TECHNICAL SUPPORT DOCUMENT

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

SUBMITTED BY

NEVADA POWER COMPANY

for

SUNRISE STATION

Part 70 Operating Permit Number: 8
Renewal
SIC Code - 4911: Electric Utility Services

Clark County
Department of Air Quality and Environmental Management
Permitting Section

October, 2009

EXECUTIVE SUMMARY

The Sunrise Station, owned by Nevada Power Company (NPC), is a major source for NO_x and CO; and a minor source for PM_{10}, SO_x, VOC, and HAP. The source is located at 6300 East Vegas Valley Drive, Las Vegas, Nevada 89122, in the Las Vegas Valley airshed, hydrographic basin number 212. Hydrographic basin 212 is nonattainment for CO, PM_{10}, and ozone (8-hour), and attainment for all other regulated air pollutants.

The NPC-Sunrise Station is a natural gas-fired electric generating facility consisting of two units that produce electricity. All generating and support processes at the site are grouped under the Standard Industrial Classification 4911 – Electric Services (NAICS: 22111 - Electric Power Generation). NPC-Sunrise Station includes one external combustion steam boiler (Unit Number 1) and one simple cycle natural gas turbine (Unit Number 2). The generating units are supported by a 250 kW, 380 HP emergency generator used for routine repairs and preventative maintenance, one cooling tower for the steam boiler, as well as fuel storage and transfer systems.

Clark County Department of Air Quality and Environmental Management (DAQEM) has delegated authority to implement the requirement of the Part 70 operating permit program. The external combustion steam boiler, cooling tower, and its supporting equipment are permitted through the Nevada Department of Environmental Protection (NDEP). DAQEM regulates only the simple cycle gas turbine, its associated emission units, the 380 HP portable generator, and the 5,064,081 gallon diesel storage tank. The entire NPC-Sunrise Station regulated by two jurisdictions, is a major source for NO_x, CO, SO_x, PM_{10}, and VOC, while DAQEM-regulated portion is only major for NO_x and CO. The terms facility and source, used in this TSD and Part 70 OP, signify only DAQEM-regulated units. The potential emissions for the source from DAQEM-regulated units are shown in the table below.

Table 1: Maximum Source PTE (tons per year)

Pollutant	PM_{10}	NO_X	CO	SO_2	VOC	HAP
Tons/Year	**46.00**	**1,760.38**	**155.34**	**10.42**	**13.30**	**1.33**
Major Source Thresholds	**70**	**50**	**70**	**100**	**50**	**10/25[1]**

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

Initial Part 70 Operating Permit was issued on January 15, 2003; Part 70 Operating Permit Modification 1 (or Revision: 1) was issued on November 30, 2006. DAQEM received the Title V renewal application on June 14, 2007. Based on the information submitted by the applicant and a technical review performed by the DAQEM staff, the DAQEM proposes the renewal of a Part 70 Operating Permit to NPC-Sunrise Station.

This Technical Support Document (TSD) accompanies the proposed Part 70 Operating Permit for Nevada Power Company - Sunrise Station.

TABLE OF CONTENTS

I. SOURCE INFORMATION 4

A. General 4
B. Description of Process 4
C. Permitting History 5
D. Operating Scenario 8
E. Proposed Exemptions 9

II. EMISSIONS INFORMATION 9

A. Total Source Potential to Emit 9
B. Equipment Description 9
C. Emission Units and PTE 10
D. Performance Testing and Compliance Assurance Monitoring 11

III. REGULATORY REVIEW 14

A. Local Regulatory Requirements 14
B. Federally Applicable Regulations 18

IV. COMPLIANCE 20

A. Compliance Certification 20
B. Compliance Summary 21
C. Federal Air Quality Regulations Applicable to Sunrise Station Unit #2 25
D. Summary of Monitoring for Compliance 27

V. EMISSION REDUCTION CREDITS (OFFSETS) 28

VI. ADMINISTRATIVE REQUIREMENTS 28

I. SOURCE INFORMATION

A. General

Permittee	Nevada Power Company - Sunrise Station
Mailing Address	6226 West Sahara Avenue, Las Vegas, NV 89151
Contacts	Steve Page
Phone Number	(702) 402-7706
Fax Number	(702) 402-7730
Source Location	6300 East Vegas Valley Drive, Las Vegas, NV 89122
Hydrographic Area	212
Township, Range, Section	T21S, R62E, Section 10
SIC Code	4911 – Electric Services
NAICS Code	22111 - Electric Power Generation

B. Description of Process

Nevada Power Company Sunrise Station (NPC-Sunrise Station) is a natural gas fired electric utility generating facility consisting of two units which produce electricity. All generating and support processes at the site are grouped under the Standard Industrial Classification 4911 – Electric Services. NPC-Sunrise Station includes one external combustion steam boiler (Unit Number 1) and one simple cycle gas turbine (Unit Number 2). DAQEM regulates only the simple cycle gas turbine (Unit Number 2), its associated emission units, the 5,064,081 gallon, diesel storage tank, and the 380 hp portable emergency generator.

Unit Number 2 is a Westinghouse 501-B6 single shaft, nominal 76 MW simple cycle combustion gas turbine using natural gas as its primary fuel (EU: 801). The unit can also use diesel fuel, but the source requested removal of the diesel fuel firing option from the permit. This request has been addressed in this revision. As originally permitted in 1975, Unit Number 2 has no restrictions on hours of operation, no restrictions concerning fuel type, no controls, and no required record keeping, reporting, or performance testing. In 2002, DAQEM issued an amended permit requiring water injection, emissions tracking, annual emission limitations, record keeping, reporting, and performance testing.

The Onan 250 kW, 380 hp emergency diesel generator (EU: A02) may be tested no more than 26 hours per year and, beyond that, may be operated for repairs and maintenance only during the interruption of the normal power supply. The facility also has a 5,064,081 gallon diesel fuel storage tank.

The NPC-Sunrise Station gas turbine (EU: 801) is continuously monitored for the natural gas flow, turbine load, and water injection rate as indicators of NO_x emissions in the flue gas. The monitoring system generates a log of data and provides alarm signals to the control room when

the 3-hour average water injection rate is less than the optimum water injection rate. The system complies with 40 CFR 64 Compliance Assurance Monitoring (CAM) Rule.

C. Permitting History

The Sunrise Station is regulated by two air quality agencies: the Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control and Clark County Department of Air Quality and Environmental Management (DAQEM), and has two Title V permits. The entire co-regulated Sunrise Station facility is a major source for NO_x, CO, SOx, PM10, and VOC, while the DAQEM-regulated portion in only a major source for NO_x and CO. Initial Part 70 Operating Permit was issued January 15, 2003; Part 70 Operating Permit Modification/Revision 1 was issued November 30, 2006 based on the AQR Section 12 ATC/OP Modification 1, Amendment 2, issued on June 30, 2006. DAQEM received the Title V renewal application on June 14, 2007. NPC proposed changes to the current Part 70 OP. None of these changes were substantive or are considered a modification under AQR Section 19. The proposed changes include addition of sampling and analysis option for verification of sulfur content of the natural gas (Part 70 OP, Modification 1, Condition IV-A-13); deleting the phrase "from the gas supplier" in the verification condition of natural gas limits (Part 70 OP, Modification 1, Condition III-C-4); and removal of the diesel firing option of the gas turbine (EU: 801) along with any related gas turbine specific diesel requirements (Part 70 OP, Modification 1, Conditions III-C-3, IV-A-4, IV-A11, and IV-A-14). The Existing Section 12 ATC/OP has not been revised to incorporate the above proposed changes.

Table I-C-1: NSR Permits Issued to Sunrise Station

Date Issued	Permit Number	Description
10/07/2008	ATC/OP Modification 1, Revision 4	The revision removes diesel firing option from the existing ATC/OP.
06/30/2006	ATC/OP Modification 1, Amendment 2	The amendment to the existing ATC/OP included updates of emission factors and revisions of the reporting requirements.
10/04/02	ATC/OP Modification 1, Amendment 1	Section 16 OP – comprehensive permit for all emission units issued and sent to Nevada Power Company (NPC). New permit establishes PTE, conditions, record keeping, reporting and performance testing. Mandates water injection year-round.
11/05/99	ATC/OP Modification 1	Authority to Construct/Operating Permit - Modification 1, addition of one 380 hp, 250 kW Onan portable diesel generator for emergency repairs during failure of grid power. Unit # 2 unaffected by this new permit.
02/04/1975	Section 8 OP (yellow ticket)	Section 8 OP (A00801) Turbine Sunrise Station OP, Natural gas 67 MW; indicates no conditions; no record keeping, and no reporting.

Table I-C-2: BACT Determinations for Sunrise Station

EU	Description	BACT Technology	BACT Limit
801	76 MW natural gas-fired electric turbine generator	Water injection for NO_x control. Natural gas burning for SO_x control.	0.34 lbs/MMBtu NO_X on a 3-hour average at 15% O_2.

EU	Description	BACT Technology	BACT Limit
A02	380 hp Onan diesel emergency generator	Turbocharged, Aftercooled, Low sulfur diesel fuel (< 0.05%)	No limits.

Unit Number 2 (EU 801) Installation and Permitting

NPC submitted an application to the Clark County Health District (CCHD) on May 29, 1973, and to the Public Service Commission (PSC) on June 29, 1973 to obtain permits for a combustion gas turbine, known as Unit Number 2 (a Westinghouse 501-B5 turbine). A revised technical support document was submitted on September 14, 1973 to the CCHD to satisfy Section 8 and 9 (1/19/1973) requirements. Unit Number 2 was issued a Section 8/9 Operating Permit (OP) February 4, 1975 by the CCHD. It is possible that water injection at that time was a practical measure for NO_x control. Regardless, the operating permit issued in 1975 did not require any control devices, including water injection control technology, to be installed on Unit Number 2. In addition, the 1975 operating permit did not regulate the type and amount of fuel use or the turbine's operating hours. The 1975 OP had no conditions regarding record keeping, reporting, performance testing, or emissions.

Permitting Water Injection Equipment for turbine EU 801

NPC and Mission Energy Company (Mission) submitted a letter on May 24, 1990 proposing a plan to offset NO_x emissions from three new gas fired turbines, Sun-peak units 3-5, by implementing water injection for NO_x control on Sunrise Unit Number 2 and other NPC units located in Las Vegas. The letter advised that water injection would be used from May through October (peak ozone months in the Las Vegas Valley) beginning June 1, 1991. NPC submitted a letter on March 1, 1991 stating that Unit Number 2 at Sunrise Station was equipped with water injection. In 1991, Section 15 of the AQR, "Source Registration" governed permitting for stationary sources.

The CCHD sent NPC a letter on March 7, 1991 requesting NPC to performance test Sunrise Unit Number 2 to determine actual NO_x reductions. The test was to include data that compared NO_x emissions with and without the water injections. In response to a CCHD request for performance testing, the Health District received an October 15, 1991 letter from NPC stating Unit Number 2 had been tested on October 10 and 11, 1991 at various water injection rates at four separate loads. NPC advised that the tests showed NO_x emissions reduced from 0.45 lbs/MMBtu to 0.33 lbs/MMBtu with a 10 gallon per minute (gpm) injection rate while burning natural gas. NPC also advised that NO_x emissions were reduced from 0.67 lbs/MMBtu to 0.33 lbs/MMBtu with a 30 gpm water injection rate while burning Number 2 diesel fuel. NPC advised that emission rates from air pollutants other than NO_x were not increased at a result of water injection.

The 1975 OP for Sunrise Station was not amended in 1991 to make water injection an enforceable condition and to impose NO_x and other emission limits based on this control technology. The amended OP issued in October 2002 includes these requirements. Additional performance tests were performed on October 15 and 16, 1991. The following tables summarize the performance test data firing for both natural gas and oil:

Table I-C-3: October 15, 1991 Testing of Unit 2 Using Natural Gas

Test Number	1	2	3	Average
Test Conditions	Gas 74 MW	Gas 74 MW	Gas 74 MW	Gas 74 MW
Barometric Pressure (in. Hg)	28.31	28.15	28.09	28.18
Stack Pressure (in. Hg)	28.08	27.91	27.85	27.95
Stack Area (ft^2)	161.92	161.92	161.92	161.92
Elapsed Sampling Time (min.)	60.00	60.00	60.00	60.00
Volume Gas Sampled (dscf)	45.778	46.133	46.474	46.128
F-Factor	8644.44	8644.44	8644.44	8644.44
Gas Data				
Average Gas Velocity (fps)	190.27	195.73	185.73	190.58
Average Gas Temperature (F°)	1090.25	1072.75	962.15	1041.72
Gas Flowrate (dscfm)	546,665	566,207	580,089	564,320
Gas Analysis (Volume %)				
Carbon Dioxide, dry	2.92	3.14	2.86	2.97
Oxygen, dry	15.82	15.70	15.74	15.75
Water	7.49	7.33	6.99	7.27
Emission Concentration (ppm)				
CO	1.36	2.34	1.93	1.88
NOx	80.96	78.83	76.8	78.86
Emission Rate (lbs/hr)				
CO	3.24	5.77	4.87	4.63
NOx	317.08	319.78	319.19	318.68
Emission Factor (lbs/MMBtu)				
CO	0.0035	0.0059	0.0049	0.0048
NOx	0.3437	0.3273	0.3215	0.3308

Permitting of Portable Emergency Diesel Generator

The diesel emergency generator was installed on September 30, 1993. On February 29, 1996, the CCHD submitted a letter to NPC which required NPC to submit a compliance plan that addressed the non-compliance issue (no ATC) for the diesel emergency generator. On March 25, 1996, NPC replied with a letter containing permit terms to be incorporated into the Title V application. NPC proposed an annual 150 hour cap for the emergency generator. On April 25, 1996, the CCHD responded to NPC in a letter, stating NPC was to "submit an application for ATC for the diesel generator by May 25, 1996". Following the CCHD determination that the ATC is complete and approvable, the information was to be submitted as the compliance schedule for the emission unit. Additionally, the CCHD explained to NPC that the Part 70 permit application could not be used as a vehicle to by-pass pre-construction review requirements for the portable generator. An application was submitted and deemed complete (11/02/99) for an ATC/OP for the Onan 250 kW emergency generator (EU A02). An ATC/OP was issued on November 5, 1999. The unit was given a 26 hours per year cap for testing and maintenance.

Table I-C-5: PTE of Onan Diesel Generator 380 hp, 250 kW.

Pollutant	EF g/hp-hr	lbs/hour	Hours/year	Tons/year
PM_{10}	0.50	0.57	26	0.01
NO_x	9.30	8.02	26	0.10
CO	1.00	1.74	26	0.02
SO_2	0.56	0.53	26	0.01
VOCs	0.48	0.64	26	0.01

The PTE emissions were below offset de minimus threshold for all pollutants and no offset obligation was placed on NPC for this unit. Neither modeling nor performance testing was required for a unit of this size, operation, and PTE.

D. Operating Scenario

Power generation units at NPC-Sunrise Station are currently dispatched (brought on or off-line) based upon economic criteria. The units with the lowest cost per kilowatt-hour (kWh) are utilized before those with higher rates. Dispatching order is determined across the NPC generating mix, therefore certain units at other locations may be dispatched before those at Sunrise Station.

The NPC-Sunrise Station Unit 2 turbine (EU: 801) is designated by NPC, as a "peaking" unit and is utilized as necessary to make up load demand after the company's base load coal fired facility at Reid Gardner is operating at maximum capacity. The unit, however, may operate up to 24 hours per day and up to 8,760 hours per year.

The NPC-Sunrise Station Unit 2 turbine (EU: 801) is a 76 MW simple cycle combustion gas turbine utilizing natural gas as its primary fuel. The unit estimated maximum rating is 1,299 MMBtu/hr. Fuel oil Number 2 was permitted to use as secondary fuel, but the source requested to remove the diesel firing option in this permit application. This permit removes the diesel firing option from the permit.

The diesel generator is limited to a maximum of 380 bhp. The emergency diesel generator may operate up to 26 hours per year for testing and maintenance purposes only. The emergency generator uses turbocharging and aftercooling, and combust only low sulfur (less than 0.05 percent) diesel fuel. The diesel generator shall not be used for dispatchable peak shaving. Emergency use as defined in AQR Section 0 is excluded from limits of hours of operation and emissions.

NPC described an alternate operating scenario in its 1998 revised Title V application that "during occasions when the turbine unit is under-going startup or shutdown operations momentary transients resulting in visible emissions may occur. While noticeable emissions are rare when burning natural gas, oil fuel adjustments could potentially produce visible emissions in excess of State and County limitations." This is not an alternative operating scenario, but could be deemed an upset or breakdown depending upon the full set of circumstances for any given situation in which opacity limits are exceeded during fuel adjustments. The Title V permit limits visible emissions from the turbine stack and the portable generator to no more than 20 percent opacity for a period or periods aggregating more than six consecutive minutes in any sixty-minute period and requires reporting of upsets, breakdowns and malfunctions.

Table I-D-1: Facility Actual Operating Hours

Year	Quarters	Hours on Gas	Hours on Diesel
2002	1,2,3 and 4	629.44	0
2003	1,2,3 and 4	319.64	0
2004	1,2,3 and 4	75.38	0
2005	1,2,3 and 4	88.19	0
2006	1,2,3 and 4	284.83	0
Average Annual Operating Hours for 2002-2006		**1397.48**	**0**

E. Proposed Exemptions

Unit Number 2 commenced operation on or about October 31, 1974. Unit Number 2 is exempt from the federal Acid Rain Program, 40 CFR, § 72.6 (b) which states that "a simple combustion turbine that commenced commercial operation before November 15, 1990" is not an affected unit subject to the requirements of the Acid Rain Program. 40 CFR § 72.2 defines a simple combustion turbine as a unit that is "rotary engine driven by a gas under pressure that is created by the combustion of any fuel". Unit Number 2 at Sunrise Station meets the definition of a simple combustion turbine.

Subpart GG is not applicable to this source. Unit 2 simple cycle natural gas/oil fired turbine began operation on or about October 31, 1974. For a facility to be subject to the requirements of NSPS Subpart GG, the facility must commence construction, modification, or reconstruction after October 3, 1977.

There are no restrictions for the operation of diesel emergency generator during emergency situations as defined in Section 0 of the AQR.

II. EMISSIONS INFORMATION

A. Total Source Potential to Emit

The source potential to emit (PTE) for pollutants (Table II-A-1), as presented in the Part 70 Operating Permit, reflects the permitted emission limits established in the January 15, 2003 (Permit 8, Modification 1), June 30, 2006 (ATC/OP 8, Modification 1, Amendment 2) for natural gas burning option, and October 7, 2008 (ATC 8, Modification 1, Revision 4).

Table II-A-1: Maximum Source PTE (tons per year)

Pollutant	PM_{10}	NO_X	CO	SO_X	VOC	HAPs
lbs/hour[1]	11.34	413.66	38.00	3.16	3.99	0.32
tons/year[2]	**46.00**	**1,760.38**	**155.34**	**10.42**	**13.30**	**1.33**

[1] lbs/hour PTE for the turbine are based on natural gas usage; lbs/hour includes portable generator and, for VOCs and HAPs, diesel storage tank hourly emission rates. Start-up/shut-down PTE listed in Table II-C-3.
[2] tons/year assumes 8,760 hours per year turbine operation on natural gas, 26 hrs/year emergency generator operation and continuous VOC and HAP emissions from the diesel tank.

B. Equipment Description

The air emission source equipment and associated major equipment is listed below. In addition, common support equipment exists to support the power generation equipment.

<u>Power Equipment</u>

1. One (1) Westinghouse 50L-B5 single shaft, simple cycle, nominal 76 MW combustion turbine, with:
    a. Natural gas firing,
    b. Inlet air filters with filter cleaning system,
    c. Fire detection and protection system,
    d. Hydrogen cooled electric generator,
    e. Emission Unit Identification 801.

Common Support Equipment

1. One (1) emergency generator, diesel fired, 250 kW (380 hp) (Emission Unit Identification A02).
2. One (1) No. 2 diesel fuel storage tank, 5,064,081 gallon capacity (Emission Unit Identification A03).

Miscellaneous Ancillary Equipment

1. Ancillary equipment as necessary to ensure efficient, safe and reliable operation:
    a. Administration and control room building,
    b. Warehouse and maintenance building,
    c. Various water storage tanks,
    d. Various chemical storage tanks,
    e. Electrical switchyard,
    f. Fire pump house,
    g. Storage structure.

C. Emission Units and PTE

The following tables summarize the allowable limits for each emission unit.

Table II-C-1: List of Emission Units

EU	Description	SCC	Type[1]
801	Westinghouse, Model 501-B5 Single Shaft, Simple Cycle, Nominal 76 MW Turbine, S/N: 27A1111-1; (MEQ = 76)	20100201	TR1, MEQ
A02	Onan 250 ODFM, 250 kW (380 hp) Diesel-Powered Emergency Generator, M/N: 250 ODFM-17R50331N; S/N: ES70899164	20200102	---
A03	5,064,081 Gallon, Diesel Number 2 Fuel Storage Tank, Chicago Bridge and Iron Co.	40301019	T1

[1]Type designates emissions unit billing: TR1 = Turbine 2.5 MW or larger; MEQ = megawatt equivalent; T1 = Storage Tank, > 40,000 gal.

Emission limitations in this document refer to pounds per MMBtu, pounds per hour, and tons per year. The terms "year" and "annual" in this permit refer to any consecutive 12-month period. Actual and allowable annual emissions, including startup and shutdown, from EU: 801 and actual and allowable short-term and annual emissions from EU: A02 and EU: A03 shall not exceed the applicable PTE listed in Table II-C-2. NO_x emission factor (0.34 lbs/MMBtu) is a short term enforceable emission limitation for EU 801.

Table II-C-2: Emission Units PTE[1]

EU	PM_{10}[2]			NO_X[3]			CO[4]			SO_X[5]			VOC[6]		
	EF	lbs/hr	tons/ year	EF	lbs/hr	tons/ year	EF	lbs/hr	tons/ year	EF	lbs/hr	tons/ year	EF	lbs/hr	tons/ year
801	0.0089	10.50	45.99	0.34	401.88	1,760.23	0.03	35.46	155.31	0.0020	2.38	10.41	0.0021	2.48	10.87
A02[7]	2.20E-03	0.84	0.01	3.10E-02	11.78	0.15	6.68E-03	2.54	0.03	2.05E-03	0.78	0.01	2.51E-03	0.96	0.01
A03[8]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	2.42

[1] Start-up/shut-down emissions are included in the annual limits of Table II-C-3 for EU 801. See Table II-C-4 for HAP emissions.

[2] EU: 801 PM_{10} emissions based on maximum heat input rating of 1,182 MMBtu/hr (based on HHV); 2003 performance testing; and 8,760 hours of operation per year. EF is in lbs/MMBtu. EU A02 based on AP-42 emission factor in lbs/hp-hr.
[3] EU: 801 NO_X emissions based on maximum heat input rating of 1,182 MMBtu/hr; 8,760 hours of operation per year; and the May 24, 1990 NO_X Reduction Plan agreement with the Clark County Health District. EF is 0.34 lbs/MMBtu. EU A02 EF is based on AP-42 emission factor in lbs/hp-hr
[4] EU: 801 CO emissions based on maximum heat input rating of 1,182 MMBtu/hr; AP-42 Table 3.1-1; and 8,760 hours of operation per year. EF is in lbs/MMBtu. EU A02 based on AP-42 emission factor in lbs/hp-hr
[5] EU 801 SO_X emissions based on maximum heat input rating of 1,182 MMBtu/hr; AP-42 Table 3.1-2a; Federal Energy Regulatory Commission pipeline quality standard of 0.75 grains/100 dscf total sulfur in natural gas; and 8,760 hours of operation per year. EF is in lbs/MMBtu. EU A02 based on AP-42 emission factor in lbs/hp-hr
[6] EU: 801 VOC emissions based on maximum heat input rating of 1,182 MMBtu/hr; AP-42 Table 3.1-2a; and 8,760 hours of operation per year. EF is in lbs/MMBtu. EU A02 based on AP-42 emission factor in lbs/hp-hr
[7] EU: A02 emissions based on 380 hp; 26 hours per year testing and maintenance.
[8] EU: A03 VOC emissions from American Petroleum Institute Tanks Program.

Table II-C-3: Turbine Start-up and Shut-down PTE[1,2,3,4,5]

EU	PM_{10}[6]		NO_X		CO		SO_X[6]		VOC[6]	
	lbs/ MMBtu	lbs/hr	lbs/ MMBtu	lbs/hr	lbs/ MMBtu	lbs/hr	lbs/ MMBtu	lbs/hr	lbs/ MMBtu	lbs/hr
801	0.0089	3.77	0.38	174.9	0.37	107.7	0.002	0.85	0.0021	0.89

[1] Annual limits for EU: 801 in Table III-C-2 include start-up and shut-down emissions shown in Table III-C-3. The EF listed in Table III-C-2 will be used unless the source will develop more representative EF.
[2] PTE represents emissions for one (1) hour of startup/shutdown.
[3] Emission factors taken from Clark Unit 7 CEMS data during periods of startup and shutdown (natural gas) with low load (15 MW or less) and no load, and are the average for the "hourly" time frame. "Hourly" time frame varied from 10 to 60 minutes. Emission factors chosen were the highest recorded during the start-up/shut-down time frames.
[4] Raw CEMS data from Clark Station Unit 7 (2/10/02): PM_{10}, SO_X and VOCs - heat input 423.8 MMBtu/hr, average load 15.6 MW, gas GCV 1,060 HHV; NO_X - heat input 423.3 MMBtu/hr, average load 15.6 MW, gas GCV 1,060 HHV; CO lbs/MMBtu - heat input 213.5 MMBtu/hr, average load 0.0 MW, gas GCV 1,060 HHV; CO lb/hr - heat input 284.8 MMBtu/hr, average load 2.8 MW, gas GCV 1,060 HHV.
[5] Actuals $\pm$ 10%.
[6] PM_{10}, VOC and SO_X emission factors were taken from Table III-C-2 and multiplied by the corresponding heat input for the start-up/shut-down period. Highest heat input was 423.8 MMBtu/hr (based on gas gross caloric value of 1,060 HHV).

Table II-C-4: HAP Emissions

	Turbine (EU: 801) Gas-fired at 8,760 Hours per Year[1,2]	Diesel Generator (EU: A02) at 26 Hours per Year[3]	Diesel Tank (EU: A03) at 8,760 Hours per Year[4]	All Emission Units
lbs/hour	0.25	0.017	0.053	0.32
ton/year	1.10	0.0002	0.23	1.33

[1] Formaldehyde, benzene, 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; remaining emission factors from AP-42 Section 3.1, Stationary Gas Turbines, Table 3.1-3.
[2] Based on heat inputs of 899 MMBtu/hr (LHV) for natural gas,
[3] Emission factors from AP-42, Volume 1, Chapter 3, Table 3.3-2.
[4] HAPs at concentrations found in #2 diesel fuel oil (per MSDS) applied to VOC emission limit.

D. Performance Testing and Compliance Assurance Monitoring

AQR Sections 8 and 9, in effect in 1975, did not require performance testing. The only performance test documented is that conducted in 1991 related to implementation of water injection. New performance testing is required initially and on an on-going basis by the 2002 amended OP and Part 70 OP.

Initial performance testing for the turbine was completed on October 15, 1991. The amended OP issued in October 2002 includes performance testing requirements. Performance testing for turbine operation using natural gas shall be conducted annually and within 60 days of the anniversary date of the previous performance test. The performance testing is subject to DAQEM's "Guideline on Performance Testing" (Revised 09/05/03). The required performance testing will be performed using the following methods:

Table II-D-1: Performance Testing Protocol Requirements for Turbine

Test Point	Pollutant	Fuel(s)	Method
Turbine Exhaust Outlet Stack	NO_X	Natural Gas	EPA Method 7E
Turbine Exhaust Outlet Stack	CO	Natural Gas	EPA Method 10
Turbine Exhaust Outlet Stack	Opacity	Natural Gas	EPA Method 9
Turbine Exhaust Outlet Stack	----	Natural Gas	EPA Methods 1, 2, 3 and 4

Performance testing shall be conducted while firing at least 80 percent of nominal capacity. During performance testing, the source shall track and record the amount of natural gas used during each test run in cubic feet per hour and MMBtu per hour corrected to standard conditions. DAQEM-approved performance test results shall be used to verify and/or revise the optimum water injection ratios for natural gas with respect to ensuring compliance with annual emission limits affected by water injection and water-to-fuel ratio. The annual compliance performance tests of NO_x emissions are presented in Table II-D-2:

Table II-D-2: Annual Compliance Performance Tests for NO_x Emissions (lbs/MMBtu)

Year	Date of Test	Run 1	Run 2	Run 3	Average	NO_x Limit
2004	7/29/04	0.340	0.339	0.330	0.336	0.34
2005	9/19/05	0.316	0.321	0.323	0.320	0.34
2006	7/25/06	0.288	0.269	0.282	0.280	0.34
2007	10/18/07	0.337	0.334	0.333	0.335	0.34

Compliance Assurance Monitoring (CAM)

The CAM rule is applicable to the turbine (EU 801) for NO_x emissions. The pollutant-specific emission unit at the facility under DAQEM jurisdiction is a Westinghouse 501B5 simple gas-fired combustion turbine (EU: 801). The emission unit combusts only pipeline quality natural gas. The NO_x emissions are controlled by water injection. The turbine is not subject to CEM. However, the natural gas flow, turbine load, and water injection rate are continuously monitored, while the emission unit is in operation, as the indicators of NO_x emissions.

According to EPA AP-42, Section 3.1.3.1, NO_x emissions are strongly dependent on the high temperatures developed in the combustor. The NO_x is formed by three different mechanisms. Thermal NO_x is formed during thermal dissociation and subsequent reaction of N_2 and O_2 molecules in the combustion air. Most thermal NO_x is formed in the high temperature stoichiometric flame pockets downstream of the fuel injections where combustion air has mixed sufficiently with the fuel to produce peak temperature at fuel/air interface. Prompt NO_x, which is formed from early reactions of N_2 molecules, is usually negligible when compared to the amount of thermal NO_x formed. The third mechanism, fuel NO_x, is negligible when natural gas is burned. Consequently, during natural gas combustion essentially all NO_x formed is thermal NO_x. Maximum reduction of thermal NO_x can be achieved by control of temperature, for given stoichiometry.

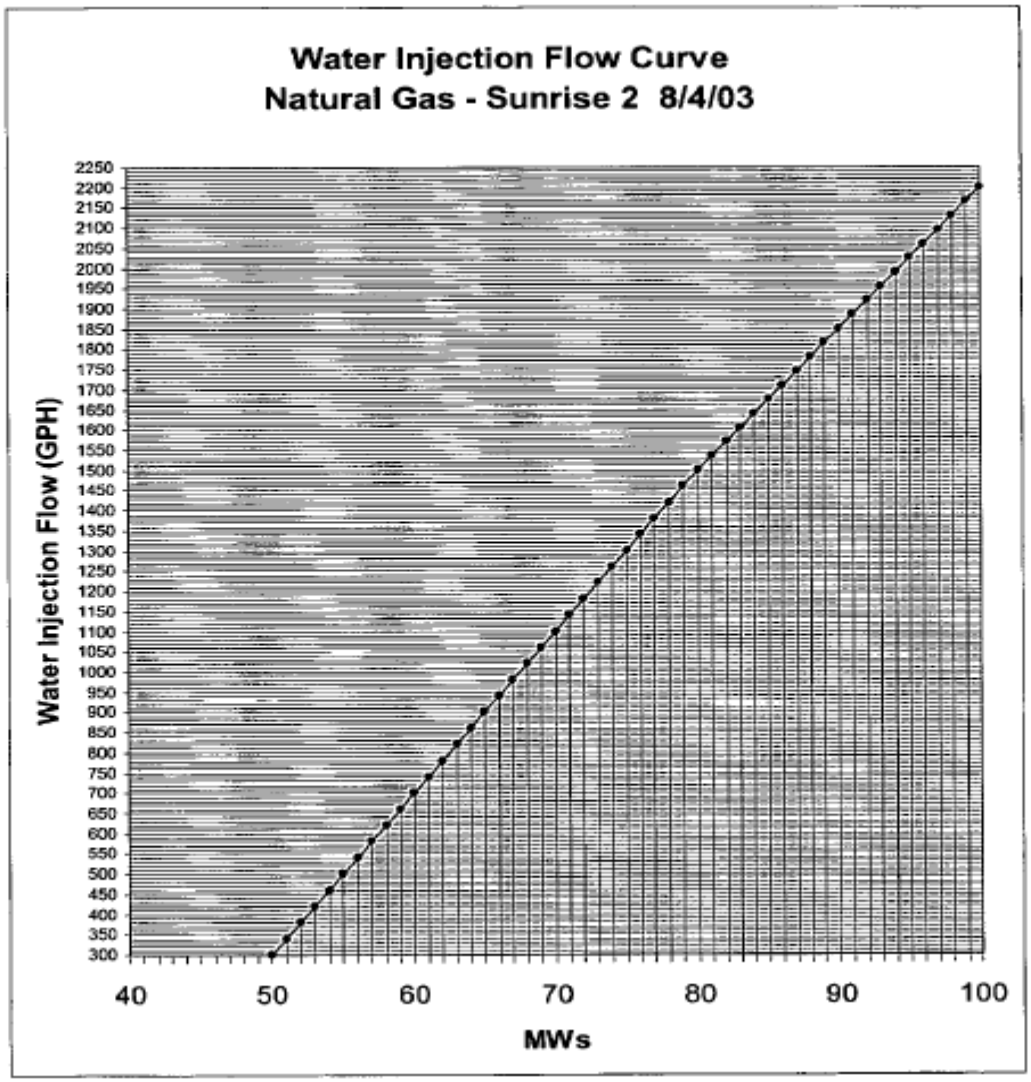
The water injection system on the NPC-Sunrise Station turbine correlates the water injection rate with the corresponding load to achieve the maximum reduction of NO_x. Measuring the water injection rate with the load works as a means to continuously reduce the amount of

thermal NO_x formed. The hourly calculation of the NO_x emissions ensures that one hour emissions are compared to with the hourly limit on the ongoing basis. These methods provide the continuous NO_x reduction and ongoing compliance assurance with the short term emission limits. Compliance with the NO_x short term emission limit as indicated by the data logging system is deemed indicative of compliance with the NO_x short term emission limits. The indicator range is based directly upon permitted emission limits for NO_x. The key elements of the monitoring approach are presented in Table III-D-3:

Table II-D-3: Monitoring Approach[1]

Criteria	Indicator
Indicator and Measurement Approach	Natural gas flow rate, turbine load, and water injection rate are monitored as the indicators of NOx emissions compliance. Water injection is used for loads over 55 MW as required under Title V permit. The water injection rate curve is used to determine the required water injection rate based on the turbine load. The annual NO_x emissions are calculated using the fuel flow and emission limit (lb/MMBtu) for NO_x emissions after water injection, in addition to startup and shutdown emissions factors listed in the permit. Annual source testing has demonstrated the actual turbine NO_x emission rate is at or below the permit emission limit.
Indicator Range	An excursion is defined as a three-hour average water injection rate lower than specified in by the water injection rate curves. The water injection system is monitored continuously (data recorded at least fifteen minutes with one hour average) and alarms are activated if the three-hour average water injection rate is less than the required flow. Excursions trigger an investigation, corrective actions and a reporting requirement. More than 6 excursions within a 6-month period require a quality improvement plan (QIP).
Performance Criteria Data Representativeness	The turbine emissions are tested annually using EPA Method 7E to ensure the NO_x emissions are below the emission rate predicted by the water injection curve and listed in the permit.
Verification of Operational Status	Compliance with Part 70 OP conditions
QA/QC Practices and Criteria	Annual calibration of flow meters (or calibration based on manufacturer's specification). Annual Source testing using EPA Method 7E.
Monitoring Frequency	The natural gas fuel flow rate and water injection flow rate are measured continuously using flow meters. Turbine load is also measured continuously. (Continuous measurement is defined as data recorded at least every fifteen (15) minutes with one hour average).
Data Collection Procedures	A datalogger records the natural gas fuel flow, turbine load, and water injection rates measured by the flow meters.
Averaging Period	A three-hour fixed block averaging period is used. All reported emissions are based on rolling hour average.

[1] Except during periods of startup, shutdown, maintenance/planned outage, or malfunction. Neither short term permit limits nor NO_x controls are applicable to turbine startup and shutdown periods. Per permit conditions, no NO_x emission control are required at loads of 55 MW or less; therefore, no NO_x emission controls are required during startup and shutdown. The startup and shutdown emissions are calculated using the NO_x emission factor listed in the permit and the measured flow rate. As noted in the permit, the startup and shut down emission factors were derived from CEMS data at a sister unit at another facility.



III. REGULATORY REVIEW

A. Local Regulatory Requirements

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

1. Clean Air Act, as amended (CAAA), Authority: 42 U.S.C. § 7401, et seq.;
2. Title 40 of the Code of Federal Regulations (CFR); including Part 70 and others;
3. Nevada Revised Statutes (NRS), Chapter 445; Sections 401 through 601;
4. Portions of the AQR included in the State Implementation Plan (SIP) for Clark County, Nevada. SIP requirements are federally enforceable. All requirements from Authority to Construct permits and Section 16 Operating Permits issued by DAQEM are federally enforceable because these permits were issued pursuant to SIP-included sections of the AQR; and
5. Portions of the AQR <u>not</u> included in the SIP. These locally applicable requirements are locally enforceable only.

The Nevada Revised Statutes (NRS) and the Clean Air Act Amendments (CAAA) are public laws that establish the general authority for the Regulations mentioned.

The DAQEM 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 [Amended 07/01/04] details the Clark County Part 70 Operating Permit Program. These regulations may be accessed on the Internet at: http://www.accessclarkcounty.com/depts/daqem/Pages/index.aspx

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 State Implementation Plan (SIP). Requirements and conditions that appear in the Part 70 OP which are related only to non-SIP rules are notated as locally enforceable only.

Table III-A-1: AQR Section 12 and 55 Summary Table

	PM_{10}	NO_X	CO	SO_X	VOC	HAP
Source PTE (tpy)	**46.00**	**1,760.38**	**155.34**	**10.42**	**13.30**	**1.33**
Emission Change (PTE to PTE due to Part 70 OP revision)	- 16.14	0.00	- 238.15	- 251.04	0.00	- 5.60
Nonmajor Source	< 70 tpy	< 50 tpy	< 70 tpy	≤ 100 tpy	< 50 tpy	≤ 25 tpy

Discussion: Decrease in PTE is due to the removal of diesel fuel burning option from the permit. NPC-Sunrise Station is a major source of NO_X and CO.

Table III-A-2: DAQEM and SIP Requirements with Source Compliance

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected Emission Unit
0. Definitions	applicable definitions	yes	entire facility
1. Definitions	applicable definitions – "Affected Facility", "Air Contaminant", "Air Pollution Control Committee", "Area Source", "Atmosphere", "Board", "Dust", "Existing Facility", "Existing Gasoline Station", "Fixed Capital Cost", "Fumes", "Health District", "Hearing Board", "Integrated Sampling", "Minor Source", "New Source", "NIC", "Point Source", "Shutdown", "Significant", "Single Source", "Smoke", "Source of Air Contaminant", "Standard Commercial Equipment", "Standard Conditions", "Start Up", "Stop Order", "Uncombined Water", and "Vapor Disposal System"	yes	entire facility
2. Air Pollution Control Board	all subsections	yes	entire facility
4. Control Officer	all subsections	yes	entire facility
5. Interference with Control Officer	all subsections	yes	entire facility
6. Injunctive Relief	all subsections	yes	entire facility

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected Emission Unit
8. Persons Liable for Penalties - Punishment: Defense	all subsections	yes	entire facility
9. Civil Penalties	all subsections	yes	entire facility
10. Compliance Schedule	when applicable; applicable subsections	yes	entire facility
11. Ambient Air Quality Standards	applicable subsections	yes	entire facility
12. Preconstruction Review for New or Modified Stationary Sources	All subsections <u>except</u> the following: § 12.2.18 HAP Sources in Clark County. § 12.2.20 Additional Requirements for STATIONARY SOURCES with Beryllium, Mercury, Vinyl Chloride, or Asbestos EMISSIONS in Clark County	yes	The turbine was installed and permitted before Section 12 applicability. There were no reported turbine modifications with emissions increases since installation. Section 12 applies to diesel-powered standby generator. The Part 70 OP requires NPC to comply with all applicable requirements with respect to new or modified emission units.
13. Emission Standards for Hazardous Pollutants	Condition A-37 is the EPA-required standard condition concerning asbestos.	no	entire facility
14. New Source Performance Standards	AQR Section 14.1.56: Subpart GG Standards of Performance for Gas Turbines	no	No emission unit is subject to a federal NSPS.
15.			
16. Operating Permits	all subsections	yes	entire facility
17. Dust Control Permit and Construction Activities	all subsections	yes	entire facility
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 facility
19. Part 70 Operating Permit Federal Approval (11/25/01)	§ 19.2 Applicability § 19.3 Part 70 Permit Applications § 19.4 Part 70 Permit Content § 19.5 Permit Issuance, Renewal, Re-openings, and Revisions § 19.6 Permit Renewal by the EPA and Affected States § 19.7 Fee Determination and Certification	N/A	entire facility
20. Emission Standards for Hazardous Air Pollutants for Source Categories	all subsections	yes	No emission unit is subject to a federal MACT standard.
21. Acid Rain Permits	all subsections	yes	An acid rain permit is not required.

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected Emission Unit
22. Acid Rain Continuous Emissions Monitoring	all subsections	yes	An acid rain permit is not required.
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	yes	entire facility
25.1 Upset/Breakdown, Malfunctions	§ 25.1 Requirements for the excess emissions caused by upset/breakdown and malfunctions	no	entire facility
25.2 Upset/Breakdown, Malfunctions	§ 25.2 Reporting and Consultation	yes	entire facility
26. Emission of Visible Air Contaminants	§ 26.1 Limit on opacity (≤ 20 percent for 3 minutes in a 60-minute period)	yes	entire facility
28. Fuel Burning Equipment	Emission Limitations for PM	yes	entire facility
29. Sulfur Contents of Fuel Oil	Sulfur content shall be equal to or less than 0.05 percent sulfur by weight	no	Diesel Generator
35. Diesel Engine Powered Electrical Generating Equipment	all subsections	yes	The Part 70 permit limits use of the emergency generator to testing, maintenance, and emergencies, and prohibits its use for dispatchable peak shaving.
40. Prohibitions of Nuisance Conditions	§ 40.1 Prohibitions	no	entire facility
41. Fugitive Dust	§ 41.1 Prohibitions	yes	entire facility
42. Open Burning	§ 42.2	no	entire facility
43. Odors In the Ambient Air	§ 43.1 Prohibitions coded as Section 29	no	entire facility
55. Preconstruction Review for New or Modified Stationary Sources in the 8-hour Ozone Nonattainment Area	all subsections	no	entire facility
60. Evaporation and Leakage	all subsections	yes	entire facility
70. Emergency Procedures	all subsections	yes	entire facility
80. Circumvention	all subsections	yes	entire facility
81. Provisions of Regulations Severable	all subsections	yes	entire facility
90. Fugitive Dust from Open Areas and Vacant Lots	all subsections	no	entire facility
91. Fugitive Dust from Unpaved Roads, Unpaved Alleys, and Unpaved Easement Roads	all subsections	no	entire facility
92. Fugitive Dust from Unpaved Parking Lots	all subsections	no	entire facility

AQR SECTION 11 - AMBIENT AIR QUALITY STANDARDS [Amended 07/01/04] *(in part)*

Discussion: Nevada Power Sunrise Station is a major source in Hydrographic Area 212 (Las Vegas Valley). Permitted emission units include one turbine, one generator and a fuel storage tank. Since minor source baseline dates for NO_X (October 21, 1988) and SO_2 (June 29, 1979) have been triggered, Prevention of Significant Deterioration (PSD) increment analysis is required.

DAQEM modeled the source using AERMOD to track the increment consumption. The generator and turbine were modeled for the NO_X and SO_2 increment consumption. Five years (1999 to 2003) of meteorological data from the McCarran Station and Desert Rock Station were used in the model. United States Geological Survey (USGS) 7.5-minute Digital Elevation Model (DEM) terrain data was used to calculate elevations. Table IV-A-3 presents the results of the modeling.

Table III-A-3: 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	7.87[1]	676812	4000789
SO_2	24-hour	3.98[1]	676812	4000789
SO_2	Annual	1.42	676812	4000789
NO_x	Annual	7.34	677100	4001300

[1]Modeled 2nd High Concentration

Table III-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 PART 60-STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES:

Subpart A - General Provisions

40 CFR § 60.7-Notification and record keeping

Discussion: This regulation requires notification to DAQEM 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. DAQEM requires records to be maintained for five years, a more stringent requirement than the two (2) years required by § 60.7.

40 CFR § 60.8 - Performance tests

Discussion: These requirements are found in the Part 70 OP. 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. DAQEM requirements for initial performance testing are identical to § 60.8. DAQEM also requires periodic performance testing on emission units based upon throughput or usage. More discussion is in this document under the compliance section.

40 CFR § 60.11 - Compliance with standards and maintenance requirements.

Discussion: Section 26 of the AQR is more stringent than the federal opacity standards, setting a maximum of 20 percent obscurity except for three (3) minutes in any 60-minute period. Sunrise Station shall operate in a manner consistent with this section of the regulation.

40 CFR § 60.12 - Circumvention

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

40 CFR § 60.13 - Monitoring requirements.

Discussion: Part 70 OP contains the monitoring conditions. In addition, the CAM plan approved for the monitoring system follows the requirements outlined including span time and recording time.

Subpart GG-Standards of Performance for Stationary Gas Turbines

40 CFR § 60.330 - Applicability and designation of affected facility.

Discussion: The simple cycle natural gas fired turbine began operation on or about October 31, 1974. For a facility to be subject to the requirements of NSPS Subpart GG, the facility must commence construction, modification, or reconstruction after October 3, 1977. Therefore, Subpart GG does not apply to the turbine at this source.

40 CFR § 60.46a – Compliance Provisions

Discussion: Part 70 permit outlines start-up/shut-down events. The ton-per-year limits for the turbines include start-up/shut-down emissions. The Permittee has completed all compliance demonstrations and has demonstrated compliance with all applicable emission standards for NO_X. The source employs water injection to control NO_X emissions. The measurements to be taken are outlined the Part 70 operating permit.

40 CFR § 60.47a – Emission Monitoring

Discussion: The source has installed water injection system to control NO_x emissions. Monitoring requirements and reporting requirements are outlined in the Part 70 operating permit.

40 CFR § 60.48a – Compliance Determination Procedures and Methods

Discussion: The compliance demonstration for the source is discussed in the Part 70 operating permit.

40 CFR § 60.49a – Reporting Requirements

Discussion: These are discussed in the Part 70 operating permit.

40 CFR PART 64-COMPLIANCE ASSURANCE MONITORING

40 CFR § 64.2 – Applicability

Discussion: The CAM Rule is applicable to the turbine (EU: 801) based on the applicability statement outlined in 40 CFR 64.2(a)(2), i.e., control device is used on this unit to achieve compliance with any emission limitation or standard for a regulated air pollutant. The CAM Rule is not applicable to this unit for SO_X and CO based on the

applicability statement outlined in 40 CFR 64.2(a)(2). Further, SO_X would be exempt from the CAM Rule based on the exemption outlined in 40 CFR 64.2(b)(1)(iii) for Acid Rain Requirements. The CAM Rule is not applicable to the unit for PM_{10}, HAPs or NH_3 based on the applicability statement outlined 40 CFR 64.2(a)(2). The combustion turbine (EU: 801) are also not CAM-applicable for VOC emissions based on the exemption outlined in 40 CFR 64.2(a)(3), i.e., the potential pre-control emissions are less than the major threshold.

40 CFR PART 72-ACID RAIN PERMITS REGULATION

Subpart A – Acid Rain Program General Provisions

40 CFR § 72.6 – Applicability

Discussion: The simple cycle natural gas fired turbine began operation on or about October 31, 1974. Sunrise Station commenced operation as a utility unit in the definitions for Part 72; therefore, the provisions of this regulation do not apply.

40 CFR PART 73 – ACID RAIN SULFUR DIOXIDE ALLOWANCE SYSTEM

Discussion: The simple cycle natural gas fired turbine began operation on or about October 31, 1974. Sunrise Station commenced operation as a utility unit in the definitions for Part 72; therefore, the provisions of this regulation do not apply.

40 CFR PART 75- ACID RAIN CONTINUOUS EMISSION MONITORING

Discussion: Sunrise Station is not subject to the Acid Rain emission limitations of 40 CFR Part 72; therefore, the facility is not subject to the monitoring requirements of this regulation.

IV. COMPLIANCE

A. Compliance Certification

19.3.3.9 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 Control Officer shall be as follows:

Table IV-A-1: Reporting Schedule

Required Report	Applicable Period	Due Date[1]
Quarterly Report for 1st Calendar Quarter	January, February, March	April 30 each year
Quarterly Report for 2nd Calendar Quarter	April, May, June	July 30 each year
Quarterly Report for 3rd Calendar Quarter	July, August, September	October 30 each year
Quarterly Report for 4th Calendar Quarter, Any additional annual records required.	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 one (1) hour of the onset of the event

Required Report	Applicable Period	Due Date[1]
Excess Emission Report	As Required	As soon as practicable but not to exceed ten (10) calendar days from onset of the event
Deviation Report	As Required	Along with quarterly reports
Performance Testing	As Required	Within 60 days from the end of the test

[1] If the due date falls on a Saturday, Sunday or legal 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

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 0	Definitions.	Applicable – Station will comply with all applicable definitions as they apply.	Sunrise Station will meet all applicable test methods should new definitions apply.	Sunrise Station complies with applicable requirements.
AQR Section 4	Control Officer.	Applicable – The Control Officer or his representative may enter into Sunrise Station property, with or without prior notice, at any reasonable time for purpose of establishing compliance.	Nevada Power Company will allow Control Officer to enter Station property as required.	Sunrise Station complies with applicable requirements.
AQR Section 11	Ambient Air Quality Standards.	Applicable – Sunrise Station is a source of air pollutants.	Sunrise Station demonstrated compliance in the ATC permit application with air dispersion modeling.	Sunrise Station complies with applicable requirements.
AQR Section 12.1	General application requirements for construction of new and modified sources of air pollution.	Applicable – Sunrise Station applied for and the ATC certificate was issued before commencing construction.	Sunrise Station received the ATC permit to construct.	Sunrise Station complies with applicable requirements.
AQR Section 12.2.2	Requirements for specific air pollutants: PM10 emission source located in the Serious Non-Attainment Area.	Applicable – Sunrise Station has PM10 PTE < 70 TPY.	All new or modified emission units at the Sunrise Station will meet LAER requirement.	Sunrise Station complies with applicable requirements.
AQR Section 12.2.7	Requirements for specific air pollutants: CO sources located in the Serious Non-Attainment Area.	Applicable – Sunrise Station has CO PTE > 70 TPY.	All new or modified emission units at the Sunrise Station will meet LAER requirement.	Sunrise Station complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 12.2.12	Requirements for specific air pollutants: VOC sources located in the VOC Management Area.	Not Applicable – Sunrise Station is located in Hydrographic Area 212.	Not Applicable.	Not Applicable.
AQR Section 12.2.14	Requirements for specific air pollutants: NOX sources located in the NOX Management Area.	Applicable – Sunrise Station has NOX PTE > 50 TPY.	All new or modified emission units at the Sunrise Station will meet BACT requirement.	Sunrise Station complies with applicable requirements.
AQR Section 12.2.16	Requirements for specific air pollutants: SO2 sources located in the PSD area.	Applicable – Sunrise Station has SO2 PTE > 40 TPY.	All new or modified emission units at the Sunrise Station will meet BACT requirement.	Sunrise Station complies with applicable requirements. Sulfur content of natural gas will not exceed 0.75 grains per 100 dscf (based on 12-month rolling average).
AQR Section 12.2.19	Requirements for specific air pollutants: TCS sources in Clark County	Not Applicable – Sunrise Station does not have any ammonia (NH3) emissions.	Not Applicable.	Not Applicable.
AQR Section 12.5	Air Quality Models	Applicable – Dispersion modeling performed will be performed as required for any future major modifications.	As applicable, future dispersion modeling will be performed in ATC permit modifications will be in accordance with provisions of 40 CFR Part 51, Appendix W.	Sunrise Station complies with applicable requirements.
AQR Section 12.7	Continuous Emission Monitoring (CEM) Systems	Not Applicable – The Sunrise Station was constructed prior to 1977 and no modifications with NEI above the thresholds have been made.	Not Applicable.	Not Applicable.
AQR Section 14.1.1 Subpart A	New Source Performance Standards (NSPS) General Provisions	Applicable – Sunrise Station turbine (EU: 801) is an affected facility under the regulations. Section 14 is locally enforceable; however, the NSPS standards referenced are federally enforceable.	Applicable monitoring, recordkeeping and reporting requirements on the turbine (EU: 801).	Sunrise Station complies with applicable requirements.
AQR Section 14.1.13 Subpart Da	New Source Performance Standards – Standards of Performance for Electric Utility Steam Generating Units	Not Applicable – Sunrise station does not have any duct burners or boilers under the jurisdiction of DAQEM.	Not Applicable.	Not Applicable.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 14.1.56 Subpart GG [	Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines	Not Applicable – The Sunrise Station turbine (EU: 801) predates the regulation as it began operation on or about October 31, 1974. For facility to be subject to the requirements of NSPS, Subpart GG, the facility must commence construction, modification, or reconstruction after October 3, 1977.	Not Applicable.	Not Applicable.
AQR Section 16 [amended 7/1/04]	DAQEM Operating Permits	Applicable – Any emission unit of stationary source must apply for and obtain a DAQEM operating permit Station applied for the operating permit from DAQEM.	Sunrise Station applied for and received operating permit from DAQEM prior to commercial operation.	Sunrise Station complies with applicable requirements.
AQR Section 17	Dust Control Permit for Construction Activities Including Surface Grading and Trenching	Applicable – Sunrise Station will need to apply for dust control permit in event construction activity greater than ¼ acre (aggregate) or trench at least 100 ft in length (and aggregate acreage greater than ¼ acre).	Sunrise Station applied for permits as needed during initial construction and conformed to required best management practices in dust control permit. Station will continue to do so in future as needed.	Sunrise Station complies with applicable requirements.
AQR Section 18	Permit and Technical Service Fees	Applicable – Sunrise Station will be required to pay all required/applicable permit and technical service fees.	Sunrise Station is required to pay all required/applicable permit and technical service fees.	Sunrise Station complies with applicable requirements.
AQR Section 19	40 CFR Part 70 Operating Permits	Applicable – Sunrise Station 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. Section 19 is both federally and locally enforceable	Sunrise Station reviewed the initial Part 70 permit dated January 15, 2003. This renewal application was submitted before June 15, 2007. Applications for new units will be submitted within 12 months of startup.	Sunrise Station complies with applicable requirements.
AQR Section 21	Acid Rain Permits	Not Applicable – per 40 CFR 72.6(b)(1). The turbine (EU: 801) is a simple combustion turbine that commenced commercial operation prior to 11/15/1990.	Not Applicable.	Not Applicable.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 22	Acid Rain Continuous Emission Monitoring	Not Applicable – per 40 CFR 72.6(b)(1). The turbine (EU: 801) is a simple combustion turbine that commenced commercial operation prior to 11/15/1990.	Not Applicable.	Not Applicable.
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 one (1) hour of onset of such event.	Sunrise Station complies with applicable requirements.
AQR Section 26	Emissions of Visible Air Contaminants	Applicable – Opacity for the Sunrise Station combustion turbine must not exceed 20 percent for more than six consecutive (6) minutes.	Compliance determined by EPA Method 9	Sunrise Station complies with applicable requirements.
AQR Section 27	Particulate Matter from Process Weight Rate	Not Applicable.	Not Applicable.	Not Applicable.
AQR Section 28	Fuel Burning Equipment	Applicable – The PM emission rate for the combustion the turbine (EU: 801) is well below those established based on Section 28 requirements.	Maximum allowable PM emission rate determined from equation in Section 28.	Sunrise Station complies with applicable requirements.
AQR Section 29	Sulfur Content of Fuel Oil	Applicable – The diesel fuel that will be burned in the emergency generator engine at the Sunrise Station will require low sulfur fuel with sulfur content less than 0.05 percent by weight. Section 29 is locally enforceable only.	Fuel sulfur content verification obtained from fuel oil supplier.	Sunrise Station 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.	Sunrise Station air contaminant emissions controlled by pollution control devices or good combustion in order not to cause a nuisance.	Sunrise Station complies with applicable requirements.
AQR Section 41	Fugitive Dust	Applicable – Sunrise Station shall take necessary actions to abate fugitive dust from becoming airborne.	Station utilizes appropriate best practices to not allow airborne fugitive dust.	Sunrise Station complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 42	Open Burning	Applicable – In event Sunrise 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.	Sunrise Station will contact the DAQEM and obtain approval in advance for applicable burning activities as identified in the rule.	Sunrise Station 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.	Sunrise Station will not operate its facility in a manner which will cause odors. Sunrise Station is a natural gas fired facility and is not expected to cause odors.	Sunrise Station complies with applicable requirements.
AQR Section 49	Emission Standards for Boilers and Steam Generators Burning Fossil Fuels	Not Applicable – Sunrise Station does not have any boilers or steam generators under the jurisdiction of DAQEM.	Not Applicable.	Not Applicable.
AQR Section 55	Preconstruction review for New or Modified Stationary Sources in the 8-Hour Ozone Nonattainment Area	Applicable – Sunrise Station is located in Las Vegas Valley airshed (hydrographic area 212) and will need to meet the applicable emission control requirements at times of future modifications.	In the event Station undertakes a major modification, the facility will have to apply BACT and LAER control requirements.	Sunrise Station complies with applicable requirements.
AQR Section 70.4	Emergency Procedures	Applicable – Sunrise Station submitted an emergency standby plan for reducing or eliminating air pollutant emissions in the Section 16 Operating Permit Application.	Sunrise Station submitted an emergency standby plan and received the Section 16 Operating Permit.	Sunrise Station complies with applicable requirements.

C. Federal Air Quality Regulations Applicable to Sunrise Station Unit #2

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 52.21	Prevention of Significant Deterioration (PSD)	Applicable – Station 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.	Sunrise Station complies with applicable sections as required by PSD regulations.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 52.1470	SIP Rules	Applicable – Sunrise Station is classified as a Title V source, and SIP rules apply.	Applicable monitoring and record keeping of emissions data.	Station 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 – Station is an affected facility under the regulations.	Applicable monitoring, recordkeeping and reporting requirements.	Sunrise Station complies with applicable requirements.
40 CFR Part 60, Subpart GG	Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines	Not Applicable – The turbine (EU: 801) was constructed in 1974 and predates requirements of this subpart.	Not Applicable.	Not Applicable.
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.	Sunrise Station complies with applicable requirements.
40 CFR Part 63	Emission Standards for Hazardous Air Pollutants	Not Applicable – Sunrise Station has a total HAPs limit less than an aggregate total of 25 TPY. No single HAP is greater than 10 TPY.	Not Applicable.	Not Applicable.
40 CFR Part 64	Compliance Assurance Monitoring	Applicable – The turbine (EU: 801) has NOx emissions that have an emissions standard and use an active control device.	Sunrise Station continuously monitors fuel flow and water injection rates and calculates hourly NOx emissions.	Sunrise Station complies with applicable requirements.
40 CFR Part 68	Chemical Accident Prevention Provisions	Not Applicable – Sunrise Station does not store or handle hazardous materials.	Construction approval and a Risk Management Plan (RMP) were not required for the Nevada Department of Environmental Protection. Sunrise Station adheres to own management programs.	Sunrise Station complies with applicable requirements.
40 CFR Part 70	Federally Mandated Operating Permits	Applicable – Sunrise Station 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.	Sunrise Station renewed the initial Part 70 permit dated January 15, 2003. This renewal application was submitted before June 15, 2007. Applications for new units will be submitted within 12 months of startup.	Sunrise Station complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 72	Acid Rain Permits Regulation	Not Applicable – Turbine EU: 801 is a simple combustion turbine that commenced operation prior to 11/15/1990.	Not Applicable.	Not Applicable.
40 CFR Part 73	Acid Rain Sulfur Dioxide Allowance System	Not Applicable – Turbine EU: 801 is a simple combustion turbine that commenced operation prior to 11/15/1990.	Not Applicable.	Not Applicable.
40 CFR Part 75	Acid Rain CEMS	Not Applicable – Turbine EU: 801 is a simple combustion turbine that commenced operation prior to 11/15/1990.	Not Applicable.	Not Applicable.

D. Summary of Monitoring for Compliance

Emission Unit	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
801	Combustion turbine	CO, NO_X, SO_2, PM_{10}, VOC, HAPs, NH_3	Section 12, Section 19, Section 55	Annual and short-term emission limits.	CAM for NO_x Stack testing for NO_X, CO and VOC by EPA Methods as outlined in Part 70 Permit. Compliance for PM_{10}, SO_2 and HAPs shall be based on sole use of natural gas as fuel and emission factors. Recording is required for compliance demonstration.
801	Combustion turbines	Opacity	AQR Section 26	Less than twenty percent opacity except for six (6) consecutive minutes.	Sole use of natural gas as fuel and EPA Method 9 performance testing upon the request of the Control Officer.
A02	Emergency generator	CO, NO_X, SO_2, PM_{10}, VOC, HAPs	Section 12, Section 19, Section 55	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.
A02	Emergency generator	Opacity	AQR Section 26	Less than twenty percent opacity except for six (6) consecutive minutes.	Sole use of low-sulfur diesel fuel and EPA Method 9 performance testing upon the request of the Control Officer.

V. EMISSION REDUCTION CREDITS (OFFSETS)

The source is subject to offset requirements in accordance with Section 59 of the Clark County Air Quality Regulations. Offset requirements and associated mitigation are pollutant-specific.

VI. ADMINISTRATIVE REQUIREMENTS

Section 19 requires that DAQEM identify the original authority for each term or condition in the Part 70 Operating Permit. Such reference of origin or citation is denoted by [italic text in brackets] after each Part 70 Permit condition.

DAQEM proposes to issue the Part 70 Operating Permit 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 Clean Air Act Amendments and implementing Part 70 of Title 40 Code of Federal Regulations.

Factual:
NPC-Sunrise Station has supplied all the necessary information for DAQEM to draft Part 70 Operating Permit conditions encompassing all applicable requirements and corresponding compliance.

Conclusion:
DAQEM has determined that NPC-Sunrise Station will continue to determine compliance through the use of CAM, performance testing, quarterly reporting, daily recordkeeping, coupled with annual certifications of compliance. DAQEM proceeds with the decision that a Part 70 Operating Permit should be issued as drafted to NPC-Sunrise Station for a period not to exceed five (5) years.