

TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)
for Permit Issuance

TECHNICAL INFORMATION PRESENTED IN REVIEW OF AN
APPLICATION FOR A PART 70 OPERATING PERMIT RENEWAL

SUBMITTED BY

NEVADA POWER COMPANY, dba, NV Energy

for

Sun Peak Station

Part 70 Operating Permit Number: 423

SIC Code - 4911: Electric Utility Services

NAICS Code – 221112: Fossil Fuel Electric Power Generation



Clark County
Department of Air Quality
Permitting Section

February 12, 2015

EXECUTIVE SUMMARY

NV Energy's Sun Peak Generating Station (SPGS) is an electrical power generating station located at 6360 Vegas Valley Drive in Las Vegas, Nevada. The legal description of the source location is as follows: portions of Township 21S, Range 62E, Section 10 in Las Vegas Valley, Clark County, State of Nevada. The source is situated in hydrographic area 212 (Las Vegas Valley), which is currently designated as attainment for all regulated pollutants.

SPGS is a major Title V source for NO_x and a minor source for PM₁₀, PM_{2.5}, SO₂, CO, VOC, and HAPs pollutants. The generating station operates three natural gas-fired turbines (84.5 MW simple cycle units), one 81 hp diesel-powered emergency generator, one, 5,064,064 gallon aboveground diesel storage tank. This Part 70 Operating Permit (OP) is issued based on the Title V Renewal application submitted on January 28, 2015 and supplemental information received on February 9, 2015. SPGS is also a source of GHG pollutants.

The following table summarizes the source potential to emit, for information only, for each regulated air pollutant from all emission units for which an Authority to Construct has been issued:

Pollutant	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC	HAP	GHG ²
Tons/year	11.00	11.00	249.42	33.17	49.39	7.26	3.71	176,237 ²
Major Source Thresholds (Title V)	100	100	100	100	100	100	10/25 ¹	-
Major Stationary Source Thresholds	250	250	250	250	250	250	10/25 ¹	-

¹Ten tons for any individual HAP or 25 tons for combination of all HAPs.

²Metric tons per year, CO_{2e}

Clark County Department of Air Quality (Air Quality) has received delegated authority from the United States Environmental Protection Agency to implement the requirement of the Part 70 OP. The initial Part 70 OP was issued on July 21, 1997, with renewals issued on February 25, 2005 and October 6, 2010, a minor revision issued on May 23, 2014, and an administrative revision issued on January 6, 2015.. Based on the information submitted by the applicant and supplemental information provided to the application, and a technical review performed by the Air Quality staff, the draft Part 70 OP renewal to SPGS is proposed.

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I. ACRONYMS

Table I-1: List of Acronyms

Acronym	Term
Air Quality	Clark County Department of Air Quality
AQR	Clark County Air Quality Regulations
AST	Aboveground Storage Tank
ASTM	American Society for Testing Materials
ATC	Authority to Construct
CAAA	Clean Air Act, as amended, or Clean Air Act Amendments
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emissions Monitoring System
CFC	Chlorofluorocarbon
CFR	United States Code of Federal Regulations
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
dscf	Dry Standard Cubic Feet
EPA	United States Environmental Protection Agency
EU	Emission Unit
FR	Federal Register
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutant
HCFC	Hydrochlorofluorocarbon
HHV	Higher Heating Value
hp	Horse Power
kg	Kilogram
LHV	Lower Heating Value
MEQ	Megawatt Equivalent
MMBtu	Millions of British Thermal Units
MW	Megawatt
NAC	Nevada Administrative Code
NAICS	North American Industry Classification System
NED	National Elevation Dataset
NO _x	Nitrogen Oxides
NRS	Nevada Revised Statutes
NSPS	New Source Performance Standards
NSR	New Source Review
OP	Operating Permit
PM	Particulate Matter
PM _{2.5}	Particulate Matter less than 2.5 microns
PM ₁₀	Particulate Matter less than 10 microns
ppm	Parts per Million
ppmvd	Parts per Million, Volumetric Dry
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
QA	Quality Assurance
RATA	Relative Accuracy Test Audit
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO _x	Sulfur Oxides
SPGS	NV Energy's Sun Peak Generating Station
U.S.C.	United States Code
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

II. SOURCE INFORMATION

A. General

Permittee	Nevada Power Company, dba, NV Energy – Sun Peak Generating Station
Mailing Address	PO Box 98910, MS #25, Las Vegas, Nevada 89151-0001
Responsible Official	Kevin Geraghty
Phone Number	(702) 402-5662
Fax Number	(702) 402-0835
Contacts	Kim Williams
Phone Number	(702) 402-2184
Fax Number	(702) 402-0835
Source Location	6360 Vegas Valley Drive, Las Vegas, Nevada 89146
Hydrographic Area	212
Township, Range, Section	T21S, R62E, S10
SIC Code	4911 – Electric Services
NAICS Code	221112 – Fossil Fuel Electric Power Generation

B. Description of Process

SPGS is a natural gas-fired electrical power generating station that falls under SIC Code 4911: Electric Services and NAICS Code 221112: Fossil Fuel Electric Power Generation. SPGS is a major source for NO_x and a minor source for PM₁₀, PM_{2.5}, SO₂, CO, VOC, and HAPs pollutants. SPGS is a source of GHG pollutants.

Turbines

The emission units covered by this Part 70 OP are listed in Table III-B-1. Turbines (EU: A01, A02, and A03) are simple cycle combustion turbines, combusting natural gas as the primary fuel and #2 diesel as a backup fuel. CEMS for NO_x and CO are installed on all the turbines.

Diesel Engines

The source operates one 81 hp emergency generator (EU: B01).

Tanks

The source operates one 120,000 barrel diesel tank (EU:T01).

C. Permitting History

There was no significant revision issued to the source after the previous renewal of the OP. however, permit revisions occurred during the current permit term. The following represents permitting activities during the term of the current permit:

Table III-C-1: Changes Made During the Current Permit Period

Issue Date	Description	Activity
05/23/2014	Administrative Revision (This action came in originally as a minor revision and a reduction in the reporting frequency from quarterly to semi-annual would be considered a significant revision per AQR 12.5.2.14(a)(1)(B). Therefore, semi-annual reporting cannot be added through a minor permitting action and would be processed in the next renewal.	Deleted a second reporting requirement in section G; removed 40 CFR Part 63, Subpart WWWW requirements; changed "DAQEM" to "Air Quality"; deleted Condition III-E-4 as Condition II-F-4 contains the Control Officer's right to require additional reports and reporting; deleted Condition III-F-4 as Condition II-D-6 contains the source's requirements during an upset, breakdown, malfunction, or emergency.
01/06/2015	Administrative Revision	Name change to Nevada Power

D. Current Permitting Action

On January 28, 2015, the source submitted an application to renew their Part 70 OP which is due to expire on October 5, 2015. The application requested the following (shown in italics, with Air Quality response where needed with no italics):

- *Addition of SPGS becoming subject to 40 CFR Part 75 (Acid Rain) when it was purchased by NV Energy.*
- *Decrease the combustion turbine operating hours for the natural gas scenario to 3,491 from 3,495 and #2 diesel scenario to 2,199 from 2,202.*

With the addition Source ID 17244 and the 81 hp emergency generator, this application reduced the previous limits to remain below PSD. Air Quality questioned the previous limit of 249.9, cue to the fact if rounded it was 250 and requested to source to further reduce the limits to be below PSD when rounding.

- *Add the 81 hp emergency generator and 120,000 barrel diesel tank permitted under Source ID 17244 to Source ID 423 as part of the two sources being consolidated. This generator will incorporate 40 CFR Part 63, Subpart ZZZZ and take an operational limit on 250 hours. The tank is taking a throughput limit of 50,400,000 gallons per year.*

NV Energy owns this facility which is contiguous to with Sun Peak Generating Station that was acquired by Nevada Power on December 20, 2014. These facilities share the same SIC code and are now under common control. Therefore, Source ID 17244 will be incorporated in Source ID 423.

- *Move the three oil lube vents emission units table to the insignificant activities list.*

These oil tubes meet the definition of insignificant; therefore will be move to reflect insignificant activities in this permitting action.

- *Visible emissions observation requirements reduction from quarterly to annually. These requirements were not changed as requested. Air Quality determined that quarterly observations are the minimum required to demonstrate compliance with AQR Section 26. In addition, this is standard practice and is consistent with other NV Energy Operating Permits.*

- *Request to revise the HAP PTE for the facility*

The source has revised the applicable HAP list and updated the values. SPGS continues to operate as an area source since no single HAP is in excess of 10 tons per year and/or combination HAPs are below 25 tons per year.

- *Request to remove the GHG PTE from the permit*

Air Quality will retain the GHG PTE in the Executive Summary for informational purposes.

On February 9, 2015, the source submitted supplemental information to the Title V renewal application received on January 28, 2015. This information included the following:

- *Revised decrease of the combustion turbine operating hours for the natural gas scenario to 3,484 from 3,491 and #2 diesel scenario to 2,184 from 2,199.*

Limit revised to reflect not being a PSD source with rounding.

- *Revise Greenhouse gas calculations.*

Air Quality requested clarification with the GHG calculations.

Although not requested on the application, the testing requirements for all of the combustion turbines when operated with natural gas only, have been removed from the permit. The reasons for this decision are as follows:

- *Turbines EUs: A01, A02, and A03) are equipped with emission control devices for NO_x and CO.*
- *Compliance with the emission limitations for the turbines equipped with CEMS units is continuously demonstrated with CEMS and annual RATA and therefore, annual performance testing for emission units equipped with CEMS for NO_x and CO is not essential. Annual RATA testing is still required.*

Greenhouse gas emission potentials are estimated and are included with this permitting action for informational purposes only.

On March 9, 2015, the source submitted supplemental information to the Title V renewal application received on January 28, 2015. This information included the following:

- *Corrected CO₂e values and HAP emissions with associated calculation sheets.*

On March 19, 2015, the source submitted supplemental information to the Title V renewal application received on January 28, 2015. This information requested that the reporting be changed to semiannual reporting from quarterly reporting.

On April 30, 2015, the source submitted supplemental information to the Title V renewal application received on January 28, 2015. This information was to clarify the HAP emissions for the facility.

On December 4, 2015 via email, NV Energy submitted additional comments to the TV Operating Permit on public notice.

- *All the comments were changed had no impact on the on any of the limitations, recordkeeping, or monitoring requirements.*

On December 16, 2015, corrected the MEQ to reflect 33.61 to 11.20 for natural gas and 21.16 to 7.05 for diesel fuel. The MEQ for natural gas and diesel fuel should have been divided by the three units instead of applied to each unit.

E. Operating Scenario

The turbines are a simple cycle combustion combusting natural gas as the primary fuel and #2 diesel as the backup. These turbines, the peaking units, are permitted to operate up to 3,484 hours per year on natural gas and 2,194 hours per year on #2 diesel.

III. EMISSIONS INFORMATION

A. Source-wide Potential to Emit

SPGS is a major source of NO_x and a minor source of PM₁₀, PM_{2.5}, CO, SO₂, VOC and HAP emissions.

Table III-A-1: Source-wide PTE (tons per year)

PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC	HAP	GHG ¹
11.00	11.00	249.42	33.17	49.39	7.26	3.71	176,237

¹Metric tons per year, CO₂e

B. Emission Units and PTE

The following tables summarize the emission units and the PTE for each emission unit.

Table III-B-1: Compilation of Emission Units

EU	Description	Rating	Make	Model #	Serial #	SCC
A01	Gas-Fired Turbine (#3); Simple Cycle; natural gas fired; MEQ = 11.20	84.5 MW	General Electric	PG7111-EA	295657	20100201
	Gas-Fired Turbine (#3); Simple Cycle; #2 diesel oil fired; MEQ = 7.05					
A02	Gas-Fired Turbine (#4); Simple Cycle; natural gas fired; MEQ = 11.20	84.5 MW	General Electric	PG7111-EA	295658	20100201
	Gas-Fired Turbine (#4); Simple Cycle; #2 diesel oil fired; MEQ = 7.05					
A03	Gas-Fired Turbine (#5); Simple Cycle; natural gas fired; MEQ = 11.20	84.5 MW	General Electric	PG7111-EA	295659	20100201
	Gas-Fired Turbine (#5); Simple Cycle; #2 diesel oil fired; MEQ = 7.05					
B01	Emergency Genset	50 kW	Taylor Power	P60DS	10039	20100102
	Diesel Engine; DOM: 1991	81 hp	Perkins	T4.236	U414484U	
T01	Diesel Tank, AST	5,064,081 gallons ¹	Chicago Bridge and Iron, Co	Horton		40100122

¹ This is equivalent to 120,000 barrels.

TABLE III-B-2: Summary of Insignificant Activities

Description
Genset Diesel Tank, AST 55 gallons
Maintenance Shop Activities (parts washers, sand blasters, etc.)
Steam Cleaning Operations
Three (3) Lube Oil Vents and Sumps

Table III-B-3: Emission Unit PTE, Including Startup and Shutdowns for Natural Gas Combustion (tons per year)

EU	PM ₁₀ /PM _{2.5}	NO _x	CO	SO ₂	VOC
A01	8.71 ¹	249.11 ¹	33.10 ¹	0.89 ¹	3.14 ¹
A02					
A03					
Total	8.71	249.11	33.10	0.89	3.41

¹ Emission limits are based on 3,484 hours per any 12-month period for all three turbine units combined.

Table III-B-4: Emission Unit PTE, Including Startup and Shutdowns for #2 Diesel Oil Combustion (tons per year)

EU	PM ₁₀ /PM _{2.5}	NO _x	CO	SO ₂	VOC
A01	10.98 ¹	249.02 ¹	20.85 ¹	49.37 ¹	4.94 ¹
A02					
A03					
Total		249.02	20.07	49.39	4.94

¹Emission limits are based on 2,194 hours per any 12-month period for all three turbine units combined.

Table III-B-5: Emission Unit PTE, Excluding Startup and Shutdowns (pounds per hour)¹

EU	Fuel	PM ₁₀	NO _x	CO	SO ₂	VOC
A01	Natural Gas	5.00	143.00	19.00	0.51	1.80
	#2 Diesel Oil	10.00	227.00	19.00	45.00	4.50
A02	Natural Gas	5.00	143.00	19.00	0.51	1.80
	#2 Diesel Oil	10.00	227.00	19.00	45.00	4.50
A03	Natural Gas	5.00	143.00	19.00	0.51	1.80
	#2 Diesel Oil	10.00	227.00	19.00	45.00	4.50

¹The exclusions for startups and shutdowns apply only to CO. No other exclusions apply to this table.

Table III-B-6: Enforceable Emission Limitations, Excluding Startup and Shutdown¹

EU	O ₂ Standard	NO _x		CO	
		Natural Gas	#2 Diesel Oil	Natural Gas	#2 Diesel Oil
A01	15%	42	65	10	10
A02	15%	42	65	10	10
A03	15%	42	65	10	10

¹On a three-hour average.

Table III-B-7: Startup and Shutdown Emissions per Turbine for Natural Gas Combustion

EU	Description	Units	PM ₁₀	NO _x	CO	SO ₂	VOC
A01, A02, A03	Startup	lbs/event	5.00	143.00	60.00	0.51	1.80
		lbs/hr	5.00	143.00	350.00	0.51	1.80
	Shutdown	lbs/event	5.00	143.00	60.00	0.51	1.80
		lbs/hr	5.00	143.00	N/A	0.51	1.80

C. Performance Testing

Air Quality has removed the every five year performance testing requirements for the burning of natural gas only for the turbines. Annual RATA testing for emission units equipped with CEMS is still in effect for this facility. This RATA must be conducted at least once every four calendar quarters. Conduct the RATA as described for the RA test procedures in the applicable performance specifications in 40 CFR Part 60 Appendix B and 40 CFR Part 75 Appendix A.

The performance testing when firing #2 diesel fuel will remain.

D. Continuous Emissions Monitoring

The purpose of CEMS is to ensure equipment and/or processes are operated so as not to exceed the permitted emission limits. CEMS is a compliance tool for both the agency and the Permittee.

For this source, CEMS measures NO_x, CO, and O₂ emissions from the exhaust stacks of turbine units 3 through 5. Annual RATA for each CEMS unit is required to ensure the monitoring system is operating properly. To demonstrate continuous, direct compliance with the emission limitations for NO_x and CO specified for each turbine, the Permittee shall calibrate, maintain, operate and certify the CEMS for each turbine in accordance with 40 CFR Part 60. In addition, the turbines are subject to the CEMS requirements of 40 CFR Part 75.

The turbines combust pipeline quality natural gas as the primary fuel and #2 diesel as backup. The NO_x emissions were controlled by water injection in the turbines.

IV. REGULATORY REVIEW

A. Local Regulatory Requirements

Air Quality has determined that the following public law, statutes and associated regulations are applicable:

1. CAAA, Authority: 42 U.S.C. § 7401, et seq.;
2. Title 40 of the CFR; including 40 CFR 70 and others;
3. NRS, Chapter 445; Sections 401 through 601;
4. Portions of the AQR included in the SIP for Clark County, Nevada. SIP requirements are federally enforceable. All requirements from ATC permits issued by Air Quality are federally enforceable because these permits were issued pursuant to SIP-included sections of the AQR; and
5. Portions of the AQR not included in the SIP. These locally applicable requirements are locally enforceable only.

B. Federally Applicable Regulations

40 CFR 60-STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES:

Subpart A - General Provisions

40 CFR Part 60.7-Notification and record keeping

Discussion: This regulation requires notification to Air Quality of modifications, opacity testing, records of malfunctions of process equipment and/or continuous monitoring device, and performance test data. These requirements are found in the Part 70 OP in Sections III-B and III-C. Air Quality requires records to be maintained for five years, a more stringent requirement than the two (2) years required by 40 CFR Part 60.7.

40 CFR Part 60.8 - Performance tests

Discussion: These requirements are found in the Part 70 OP in Section III-D. Notice of intent to test, the applicable test methods, acceptable test method operating conditions, and the requirement for three runs are outlined in this regulation. Air Quality requirements for initial performance testing is identical to 40 CFR Part 60.8. Air Quality also requires periodic performance testing on emission units based upon throughput or usage. .

40 CFR Part 60.11 - Compliance with standards and maintenance requirements

Discussion: 40 CFR Part 60, Subpart GG requires fuel monitoring and sampling to meet a standard, applicable to the turbines. 40 CFR Part 60, Subpart GG establishes NO_x and SO₂ limitations, applicable to the turbines. 40 CFR Part 60, Subpart GG requirements are in the Part 70 OP.

At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected source including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

These requirements have been included in the Part 70 OP.

40 CFR Part 60.12 - Circumvention

Discussion: This prohibition is addressed in the Part 70 OP. This is also local rule AQR Section 80.1.

40 CFR Part 60.13 - Monitoring requirements

Discussion: This section requires that CEMS meet Appendix B and Appendix F standards of operation, testing and performance criteria. Section III-C of the Part 70 OP contains the CEMS conditions and citations to Appendix B and F. In addition, the QA plan approved for the CEMS follows the requirements outlined including span time, recording time, RATA waivers and malfunctions.

Subpart GG-Standards of Performance for Stationary Gas Turbines

40 CFR Part 60.330 - Applicability and designation of affected facility

Discussion: The provisions of this subpart are applicable to the following affected facilities: All stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired. Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after October 3, 1977, is subject to the requirements of this part except as provided in paragraphs (e) and (j) of 40 CFR Part 60.332. [44 FR 52798, Sept. 10, 1979, as amended at 52 FR 42434, Nov. 5, 1987]

Units 3 through 5. All turbine units are subject to Subpart GG in its entirety.

40 CFR Part 60.332-Standard for nitrogen oxides (NO_x limits using the F formula)

Discussion: SPGS is permitted such that combustion turbine units 3 through 5 shall be limited to 833 MMBtu/hr LHV natural gas fuel rate and 846 MMBtu/hr for #2 diesel fuel.

40 CFR Part 60.333-Standard for sulfur dioxide

Discussion: The sole use of pipeline-quality natural gas with total sulfur content less than 20 grains per 100 dscf satisfies this requirement.

40 CFR Part 60.334 - Monitoring of operations

Discussion: The source installed, calibrated, maintains and operates a continuous monitoring system.

40 CFR Part 60.335 - Test methods and procedures.

Discussion: The source has passed initial performance testing. Air Quality has removed subsequent performance testing requirements. Only RATA testing is required.

40 CFR Part 63 – NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES:

Subpart A - General Provisions

40 CFR Part 63.4 – Prohibited activities and circumvention

Discussion: This prohibition is addressed in the Part 70 OP. This is also local rule AQR Section 80.1.

Subpart ZZZZ- National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR Part 63.6585 Am I subject to this subpart

Discussion: Subpart ZZZZ applies to the diesel emergency generator (EU: B01) at this source.

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

The diesel emergency generator (EU: B01) is subject to the provisions of 40 CFR Part 63, Subpart ZZZZ and shall comply with the following requirements no later than May 3, 2013:

- a. Change the oil and filter every 500 hours of operation or annually whichever comes first;

- b. Inspect air cleaner every 1,000 hours of operation or annually whichever comes first;
- c. Inspect all hoses and belts every 500 hours of operation or annually whichever comes first and replace if needed;
- d. Operate the emergency generator up to 50 hours per year for nonemergency situations, but those hours count towards the 100 hours provided for testing and maintenance. The 50 hours per year for nonemergency situations cannot be used for peak shaving or to generate income for the facility; and
- e. Operate the emergency generator with a nonresettable hour meter.

In accordance with 40 CFR Part 63, Subpart ZZZZ, the generator can only combust diesel fuel with a maximum sulfur content of 15 ppm and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume. ASTM D975 specifies, requires, and tests for all of these conditions. NRS 590.070, "Specifications of Motor Fuel Oil," and NAC 590.050, "Diesel Fuel Oils," both adopt ASTM D975 by reference and require using only diesel fuel that meets its requirements. Therefore, NV Energy is not required to monitor or keep records of the sulfur content, cetane index, or aromatic content of the fuel burned.

40 CFR Part 64 – COMPLIANCE ASSURANCE MONITORING

40 CFR Part 64.2 – Applicability

Discussion: The CAM rule is not applicable to the emergency generator (EU: B01) and the above ground diesel storage tank (EU: T01) based on the applicability statement outlined in 40 CFR 64.2(a)(2), i.e., no control devices (other than inherent process equipment) are used on these units to achieve compliance with any emission limitation or standard for a regulated air pollutant.

For Turbine Units 3 through 5, the CAM Rule is not applicable for CO, PM₁₀, SO_x, VOC, or HAP based on the applicability statement outlined in 40 CFR 64.2(a)(2), a control device is not used on this unit to achieve compliance with these pollutants. Turbine Units 3 through 5 are exempt from the CAM Rule for NO_x because the NO_x CEMS, which are operated and required by the Part 70 Operating Permit, meet the CAM 40 CFR 64.2(b)(l)(vi) exemption requirements of a continuous compliance determination method. Turbine Units 3 through 5 are also regulated by the Acid Rain program.

40 CFR Part 72-ACID RAIN PERMITS REGULATION

Subpart A – Acid Rain Program General Provisions

40 CFR Part 72.6 – Applicability

Discussion: Prior to purchase by NV Energy, the turbines were exempt from the acid rain regulation because the facility was an independent power production facility that met the requirements of the exemption in 40 CFR 72.6(b)(6). When SPGS was purchased by NV Energy, the three turbines became subject to 40 CFR Part 75. The turbines were required to become compliant with the Acid Rain Program provisions by June 18, 2015. This requirement has been met.

40 CFR Part 73 – ACID RAIN SULFUR DIOXIDE ALLOWANCE SYSTEM

Discussion: The turbines are applicable units and therefore the provisions of this regulation apply.

40 CFR Part 75 – CONTINUOUS EMISSION MONITORING

Discussion: SPGS is an affected facility subject to the Acid Rain emission limitations of 40 CFR Part 72; therefore, the source is subject to the monitoring, record keeping, and reporting requirements of this regulation.

V. COMPLIANCE

A. Compliance Certification

12.5.2.8 Requirements for compliance certification:

- (a) Regardless of the date of issuance of this Part 70 OP, the schedule for the submittal of reports to the Air Quality shall be as follows:

Table V-A-1: Reporting Schedule¹

Required Report	Applicable Period	Due Date ²
Semiannual Report for 1st half of the year.	January, February, March, April, May, June	July 30 th each year
Semiannual Report for 2nd half of the year. Any additional annual records required.	July, August, September, October, November, December	January 30 th each year
Annual Compliance Certification Report	Calendar Year	January 30 th each year
Annual Emission Inventory Report	Calendar Year	March 31 st each year
Excess Emission Notification	As Required	Within 24 hours of the onset of the event
Excess Emission Report	As Required	As soon as practicable but not to exceed 72 hours from notification
Deviation Report	As Required	Along with semiannual reports
RATA Testing	As Required	Within 45 days from the end of the test

¹Note the source is required to comply in accordance with reporting of the deviations from the CEMS for the Acid Rain Program.

²If the due date falls on a Saturday, Sunday or a Federal or Nevada holiday, then the submittal are due on the next regularly scheduled business day.

- (b) A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods.
- (c) A schedule for submission of compliance certifications during the permit term.
- (d) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.

B. Compliance Summary

Table V-B-1: Applicable Regulations

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 0	Definitions	Applicable – NV Energy will comply with all applicable definitions as they apply.	NV Energy will meet all applicable test methods should new definitions apply.	NV Energy complies with applicable requirements.
AQR Section 4	Control Officer	Applicable – The Control Officer or his representative may enter into Sun Peak Station property, with or without prior notice, at any reasonable time for purpose of establishing compliance.	NV Energy will allow Control Officer to enter Station property as required.	NV Energy complies with applicable requirements.
AQR Section 5	Interference with Control Officer	Applicable – NV Energy shall not hinder, obstruct, delay, resist, or interfere with the Control Officer.	NV Energy will allow Control Officer to operate as needed.	NV Energy complies with applicable requirements.
AQR Section 8	Persons Liable for Penalties	Applicable – NV Energy and employees will be individually and collectively liable to any penalty or punishment from Air Quality.	NV Energy will adhere to the rules stipulated in applicable AQR.	NV Energy complies with applicable requirements.
AQR Section 9	Civil Penalties	Applicable – The rule stipulates penalties for AQR violations.	NV Energy will adhere to the rules stipulated in applicable AQR.	NV Energy complies with applicable requirements.
AQR Section 10	Compliance Schedule	Applicable – Any existing source not in compliance with emission limitations shall submit a compliance schedule.	NV Energy will adhere to emission limitations and submit a compliance schedule if those limits are exceeded.	NV Energy complies with applicable requirements.
AQR Section 12.0	Applicability, General Requirements and Transition	Applicable – NV Energy as a whole is not subject to these requirements. Rule outlines source applicability, requirements for a source to obtain a permit and transition for sources that received a permit prior to rulemaking.	NV Energy applied for and received ATC permits for Air Quality prior to commercial operation. NV Energy will comply with the requirements of the ATCs.	NV Energy complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 12.1	Permit Requirements for Minor Sources	Not Applicable.	NV Energy applied for and received ATC permits for Air Quality prior to commercial operation. NV Energy will comply with the requirements of the ATCs.	NV Energy complies with applicable requirements.
AQR Section 12.2	Permit Requirements for Major Sources in Attainment Areas (PSD)	Not Applicable.	Not Applicable.	Not Applicable.
AQR Section 12.3	Permit Requirements for Major Sources in Nonattainment Areas	Not Applicable.	Not Applicable.	Not Applicable.
AQR Section 12.4	ATC application and Permit Requirements for Part 70 Sources	Applicable – NV Energy applied for an ATC from Air Quality.	NV Energy applied for, and received, ATC permits from Air Quality. Sun Peak Station shall comply with the requirements for ATCs.	NV Energy complies with applicable requirements.
AQR Section 12.5	Part 70 Operating Permit Requirements	Applicable – NV Energy as a whole is applicable.	NV Energy complies with the requirements for Title V permits outlined in this AQR and with the current Title V permit.	NV Energy complies with applicable requirements.
AQR Section 12.9	Annual Emissions Inventory	Applicable – NV Energy shall complete and submit an annual emissions inventory.	Annual emission inventories shall be submitted by March 31 each year.	NV Energy complies with applicable requirements.
AQR Section 12.10	Continuous Monitoring Requirements	Applicable – NV Energy NO _x and CO CEMS installed on all applicable stacks of the turbines and meets provisions of 40 CFR Part 60 and 40 CFR Part 75.	NV Energy submitted all required protocols/test plans per the issued ATC permit prior to CEMS certification. CEMS certification was approved by Air Quality.	NV Energy complies with applicable requirements.
AQR Section 13.2(b)(1) Subpart A	MACT – General Provisions	Applicable – NV Energy emits hazardous air pollutants.	NV Energy complies with the applicable requirements of 40 CFR Part 61 and Part 63.	NV Energy complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 13.2(b)(82) Subpart ZZZZ	National Emission Standard for Hazardous Air Pollutants – Stationary Reciprocating Internal Combustion Engines	Applicable – as of May 3, 2013.	Applicable compliance, monitoring, recordkeeping, and reporting requirements.	NV Energy complies with applicable requirements.
AQR Section 14.1(b)(1) Subpart A	NSPS – General Provisions	Applicable – NV Energy is an affected source under the regulations. AQR Section 14 is locally enforceable; however, the NSPS standards they reference are federally enforceable.	Applicable monitoring, recordkeeping and reporting requirements on these turbines.	NV Energy complies with applicable requirements.
AQR Section 14.1(b)(40) Subpart GG	NSPS – Standards of Performance for Stationary Gas Turbines	Applicable – NV Energy turbine units are natural gas fired (or #2 diesel fired) units with heat input greater than 10 MMBtu/hr.	All stationary gas turbines meet the applicable NO _x emission standard. When firing on natural gas, NO _x emissions shall not exceed 42 ppmv (dry, corrected to 15 percent oxygen). When firing on #2 diesel oil, NO _x emissions shall not exceed 65 ppmv (dry, corrected to 15 percent oxygen). NO _x emissions determined by EPA Method 7E.	NV Energy complies with applicable requirements.
AQR Section 18	Permit and Technical Service Fees	Applicable – NV Energy will be required to pay all required/applicable permit and technical service fees.	NV Energy is required to pay all required/applicable permit and technical service fees.	NV Energy complies with applicable requirements.
AQR Section 21	Acid Rain Permits	Applicable – NV Energy became an affected facility on December 20, 2014.	NV Energy submitted the required acid rain permit forms/applications.	NV Energy complies with applicable requirements.
AQR Section 22	Acid Rain Continuous Emission Monitoring	Applicable - NV Energy is an affected facility and is required to meet the requirements for monitoring, recordkeeping, and reporting for SO ₂ , NO _x , CO ₂ emissions. Sun Peak Station has to be compliant with 40 CFR Part 75 conditions.	NV Energy submitted all required protocols/test plans. CEMS certification. CEMS certification was approved by Air Quality and EPA CAMD. Sun Peak will perform all certification activities.	NV Energy complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 25	Upset/Breakdown, Malfunctions	Applicable – Any upset, breakdown, emergency condition, or malfunction which causes emissions of regulated air pollutants in excess of any permit limits shall be reported to Control Officer. Section 25.1 is locally and federally enforceable.	Any upset, breakdown, emergency condition, or malfunction in which emissions exceed any permit limit shall be reported to the Control Officer within twenty (24) hours of the time that the Permittee learns of the event.	NV Energy complies with applicable requirements.
AQR Section 26	Emissions of Visible Air Contaminants	Applicable – Opacity for the NV Energy combustion turbines must not exceed 20 percent for more than 6 consecutive minutes.	Compliance determined by EPA Method 9.	NV Energy complies with applicable requirements.
AQR Section 27	Particulate Matter from Process Weight Rate	Applicable – NV Energy emission units are required to meet the maximum process weight rate based emission limit based on maximum design and rate of equipment.	Compliance determined by meeting maximum particulate matter discharge rate based on process rate.	NV Energy complies with applicable requirements.
AQR Section 28	Fuel Burning Equipment	Applicable – The PM emission rate for the combustion the turbines is well below those established based on Section 28 requirements.	Maximum allowable PM emission rate determined from equation in Section 28.	NV Energy complies with applicable requirements.
AQR Section 40	Prohibition of Nuisance Conditions	Applicable – No person shall cause, suffer or allow the discharge from any source whatsoever such quantities of air contaminants or other material which cause a nuisance. Section 40 is locally enforceable only.	NV Energy air contaminant emissions controlled by pollution control devices or good combustion in order not to cause a nuisance.	NV Energy complies with applicable requirements.
AQR Section 41	Fugitive Dust	Applicable – NV Energy shall take necessary actions to abate fugitive dust from becoming airborne.	Station utilizes appropriate best practices to not allow airborne fugitive dust.	NV Energy complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 42	Open Burning	Applicable – In event NV Energy burns combustible material in any open areas, such burning activity will have been approved by Control Officer in advance. Section 42 is a locally enforceable rule only.	NV Energy will contact the Air Quality and obtain approval in advance for applicable burning activities as identified in the rule.	NV Energy complies with applicable requirements.
AQR Section 43	Odors in the Ambient Air	Applicable – An odor occurrence is a violation if the Control Officer is able to detect the odor twice within a period of an hour, if the odor causes a nuisance, and if the detection of odors is separated by at least fifteen minutes. Section 43 is a locally enforceable rule only.	NV Energy will not operate its source in a manner which will cause odors. Sun Peak Station is a natural gas fired source and is not expected to cause odors.	NV Energy complies with applicable requirements.
AQR Section 70.4	Emergency Procedures	Applicable – NV Energy submitted an emergency standby plan for reducing or eliminating air pollutant emissions in the Section 12.5 Operating Permit Application.	NV Energy submitted an emergency standby plan and received the Section 12.5 Operating Permit.	NV Energy complies with applicable requirements.
AQR Section 80	Circumvention	Applicable – NV Energy shall not conceal emissions in any way.	NV Energy will disclose all emissions as required by state and federal regulations.	NV Energy complies with applicable requirements.
AQR Section 94	Permitting and Dust Control for Construction Activities.	Applicable – NV Energy shall apply for a dust control permit in the event of engaging in a construction activity greater than 0.25 acre.	Applicable – NV Energy shall apply for a dust control permit in the event of engaging in a construction activity greater than 0.25 acre.	NV Energy complies with applicable requirements.
NRS Chapter 445B	Nevada Revised Statutes, Air pollution	Applicable – NV Energy shall comply with applicable regulations.	NV Energy complies with applicable regulations.	NV Energy complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 52.21	Prevention of Significant Deterioration	Applicable – NV Energy is a categorical minor source for PSD.	NV Energy complies with the regulations of the Section and with the requirements of AQR 12.2. Bact analysis. Air quality analysis, and visibility and additional impact analysis performed for the original permit.	NV Energy complies with applicable requirements.
40 CFR Part 52.1470	State Implementation Plan Rules	Applicable – NV Energy is subject to the Nevada SIP.	NV Energy shall continue to comply with the federally enforceable monitoring, testing, recordkeeping, and reporting requirements stipulated in the SIP.	NV Energy complies with applicable requirements.
40 CFR Part 60 Subpart A	Standards of Performance for New Stationary Sources – General provisions	Applicable – NV Energy is an affected facility under NSPS Subpart GG. Therefore, Subpart A provisions are applicable.	NV Energy shall continue to adhere to applicable monitoring , testing, recordkeeping, and reporting regulations.	NV Energy complies with applicable requirements.
40 CFR Part 60 Subpart GG	Standards of Performance for Stationary Gas Turbines	Applicable – NV Energy turbine units are natural gas fired (or #2 diesel fired) units with heat input greater than 10 MMBtu/hr.	NV Energy shall continue to adhere to applicable monitoring , testing, recordkeeping, and reporting regulations for the turbines, In addition, the turbines shall meet the applicable NO _x and SO ₂ emission limits.	NV Energy complies with applicable requirements.
40 CFR Part 63 Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Applicable – The emergency generator is subject to this subpart.	NV Energy shall continue to adhere to the applicable emission limitations, operating and maintenance requirements, recordkeeping, reporting, and general provisions.	NV Energy complies with applicable requirements.
40 CFR Part 64	Compliance Assurance Monitoring	Not Applicable – The turbines are exempt to the CAM rule. See appendix E.	Not Applicable.	Not Applicable.
40 CFR Part 68	Chemical Accident Prevention Provisions	Not Applicable.	Not Applicable.	Not Applicable.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 70	Federally Mandated Operating Permits	Applicable – The regulations provide for the establishment of State air quality permitting systems consistent with the requirements of Title V of the Clean Air Act.	NV Energy complies with this regulation by maintaining an updated Title V federal operating permit.	NV Energy complies with applicable requirements.
40 CFR Part 72	Acid Rain Permit Regulations	Applicable – The turbine are subject to acid rain regulations.	NV Energy complies with all applicable regulations. An acid rain permit was submitted with the renewal application.	NV Energy complies with applicable requirements.
40 CFR Part 73	Acid Rain Sulfur Dioxide Allowance System	Applicable – The regulations stipulate the allocation, exchange, etc. of acid rain SO ₂ allowances.	NV Energy complies with all applicable requirements and obtains required acid rain SO ₂ allowances.	NV Energy complies with applicable requirements.
40 CFR Part 75	Acid Rain Continuous Emission Monitoring	Applicable – NV Energy is an affected facility and must meet the requirements for monitoring, recordkeeping, and reporting of flow rate, SO ₂ , NO _x , and CO ₂ emissions.	NV Energy shall continue to adhere to the CEMS requirements for monitoring, recordkeeping, and reporting.	NV Energy complies with applicable requirements.
40 CFR Part 82	Protection of Stratospheric Ozone	Applicable – NV Energy is subject to the applicable rules regarding protection of stratospheric ozone.	NV Energy does not use or sell a substitute material for a device designated to use a CFC or HCFC and keeps records applicable to the rule onsite.	NV Energy complies with applicable requirements.

C. Summary of Monitoring for Compliance

Table V-C-1: Compliance Monitoring

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A01, A02, and A03	Combustion turbines Units 3 through 5	CO, NO _x , SO ₂ , PM ₁₀ , VOC, and HAP	AQR Section 12, 40 CFR Part 60, Subpart GG	Annual and short-term emission limits. Fuel consumption recordkeeping and reporting	CEMS for NO _x , and CO. Compliance for HAPs and non-CEMS monitored emissions shall be based on fuel consumption and emission factors. Recording is required for compliance demonstration. SO ₂ will be monitored through sulfur content in the fuels and recordkeeping of hours of operation,
A01, A02, and A03	Combustion turbines Units 3 through 5	SO ₂	40 CFR Part 60 Subpart GG	Natural gas sulfur content limited by 20 grains per 100 standard cubic feet.	Annual sulfur content results to be submitted with annual reports. Recordkeeping of sulfur content quarterly. Excess emissions report if sulfur exceeds 20 grains per 100 standard cubic feet.
A01, A02, and A03	Combustion turbines Units 3 through 5		AQR Section 26	Opacity 20%	Regular, periodic visual survey of opacity shall be made while burning gas. Immediate logging of any opacity noted, and correction of opacity exceedances. Reporting of upset/breakdown to EPA and Air Quality.
B01	Emergency Generator	NO _x , CO, VOC, PM ₁₀ , HAP, and SO ₂	40 CFR Part 63 Subpart ZZZZ	Emergency is limited to 250 hours per year. Emission limitations based upon fuel throughput and hours of operation for testing and maintenance. Sulfur limited to 15 ppm and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume.	Recordkeeping of fuel use and hours of operation. Calculated emissions based upon manufacturer's emission factors, AP-42 and fuel. N/A Nevada State law
T01	120,000 barrel Tank	VOC	AQR Sections 12	Emission limitations based on throughput limit of 50,400,000 gallons.	Recordkeeping of the gallons throughput.

VI. EMISSION REDUCTION CREDITS (OFFSETS)

The source is subject to offset requirements in accordance with AQR Section 12.7. All offset requirements have been met.

VII. ADMINISTRATIVE REQUIREMENTS

AQR Section 12.5 requires that Air Quality identify the original authority for each term or condition in the Part 70 OP. Such reference of origin or citation is denoted by [italic text in brackets] after each Part 70 OP condition.

Air Quality proposes to issue the Part 70 OP conditions on the following basis:

Legal:

On December 5, 2001 in Federal Register Volume 66, Number 234 FR30097 the EPA fully approved the Title V Operating Permit Program submitted for the purpose of complying with the Title V requirements of the 1990 CAAA and implementing 40 CFR Part 70.

Factual:

NPC-Sun Peak Station has supplied all the necessary information for Air Quality to draft Part 70 OP conditions encompassing all applicable requirements and corresponding compliance.

Conclusion:

Air Quality has determined that NPC-Sun Peak Station will continue to determine compliance through the use of CEMS, RATA testing, quarterly reporting, daily recordkeeping, coupled with annual certifications of compliance. Air Quality proceeds with the decision that a Part 70 OP should be issued as drafted to NPC-Sun Peak Station for a period not to exceed five years.

VIII. MODELING

SPGS is a major source in Hydrographic Area 212 (Las Vegas Valley). Permitted emission units include three turbines, one generator and one storage tank. Since minor source baseline dates for NO_x (October 21, 1988) and SO₂ (June 29, 1979) have been triggered, PSD increment analysis is required.

Air Quality modeled the source using AERMOD to track the increment consumption. Stack data submitted by the applicant were supplemented with information available for similar emission units. Five years (1999 to 2003) of meteorological data from the McCarran Station and Desert Rock Station were used in the model. USGS NED terrain data was used to calculate elevations. Table VIII-1 presents the results of the modeling.

Table VIII-1: PSD Increment Consumption

Pollutant	Averaging Period	PSD Increment Consumption by the Source (µg/m ³)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO ₂	3-hour	46.34 ¹	676912	4001360
SO ₂	24-hour	13.82 ¹	677000	4001500
SO ₂	Annual	0.82	676457	4001352
NO _x	Annual	0.34	676457	4001352

¹Second High Concentration

Table VIII-1 shows the location of the maximum impact and the potential PSD increment consumed by the source at that location. The impacts are below the PSD increment limits.

Table IX-2: PTE for Diesel Engine

EU#	Make:	Model:	S/N:	Horsepower:	Hours/Day:	Hours/Year	Emission Factor (lb/hp-hr)	Control Efficiency	Potential Emissions			
									lb/hr	lb/day	ton/yr	
				81	24.0	8760	PM10	2.20E-03	0.00%	0.18	4.28	0.78
							NOx	3.10E-02	0.00%	2.51	60.26	11.00
							CO	6.68E-03	0.00%	0.54	12.99	2.37
Manufacturer Guarantees												
	PM10						VOC	2.05E-03	0.00%	0.17	3.99	0.73
	NOx						HAP	2.51E-03	0.00%	0.20	4.89	0.89
	CO											
	SOx											
	VOC											
Engine Type:				Diesel								

EU#	Make:	Model:	S/N:	Horsepower:	Hours/Day:	Hours/Year	Emission Factor (lb/hp-hr)	Control Efficiency	Potential Emissions			
									lb/hr	lb/day	ton/yr	
				81	24.0	250	PM10	2.20E-03	0.00%	0.18	4.28	0.02
							NOx	3.10E-02	0.00%	2.51	60.26	0.31
							CO	6.68E-03	0.00%	0.54	12.99	0.07
Manufacturer Guarantees												
	PM10						VOC	2.05E-03	0.00%	0.17	3.99	0.02
	NOx						HAP	2.51E-03	0.00%	0.20	4.89	0.03
	CO											
	SOx											
	VOC											
Engine Type:				Diesel								

Table IX-3: PTE for Greenhouse Gas for Combustion Turbines and Emergency Generator

Total GHG presented in Table IX-3 is the total tonnage of all compounds identified as GHG. It does not represent CO₂e.

Calculations for Table IX-3

Equipment ID	A01-A03	B01	
Emission Unit Name	Simple Cycle Natural Gas Only Turbine (Turbine Units 3-5)	Katolight Diesel Emergency Generator (Substation)	Total
Total CO₂e (metric)	176,224	12	176,237

Equipment ID	A01-A03	Total
Emission Unit Name	Simple Cycle Natural Gas Only Turbine (Turbine Unit 3-5)	
HHV Heat Input ^a (MMBtu/hr)	937	
Annual Operating Limit (hr/yr)	3,484	
CO ₂ ^b (tons/yr)	194,056.72	194,057
CH ₄ ^c (metric tons/yr)	3.27	3
CH ₄ as CO ₂ e ^d (tons/yr) ^e	89.99	90
N ₂ O ^f (metric tons/yr)	0.33	0
N ₂ O as CO ₂ e ^f (tons/yr) ^e	107.26	107
Total CO₂e (metric tons/year)	176,224.45	176,224

Notes:

- ^a Conversion between Higher Heating Value (HHV) and Lower Heating Value (LHV).
 $HHV = 1.10786 \cdot LHV$
- ^b CO₂ quantified using Part 75 Appendix G Equation G-4 below.
- ^c CH₄ and N₂O quantified using Part 98.33(c) Equation C-10 below.
- ^d Global warming potential is 25 for CH₄ per Table A-1 to subpart A of part 98 published on Nov. 29, 2013.
- ^e Convert from metric ton to short ton (ton) multiply by 1.10231 per Table A-2 to subpart A of Part 98.
- ^f Global warming potential is 298 for N₂O per Table A-1 to subpart A of part 98 published on Nov. 29 2013.

Part 75, App. G Equation G-4

Estimate of hourly CO₂ mass emissions (in tons).

$$W_{CO_2} = \frac{F_c \times H \times U_f \times MW_{CO_2}}{2000}$$

Where:

- W_{CO₂} = CO₂ emitted from combustion, tons/hr.
- MW CO₂ = Molecular weight of carbon dioxide, 44.0 lb/lb-mole.

F_c = Carbon based F-factor, 1040 scf/mmBtu for natural gas and calculated according to the procedures in section 3.3.5 of appendix F to this part for other gaseous fuels.

H = Hourly heat input in mmBtu, as calculated using the procedures in section 5 of appendix F of this part.

U_f = 1/385 scf CO₂/lb-mole at 14.7 psia and 68 °F.

Part 98 Subpart C, Equation C-10

Estimate of Annual CH₄ or N₂O mass emissions (metric tons).

$$CH_4 \text{ or } N_2O = 0.001 \cdot (HI)_A \cdot EF$$

Where:

- CH₄ or N₂O = Annual CH₄ or N₂O emissions from the combustion of a particular type of fuel (metric tons).
- (HI)_A = Cumulative annual heat input from combustion of the fuel (mmBtu).
- EF = Fuel-specific emission factor for CH₄ or N₂O, from Table C-2 of this section (kg CH₄ or N₂O per mmBtu).
 $EF_{CH_4} = 1.00E-03 \text{ kg/mmBtu}$
 $EF_{N_2O} = 1.00E-04 \text{ kg/mmBtu}$
- 0.001 = Conversion factor from kg to metric tons.

**Table IX-4: PTE for HAPs
Calculations for Table IX-4**

Turbines

Emissions Unit #			A01		
Emissions Unit Name			All Turbines		
HHV Heat Input¹ (MMBtu/hr)			846.0		
Annual Operating Time (hr/year)			3484		
CAS No.	HAP	Emission Factors² (lbs/MMBtu)	Annual Emissions (tpy)		
106990	1,3-Butadiene	4.30E-07	6.34E-04		
75070	Acetaldehyde	4.00E-05	5.89E-02		
107028	Acrolein	6.40E-06	9.43E-03		
71432	Benzene	1.30E-06	1.92E-03		
100414	Ethylbenzene	3.20E-05	4.72E-02		
50000	Formaldehyde	1.53E-05	2.25E-02		
91203	Napthalene	1.30E-06	1.92E-03		
NA	PAHs	2.20E-06	3.24E-03		
75569	Propylene Oxide	2.90E-05	4.27E-02		
108883	Toluene	2.10E-05	3.09E-02		
1330207	Xylenes	6.40E-05	9.43E-02		
Emissions Unit		----	0.31		

¹ Based on HHV equivalent of heat inputs = Heat input at LHV x 1.11

² Most emission factors from AP-42, Volume 1, Chapter 3, Table 3.1-3 Supplement F, except benzene, formaldehyde, and toluene emission factors from Gas-Fired Boiler and Turbine Air Toxics Summary Report, prepared by Carnot Technical Services, Tustin, CA, for the Gas Research Institute and The Electric Power Research Institute, August 1996

Oil Fired Turbines

Emissions Unit #			A01		
Emissions Unit Name			Turbine Unit 3		
HHV Heat Input¹ (MMBtu/hr)			833		
Annual Operating Time (hr/year)			2194		
CAS No.	HAP	Emission Factors¹ (lbs/MMBtu)	Annual Emissions (tpy)		
106990	1,3-Butadiene	3.91E-05	3.63E-02		
75070	Acetaldehyde	7.67E-04	7.12E-01		
107028	Acrolein	9.25E-05	8.58E-02		
71432	Benzene	9.33E-04	8.66E-01		
50000	Formaldehyde	1.18E-03	1.10E+00		
NA	PAH	1.68E-04	1.56E-01		
108883	Toluene	4.09E-04	3.80E-01		
1330207	Xylenes	2.85E-04	2.64E-01		
	Lead	8.90E-06	8.26E-03		
Emissions Unit		----	3.55		

Emergency Generator

See above calculations

Tank

120,000 bbl capacity		
5,040,000 gallons capacity		
10 turnovers/year		
50,400,000 gallons/year throughput		
Potential Emissions (TANKS 4.09)		
4579.91		lb/yr
2.29		ton/yr VOC
Hazardous Air Pollutants		
HAP	Content	Emissions (ton/yr)
Xylenes	1%	0.02
1,2,4-Trimethylbenzene	1%	0.02
Naphthalene	5%	0.11
TOTAL		0.15

		PM10/PM2.5	NOx	CO	SOx	VOC	HAP
	NG						
Turbines		8.71	249.11	33.10	0.89	3.14	
Turbine other Haps		0.00	0.00	0.00	0.00	0.00	0.31
Engine		0.02	0.31	0.07	0.02	0.03	0.01
Tank		0.00	0.00	0.00	0.00	2.29	0.15
Total		8.73	249.42	33.17	0.91	5.46	0.47
	#2 Diesel						
Turbines		10.98	249.02	20.85	49.37	4.94	
Turbine other Haps		0.00	0.00	0.00	0.00	0.00	3.55
Engine		0.02	0.31	0.07	0.02	0.03	0.01
Tank		0.00	0.00	0.00	0.00	2.29	0.15
Total		11.00	249.33	20.92	49.39	7.26	3.71

Attachment

Clark County Department of Air Quality– Air Quality Regulations and SIP status

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected Emission Unit
0. Definitions	applicable definitions	yes	entire source
1. Definitions	“Affected Facility”, “Dust”, “Existing Gasoline Station”, “Fumes”, “Mist”, “New Gasoline Stations”, “New Source”, “Single Source”, “Standard Conditions”, “Uncombined Water”.	Yes	entire source
4. Control Officer	all subsections 4.7.3 and 4.12.1 through 4.12.3 in SIP	partial	entire source
5. Interference with Control Officer	all subsections	yes	entire source
6. Injunctive Relief	all subsections	yes	entire source
7. Hearing Board and Hearing Officer	all subsections	no	entire source
8. Persons Liable for Penalties - Punishment: Defense	all subsections	yes	entire source
9. Civil Penalties	all subsections	no	entire source
10. Compliance Schedule	when applicable; applicable subsections	yes	entire source
12.0. Applicability, General Requirements and Transition Procedures	all subsections	yes	entire source
12.2 Prevention of Significant Deterioration in Attainment Areas	all subsections	yes	entire source
12.3 Permit Requirements for Major Sources in Nonattainment Areas	all subsections	yes	entire source
12.4 Authority to Construct Permit Requirements for Part 70 Sources	all subsections	yes	entire source
12.5 Part 70 Operating Permit Requirements	all subsections	yes	entire source
12.6 Confidentiality	all subsections	yes	entire source
12.7 Emission Reduction Credits	all subsections	yes	entire source
12.9 Annual Emission Inventory Requirements	all subsections	yes	entire source
12.10 Continuous Monitoring Requirements for Stationary Sources	all subsections	yes	entire source

13. Emission Standards for Hazardous Pollutants	Delegated Program AQR Section 13.2(b)(82): Subpart ZZZZ National Emission Standards for Hazardous Air Pollutant for Stationary Reciprocating Internal Combustion Engines	no	Diesel Engines
14. New Source Performance Standards	Delegated Program AQR Section 14.1(b)(40): Subpart GG Standards of Performance for Stationary Gas Turbines	no	Turbines
18. Permit and Technical Service Fees	all subsections 18.1 through 18.5.2 and 18.6 through 18.12 in SIP	partial	entire source
24. Sampling and Testing - Records and Reports	§ 24.1 Requirements for installation and maintenance of sampling and testing facilities § 24.2 Requirements for emissions record keeping § 24.3 Requirements for the record format § 24.4 Requirements for the retention of records by the emission sources (Note: Repealed from SIP on Oct 17, 2014)	no	entire source
25.1 Upset/Breakdown, Malfunctions (1981)	§ 25.1 Requirements for the excess emissions caused by upset/breakdown and malfunctions	no	entire source
25.2 Upset/Breakdown, Malfunctions (1981)	§ 25.2 Reporting and Consultation	yes	entire source
26. Emission of Visible Air Contaminants (1981)	§ 26.1 Limit on opacity (\leq an average of 20 percent for a period of more than 6 consecutive minutes)	yes	entire source
27. Particulate Matter from Process Weight Rate	all subsections	yes	entire source
28. Fuel Burning Equipment	Emission Limitations for PM	yes	entire source
29. Sulfur Contents of Fuel Oil	Repealed by County	yes	entire source
30. Incinerators	Repealed by County	yes	entire source
40. Prohibitions of Nuisance Conditions	§ 40.1 Prohibitions	no	entire source
41. Fugitive Dust	§ 41.1 Prohibitions	yes	entire source
42. Open Burning	§ 42.2	no	entire source
43. Odors In the Ambient Air	§ 43.1 Prohibitions coded as Section 29	no	entire source
52. Gasoline Dispensing Facilities	Repealed by County	yes	entire source
60. Evaporation and Leakage	all subsections Repealed by County and from SIP in 2011	no	entire source

70. Emergency Procedures	all subsections	yes	entire source
80. Circumvention	all subsections	yes	entire source