

TECHNICAL SUPPORT DOCUMENT

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

APPLICATION SUBMITTED BY

Las Vegas Power Company LLC

For

Apex Generating Station

**Part 70 Operating Permit Number: 1520
(Renewal)**

SIC Code 4911: Electric Utility Services



Clark County
Department of Air Quality
Permitting Division

September 12, 2013

This Technical Support Document (TSD) accompanies the proposed Part 70 Operating Permit for Apex Generating Station.

TABLE OF CONTENTS

	Page
I. ACRONYMS.....	3
II. EXECUTIVE SUMMARY	4
III. SOURCE INFORMATION.....	5
A. GENERAL	5
B. DESCRIPTION OF PROCESS.....	5
C. PERMITTING HISTORY	6
D. PERMITTING ACTION.....	6
D. OPERATING SCENARIO.....	8
E. PROPOSED EXEMPTIONS.....	9
IV. EMISSIONS INFORMATION.....	10
A. SOURCE-WIDE POTENTIAL TO EMIT	10
B. EMISSION UNITS, EMISSION LIMITATIONS AND PTE.....	10
C. TESTING	17
D. CONTINUOUS EMISSIONS MONITORING.....	17
E. GREENHOUSE GAS (GHG) EMISSIONS.....	18
V. REGULATORY REVIEW	18
A. LOCAL REGULATORY REQUIREMENTS	19
TABLE V-A-3: PSD INCREMENT CONSUMPTION	21
B. FEDERALLY APPLICABLE REGULATIONS.....	21
VI. COMPLIANCE	26
A. COMPLIANCE CERTIFICATION	26
B. COMPLIANCE SUMMARY.....	27
C. PERMIT SHIELD	31
D. STREAMLINING DEMONSTRATION.....	32
E. SUMMARY OF MONITORING FOR COMPLIANCE	34
VII. EMISSION REDUCTION CREDITS (OFFSETS).....	34
VIII. ADMINISTRATIVE REQUIREMENTS.....	34

I. ACRONYMS

Table I-1: List of Acronyms & Abbreviations

Acronym	Term
AGS	Apex Generating Station
AQR	Clark County Air Quality Regulations
ATC	Authority to Construct
CAA	Clean Air Act or "The Act"
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emissions Monitoring System
CFR	United States Code of Federal Regulations
CO	Carbon Monoxide
CTG	Combustion Turbine-Generator
Air Quality	Clark County Department of Air Quality
DLN	Dry Low-NO _x
EPA	United States Environmental Protection Agency
EU	Emission Unit
FGDH	Fuel Gas Dewpoint Heater
GHG	Greenhouse Gases
gr	Grains
HAP	Hazardous Air Pollutant
HHV	Higher Heating Value
HP	Horse Power
kW	kilowatt
LHV	Lower Heating Value
MACT	Maximum Achievable Control Technology
MMBtu	Millions of British Thermal Units
M/N	Model Number
MW	Megawatt
NAICS	North American Industry Classification System
NO _x	Nitrogen Oxides
NRS	Nevada Revised Statutes
OP	Operating Permit
NSR	New Source Review
NNSR	Nonattainment New Source Review
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/QC	Quality Assurance/Quality Control
RATA	Relative Accuracy Test Audits
RICE	Reciprocating Internal Combustion Engine
RMP	Risk Management Plan
RO	Responsible Official
SCC	Source Classification Codes
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
S/N	Serial Number
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxides
STG	Steam Turbine Generator

Acronym	Term
SU/SD	Startup/Shutdown
TCS	Toxic Chemical Substance
ULN	Ultra Low-NO _x
VOC	Volatile Organic Compound

II. EXECUTIVE SUMMARY

Apex Generating Station (AGS) is an electric power generating plant located at 15555 Apex Power Parkway, Apex, Nevada 89165 in the Garnet Valley airshed, hydrographic basin 216, which is currently designated as PSD for all regulated pollutants. All processes at the site are grouped under SIC 4911: Electric Services and NAICS 221112: Fossil Fuel Electric Power Generation.

The following table summarizes the source PTE for each regulated air pollutant emitted by all emission units addressed by this Part 70 operating permit:

PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC	HAP
107.03	107.03	208.83	327.49	13.25	60.68	10.88

AGS is a Title V major source of PM₁₀, PM_{2.5}, NO_x and CO and a minor source of SO_x, VOC and HAP. As the source is a categorical stationary source, a fossil fuel-fired steam electric plant with more than 250 million Btu per hour heat input, it is also major for PSD review for PM₁₀, PM_{2.5}, NO_x and CO. The initial Part 70 OP was issued on June 6, 2006. This Part 70 OP is issued based on Title V Modification 2, Revision 5, application submitted on May 7, 2008 and Title V renewal application submitted on December 3, 2010, including supplemental documents.

AGS is a major source of Greenhouse Gases (GHG). The source calculated the PTE of GHG to be 2,302,336 tons per year. This includes both turbines and HRSGs, the dewpoint heater, emergency generator, fire pump and the rental boiler.

Based on the information submitted by the applicant and a technical review performed by departmental staff, the Clark County Department of Air Quality (Air Quality) proposes the renewal of a Part 70 OP to Las Vegas Power Company LLC, Apex Generating Station.

III. SOURCE INFORMATION

A. General

Permittee	Las Vegas Power Company LLC, Apex Generating Station
Mailing Address	P.O. Box 34089, Las Vegas, Nevada 89133
Contacts	Dale Gray
Phone Number	(636) 532-2200
Fax Number	(636) 532-2250
Source Location	15555 Apex Power Parkway, Apex, Nevada 89165
Hydrographic Area	216
Township, Range, Section	T18S, R63E, Section 5
SIC Code	4911: Electric Services
NAICS Code	221112: Fossil Fuel Electric Power Generation

B. Description of Process

AGS has a two-on-one combined cycle configuration. The two-on-one unit consists of two 170 MW GE 7FA combined cycle natural gas turbines, (EUs: A01 and A03), two Coen 460 MMBtu/hour heat recovery steam generators (HRSG) with natural gas fired duct burners (EUs: A02 and A04) for supplemental firing and a steam turbine generator. The facility also operates a 9.67 MMBtu/hour natural gas-fired fuel gas dewpoint heater (EU: A05), an emergency generator with a diesel engine, an emergency fire pump with a diesel engine (EUs: A06 and A07), and a rental 9.5 MMBtu/hour propane fired boiler (EU: A09). The rental boiler is used temporarily during turbine outages to generate steam in order to process turbine wastewater.

The facility draws natural gas directly from the Kern River pipeline. The fuel gas dewpoint heater (FGDH) prevents condensation droplets from entering the turbines. The natural gas is then piped to the gas turbines for combustion. The exhaust heat from each turbine is directed through the HRSG, which generates steam to drive a secondary turbine to supplement electricity production. Duct burners in the HRSG provide additional heat to aid the production of additional steam. Selective catalytic reduction (SCR), which utilizes anhydrous ammonia, controls NO_x emissions from the turbines. Catalytic oxidation (cat-ox) is used to control CO and VOC emissions from the turbines.

The combustion system utilizes dry low-NO_x combustion burner technology that accurately controls fuel flow to maintain turbine load and minimize turbine emissions. The turbines and duct burners combust only pipeline quality natural gas.

The diesel emergency generator is used for backup power for critical plant operation and safety systems. The diesel emergency fire pump provides a secondary emergency water supply for firefighting activities. The 15,228 gallon anhydrous ammonia tank stores the reagent for the SCR. A temporary propane boiler may be brought on site to generate steam and/or heat in order to supplement plant operations.

C. Permitting History

AGS is regulated by Air Quality and has a Title V permit. The initial Part 70 Operating Permit was issued June 6, 2006.

Table III-C-1: Permits Issued to Apex Generating Station

Date Issued	Permit Number	Description
05/07/2008	Modification 2, Revision 5	ATC/OP revision to address typographical errors, correct contact information, and revise information changed in the Modification 2, Revision 3 Permit (Reissuance)
04/11/2008	Modification 2, Revision 4	ATC/OP revision to address typographical errors, correct contact information, and revise information changed in the Modification 2, Revision 3 Permit
10/1/2007	Modification 2, Revision 3	ATC/OP revision for a Change of Name and Ownership
03/09/2007	Modification 2, Revision 2	ATC/OP revision to amend the SO ₂ limitations and start-up conditions of the Title V Operating Permit
06/06/2006	Initial Title V	Issuance of Title V Operating Permit
03/14/06	Modification 2, Amendment 1	ATC/OP amendment to remove ATC for Block 2 because it was not constructed
01/12/06	Modification 2, Amendment 1	ATC/OP amendment to remove ATC for Block 2 because it was not constructed
02/05/03	Modification 2	ATC/OP for Block 1 and continuation of the ATC for Block 2
12/20/01	Modification 2	ATC to construct a second 600 MW electrical generating plant adjacent to the current facility
07/20/01	Modification 1	ATC allows a reduction in stack height for the 2 turbine/HRSG unit and a revised increment consumption analysis
03/29/01	Modification 0	ATC to construct a new 600 MW merchant power generating plant consisting of 2 – GE 7FA combustion turbine generators, two HSRG, one steam turbine generator and ancillary equipment

D. Permitting Action

On December 3, 2010, Air Quality received an application to renew the Part 70 OP. Revisions to the operating permit include the following:

1. Modification 2, Revision 2: Incorporate the revision to amend the SO₂ limitation and start-up conditions of the Title V Operating permit.
2. Change of ownership and change of contact information to reflect that Las Vegas Power Company owns AGS.
3. Corrections to model numbers and serial numbers.
4. Ammonia (NH₃) is no longer a locally regulated air pollutant in Clark County and therefore, Air Quality has decided to remove all corresponding conditions and emission pertaining to NH₃ from the permit. Though the conditions pertaining to the monitoring of NH₃ as far as Continuous Emissions Monitoring (CEMS) and Parametric Emissions Monitoring (PEMS) will remain in the permit to demonstrate compliance of the SCR system. The Ammonia

storage tank has been removed from the EU list and placed on the Insignificant EU list. AGS has a potential to emit approximately 217.34 tons of NH₃ per year.

5. The Fuel Gas Dewpoint Heater (FGDH) MMBtu rating is being corrected from 6.5 MMBtu/hr to 9.67 MMBtu/hr (EU: A05). Corrections were made to the PM₁₀ emission factor to reflect both filterable and condensable PM₁₀. The emission factor was revised from 0.0019 MMBtu/hr to 0.0075 MMBtu/hr. A BACT analysis was performed for 10.0 MMBtu/hr FGDH in March 2001 therefore, a new control analysis is not needed nor does the corrected PTE need to be added to the NEI of the Operating Permit.
6. Correction to the Caterpillar emergency generator (EU: A06) AP-42 emission factors. The original AP-42 emission factors were incorrect, as the factors for engines less than 600 horsepower were used. Also, during the permitting process for a 502(b)(10) change involving the generator, it was discovered that there were manufacturer's emission guarantees available for the unit for all pollutants except SO_x. There has also been a change in Air Quality's policy regarding emergency generators that requires all PTE estimates to include run time, testing, and maintenance operation default to 500 hours per year. This increased the PTE for the emergency generator, but it will not contribute to the NEI.
7. Correction to the Caterpillar fire pump (EU: A07) emissions changed due to Air Quality's policy regarding emergency fire pumps that requires all PTE estimates to include run time, testing, and maintenance operation default to 500 hours per year. This increased the PTE for the fire pump, but it will not contribute to the NEI.
8. Combustion Turbines. The emission increases for the combustion turbines from modifications/revisions will be addressed as part of this renewal through the Title V Operating Permit minor revision process listed in AQR Section 12.5.2.14:
 - a. In the current OP, there is no limit on the operating hours for the turbines. The current PTE for the turbines is based on continuous operation at maximum rated capacity. However, there is a heat input limit of 17,082,000 MMBtu/year for each turbine, which reflects 8,627 hours of operation. Therefore, the heat input will be changed to 17,344,800 MMBtu/year to reflect 8,760 hours per year of operation. This operating scenario was demonstrated by AGS to be worse-case emissions for all pollutants, with the exception of NO_x (see paragraph "b" below). These emission calculations are presented in the PTE Calculations section of this TSD. The amended PTE for the turbines will be based on 8,760 hours per year of operation for all pollutants except NO_x. The emission increase is less than the Minor NSR Significance thresholds in AQR 12.4.2.1(b) for all pollutants.
 - b. In the current OP the PTE reflects 8,760 hours of operation for each turbine and does not include the existing limit of 876 hours per year for SU/SD operations. In an attempt to reconcile SU/SD emissions, AGS proposed a secondary operating scenario to establish worse-case emissions. These emission calculations are presented in the PTE Calculations section of this TSD. AGS used the currently permitted SU/SD limit of 876 hours per year with a maximum of 2,000 hours for normal operations. In other words, if the source utilized all of their operational limit for SU/SD (876 hours per year), they would not be able to operate greater than 2,000 hours for normal operation without exceeding the PTE limit in the OP. The amended PTE for the turbines will be based on the current SU/SD limit of 876 hours per year for NO_x only. The emissions increases from the revised PTE values are less than the Minor NSR Significance thresholds in AQR 12.4.2.1(b) for all pollutants; therefore, another NSR analysis is not required.

- c. Revisions are being made to the emission factors for both NO_x and CO for SU/SD operation to reflect actual data recorded by the CEMS versus engineering estimates that were initially used when actual data was not available.
 - d. There is an increase to the HAP PTE from 9.39 tons/year to 10.87 tons/year to address a correction in the emission factors previously used. This increase does not make AGS a major source for combined or single HAP. The emission increases from these modifications are less than the Minor NSR Significance thresholds in AQR 12.4.2.1(b).
9. AGS will be utilizing a rental 9.5 MMBtu/hr propane boiler on site as a backup for producing steam and/or heat to supplement the facility operations. The boiler will not be at the facility year round, and the same boiler will not always be rented. A limit of 1,000 hours/year is being requested for the rental boiler. Based on a maximum rated heat input of 9.5 MMBtu/hour and 8,760 operating hours, the PTE is less than the minor NSR thresholds in AQR 12.4.2.1(b); therefore, they require no controls analysis. The addition of this boiler will be addressed through the Title V Operating Permit minor revision process listed in AQR Section 12.5.2.14.
10. There was an overall increase of formaldehyde from 3.23 tons/year to 4.52 tons/year.

As shown in Table III-C-2 the change in the PTE of the turbine/HRSG and the addition of a 9.5 MMBtu/hr propane rental boiler are less than minor NSR thresholds in AQR 12.4.2.1(b) and therefore, a control analysis is not required.

Table III-C-2: Net Emissions Increase (NEI)

	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC
Source PTE (tpy)	107.03	107.03	208.83	327.49	13.25	60.68
NEI	-1.32	0.00	13.91	-42.89	1.32	-0.09
Significant Revision (PSD Source)	15	10	40	100	40	40
Minor Revision Threshold (PSD Source)	7.5	5	20	50	20	20
Major Source Threshold for Categorical Stationary Sources	100	100	100	100	100	100
Control Technology	N/A	N/A	N/A	N/A	N/A	N/A

The application for this permit renewal was deemed complete on December 7, 2011. The Part 70 OP will be issued under the authority of AQR Section 12.5, consistent with the transition procedures identified in AQR Section 12.0.

D. Operating Scenario

Stationary Gas Turbine Generators

The stationary gas turbines are combined cycle natural gas-fired units with a nominal energy production rating of 170 MW each. The heat input for each stationary gas turbine, based on the higher heating value of natural gas (HHV), is limited to 1,980 MMBtu/hr and 17,344,800 MMBtu/year (consecutive 12-month average). Compressed air and natural gas are mixed and combusted in the turbine combustion chamber. Lean pre-mix dry low-NO_x combustors minimize NO_x formation during combustion. Exhaust gas from the combustion chamber is

expanded through the power turbine that drives both the air compressor and electric power generator. Exhaust gas exiting the power turbine at approximately 1,100°F is ducted to the HRSG where steam is produced to generate additional electricity in a steam turbine generator. In turn, the high-pressured portion of the steam turbine receives high-pressure superheated steam from the HRSG and exhausts to the reheat section of the HRSG. The steam from the reheat section of the HRSG is supplied to the intermediate-pressure section of the turbine, which expands to the low-pressure section. There is no limit on the hours of operation of the stationary gas turbines.

Duct Burners (HRSG)

Heat input for each duct burner, based on the HHV, is limited to 460 MMBtu/hr and 2,300,000 MMBtu/year (consecutive 12-month average). Each duct burner is permitted to operate up to 5,000 hours equivalent full load per rolling 12-month period. Combustion turbine exhaust gas enters the HRSG at approximately 1,100°F where the heat recovery steam generating process will reduce the exhaust gas temperature to approximately 200°F prior to exhausting to the atmosphere. Natural gas fired duct burners located within the HRSGs are used to increase steam output.

Fuel Gas Dewpoint Heater (FGDH)

The heat input for the FGDH, based on the HHV, is limited to 9.67 MMBtu/hr and 84,709.20 MMBtu/year (consecutive 12-month average). The FGDH heats the incoming natural gas to prevent condensation droplets from entering the turbines. There is no limit on the hours of operation of the FGDH.

Emergency Generator

The emergency diesel generator ensures power supply, in the event of a power failure. The use of the emergency diesel generator allows the orderly shutdown of the facility. The unit is rated at 1,180 hp and it is permitted for 100 hours of operation for maintenance and testing purposes (consecutive 12-month average).

Emergency Fire Pump

The emergency diesel fire pump ensures the availability of fire-fighting water, even in the event of a power failure. The unit has a rating of 270 hp. This unit is permitted for 100 hours of operation for maintenance and testing purposes (consecutive 12-month average).

Rental Boiler

Heat input for each duct burner, based on the higher heating value of propane, is limited to 9.5 MMBtu/hr and 9,500 MMBtu/year (consecutive 12-month average). The rental boiler is limited to 1,000 hours of operation in a consecutive 12-months period. The rental boiler will be used as a backup for steam production to supplement plant operations.

E. Proposed Exemptions

There are no proposed exemptions.

IV. EMISSIONS INFORMATION

A. Source-Wide Potential to Emit

Table IV-A-1 reflects the sum of the PTEs of all permitted emission units. The source is major for PM₁₀, PM_{2.5}, NO_x and CO and minor for SO_x, and VOC. HAP is noted in the table to demonstrate that it has been calculated and the source is minor for HAP. As a minor source for HAP, these pollutants will not be regulated by the OP.

Table IV-A-1: Source-Wide PTE (tons per year)

Pollutant	PM ₁₀	PM _{2.5}	NO _x	CO	SO _x	VOC	HAP
PTE Totals	107.03	107.03	208.83	327.49	13.25	60.68	10.87
Major Source Thresholds	100	100	100	100	100	100	10/25¹

¹25 tons for combination of all HAPs (no single HAP exceeds 10 tons).

B. Emission Units, Emission Limitations and PTE

The emission units are summarized in Table IV-B-1.

Table IV-B-1: Source Emission Units

EU	Description	Rating	Make	Model #	Serial #
A01	Stationary Gas Turbine, natural gas fired, MEQ = 170	170 MW	GE	7FA	297836
A02	Duct Burner for HRSG associated with A01	460 MMBtu/hr	Coen		40D-13761-1-000
A03	Stationary Gas Turbine, natural gas fired, MEQ = 170	170 MW	GE	7FA	297837
A04	Duct Burner for HRSG associated with A03	460 MMBtu/hr	Coen		40D-13761-1-000
A05	Fuel Gas Dewpoint Heater	9.67 MMBtu/hr	Total Energy Resources Inc.		618614
A06	Emergency Diesel Generator	1,180 hp	Caterpillar	3412	1EZ02448
A07	Emergency Fire Pump	270 hp	Caterpillar	3208	03Z17773
A09	Rental Boiler	9.5 MMBtu/hr			

The following units or activities are present at this source, but are deemed insignificant. The emissions from these units or activities, when added to the PTE of the source presented in Table IV-C-2, will not make the source major for any additional pollutant not already considered major.

Table IV-B-2: Insignificant Units or Activities

Description	
Ammonia Storage Tank; Sealed; S/N: S-1935, 15,228 gallons	
Econoline Blast Cabinet, M/N: 101698R-A, 40" x 40", 25 cfm foot blast with 100 cfm exhaust	
Grayamills PL36-A Handi-Kleen Solvent Cleaner	
Mr. Heater, M/N: MH55FAV, 55,000 Btu/hr Kerosene Heater	
Reddy Heater, R55CT, 55,000 Btu/hr Propane Heater	
Dayton; M/N: 3VE48A, 45,000 Btu/hr Kerosene Heater	
Reddy Heater; M/N: 125T, 125,000 Btu/hr Kerosene Heater	
Mr. Heater; M/N: MH35LP, 35,000 Btu/hr, Propane Heater	
Mr. Heater; M/N: MH42T, 42,000 Btu/hr, Propane Heater	
2,413 Gallon Diesel Tank	
250 Gallon Diesel Day Tank	
500 Gallon Diesel Day Tank	
499 Gallon Propane Tank (rental)	
499 Gallon Propane Tank (rental)	
Description	AQR Citation
Various Mobile Equipment (cranes, forklifts, manlifts, etc.)	12.5.2.5(a)(1)
Stihl BR600 Backpack Blower with gasoline engine	12.5.2.5(a)(7)
Miller Bobcat 250 Welder with 19 hp diesel engine	12.5.2.5(a)(13)
Mi-T-M Mobile Pressure Washer with 19 hp diesel engine	12.5.2.5(a)(13)
Dayton 3W736C Portable Generator with 8 hp diesel engine	12.5.2.5(a)(15)
Genpower 305 Portable Generator with 10 hp gasoline engine	12.5.2.5(a)(15)
Honda GX160 5.5 hp Portable gasoline generator	12.5.2.5(a)(15)
550 Gallon Used Lubrication Oil Storage Tank	12.5.2.5(a)(20)
2 - GTG Lube Oil Tanks (6,200 gallon each)	12.5.2.5(a)(20)
STG Lube Oil Tank (10,200 gallon)	12.5.2.5(a)(20)
STG Hydraulic Oil Tank (235 gallon)	12.5.2.5(a)(20)
2 - CTG Isolateion Transformers (977 gallon each)	12.5.2.5(a)(20)
2 - CTG Excitation Transformers (390 gallon)	12.5.2.5(a)(20)
STG Excitation Transformer (390 gallon)	12.5.2.5(a)(20)
2 - Unit Auxiliary Step Down Transformers (5,555 gallons each)	12.5.2.5(a)(20)
2 - Load Center Step Down Transformers (652 gallons each)	12.5.2.5(a)(20)
Load Center Step Down Transformer (322 gallons)	12.5.2.5(a)(20)
2 - CTG Generator Step Up Transformers (23,644 gallon each)	12.5.2.5(a)(20)
STG Generator Step UP Transformers (23,775 gallons)	12.5.2.5(a)(20)
6 - Air Cooled Condenser Load Center Step Down Transformers (322-653 gallons each)	12.5.2.5(a)(20)
Well Pump VFD Mineral Oil Storage (390 gallons)	12.5.2.5(a)(20)
Well Pump Step Down Transformer (404 gallons)	12.5.2.5(a)(20)
Water Treatment Step Down Transformer (322 gallons)	12.5.2.5(a)(20)
Construction Transformers (450 gallons)	12.5.2.5(a)(20)
Construction Transformers (2,598 gallons)	12.5.2.5(a)(20)

Stationary Gas Turbines and Duct Burners (EUs: A01/A02 and A03/A04)

Hourly emission limits for each stationary gas turbine are based on 100% load at 25°F, which corresponds to the heat input rate of 1,980 MMBtu/hr (based on HHV). Hourly limits for each duct burner are based on equivalent full load which corresponds to a heat input rate of 460 MMBtu/hr (based on HHV). Annual emission limits for each stationary gas turbine and each duct burner are based on fuel limitations (heat input rates) of 17,344,800 MMBtu and 2,300,000

MMBtu respectively, per consecutive 12-month period. The potential to emit for each turbine/HRSG unit is based on operational data and manufacturer's information.

Fuel Gas Dewpoint Heater (EU: A05)

Short term emissions for the boiler were based on AP-42 emission factors for all pollutants except NO_x and CO which were based on 80 ppm and 110 ppm, respectively. Annual emission rates were based on 8,760 hours of operation per year.

Emergency Generator (EU: A06)

Emissions from the emergency generator were based on manufacturer guarantees for all pollutants except SO_x, which was based on AP-42. The emergency generator ensures power supply in the event of a power failure. The generator will ensure the facility will have electricity to power down all systems. The unit has a rating of 1,180 hp. The PTE of the unit is based on 500 hours per year for testing, maintenance and emergency use.

Emergency Fire Pump (EU: A07)

Emissions from the emergency fire pump were based on AP-42 for all pollutants. The emergency fire pump ensures the availability of water for fire-fighting, even during a power failure. The unit has a rating of 270 hp. The unit is permitted to operate up to 500 hours per year for testing, maintenance and emergency use.

Rental Boiler (EU: A09)

Short term emissions from the propane boiler were based on AP-42 emission factors for all pollutants except NO_x and CO which were based on 127 ppm and 28 ppm, respectively. Annual emission rates were based on 1,000 hours of operation per year.

Table IV-B-3: Emission Unit PTE, Including Startups and Shutdowns (tons per year)¹

EU	PM ₁₀	PM _{2.5}	NO _x	CO	SO _x	VOC
A01/A02	53.18	53.18	98.59	161.06	6.44	30.04
A03/A04	53.18	53.18	98.59	161.06	6.44	30.04
A05	0.32	0.32	4.15	3.49	0.03	0.23
A06	0.18	0.18	4.68	1.04	0.12	0.17
A07	0.15	0.15	2.09	0.45	0.14	0.17
A09	0.02	0.02	0.73	0.39	0.08	0.03
Total Source PTE	107.03	107.03	208.83	327.49	13.25	60.68

¹ Annual emissions based on fuel limitations of stationary gas turbine and duct burner of 17,344,800 MMBtu/yr and 2,300,000 MMBtu/yr, respectively.

The operating permit limits the source to the emission rates presented above in Table IV-B-3 for EUs: A01 through A04. Compliance with the emission rates for PM₁₀, NO_x, CO and VOC are demonstrated through performance testing and CEMS for these pollutants. There are no requirements to demonstrate ongoing compliance with the emission rates for PM_{2.5} and SO_x, therefore these pollutants are not included in the enforceable emission rates listed in Table III-B-2 of the Operating Permit. Similarly, as emission units A05 through A09 are not subject to ongoing compliance demonstration (i.e. testing or CEMS) for emissions, they also are not listed in Table III-B-4 of the Operating Permit.

Table IV-B-4: Emission Unit PTE, Excluding Startups and Shutdowns (pounds per hour)¹

EU	PM ₁₀	PM _{2.5}	NO _x	CO	SO _x	VOC
A01/A02	13.00	13.00	23.00	47.00	1.47	10.70
A03/A04	13.00	13.00	23.00	47.00	1.47	10.70
A05	0.07	0.07	0.95	0.80	0.01	0.05
A06	0.70	0.70	18.73	4.15	0.48	0.68
A07	0.59	0.59	8.37	1.80	0.55	0.68
A09	0.04	0.04	1.47	0.78	0.15	0.05
Total Source PTE	27.40	27.40	75.52	101.53	4.13	22.86

¹ Hourly emissions based on rated fuel consumption of stationary gas turbine and duct burner of 1,980 MMBtu/hr and 460 MMBtu/hr, respectively.

Table IV-B-5: Emission Concentrations Excluding Startups and Shutdowns

EU	Averaging Period	O ₂ Standard	NO _x (ppmvd)	CO (ppmvd)	VOC (ppmvd)
A01/A02	3-Hour	15%	3.0	10.0	4.0
A03/A04	3-Hour	15%	3.0	10.0	4.0

The SU/SD emission rates listed in Table IV-B-5 are not federally enforceable performance limits. These values are to be used when CEMS data is not available during periods of SU/SD. The Permittee shall include actual SU/SD emissions in the annual mass emission reporting based on either CEMS data, or the emission rates specified in Table IV-B-6.

Table IV-B-6: Startup and Shutdown Emissions (pounds per hour)¹

EU	PM ₁₀	PM _{2.5}	NO _x	CO	SO _x	VOC
A01/A02 & A03/A04	18.0	18.0	180.0	200.0	1.47	1.70

¹ Emissions include contribution from HRSG units.

Table IV-B-7: Estimated Source HAP Emissions (tons per year)

Pollutant	Stationary Gas Turbines and Duct Burners (EUs: A01 – A04 Combined) ¹	Fuel Gas Dewpoint Heater (EU: A05) ²	Emergency Generator and Fire Pump (EUs: A06 & A07) ³	Rental Boiler (EU: A09) ⁴
1,3 Butadiene	8.45E-03	---	5.83E-03	---
Acetaldehyde	7.86E-01	---	4.14E-04	---
Acrolein	1.26E-01	---	6.00E-05	---
Benzene	2.36E-01	8.72E-05	2.04E-03	1.09E-07
Ethylbenzene	6.29E-01	---	---	---
Formaldehyde ⁵	4.52E+00	6.92E-07	2.56E-02	9.64E-12
Naphthalene	2.55E-02	2.53E-05	---	3.17E-08
PAH	4.32E-02	1.90E-06	5.17E-04	2.41E-09
Propylene Oxide	5.70E-01	---	---	---
Toluene	2.55E+00	1.41E-04	7.73E-04	1.77E-07
Xylenes	1.26E+00	---	5.34E-04	---
Polycyclic Organic Matter	---	---	---	---
Dichlorobenzene	---	4.98E-05	---	6.23E-08
Hexane	---	7.47E-02	---	9.34E-05
Arsenic Compounds	---	8.30E-06	---	1.04E-08

Pollutant	Stationary Gas Turbines and Duct Burners (EUs: A01 – A04 Combined) ¹	Fuel Gas Dewpoint Heater (EU: A05) ²	Emergency Generator and Fire Pump (EUs: A06 & A07) ³	Rental Boiler (EU: A09) ⁴
Beryllium Compounds	---	4.98E-07	---	6.23E-10
Cadmium Compounds	---	4.57E-05	---	5.71E-08
Chromium Compounds	---	5.81E-05	---	7.27E-08
Cobalt Compounds	---	3.49E-06	---	4.36E-09
Manganese Compounds	---	1.58E-05	---	1.97E-08
Mercury Compounds	--	1.08E-05	---	1.35E-08
Nickel Compounds	---	8.72E-05	---	1.09E-07
Selenium Compounds	---	9.97E-07	---	1.25E-09
HAP Emissions Total	10.75	0.08	0.04	0.00

¹All emission factors, except formaldehyde, are from AP-42, Section 3.1: Table 3.1-3. Turbine formaldehyde emission factor was taken from 40 CFR 63 Subpart YYYY limit and the duct burner formaldehyde emission factor was taken from Ventura County APCD AB-2588 document.

²Emission factors for all metals were taken from AP-42, Section 1.4 Table 1.4-4. Emissions for all other pollutants were taken from AP-42 Table 1.4-3.

³All emission factors were taken from AP-42, Section 3.4 Tables 3.4-2, Table 3.4-3 and Table 3.4-4.

⁴Emission factors for all metals were taken from AP-42, Section 1.4 Table 1.4-4. Emissions for all other pollutants were taken from AP-42 Table 1.4-3.

⁵Formaldehyde emission factors were taken from Ventura County APCD AB-2855 document.

No single source-wide HAP emission shall exceed ten tons per year and total source-wide HAP emissions shall not exceed 25 tons per year. Therefore, the source is not subject to 40 CFR 63 Subpart YYYY for stationary gas turbines. The emergency generator and emergency fire pump are subject to a MACT standard (40 CFR 63, Subpart ZZZZ) since it is a reciprocating internal combustion engine (RICE) operating at an area source of HAP emissions.

Table IV-B-8: Source-Wide PTE

Pollutant	PM ₁₀	PM _{2.5}	NO _x	CO	SO _x	VOC	HAP
lbs/hour	27.40	27.40	75.52	101.53	4.13	22.86	2.74
tons/year	107.03	107.03	208.83	327.49	13.25	60.68	10.87

PTE Calculations – Normal Operation:

Emission Calculations for turbines and HRSG:

The PTE for each turbine/HRSG unit is based on operational data and manufacturer's information. It was assumed that each turbine/HRSG could operate 8,760 hours per year. The duct burner is limited to operate up to 4,000 hours per year with the CT/HRSG and the duct burner is limited to operate with power augmentation up to 1,000 hours per year with the CT/HRSG. In this scenario there is no SU/SD calculated; it is assumed that the turbines will operate 8,760.

$$E = \frac{(3,610 \times A) + (4,000 \times B) + (1,000 \times C)}{2,000}$$

Where:

E = turbine/HRSG PTE including startup/shutdown (tons/yr)

A = short term emissions for turbine/HRSG (lb/hr)

B = short term emission for turbine/HRSG + duct burner (lb/hr)

C = short term emissions for turbine/HRSG + duct burner + power augmentation (lb/hr)

For pollutants where the startup factor was less than or equal to the normal operating factor (SO₂ and VOC):

$$E = \frac{(3,760 \times A) + (4,000 \times B) + (1,000 \times C)}{2,000}$$

HAP emission were calculated using emission factors based on the fuel firing rate of the turbine and HRSG duct burner.

$$H_S = EF \times F_{MAX}$$

Where:

H_S = Short-term HAP PTE (lb/hr)

EF = emission factor (lb/MMBtu)

F_{MAX} = maximum heat input rating (MMBtu/hr)

AGS demonstrated that worse-case emissions for all pollutants, except NO_x, were derived from 8,760 hours per year of normal operation (see Table IV-B-9). These changes amending the PTE are below the significant thresholds and therefore, this does not trigger a control analysis.

Table IV-B-9: Turbine/HRSG Calculations without Startup/Shutdown (tons per year)

Pollutant	Maximum Emission Rate (lb/hr)			PTE Per Turbine w/ Duct Burner (ton/yr) ⁴	PTE of Total Turbines w/ Duct Burners (ton/yr)
	CTG/HRSG ¹	CTG/HRSG + Duct Burner ¹	CTG/HRSG + Duct Burner + Power Aug. ²		
PM ₁₀ ³	11.0	13.0	13.0	53.18	106.36
PM _{2.5} ³	11.0	13.0	13.0	53.18	106.36
NO _x	18.1	21.4	23.0	88.33	176.66
CO	27.0	43.4	47.0	161.06	322.12
SO ₂	1.47	1.47	1.47	6.44	12.88
VOC	2.6	9.9	10.7	30.04	60.08

¹Maximum emission rates taken from Appendix C of the initial application for an ATC submitted on 9/2000. Rates are based on manufacturer's data for multiple ranges of operation.

²Worst-case lb/hr emission rate is the short-term PTE for each turbine/HRSG unit.

³PM_{2.5} is assumed equal to PM₁₀

⁴The following operating assumptions are used to determine annual PTE: 3,760 hr/yr of CT/HRSG operation, 4,000 hr/yr of CT/HRSG + duct burner operations, and 1,000 hr/yr of CT/HRSG + duct burner + power augmentation operation.

PTE Calculations - Startup/Shutdown:

The PTE for each turbine/HRSG unit is based on operational data and manufacturer's information. The PTE was amended to account for the corrected calculation of SU/SD emissions and the revised SU/SD emission factors. AGS proposed a secondary operating scenario whereby it would utilize 876 hours per year for SU/SD. As such, AGS reasoned that each turbine/HRSG would operate in normal mode for a maximum of 2,000 hours per year, which considers the likelihood of down time between each subsequent startup. The duct burner

is limited to operate up to 1,000 hours per year with the turbine/HRSG. This scenario utilizes SU/SD at 876 hours per year, as it is currently permitted.

Shutdown operations are lower than startup emissions, they comprise very little of the total SU/SD emissions; therefore, the startup emission factors were used to determine PTE. For pollutants where the startup factor was higher than the normal operating factor (PM₁₀, PM_{2.5}, NO_x, and CO):

$$E = \frac{(1,000 \times A) + (1,000 \times B) + (0 \times C) + (876 \times S)}{2,000}$$

Where:

- E = turbine/HRSG PTE including startup/shutdown (tons/yr)
- A = short term emissions for turbine/HRSG (lb/hr)
- B = short term emission for turbine/HRSG + duct burner (lb/hr)
- C = short term emissions for turbine/HRSG + duct burner + power augmentation (lb/hr)
- S = short term emissions for startup/shutdown (lb/hr)

For pollutants where the startup factor was less than or equal to the normal operating factor (SO₂ and VOC):

$$E = \frac{(1,000 \times A) + (1,000 \times B) + (0 \times C)}{2,000}$$

AGS demonstrated that worse-case emissions for NO_x are derived from 876 hours per year of SU/SD operation (see Table IV-B-10). Utilization of the current SU/SD limit (i.e. 876 hours per year) would allow each turbine to operate 2,000 hours per year in normal operation mode in order to comply with their annual emissions limits.

Table IV-B-10: Limited Turbine/HRSG Operations with 876 hours of Startup/Shutdown Calculations (tons per year)

Pollutant	Maximum Emission Rate (lb/hr)			PTE Per Turbine w/ Duct Burner (ton/yr) ⁵	PTE of Total Turbines w/ Duct Burners (ton/yr)
	CTG/HRSG ¹	CTG/HRSG + Duct Burner ¹	Startup/Shutdown ⁴		
PM ₁₀ ³	11.0	13.0	18.0	19.88	39.76
PM _{2.5} ³	11.0	13.0	18.0	19.88	39.76
NO _x	18.1	21.4	180.0	98.59	197.18
CO	27.0	43.4	200.0	122.80	245.60
SO ₂	1.47	1.47	1.47	2.11	4.22
VOC	2.6	9.9	1.70	6.99	13.98

¹Maximum emission rates taken from Appendix C of the initial application for an ATC submitted on 9/2000. Rates are based on manufacturer's data for multiple ranges of operation.

²Worst-case lb/hr emission rate is the short-term PTE for each turbine/HRSG unit.

³PM_{2.5} is assumed equal to PM₁₀

⁴The estimated emissions for startup and shutdown operations based on manufacturer's data for PM₁₀, PM_{2.5}, SO₂, and VOC; and an analysis of CEMS data for NO_x and CO.

⁵The following operating assumptions are used to determine annual PTE: 1,000 hr/yr of CT/HRSG operation, 1,000 hr/yr of CT/HRSG + duct burner operations with 876 hours of startup and shutdown.

Emission Calculations for Rental Boiler

The PTE of the propane fired rental boiler (EU: A09) is based on a maximum rating of 9.5 MMBtu/hr and 1,000 hours of usage in a consecutive 12-month period. The PTE of the revisions proposed is under the minor NSR significance thresholds and, therefore the addition of the boiler does not require a control analysis. The PTE of the unit will be included in the NEI of the source.

C. Testing

Performance testing is subject to 40 CFR 60, Subpart A; 40 CFR 60, Subpart GG; 40 CFR 60 Subpart Da; 40 CFR 63, Subpart ZZZZ; 40 CFR 75 and Air Quality’s “Guidelines for Source Testing” (08/12/2011). Required testing will be performed using the following methods:

Table IV-C-1: Performance Testing Requirements for Stationary Gas Turbines/HRSGs

Test Point	Pollutant	Method (40 CFR 60, Appendix A)
Turbine Exhaust Outlet Stack	PM ₁₀	Method 201/202 or 201A/202
Turbine Exhaust Outlet Stack	VOC	Method 18 or Method 25A
Turbine Exhaust Outlet Stack	Opacity	EPA Method 9
Stack Gas Parameters	---	EPA Methods 1, 2, 3, 4

All performance tests for VOCs shall be conducted at peak load (duct burners on) operational conditions. Performance testing shall be conducted once every five years.

Per the Department of Air Quality “Guidelines of Source Testing” (08/12/2011), the Permittee shall conduct burner efficiency test on the Rental Boiler (EU: A09) in accordance with the manufacturer’s recommendations and specifications for good combustion practices. If the manufacturer’s recommendations and specification are unavailable the Permittee may use an alternative method to perform the boiler efficiency test after prior approval from the Air Quality Control Officer. The Permittee shall perform a burner efficiency test once each calendar year, except as allowed in 10.6.5 of the Air Quality’s “Guidelines for Source Testing” when there was no operation of the unit.

D. Continuous Emissions Monitoring

To demonstrate continuous direct compliance with all emission limitations for NO_x and CO specified in this permit, the source operates a continuous emission monitoring system (CEMS) for NO_x, CO and O₂ on each stationary gas turbine unit in accordance with 40 CFR 60 and 40 CFR 75. The CEMS monitors and records the following parameters for each stationary gas turbine:

1. exhaust gas concentrations of NO_x, CO, and diluent O₂ including periods of startup and shutdown;
2. exhaust gas flow rate (by direct or indirect methods);
3. fuel flow rate;
4. hours of operation;
5. consecutive 3-hour averages of NO_x and CO concentrations (in ppm);
6. hourly and consecutive 12-month accumulated mass emissions of NO_x and CO; and
7. hours of downtime of the CEMS.

Excluding start-up or shut-down, any exceedance of the hourly, daily, or annual CO and/or NO_x emissions limitations expressed in Section III as determined by the CEMS shall be considered a violation of the emission limit imposed and may result in enforcement action.

Emissions of NH₃ from each stationary gas turbine shall be monitored either by use of an NH₃ CEMS or NH₃ PEMS based on ammonia flow rate to the SCR and NO_x emissions monitoring data as approved by the Control Officer.

Required periodic audit procedures and QA/QC procedures for CEMS shall conform to the provisions of 40 CFR 60, Appendix F. Relative accuracy test audits (RATA) of the CO, NO_x and O₂ CEMS shall be conducted at least every four calendar quarters, except in the case where the affected facility is off-line (does not operate) in the fourth calendar quarter since the quarter of the previous RATA. In that case, the RATA shall be performed in the quarter in which the unit recommences operation. [40 CFR 60, Appendix F]

E. Greenhouse Gas (GHG) Emissions

Beginning January 2, 2011, only newly constructed or existing Title V major sources will have Title V requirements for GHGs. Facilities, such as AGS, that emit 100,000 tons of CO₂e or more a year will be subject to the Title V permitting requirements beginning July 1, 2011 in accordance with federal and/or state/local requirements for submittal of a timely Title V application, which is typically within one year of meeting the applicability criteria.

ASG must address GHG requirements because the facility is renewing the OP after the January 2, 2011 applicability date. These requirements will include any GHG applicable requirements, associated monitoring, record-keeping, and reporting. ASG has calculated the facility's GHG emissions in Table IV-E-1.

Table IV-E-1: GHG PTE (tons/year)⁽³⁾

Emission Unit	CO ₂	CH ₄	N ₂ O	CO ₂ e
A01 – CTG 1A ⁽¹⁾	1,013,707.75	19.12	1.91	1,014,701.37
A02 – HRSG 1A ⁽¹⁾	134,422.30	2.54	0.25	134,553.14
A03 – CTG 1B ⁽¹⁾	1,013,707.75	19.12	1.91	1,014,701.37
A04 – HRSG 1B ⁽¹⁾	134,422.30	2.54	0.25	134,553.14
A05 – FGDH ⁽¹⁾	4,950.78	0.09	0.01	4,956.00
A06 – Emergency Generator ⁽²⁾	329.59	0.013	0.003	330.70
A07 – Fire Pump ⁽²⁾	104.63	0.004	0.008	646.21
A09 – Boiler ⁽¹⁾	643.61	0.03	0.006	646.21
Total	2,302,288.71	43.46	4.35	2,305,088.14

1. PTE for A01 through A05 and A09 is based on default emission factors from 40 CFR 98, Table C-1 and Table C-3 and permitted maximum fuel usage.
2. PTE for A06 and A07 is based on default emission factors from 40 CFR 98, Table C-1 and Table C-3, permitted testing and maintenance hours, and maximum rated fuel consumption.
3. All units are in short tons per the GHG Tailoring Rule Guidance.

V. REGULATORY REVIEW

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

1. CAAA, Authority: 42 U.S.C. § 7401, et seq.;
2. Title 40 of the CFR;

3. NRS, Chapter 445B;
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.

A. Local Regulatory Requirements

The NRS and the CAAA are public laws that establish the general authority for the Regulations mentioned.

The Air Quality Part 70 (Title V) Program received Final Approval on November 30, 2001 with publication of that approval appearing in the Federal Register December 5, 2001 Vol. 66, No. 234. AQR Section 19 - Part 70 Operating Permits details the Clark County Part 70 Operating Permit Program. These regulations may be accessed on the Internet at: <http://www.accessclarkcounty.com/depts/DAQ/aq/rules/pages/regs.aspx>

Ammonia was a locally regulated air pollutant based on the previous air quality regulations (AQR). Based on the current AQR, ammonia is no longer a regulated air pollutant and therefore, Air Quality decides to remove corresponding conditions pertaining to NH₃. CEMS and PEMS, will continue monitoring of NH₃ to show the flow rate to the SCR system.

The source must operate SCR on each stationary gas turbine to control NO_x emissions. In order to ensure the SCR system is sufficiently controlling NO_x emissions, the NH₃ throughput in relation to NO_x emissions is monitored by use of a PEMS or other effective monitoring methods.

Local regulations contain sections that are federally enforceable and sections that are locally enforceable only. Locally enforceable only rules have not been approved by EPA for inclusion into the SIP. Requirements and conditions that appear in the Part 70 Operating Permit which are related only to non-SIP rules are notated below as locally enforceable only.

Table V-A-1: AQR 12 Summary

	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC	HAP
Air Quality Area	PSD	PSD	Basic nonattainment (ozone)	PSD	PSD	Basic nonattainment (ozone)	PSD
Source PTE (tpy)	107.03	107.03	208.83	327.49	13.25	60.68	10.87
Major Source Title V	≥ 100 tpy	≥ 100 tpy	≥ 50 tpy	≥ 100 tpy	≥ 100 tpy	≥ 50 tpy	≥ 10 tpy for each HAP, or ≥ 25 tpy for combined HAPs

	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC	HAP
Major Source PSD/NNSR (Categorical Stationary Source)	≥ 100 tpy	≥ 100 tpy	≥ 50 tpy	≥ 100 tpy	≥ 100 tpy	≥ 50 tpy	≥ 10 tpy for each HAP, or ≥ 25 tpy for combined HAPs

Discussion: Apex Generating Station is a major source of PM₁₀, PM_{2.5}, NO_x and CO. As part of the original NSR analysis all of these emissions triggered notice of proposed action.

Table V-A-2: Clark County Air Quality – AQR with Source Compliance or Requirement

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected EU
00. Definitions	applicable definitions	yes	entire source
2. Air Pollution Control Board	all subsections	yes	entire source
4. Control Officer	all subsections	yes	entire source
5. Interference with Control Officer	all subsections	yes	entire source
6. Injunctive Relief	all subsections	yes	entire source
8. Persons Liable for Penalties - Punishment: Defense	all subsections	yes	entire source
9. Civil Penalties	all subsections	yes	entire source
10. Compliance Schedule	when applicable; applicable subsections	yes	entire source
12.2.2(j)(1) PSD Requirements	Definition of Categorical Stationary Source – Fossil fuel-fired steam electric plants for more than 250 MMBtu/hr heat input	yes	entire source
12.5. Part 70 Operating Permit Requirements	applicable subsections	yes	entire source
12.10. Continuous Monitoring Requirements for Stationary Sources	applicable subsections	yes	stationary gas turbines and HGRS
12.13. Posting of Permit	all subsections	yes	entire source
13. National Emission Standards for Hazardous Air Pollutants	CCAQR Section 13.2(b)(85): Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	no	emergency generator and fire pump
14. New Source Performance Standards	CCAQR Section 14.1(a)(46): Subpart GG Standards of Performance for Stationary Gas Turbines CCAQR Section 14.1(a)(9): Subpart Da Standards of Performance for Electric Utility Steam Generating Units	no	stationary gas turbines and HGRS

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected EU
18. Permit and Technical Service Fees	18.1 Operating Permit Fees 18.2 Annual Emission Unit Fees 18.4 New Source Review Application Review Fee 18.5 Part 70 Application Review Fee 18.6 Annual Part 70 Emission Fee 18.14 Billing Procedures	yes	entire source
21. Acid Rain Permits	all subsections	no	entire source
22. Acid Rain Continuous Emissions Monitoring	all subsections	no	entire source
25. Affirmative Defense for Excess Emissions due to Malfunctions, Startup and Shutdown	applicable subsections	yes	entire source
26. Emission of Visible Air Contaminants	26.1 Limit on opacity (≤ 20 percent for 6 minutes in a 60-minute period)	yes	entire source
28. Fuel Burning Equipment	Emission Limitations for PM	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	no	entire source
70. Emergency Procedures	all subsections	yes	entire source
80. Circumvention	all subsections	yes	entire source
81. Provisions of Regulations Severable	all subsections	yes	entire source

AMBIENT AIR QUALITY STANDARDS (in part)

Table V-A-3: PSD Increment Consumption

Pollutant	Averaging Period	PSD Increment Consumption by the Source ($\mu\text{g}/\text{m}^3$)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO ₂	3-hour	25.90 ¹	682672	4032035
SO ₂	24-hour	8.64 ¹	683126	4032026
SO ₂	Annual	1.85	683126	4032026
PM ₁₀	24-hour	11.56 ¹	683126	4032026
PM ₁₀	Annual	2.48	683126	4032026
NO _x	Annual	4.36	682644	4031851

¹Modeled 2nd High Concentration

Table V-A-3 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.

B. Federally Applicable Regulations

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

Subpart A – General Provisions

40 CFR 60.7 – Notification and record keeping

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

40 CFR 60.8 – Performance tests

Discussion: These requirements are found in the Part 70 OP in Section IV-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 are identical to AQR Section 60.8. Air Quality also requires periodic performance testing on emission units based upon throughput or usage.

40 CFR 60.11 – Compliance with standards and maintenance requirements

Discussion: Compliance with various applicable standards will be demonstrated by performance tests unless otherwise specified in the standard. The source is subject to 40 CFR 60, Subpart GG which requires fuel monitoring and sampling to meet a standard. Subpart GG requirements are addressed in the Part 70 OP. AQR Section 26 is more stringent than the federal opacity standards, setting a maximum of 20 percent opacity for a period of more than 6 consecutive minutes. AGS shall operate in a manner consistent with this regulation.

40 CFR 60.12 – Circumvention

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

40 CFR 60.13 – Monitoring requirements

Discussion: This section requires that CEMS meet 40 CFR 75 Appendix B and 40 CFR 60 Appendix F standards of operation, testing and performance criteria. The Part 70 OP contains the CEMS conditions and citations to 40 CFR 75 Appendix B and 40 CFR 60 Appendix F. In addition, the QA plan approved for the CEMS follows the requirements for span time and recording time.

Subpart Da – Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978

40 CFR 60.40Da – Applicability

Discussion: The duct burners (EUs: A02 and A04) are subject to the provisions of this subpart. They each have a rated capacity of 460 MMBtu/hr.

40 CFR 60.42Da – Standard for Particulate Matter

Discussion: The duct burners are limited to 0.03 pounds per MMBtu of PM emissions. AGS shall be in compliance with this regulation. The Part 70 OP states that visible emissions from each stationary gas turbine/duct burner stack shall not exceed twenty (20) percent opacity for a period of more than 6 consecutive minutes. This is more stringent than the NSPS limits.

40 CFR 60.43Da – Standard for Sulfur Dioxide

Discussion: The duct burners shall not discharge SO₂ in excess of 100 percent of the potential combustion concentration when emissions are less than 0.20 pounds per MMBtu heat input. Apex Generating Station is in compliance with this standard.

40 CFR 60.44Da – Standard for Nitrogen Oxides

Discussion: The duct burners shall not discharge into the atmosphere any gases that contain NO_x in excess of 1.6 pounds per MWh gross energy output, based on 30-day nor discharge into the atmosphere any gases that contain NO_x is excess of 0.15 pounds per MMBtu heat input. Apex Generating Station is in compliance with this standard.

40 CFR 60.48Da – Compliance Provisions

Discussion: AGS has separate emission standards during SU/SD. They are outlined in the Part 70 operating permit. AGS has completed all compliance demonstrations and has demonstrated compliance with all applicable emission standards for NO_x and SO₂. The source also uses CEMS on each of the stationary gas turbine stacks to monitor NO_x emissions. The required measurements are outlined in the Part 70 OP.

40 CFR 60.49Da – Emissions Monitoring

Discussion: The duct burners combust only natural gas; COMS and SO₂ CEMS are not required. AGS is subject to the requirements of 40 CFR 75; therefore, the data acquired by the NO_x CEMS are allowed to be used to show compliance with 40 CFR 60, Subpart Da and 40 CFR 75. The duct burners and the combustion turbines exhaust through the same stack; therefore, the required monitoring of stationary gas turbine emissions will also monitor duct burner emissions. The reporting and monitoring requirements are outlined in the Part 70 OP.

40 CFR 60.50Da – Compliance Determination Procedures and Methods

Discussion: The compliance demonstration for this source is discussed in the Part 70 OP.

40 CFR 60.51Da – Reporting Requirements

Discussion: Reporting requirements are discussed in the Part 70 OP.

Subpart GG – Standards of Performance for Stationary Gas Turbines

40 CFR 60.330 – Applicability and designation of affected facility

Discussion: Subpart GG applies to the two stationary gas turbines at this source.

40 CFR 60.332 – Standard for nitrogen oxides

Discussion: See Table VI-D-1 of this document.

40 CFR 60.333 – Standard for sulfur dioxide

Discussion: See Table VI-D-1 of this document.

40 CFR 60.334 – Monitoring of operations

Discussion: The requirements are stipulated in the Part 70 OP. Sulfur content shall be verified annually and based on data from the gas supplier.

40 CFR 60.335 – Test methods and procedures

Discussion: These requirements are found in the conditions for performance testing found in the Part 70 OP.

Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

40 CFR 60.4305 - Applicability

Discussion: Subpart KKKK does not apply to the turbines at this source because the turbines did not commence construction, modification, or reconstruction after February 18, 2005.

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

Subpart ZZZZ – National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR 63.6585 – Applicability

Discussion: Subpart ZZZZ applies to the 500 hp emergency generator at this source.

40 CFR 63.6595 – Date of Compliance

Discussion: The emergency diesel generator must comply with the applicable emission limitations and operating limitations no later than May 3, 2013.

40 CFR 63.6603 – Emission Limitations and Operating Limitations

Discussion: The requirements are stipulated in the Part 70 OP.

40 CFR 63.6625 – Monitoring, Installation, Collection, Operation and Maintenance Requirements

Discussion: The source must install a non-resettable hour meter if one is not already installed.

40 CFR 63.6640 – How do I Demonstrate Continuous Compliance with the Emission Limitations and Operating Limitations

Discussion: The requirements are stipulated in the Part 70 OP.

40 CFR 63.6655 – What Records must I keep

Discussion: The requirements are stipulated in the Part 70 OP.

40 CFR 63.6660 – In what Form and how long must I keep my Records

Discussion: The requirements are stipulated in the Part 70 OP.

Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines:

40 CFR 63.6080 – Applicability

Discussion: Subpart YYYY does not apply to the source because Apex Generating Station is an area source of HAP and meets the definition of an existing stationary combustion turbine.

Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources:

40 CFR 63.11193 – Applicability

Discussion: Subpart JJJJJJ does not apply to the source because AGS meets the definition of a gas-fired boiler.

40 CFR 64 – COMPLIANCE ASSURANCE MONITORING

40 CFR 64.2 – Applicability

Discussion: CAM requirements contained in 40 CFR 64 are only applicable for an emission when that unit meets all of the following:

- The unit must be located at a major source for which a Part 70 or 71 permit is required.
- The unit must be subject to an emission limitation or standard.
- The unit must have uncontrolled potential emissions of at least 100 percent of the major source amount.
- The unit must use a control device to achieve compliance.

Additionally, certain exemptions under the CAM rule apply to those units that are subject to requirements and compliance demonstration provisions under Titles IV and V to the Clean Air Act (CAA).

Stationary Gas Turbines/Duct Burners (EUs: A01/A02 and A03/A04)

Pursuant to 40 CFR 64.2(b)(1)(iii), NO_x emissions are exempt from CAM requirements because acid rain program requirements are applicable. Pursuant to 40 CFR 64.2(b)(1)(vi), CO emissions are exempt because CO CEMS requirements are included in the Title V permit. EUs: A01/A02 and A03/A04 do not have any control device for PM₁₀ or SO₂ and the uncontrolled potential VOC emissions are less than the major source threshold. Therefore, EUs: A01/A02 and A03/A04 do not meet the CAM applicability criteria described above for PM₁₀, VOC or SO₂.

Auxiliary Boiler and Fire Pump (EUs: A05 through A07 and A09)

The uncontrolled potential emissions of each regulated air pollutant from the auxiliary boiler and fire pump are less than the major source threshold. Therefore, the CAM requirements do not apply for any regulated pollutant.

40 CFR 72 – ACID RAIN PERMITS REGULATION

Subpart A – Acid Rain Program General Provisions

40 CFR 72.6 – Applicability

Discussion: Apex Generating Station is defined as a utility unit in the definitions of 40 CFR 72; therefore, the provisions of this regulation apply.

40 CFR 72.9 – Standard Requirements

Discussion: AGS has applied for all of the proper permits under this regulation.

Subpart B – Designated Representative

Discussion: Apex Generating Station has a Certificate of Representation for Designated Representative on file. The source fulfilled all requirements under this Subpart.

Subpart C – Acid Rain Permit Applications

Discussion: Apex Generating Station has applied for an acid rain permit.

Subpart D – Acid Rain Compliance Plan and Compliance Options

Discussion: This Subpart discusses the individual requirements necessary for a complete compliance plan. A compliance plan exists for each stationary combustion turbine.

Subpart E – Acid Rain Permit Contents

Discussion: Apex Generating Station has applied for an acid rain permit and it will contain all information necessary to demonstrate compliance with this Subpart.

40 CFR 73 – ACID RAIN SULFUR DIOXIDE ALLOWANCE SYSTEM

Discussion: Apex Generating Station is an affected source pursuant to 40 CFR 72.6 because it fits the definition of a utility unit; therefore, this regulation shall apply.

Subpart B – Allowance Allocations

Discussion: Apex Generating Station is not listed on either Phase I or Phase II tables because it is a newer power plant; therefore, it will not have an initial allocation per 40 CFR 73.10.

Subpart C – Allowance Tracking System

Discussion: A complete certificate of representation has been received and an account has been established for this source. Apex Generating Station shall follow all guidelines and instructions presented in this Subpart while maintaining its allowance account.

Subpart D – Allowance Transfers

Discussion: When an allowance transfer is necessary, AGS shall follow all procedures in this Subpart.

Subpart E – Auctions, Direct Sales and Independent Power Producers Written Guarantee

Discussion: This Subpart outlines the auction process for allowance credits.

Subpart F – Energy Conservation and Renewable Energy Reserve

Discussion: There are no qualified conservation measures or renewable energy generation processes at this source; therefore, this Subpart does not apply.

40 CFR 75 – CONTINUOUS EMISSION MONITORING

Discussion: Apex Generating Station is subject to the Acid Rain emission limitations of 40 CFR 72; therefore, the facility is subject to the monitoring requirements of this regulation.

Each stationary gas turbine/duct burner has been equipped with a NO_x CEMS and a diluent oxygen monitor. Each stationary gas turbine is also equipped with a fuel flow monitor. The data from the CEMS is used to provide quarterly acid rain reports to both EPA and Air Quality.

All required monitoring plans, RATA testing protocols and certification testing reports have been provided to EPA and Air Quality. Initial CEMS certification testing was completed on November 23, 2003. The CEMS Quality Assurance Plan was submitted to Air Quality on April 10, 2003 and was approved on January 2, 2002.

VI. COMPLIANCE

A. Compliance Certification

AQR 12.5.2.3(k) 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 VI-A-1: Reporting Schedule ⁽¹⁾

Required Report	Applicable Period	Due Date ¹
Semi-annual Report for 1 st Six-Month Period	January, February, March, April, May, June	July 30 each year
Semi-annual Report for 2 nd Six-Month Period, any additional annual records required	July, August, September, October, November, December	January 30 each year
Annual Compliance Certification Report	12 Months	30 days after the Operating Permit issuance anniversary date
Annual Emission Inventory Report	Calendar Year	March 31 each year
Excess Emission Notification	As Required	Within 24 hours of the time the Permittee first learns of the excess emissions
Excess Emission Report	As Required	Within 72 hours of the Excess Emission Notification
Deviation Report	As Required	Along with semi-annual reports
Performance Testing	As Required	Within 60 days from the end of the test

¹ Each report shall be received by Air Quality on or before the due date listed. If the due date falls on a Saturday, Sunday or a Federal or Nevada holiday, then the submittal is 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 VI-B-1: AQR Applicable to Apex Generating Station

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 0	Definitions	Applicable – AGS will comply with all applicable definitions as they apply.	AGS will meet all applicable test methods should new definitions apply.	AGS complies with applicable requirements
AQR Section 4	Control Officer	Applicable – The Control Officer or his representative may enter into Apex Generating Station property, with or without prior notice, at any reasonable time for purpose of establishing compliance with permit regulations	Apex Generating Station will allow Control Officer to enter property as required.	AGS complies with applicable requirements

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 12.5	Part 70 Operating Permits	Applicable – AGS is a major stationary source and under Part 70. Renewal applications are due between 6 and 18 months prior to expiration. Revision applications will be submitted within 12 months of commencing operation of the new emission unit.	Apex Generating Station submitted the initial Part 70 permit application within 12 months of startup. The renewal application was submitted within the appropriate timeframe.	AGS complies with applicable requirements
AQR Section 13.2.85 Subpart ZZZZ	NESHAP – Stationary Reciprocating Internal Combustion Engines	Applicable – The Apex Generating Station fire pump is an affected unit.	Applicable monitoring requirements.	AGS complies with applicable requirements
AQR Section 14.1.1 Subpart A	NSPS – General Provisions	Applicable – AGS is an affected facility under the regulations. Sec. 14 is locally enforceable; however, the NSPS standards they reference are federally enforceable.	Applicable monitoring, recordkeeping and reporting requirements.	AGS complies with applicable requirements
AQR Section 14.1.9 Subpart Da	NSPS – Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced after September 18, 1978	Applicable – The Apex Generating Station duct burners are natural gas fired units with heat input greater than 250 MMBtu/hr.	All duct burners meet the applicable PM, SO ₂ and NO _x emission standards. The duct burners also meet the opacity requirements.	AGS complies with applicable requirements
AQR Section 14.1.46 Subpart GG	NSPS – Standards of Performance for Stationary Gas Turbines	Applicable – The Apex Generating Station stationary gas turbines are natural gas 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 3.0 ppmv (dry, corrected to 15 percent oxygen). NO _x emissions determined by EPA Method 7E.	AGS complies with applicable requirements
AQR Section 18	Permit and Technical Service Fees	Applicable – AGS will be required to pay all required applicable permit and technical service fees.	AGS is required to pay all required/applicable permit and technical service fees.	AGS complies with applicable requirements
AQR Section 21	Acid Rain Permits	Applicable – AGS is an affected facility. The stationary combustion turbines are applicable under the Acid Rain Program.	Apex Generating Station submitted required acid rain permit forms/applications.	AGS complies with applicable requirements
AQR Section 22	Acid Rain Continuous Emission Monitoring	Applicable – AGS an affected facility and is required to meet the requirements for the monitoring, recordkeeping and reporting of flow rate.	Apex Generating Station submitted all required protocols/test plans per ATC prior to CEMS certification.	AGS 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 1-hour of onset of such event.	AGS complies with applicable requirements
AQR Section 26	Emissions of Visible Air Contaminants	Applicable – Opacity for the any emission unit may not exceed 20 percent for more than 6 consecutive minutes.	Compliance determined by EPA Method 9.	AGS complies with applicable requirements
AQR Section 28	Fuel Burning Equipment	Applicable – The PM emission rates for all stationary gas turbines are well below those established based on Section 28 requirements.	Maximum allowable PM emission rate determined from equation in Section 28.	AGS 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.	Apex Generating Station air contaminant emissions controlled by pollution control devices or good combustion and thus will not cause a nuisance.	AGS complies with applicable requirements
AQR Section 41	Fugitive Dust	Applicable – Apex Generating Station shall take necessary actions to abate fugitive dust from becoming airborne.	Apex Generating Station utilizes appropriate best practices to not allow airborne fugitive dust.	AGS complies with applicable requirements
AQR Section 42	Open Burning	Applicable – In event Apex Generating Station 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.	Apex Generating Station will contact the Air Quality and obtain approval in advance for applicable burning activities as identified in the rule.	AGS 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 15 minutes. Section 43 is a local enforceable rule only.	Apex Generating Station is a predominantly natural gas-fired facility and is not expected to cause odors.	AGS complies with applicable requirements

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 70.4	Emergency Procedures	Applicable – Apex Generating Station submitted an emergency standby plan for reducing or eliminating air pollutant emissions in the Section 16 Operating Permit Application.	Apex Generating Station submitted an emergency standby plan and received the Section 16 Operating Permit.	Apex Generating Station complies with applicable requirements.
AQR Section 80	Circumvention	Applicable – Apex Generating Station shall not build, erect, install or uses any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of these regulations.	Apex Generation Station shall submit an application with the appropriate information as required by this regulation.	Apex Generating Station complies with applicable requirements.

Table VI-B-2: Federal Regulations Applicable to Apex Generating Station

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 52.21	Prevention of Significant Deterioration (PSD)	Applicable – AGS PTE > 100 TPY and is listed as one of the 28 source categories.	BACT analysis, air quality analysis using modeling, and visibility and additional impact analysis performed for original ATC permits.	AGS complies with applicable sections as required by PSD regulations.
40 CFR Part 52.1470	SIP Rules	Applicable – Apex Generating Station is classified as a Title V source, and SIP rules apply.	Applicable monitoring and record keeping of emissions data.	AGS is in compliance with applicable state SIP requirements including monitoring and record keeping of emissions data.
40 CFR Part 60, Subpart A	Standards of Performance for New Stationary Sources (NSPS) – General Provisions	Applicable – Apex Generating Station is an affected facility under the regulations.	Applicable monitoring, recordkeeping and reporting requirements.	Apex Generating Station complies with applicable requirements.
40 CFR Part 60, Subpart Da	Standards of Performance for Electric Utility Steam Generating Units for Which Construction Is Commenced After September 18, 1978	Applicable – AGS stationary gas turbines are applicable subject to the requirements of this Subpart.	Applicable monitoring, recordkeeping and reporting requirements.	Apex Generating Station complies with applicable requirements.
40 CFR Part 60, Subpart GG	Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines	Applicable – The Apex Generating Station stationary gas turbines are natural gas-fired units with heat input greater than 10 MMBtu/hr.	Applicable monitoring, recordkeeping and reporting requirements.	Apex Generating Station complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 60	Appendix A, Method 9 or equivalent, (Opacity)	Applicable – Emissions from stacks are subject to opacity standards.	Opacity determined by EPA Method 9.	AGS complies with applicable requirements.
40 CFR Part 63, Subpart ZZZZ	Emission Standards for Hazardous Air Pollutants	Applicable – The Apex Generating Station diesel emergency fire pump is subject to the requirements of this subpart	Applicable monitoring, recordkeeping and reporting requirements.	AGS must be in compliance with the applicable requirements on and after May 3, 2013.
40 CFR Part 64	Compliance Assurance Monitoring	Not Applicable – Apex Generating Station has CEMS to monitor NO _x and CO emissions.	Apex Generating Station continuously monitors NO _x and CO emissions with CEMS.	Not Applicable.
40 CFR Part 70	Federally Mandated Operating Permits	Applicable – AGS is a major stationary source and under Part 70 the initial Title V permit application was submitted as required. Renewal applications are due between 6 and 18 months prior to expiration. Revision applications will be submitted within 12 months or commencing operation of any new emission unit.	Apex Generating Station submitted a renewal application on December 3, 2010. Applications for new units will be submitted within 12 months of startup.	Apex Generating Station complies with applicable requirements.
40 CFR Part 72	Acid Rain Permits Regulation	Applicable – AGS is applicable to the requirements under this regulation.	AGS has submitted the required application and notifications.	AGS complies with applicable requirements.
40 CFR Part 73	Acid Rain Sulfur Dioxide Allowance System	Applicable – Apex Generating Station is applicable to the requirements under this regulation.	AGS will obtain SO ₂ allowances based on the actual emissions recorded annually by the CEMS.	AGS complies with applicable requirements
40 CFR Part 75	Acid Rain CEMS	Applicable – Apex Generating Station is applicable to the requirements under this regulation.	AGS will comply with all monitoring, recordkeeping and reporting for SO ₂ , NO _x and CO ₂ emissions and flow rate from affected units under the Acid Rain Program.	AGS complies with applicable requirements
40 CFR Part 82	Protection of Stratospheric Ozone	Applicable – Apex Generating Station is subject to stratospheric ozone regulations based on 40 CFR 82.4.	Applicable.	Applicable.

C. Permit Shield

A permit shield was not requested by the source.

D. Streamlining Demonstration

Table VI-D-1: 40 CFR 60 Subparts Da and GG Streamlining Demonstration

EU	Regulation (40 CFR)	Regulatory Standard	Permit Limit	Value Comparison (in Units of the Permit Limit)			Averaging Period Comparison			Streamlining Statement for Shielding Purposes
				Standard Value	Permit Limit Value	Is Permit Limit Equal or More Stringent?	Standard Averaging Period	Permit Limit Averaging Period	Is Permit Limit Equal or More Stringent?	
A01/A02	60.332 (GG)	124 ppmvd NO _x @ 15% O ₂ ⁽¹⁾	3.0 ppmvd NO _x @ 15% O ₂	124 ⁽¹⁾	3.0	Yes	4 hour	3 hour	Yes	The permit limits are more stringent than the standard based upon both concentration and averaging time. Compliance with the permit demonstrates compliance with the standard.
A03/A04										
A01/A02	60.333 (GG)	150 ppmvd (1,878.8 lbs/hr) SO ₂ @ 15% O ₂	1.47 lbs/hr SO ₂ @ 15% O ₂ (natural gas)	1,878.8 ⁽²⁾	1.47	Yes	4 hour	3 hour	Yes	
A03/A04										
A01/A02	60.333 (GG)	0.8% Sulfur by weight (280 gr/100 scf)	0.5 gr/100 scf	280 ⁽³⁾	0.50	Yes	4 hour	rolling 12-month	Yes	
A03/A04										
A01/A02	60.42Da	0.03 lb PM/MMBtu	13.00 lbs PM ₁₀ /hr	73.20 ⁽⁴⁾	13.00	Yes	30-day rolling	3 hour	Yes	
A03/A04										
A01/A02	60.42Da	20% Opacity	20% Opacity	20	20	Yes	60-minute period, excepting 6 minutes	60-minute period, excepting 6 minutes	Yes	
A03/A04										
A01/A02	60.43Da	0.20 lb SO ₂ /MMBtu	1.47 lb SO ₂ /hr	488 ⁽⁵⁾	1.47	Yes	30-day rolling	3 hour	Yes	
A03/A04										
A01/A02	60.44Da	0.15 lb NO _x /MMBtu	3.0 ppm NO _x @ 15% O ₂	366 ⁽⁶⁾	3.0	Yes	30-day rolling	3 hour	Yes	
A03/A04										
A01/A02	60.44Da	1.6 lb NO _x /MW-hr	19.86 lb NO _x /hr	272 ⁽⁷⁾	19.87	Yes	30-day rolling	3 hour	Yes	
A03/A04										

¹ The 40 CFR 60.332 NO_x standard is the following formula: $STD = 0.0075 * (14.4)/Y + F$; the calculated value (124 ppmvd) is the minimum possible value of the standard for any emission unit.

Where:

STD = allowable ISO corrected NO_x emission concentration (percent by volume at 15 percent oxygen and on a dry basis);

Y = manufacturer's rated heat at manufacturer's rated load or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour (for the purposes of obtaining the minimum possible value of the standard, Y = 8.74; and

F = NO_x emission allowance for fuel-bound nitrogen (N = the nitrogen content of the fuel). For the purposes of obtaining the minimum possible value of the standard, F = 0.

Fuel-bound nitrogen (percent by weight)	F (NO _x percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04 (N)
$0.1 < N \leq 0.25$	$0.004 + 0.0067(N - 0.1)$
$N > 0.25$	0.005

² Converting 150 ppmvd SO₂ to lbs/hr: $EF \text{ for } SO_2 = \left(\frac{150 \text{ ppm}}{10^6}\right) \left(\frac{64.06 \text{ lb } SO_2}{\text{lb-mol}}\right) \left(\frac{\text{lb-mol}}{385 \text{ scf}}\right) \left(\frac{8740 \text{ dscf of Natural Gas}}{\text{MMBtu}}\right) \left(\frac{20.9}{20.9-15}\right) = \frac{0.77 \text{ lb } SO_2}{\text{MMBtu}}$

EF for SO₂ = $\left(\frac{0.77 \text{ lb } SO_2}{\text{MMBtu}}\right) \left(\frac{2,440 \text{ MMBtu}}{\text{hr}}\right) = \frac{1,524.6 \text{ lb}}{\text{hr}}$, where (lb-mol/ 385 scf) is a constant for gas, 8,740 dscf/MMBtu is a constant at standard conditions of natural gas and (20.9/20.9-15) is the percent oxygen in affluent gas stream measured on a dry basis and 2,440 MMBtu/hr are the turbine and HRSG rating combined.

³ Sulfur content was converted from percent by weight to grains per 100 scf as follows: 0.08% sulfur x 7,000 gr/lb = 56 gr sulfur per lb of natural gas. AP-42 defines natural gas generally more than 85 percent methane and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium). Assuming an average molecular weight of 18 lb/lb-mol, 1 lb of natural gas = 20 scf. Lastly, 56 grains sulfur per 20 scf of natural gas = 280 gr/100 scf.

⁴ EUs: A01/A02 and A03/A04 are rated at 2,440 MMBtu/hr: Standard lb/hr = (0.03 lb/MMBtu)(2,440 MMBtu/hr) = 73.20 lbs/hr. AP-42 Table 1.4-2 footnotes that all PM is assumed to be less than 1.0 micron in diameter. Therefore, the correlation between the PM standard from 60.42Da and the PM₁₀ standard in the permit is appropriate for streamlining purposes.

⁵ EUs: A01/A02 and A03/A04 are rated at 2,440 MMBtu/hr: Standard lb/hr = (0.20 lb/MMBtu)(2,440 MMBtu/hr) = 488 lbs/hr

⁶ EUs: A01/A02 and A03/A04 are rated at 2,440 MMBtu/hr: Standard lb/hr = (0.15 lb/MMBtu)(2,440 MMBtu/hr) = 366 lbs/hr

⁷ EUs: A01/A02 and A03/A04 are rated at 170 MW: Standard lb/hr = (1.6 lb/MW-hr)(170 MW) = 272 lbs/hr

E. Summary of Monitoring for Compliance

Table VI-E-1: Summary of Monitoring for Compliance

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A01 & A03	Stationary Gas Turbines	CO, NO _x , SO ₂ , PM ₁₀ , VOC, HAPs	AQR 12.5 40 CFR 60 Subpart GG	Annual and short-term emission limits.	CEMS for NO _x and CO. Stack testing for VOC, PM ₁₀ and opacity as outlined in Part 70 OP. Compliance for SO ₂ and HAPs shall be based on sole use of natural gas as fuel and emission factors. Hours of operation for duct burners (EUs: A02 and A04) Recording is required for compliance demonstration.
A01 & A03	Stationary Gas Turbines	Opacity	AQR 26	Less than twenty percent opacity.	Use of natural gas as fuel and good combustion practices as well as EPA Method 9 performance testing upon the request of the Control Officer.
A05	Fuel Gas Dewpoint Heater	Opacity	AQR 26	Less than twenty percent opacity.	Use of natural gas as fuel and good combustion practices as well as visual emission checks as outline in Part 70 OP.
A06	Diesel Emergency Generator	CO, NO _x , SO ₂ , PM ₁₀ , VOC, HAPs	AQR 12 40 CFR 63 Subpart ZZZZ	Annual and short-term emission limits.	Compliance for regulated pollutants shall be based on sole use of low-sulfur diesel fuel and emission factors. Recording is required for compliance demonstration.
A06	Diesel Emergency Generator	Opacity	AQR 26	Less than twenty percent opacity.	Sole use of low-sulfur diesel fuel and quarterly visual emission checks as outlined in Part 70 OP.
A07	Diesel Emergency Fire Pump	Opacity	AQR 26	Less than twenty percent opacity.	Sole use of low-sulfur diesel fuel and quarterly visual emission checks as outlined in Part 70 OP.
A09	Rental Boiler	Opacity	AQR 26	Less than twenty percent opacity.	Use of natural gas as fuel and good combustion practices as well as visual emission checks as outline in Part 70 OP.

VII. EMISSION REDUCTION CREDITS (OFFSETS)

The source has no federal offset requirements associated with this permitting action.

VIII. 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 Permit 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 70.

Factual:

Apex Generating 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 Apex Generating Station will continue to determine compliance through the use of CEMS, performance testing, semi-annual reporting, daily recordkeeping, coupled with annual certifications of compliance. Air Quality proceeds with the preliminary decision that a Part 70 OP should be issued as drafted to Apex Generating Station for a period not to exceed five years.