>
Unit 4 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 4 Commissioning <sup>1</sup>	134	72.60	71.21	2.81	4.01	0.34	9,728	9,542	377	537	45
Unit 4 Normal Operation	2,634	12.00	8.21	2.28	6.00	0.61	31,608	21,625	6,006	15,804	1,596
Unit 4 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 4 Totals</b>	<b>3,468</b>						<b>58,276</b>	<b>38,664</b>	<b>8,416</b>	<b>20,541</b>	<b>2,066</b>
Unit 5 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 5 Commissioning <sup>1</sup>	134	72.60	71.21	2.81	4.01	0.34	9,728	9,542	377	537	45
Unit 5 Normal Operation	2,634	12.00	8.21	2.28	6.00	0.61	31,608	21,625	6,006	15,804	1,596
Unit 5 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 5 Totals</b>	<b>3,468</b>						<b>58,276</b>	<b>38,664</b>	<b>8,416</b>	<b>20,541</b>	<b>2,066</b>
<b>Total Annual Emissions (lb/year)</b>							<b>291,382</b>	<b>193,321</b>	<b>42,078</b>	<b>102,707</b>	<b>10,328</b>

<sup>1</sup>From Table 12-Proposed Commissioning Schedule in analysis; totals divided by 5 turbines

**Appendix C - VALLE DEL SOL ENERGY, LLC**  
**LMS100 PA Annual Emissions - Non-Commissioning Year**

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/8/06	

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	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 1 Normal Operations	2768	12.00	8.21	2.28	6.00	0.61	33,216	22,725	6,311	16,608	1,677
Unit 1 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 1 Totals</b>	<b>3,468</b>						<b>50,156</b>	<b>30,222</b>	<b>8,345</b>	<b>20,808</b>	<b>2,102</b>
Unit 2 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 2 Normal Operations	2768	12.00	8.21	2.28	6.00	0.61	33,216	22,725	6,311	16,608	1,677
Unit 2 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 2 Totals</b>	<b>3,468</b>						<b>50,156</b>	<b>30,222</b>	<b>8,345</b>	<b>20,808</b>	<b>2,102</b>
Unit 3 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 3 Normal Operations	2768	12.00	8.21	2.28	6.00	0.61	33,216	22,725	6,311	16,608	1,677
Unit 3 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 3 Totals</b>	<b>3,468</b>						<b>50,156</b>	<b>30,222</b>	<b>8,345</b>	<b>20,808</b>	<b>2,102</b>
Unit 4 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 4 Normal Operations	2768	12.00	8.21	2.28	6.00	0.61	33,216	22,725	6,311	16,608	1,677
Unit 4 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 4 Totals</b>	<b>3,468</b>						<b>50,156</b>	<b>30,222</b>	<b>8,345</b>	<b>20,808</b>	<b>2,102</b>
Unit 5 Start-Up	350	20.40	10.42	2.81	6.00	0.61	7,140	3,647	984	2,100	212
Unit 5 Normal Operations	2768	12.00	8.21	2.28	6.00	0.61	33,216	22,725	6,311	16,608	1,677
Unit 5 Shutdown	350	28.00	11.00	3.00	6.00	0.61	9,800	3,850	1,050	2,100	212
<b>Unit 5 Totals</b>	<b>3,468</b>						<b>50,156</b>	<b>30,222</b>	<b>8,345</b>	<b>20,808</b>	<b>2,102</b>
<b>Total Annual Emissions (lb/year)</b>							<b>250,780</b>	<b>151,111</b>	<b>41,723</b>	<b>104,040</b>	<b>10,508</b>

# **Appendix D - VALLE DEL SOL ENERGY, LLC** **Emergency Fire Pump Emissions**

PAGES	PAGE	A/N 450943
BY KLC	DATE 2/8/06	

## **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: 340 bhp at 2,100 rpm  
 Engine Design: Lean Burn  
 Maximum Rated Fuel Consumption: 16.0 gph  
 No. of Cylinders: 6

## **Assumptions:**

Maximum hours of operation: 199 hours/year  
 Steady speed, steady load operations

Pollutant	Emission Factor <sup>6</sup> (lb/BHP-hr)	Emission Factor <sup>7</sup> (gm/BHP-hr)	Maximum Rated Power (BHP)	Conversion Factor (gm/lb)	Emission Rate (lb/hr)	Annual Emission Rate <sup>8</sup> (lb/year)	Monthly Emission Rate <sup>9</sup> (lb/month)	30 Day Average <sup>10</sup> (lb/day)
NOx	0.031		340	454	10.540	2097.46	174.79	6
CO		0.45	340	454	0.337	67.06	5.59	0
VOC		0.15	340	454	0.112	22.35	1.86	0
PM10		0.09	340	454	0.067	13.41	1.12	0
SOx		0.0055	340	454	0.0041	0.82	0.07	0

<sup>6</sup> NOx is based on the factor found in Table 3.3-1 of AP-42; NOx = 0.031 lb/bhp-hr.

<sup>7</sup> Provided by the engine manufacturer (Clarke)

<sup>8</sup> Emission rate (lb/hr) multiplied by 199

<sup>9</sup> Emission rate (lb/year) divided by 12

<sup>10</sup> Emission rate (lb/month) divided by 30

## Appendix E - VALLE DEL SOL ENERGY, LLC

### Cooling Tower Emissions

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/8/06	

#### Data:

Manufacturer: Marley

No. of cells: 5

Drift Loss: 0.0005%

Maximum TDS in Circulating Water: 5,000 mg/l

Circulating Water Rate: 35,500 gpm

Fan Exit Height : 39.09 ft AGL

Exhaust Fan Diameter: 22 ft

PM10 Emissions (lb/hr) = (Maximum TDS)\*[(3.785\*60)/(454\*1000)]\*(Circulating Water Rate)\*(Drift Loss)

Water Source: Reclaimed/Recycled Water

Tower Dimensions: Deck Height: 27.09 ft AGL; Deck Length: 210.7 ft; Deck Width: 36.67 ft

#### Assumptions:

Cooling tower emissions based on 3,468 hr/yr operation

100% of TDS in solution is converted to PM10 at a drift loss of 0.0005%

Pollutant	Maximum TDS in circulating water (mg/l)	Circulating Water Rate (gpm)	Drift Loss (percent)	PM10 Emissions (lb/hr)	PM10 Emissions (lb/year)	PM10 Emissions <sup>11</sup> (lb/month)	30 Day Average <sup>12</sup> (lb/day)
PM10	5,000	35,500	0.00050	0.4439	1,539.60	128.30	4

<sup>11</sup> PM10 emissions (lb/year) divided by 12

<sup>12</sup> PM10 emissions (lb/month) divided by 30

**Appendix F - VALLE DEL SOL ENERGY, LLC**  
**NOx RTC Calculations**

		A/N 450931
BY KLC	DATE 2/8/06	

Data:

Operating Schedule (1st Year):

Startups = 350 hours/year

Shutdowns = 350 hours/year

Normal Operations = 2,634 hours/year

Commissioning Period = 134 hours

Operating Condition 100	Hours per Year	NOx (lb/hr)	NOx (lb/year) per device	NOx (lb/year) cumulative
<b>CTGs</b>				
Startup	350	10.42	3,647.00	18,235.00
Shutdown	350	11.00	3,850.00	19,250.00
Normal Operation	2,634	8.21	21,625.14	108,125.70
Commissioning	134	71.21	9,542.14	47,710.70
CTG Totals	3,468		38,664.28	193,321.40
Emergency Fire Pump	199	10.54	2,097.46	2,097.46
Total 1st Year Emissions (lb/year)			40,761.74	195,418.86
Offset Ratio			1.00	1.00
1st year RTCs (lb/year)			40,761.74	195,418.86
2nd year RTCs (lb/year)			32,319.74	153,208.86



## Appendix G - VALLE DEL SOL ENERGY, LLC

### Emission Factors<sup>1</sup>

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/19/06	

Total Annual Hours of Operation = 3,468 hours

Total Hours of Commissioning = 134 hours

Total Hours During Non-Commissioning = 3,334 hours

### Fuel Consumption During the Commissioning Period

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	20	750	1,050	0.7143	14.2857	14.2857
Phase 2	14	900	1,050	0.8571	12.0000	26.2857
Phase 3	24	2500	1,050	2.3810	57.1429	83.4286
Phase 4	12	4,503	1,050	4.2886	51.4629	134.8914
Phase 5	24	3,500	1,050	3.3333	80.0000	214.8914
Phase 6	40	4,503	1,050	4.2886	171.5429	386.4343

### Commissioning Period Emission Factor

Commissioning Schedule	Fuel Consumption per Phase (MMscf)	NOx Emissions per Phase (lb)	CO Emissions per Phase (lb)	NOx EF lb/mmscf	CO EF lb/mmscf
Phase 1	14.2857	9,100	5,500		
Phase 2	12.0000	6,930	4,200		
Phase 3	57.1429	21,000	20,160		
Phase 4	51.4629	4,860	15,300		
Phase 5	80.0000	4,200	1,080		
Phase 6	171.5429	1,620	2,400		
TOTALS	386.4343	47,710	48,640	123.46	125.87

<sup>1</sup> The heat input values, fuel consumptions, and emissions during each phase of commissioning are for all five CTGs

## Appendix G - VALLE DEL SOL ENERGY, LLC

### Emission Factors<sup>2</sup>

PAGES	PAGE	A/N 450931
BY KLC	DATE 2/19/06	

Annual fuel consumption (AFC) during non-commissioning is calculated as follows:

$$\text{AFC} = (5 \text{ CTGs})(891.7 \text{ MMBTU/hr})(1 \text{ scf}/1,050 \text{ BTU})(3,334 \text{ hr/yr}) = 14,156.7 \text{ MMscf/yr}$$

#### 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/mmcsf	CO EF lb/mmcsf
145,610	242,740	10,508	14,156.7	10.29	17.15

<sup>2</sup> The total NOx, CO and SOx emissions as well as the AFC are for all 5 CTGs

#### Emission Factor Determination for Condition A63.1 & A63.2

PM10 EF lb/MMBTU	SOx EF gr/100 scf	VOC EF lb/MMBTU	Grains/lb	Heat Content BTU/scf	PM10 lb/mmcsf	SOx lb/mmcsf	VOC lb/mmcsf
0.0066	0.250	0.0019	7,000	1,050	6.93	0.7143	1.9950