

TECHNICAL SUPPORT DOCUMENT

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

SUBMITTED BY

NEVADA POWER COMPANY

for

CLARK STATION

Part 70 Operating Permit Number: 7
SIC Code - 4911: Electric Utility Services



Clark County
Department of Air Quality and Environmental Management
Permitting Section

December, 2010

EXECUTIVE SUMMARY

Nevada Power Company's (NPC) Clark Generating Station is located at 5640 Stephanie St, Las Vegas, Nevada 89122, in the Las Vegas Valley airshed, hydrographic basin 212. Hydrographic basin 212 is nonattainment for CO, PM₁₀, and ozone, and PSD for all other regulated air pollutants.

This major stationary source has been in operation nearly 30 years. Averaging 697 MW, this source provides approximately 20 percent of the Valley's electrical requirements during the summer peak months, with lesser generation during the off-peak requirement months.

DAQEM has permitting responsibilities for the five combustion gas turbines (Turbine Units 4 through 8), twelve peaker turbine units, two cooling towers, two diesel emergency generators, a diesel fire pump, and ancillary equipment at the source. The permitting history of this source reflects the changes in air quality permitting practices both at the local and federal levels in response to changing environmental regulations. This is a revision of the Part 70 OP for this source. The revision to the Part 70 OP adds the twelve peaker units (EUs: A27 through A38), adds three ammonia storage tanks (EUs: A40 through A42), and replaces a diesel fire pump (EU: A23) with a larger model (EU: A45).

The table below lists the source PTE of the emission units subject to Part 70 requirements. All generating and support processes at the site are grouped under the Standard Industrial Classification 4911: Electric Services (NAICS 22111: Electric Power Generation).

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

Pollutant	PM ₁₀	NO _x	CO	SO _x	VOC	HAP	TCS
Tons/year	792.43	2,464.40	1,850.58	48.50	216.46	8.43	85.44
Major Source Thresholds	70	50	100	100	50	10/25 ¹	N/A

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

DAQEM has delegated authority to implement the requirement of the Part 70 OP program. The initial Part 70 OP was issued on November 3, 2003, with a renewal issued on November 2, 2009, and a revision issued on January 15, 2010. This minor permit revision of the Part 70 operating permit incorporates the ATC/OP Modification 4, Revision 1, issued on March 20, 2007 and the ATC Modification 6, issued on April 27, 2009. Based on the information submitted by the applicant and a technical review performed by the DAQEM staff, the DAQEM proposes the minor revision of the Part 70 OP to NPC-Clark Station.

This Technical Support Document (TSD) accompanies the proposed Part 70 Operating Permit for Nevada Power – Clark Station.

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I. ACRONYMS

Table I-1: List of Acronyms

Acronym	Term
APCD	Air Pollution Control District
AQD	Air Quality District
AQR	Clark County Air Quality Regulations
AST	Aboveground Storage Tank
ATC	Authority to Construct
ATC/OP	Authority to Construct/Operating Permit
CAAA	Clean Air Act, as amended, or Clean Air Act Amendments
CCHD	Clark County Health District
CE	Control Efficiency
CEMS	Continuous Emissions Monitoring System
CF	Control Factor
CFR	United States Code of Federal Regulations
CO	Carbon Monoxide
CPI	Urban Consumer Price Index
DAHS	Data Acquisition and Handling System
DAQEM	Clark County Department of Air Quality & Environmental Management
DEM	Digital Elevation Model
EF	Emission Factor
EO	Executive Order
EPA	United States Environmental Protection Agency
ERC	Emission Reduction Credit
EU	Emission Unit
GDO	Gasoline Dispensing Operation
HAP	Hazardous Air Pollutant
HP	Horse Power
HRSG	Heat Recovery Steam Generating Unit
H ₂ S	Hydrogen Sulfide
MMBtu	Millions of British Thermal Units
NEI	Net Emission Increase
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH ₃	Ammonia
NMHC	Non-Methane Hydro-Carbons
NO _x	Nitrogen Oxides
NOV	Notice of Violation
NPC	Nevada Power Company
NRS	Nevada Revised Statutes
NSPS	New Source Performance Standards
NSR	New Source Review
OP	Operating Permit
PM ₁₀	Particulate Matter less than 10 microns
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RATA	Relative Accuracy Test Audit
RMP	Risk Management Plan
scf	Standard Cubic Feet
SIP	State Implementation Plan
SO _x	Sulfur Oxides
TCS	Toxic Chemical Substance

Acronym	Term
TDS	Total Dissolved Solids
TSD	Technical Support Document
TSP	Total Suspended Particulates
ULNB	Ultra Low NO _x Burner
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

II. SOURCE INFORMATION

A. General

Permittee	Nevada Power Company Clark Station
Mailing Address	PO Box 98910, MS #30, Las Vegas, NV 89151-0001
Contacts	Kevin Geraghty
Phone Number	(702) 402-5662
Fax Number	(702) 402-0835
Source Location	5640 Stephanie St., Las Vegas, NV 89122
Hydrographic Area	212
Township, Range, Section	T21S, R62E, Section 28
SIC Code	4911 – Electric Services
NAICS Code	22111 - Electric Power Generation

B. Description of Process

Nevada Power Company (NPC)-Clark Station is a natural gas fired electric utility generating source consisting of several units which produce electricity. All generating and support processes at the site are grouped under SIC 4911: Electric Services.

The emission units covered in this Part 70 OP are listed in Table III-C-1. Turbine Unit 4 is a simple cycle combustion turbine combusting natural gas only. Units 5 and 6 are operated as a combined cycle pair, where the exhaust gas is collected in the HRSG and used to turn steam-turbine Unit 10. Supplemental duct-firing is not used in the HRSG. No additional emissions result from the operation of Unit 10. Turbine Units 7 and 8 are also a combined cycle island pair with the same operational configuration as Units 5 and 6. Unit 9 is the steam turbine associated with Units 7 and 8. Turbine Units 5 through 8 burn only natural gas, as they are no longer permitted to burn Number Two fuel oil as a result of NSR Modification 5. NPC-Clark Station is a major source for PM₁₀, NO_x, CO, VOC, and TCS (NH₃) and a non-major source for SO₂ and HAPs. Thus, it is not subject to MACT review. CEMS for NO_x and CO are installed on Turbine Units 5, 6, 7 and 8.

Turbine Unit 4 is one of the last to be fired up in NPC's operating scenarios for producing power. Turbine Units 5 and 6 are operated as a combined cycle pair tied into Steam Turbine Generator Unit 10. Turbine Units 7 and 8 are a combined cycle pair tied into Steam Turbine Generator Unit 9. The cooling towers for Units 9 and 10 are associated with the two combined cycle islands. At one point in time, the source used gray water in the cooling towers, thus the need for lime silos and soda ash silos. The original limits for the equipment are being maintained in this permit as the emission units are still functional and can be used at the discretion of NPC.

The twelve peaking units are natural gas fired and are used to produce power during times when the larger turbine units cannot meet demand. Three ammonia storage tanks are also being incorporated into the Title V permit.

C. Permitting History

A Part 70 operating permit was issued on November 2, 2009, and a revision to this OP was issued on January 15, 2010. This minor permit revision of the Part 70 operating permit incorporates the ATC/OP Modification 4, Revision 1, issued on March 20, 2007 and the ATC Modification 6, issued on April 27, 2009. ATC Modification 5 was already incorporated in the OP issued on November 2, 2009.

Table II-C-2: NSR Permits Incorporated to Operating Permit with this Revision

Date Issued	Permit Number	Description
04/27/2009	ATC Modification 6	ATC to add a diesel fire pump and diesel emergency generator.
03/20/2007	ATC/OP Modification 4, Revision 1	Permit revision to address administrative changes.
02/09/2007	ATC/OP Modification 4	ATC to add 12 peaker turbines. ATC/OP for a diesel emergency generator and three ammonia storage tanks.

On September 30, 2005, DAQEM received an application from NPC to construct twelve natural gas fired peaking units (EU: A27-A38) and ammonia storage tanks (EU: A40-A42). These units were installed in conjunction with the decommissioning of Turbine Units 1, 2, and 3. NPC also applied for emission reduction credit with this application. ATC/OP Modification 4, Revision 1 was issued on March 20, 2007 in response to this application.

An ATC, Modification 6, to add a diesel fire pump (EU A45) and a diesel emergency generator (EU A46) was issued on April 27, 2009. EU A46 is not part of this Title V operating permit because the emission unit is not installed yet.

Table II-C-3: BACT Determinations for NPC – Clark Station

EU	Description	BACT Technology	BACT Limit
A27 – A38	Two (2) Simple Cycle Combustion Turbines, 57.9 MW each, No Supplemental Duct-firing	SCR, water injection, oxidation catalyst, natural gas combustion, inlet air filters	NO _x : 5.0 ppmvd at 15% O ₂ CO: 2.0 ppmvd at 15% O ₂ NH ₃ : 5.0 ppmvd at 15% O ₂
A40 - A42	19,900 Ammonia Storage Tank, Sealed System	N/A	N/A

EU	Description	BACT Technology	BACT Limit
A45	Cummins Diesel Emergency Fire Pump, 460 hp.	turbocharger and aftercooler, Low sulfur diesel.	Same as 40 CFR Subpart IIII

NPC submitted an application on April 2, 2009, to revise the Part 70 OP to include Turbine Units 11 through 22 and associated ammonia storage tanks. On May 5, 2010, NPC submitted an application to revise the Part 70 OP to include a new diesel fired fire pump (EU: A45).

D. Operating Scenario

Turbine Unit 4 is a simple cycle combustion turbine combusting only natural gas and permitted to operate up to 8,760 hours per year. This turbine is one of the last to be fired up in NPC's operating scenarios for providing power. Turbine Units 5 and 6 are operated as a combined cycle pair tied into Steam Turbine Unit 10. Turbine Units 7 and 8 are a combined cycle unit tied into Steam Turbine Unit 9. All four of these gas turbines are permitted to operate on natural gas up to 8,760 hours per year. Formerly, these units were each permitted to operate up to 60 percent of the year (5,256 hours) firing Number two distillate oil. The use of Number two distillate oil has been removed from the permit with the implementation of the Consent Decree. Emission limitations have been established for each of these turbines based on 8,760 hours of natural gas fuel. Turbine Units 11 through 22, the peaking units, are permitted to operate up to 3,500 hour per year. These units are also limited on the number of startups and shutdowns, 350 of each, per year. The three ammonia tanks are installed as part of the emissions control system of these peaking units.

The cooling towers for Units 9 and 10 are associated with the two combined cycle islands, and are permitted for 8,760 hours of operation per year. At one point in time, the source used gray water in the cooling towers, thus the need for lime silos, soda ash silos and the NH₃ monitoring placed upon the cooling towers in 1993. In 1996, the NH₃ monitoring requirements were removed. Currently, the silos are not being used and there are no NH₃ emissions from the towers. The original limits for the equipment are being maintained in this permit to enable the source to use gray water again if deemed necessary as a water conservation measure.

E. Proposed Exemptions

NPC has not proposed any additional exemptions.

III. EMISSIONS INFORMATION

A. Source-wide Potential to Emit

NPC-Clark Station is a major source of PM₁₀, NO_x, CO, VOC, and a TCS (NH₃) and a minor source of SO_x and HAP emissions.

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

Pollutant	PM ₁₀	NO _x	CO	SO _x	VOC	HAP	TCS
PTE	792.43	2,464.40	1,850.58	48.50	216.46	8.43	85.44

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.

Power Equipment

1. EU: A00704D – One (1) General Electric 7B (7000), simple cycle combustion turbine, 65 MW nominal output (Turbine Unit 4).
2. EUs: A00701A, A00702B, A00705, and A00708 – Four (4) Westinghouse 501B5 with B6 upgrade, combustion turbines with 85 MW nominal output and no supplemental duct-firing (Turbine Units 5 through 8).
3. EUs: A27 through A38 – Twelve (12) Simple Cycle Combustion Turbine pairs with combined nominal output of 57.9MW, no supplemental duct firing.

Common Support Equipment

1. EU: A00709 – Lime Silo, 3,700 cf.
2. EU: A00710 – Soda Ash Silo (A), 4,160 cf.
3. EU: A00711 – Soda Ash Silo (B), 4,160 cf.
4. EU: A00712 – Cooling Tower for Unit 9 steam turbine generator associated with Turbine Units 7 and 8 (EUs: A00705 and A00708), 53,000 gpm.
5. EU: A00713 – Cooling Tower for Unit 10 steam turbine generator associated with Turbine Units 5 and 6 (EUs: A00701A and A00702B), 53,000 gpm.
6. EU: A21 – Detroit Diesel Emergency Generator, 474 hp.
7. EU: A22 – Onan Diesel Emergency Generator, 250 kW, 335.1 hp.
8. EUs: A40, A41, and A42 – 19,900 gallon Ammonia Storage Tank, sealed system.
9. EU: A43 – One (1) 1,200 gallon above ground storage tank and one (1) single product dispensing nozzle.
10. EU: A45 – Cummins Diesel Emergency Fire Pump, 460 hp.

C. Emission Units and PTE

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

Table III-C-1: Compilation of Emission Units

EU	Description	Rating	Make	Model #	Serial #
A00704D	Simple Cycle Stationary Gas Turbine, natural gas fired, MEQ = 60. Turbine Unit 4	60 MW	General Electric	7B (7000)	n/a
A00701A	Combined Cycle Stationary Gas Turbine with ULNB, natural gas fired, no supplemental duct-firing, MEQ = 85. Turbine Unit 5	85 MW	Westinghouse	501B6 with ULNB	n/a
A00702B	Combined Cycle Stationary Gas Turbine with ULNB, natural gas fired, no supplemental duct-firing, MEQ = 85. Turbine Unit 6	85 MW	Westinghouse	501B6 with ULNB	n/a
A00705	Combined Cycle Stationary Gas Turbine with ULNB, natural gas fired, no supplemental duct-firing, MEQ = 85. Turbine Unit 7	85 MW	Westinghouse	501B6 with ULNB	n/a

EU	Description	Rating	Make	Model #	Serial #
A00708	Combined Cycle Stationary Gas Turbine with ULNB, natural gas fired, no supplemental duct-firing, MEQ = 85. Turbine Unit 8	85 MW	Westinghouse	501B6 with ULNB	n/a
A00709	Lime Silo	3,700 cubic feet	n/a	n/a	n/a
A00710	Soda Ash Silo (A)	4,160 cubic feet	n/a	n/a	n/a
A00711	Soda Ash Silo (B)	4,160 cubic feet	n/a	n/a	n/a
A00712	Cooling Tower for Unit 9 Steam Turbine Generator Associated with Turbine Units 7 and 8 (EUs: A00705 & A00708)	53,000 gpm	n/a	n/a	n/a
A00713	Cooling Tower for Unit 10 Steam Turbine Generator Associated with Turbine Units 5 and 6 (EUs: A00701A & A00702B)	53,000 gpm	n/a	n/a	n/a
A21	Diesel Emergency Generator	474 hp	Detroit Diesel	8063-7416	n/a
A22	Diesel Emergency Generator	250 kW, 335.1 hp	Onan	n/a	n/a
A27	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 11	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A28	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 12	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A29	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 13	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A30	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 14	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A31	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 15	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A32	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 16	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A33	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 17	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a

EU	Description	Rating	Make	Model #	Serial #
A34	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 18	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A35	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 19	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A36	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 20	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A37	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 21	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A38	Two (2) Simple Cycle Combustion Turbines, No Supplemental Duct-firing; Turbine Unit 22	57.9 MW Combined Nominal Output	Pratt and Whitney	FT8-3 Swift Pac	n/a
A40	Ammonia Storage Tank, Sealed System	19,900 Gallons	n/a	n/a	n/a
A41	Ammonia Storage Tank, Sealed System	19,900 Gallons	n/a	n/a	n/a
A42	Ammonia Storage Tank, Sealed System	19,900 Gallons	n/a	n/a	n/a
A43	Gasoline Dispensing Operation, Aboveground Storage Tank, One Product Nozzle, Regular Unleaded Gasoline	1,200 Gallon	n/a	n/a	n/a
A45	Diesel Fire Pump	460 hp	Cummins	CFP15E-F10	n/a

n/a – not available

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.

Insignificant emission units at the source include diesel storage tanks, generator lube oil tanks, a steam turbine lube oil tank, a steam turbine lube oil conditioner tank, an oil/water sump, gas turbine lube oil tanks, calibration gases, and mobile sources which include a portable engine for welding, forklifts, trucks, and other vehicles. These units and processes were listed in the Part 70 OP application. None are large enough or otherwise qualify as emission units to be included in the PTE for the source.

Table III-C-2: PTE, Including Startup and Shutdowns (tons per year)

EU	PM ₁₀	NO _x	CO	SO _x	VOC	NH ₃
A00704D	165.4	1,732.6	433.1	7.9	94.5	0.00
A00701A	106.9	360	319.7	7.1	21.9	0.00
A00702B	106.9		319.7	7.1	21.9	0.00
A00705	106.9		319.7	7.1	21.9	0.00
A00708	106.9		319.7	7.1	21.9	0.00
A00709	8.6		0.00	0.00	0.00	0.00

EU	PM ₁₀	NO _x	CO	SO _x	VOC	NH ₃
A00710	8.6	0.00	0.00	0.00	0.00	0.00
A00711	8.6	0.00	0.00	0.00	0.00	0.00
A00712	32.2	0.00	0.00	0.00	0.00	0.00
A00713	32.2	0.00	0.00	0.00	0.00	0.00
A21	0.01	0.13	0.05	0.05	0.01	0.00
A22	0.01	0.10	0.02	0.01	0.01	0.00
A27	9.10	30.96	11.55	1.01	2.86	7.12
A28	9.10	30.96	11.55	1.01	2.86	7.12
A29	9.10	30.96	11.55	1.01	2.86	7.12
A30	9.10	30.96	11.55	1.01	2.86	7.12
A31	9.10	30.96	11.55	1.01	2.86	7.12
A32	9.10	30.96	11.55	1.01	2.86	7.12
A33	9.10	30.96	11.55	1.01	2.86	7.12
A34	9.10	30.96	11.55	1.01	2.86	7.12
A35	9.10	30.96	11.55	1.01	2.86	7.12
A36	9.10	30.96	11.55	1.01	2.86	7.12
A37	9.10	30.96	11.55	1.01	2.86	7.12
A38	9.10	30.96	11.55	1.01	2.86	7.12
A40	0.00	0.00	0.00	0.00	0.00	0.00
A41	0.00	0.00	0.00	0.00	0.00	0.00
A42	0.00	0.00	0.00	0.00	0.00	0.00
A43	0.00	0.00	0.00	0.00	0.01	0.00
A45	0.01	0.05	0.01	0.02	0.01	0.00
Totals	792.43	2,464.40	1850.58	48.50	216.46	85.44

Table III-C-3: PTE, Excluding Startup and Shutdowns (lbs/hr)

EU	PM ₁₀	NO _x	CO	SO _x	VOC	NH ₃
A00701A	24.4	19.91	50.00	1.62	5.0	0.00
A00702B	24.4	19.91	50.00	1.62	5.0	0.00
A00705	24.4	19.91	50.00	1.62	5.0	0.00
A00708	24.4	19.91	50.00	1.62	5.0	0.00
A27	3.61	11.01	2.61	0.36	1.49	4.07
A28	3.61	11.01	2.61	0.36	1.49	4.07
A29	3.61	11.01	2.61	0.36	1.49	4.07
A30	3.61	11.01	2.61	0.36	1.49	4.07
A31	3.61	11.01	2.61	0.36	1.49	4.07
A32	3.61	11.01	2.61	0.36	1.49	4.07
A33	3.61	11.01	2.61	0.36	1.49	4.07
A34	3.61	11.01	2.61	0.36	1.49	4.07
A35	3.61	11.01	2.61	0.36	1.49	4.07
A36	3.61	11.01	2.61	0.36	1.49	4.07
A37	3.61	11.01	2.61	0.36	1.49	4.07
A38	3.61	11.01	2.61	0.36	1.49	4.07

Table III-C-4: Emission Rates, Excluding Startup and Shutdowns

EU	NO _x		CO		VOC	NH ₃
	ppm ¹ @15% O ₂	lbs/ MMBtu	ppm ¹ @15% O ₂	lbs/ MMBtu	ppm @ 15% O ₂	ppm @ 15% O ₂ ⁽¹⁾
A00704D	NL	NL	NL	NL	NL	NL
A00701A	5	0.02	NL	0.08	NL	NL
A00702B	5	0.02	NL	0.08	NL	NL
A00705	5	0.02	NL	0.08	NL	NL

EU	NO _x		CO		VOC	NH ₃
A00708	5	0.02	NL	0.08	NL	NL
A27 – A38	5.0	NL	2.0	NL	2.0 ppmvd	5.0 ppmvd

¹On a one-hour average. NO_x emission limits are based on the consent decree limit of 5 ppm with ULNB.

Table III-C-5: Source-Wide HAP Emissions (tons per year)

HAP	Unit 4 (EU: A00704D) ^{1,2}	Total of Turbine Units 5-8 (EUs: A00701A, A00702B, A00705 A00708) ^{1,2,3}	474 hp Generator (EU: A21)	250 kW Generator (EU: A22) ⁴	Total of 12 Peakers (EUs: A27 through A38) ^{1,2}	Total for Gasoline Storage Tank (EU: A43) ⁵	460 hp Fire Pump (EU: A45)
1,3-Butadiene	1.88E-03	9.04E-03	1.71E-06	1.19E-06	5.43E-03	--	2.48E-06
Acetaldehyde	1.75E-01	8.40E-01	3.35E-05	2.34E-05	5.05E-01	--	4.87E-05
Acrolein	2.80E-02	1.34E-01	4.04E-06	2.82E-06	8.08E-02	--	5.88E-06
Arsenic	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--
Chromium	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--
Formaldehyde	6.69E-02	3.22E-01	5.15E-05	3.60E-05	1.93E-01	--	7.50E-05
Mercury	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--
Benzene	5.68E-03	2.73E-02	4.08E-05	2.85E-05	1.64E-02	2.38E-04	5.93E-05
Ethyl Benzene	1.40E-01	6.72E-01	--	--	4.04E-01	2.17E-05	--
Selenium	--	--	--	--	--	--	--
Naphthalene	5.68E-03	2.73E-02	--	--	1.64E-02	--	5.39E-05
Toluene	9.18E-02	4.40E-01	1.79E-05	1.25E-05	2.65E-01	1.30E-04	2.60E-05
Propylene Oxide	1.27E-01	6.08E-01	--	7.85E-05	3.66E-01	--	--
Xylenes	2.80E-01	1.34E+00	1.24E-05	8.70E-06	8.08E-01	4.33E-05	1.81E-05
PAHs	9.62E-03	4.64E-02	7.34E-06	5.10E-06	2.78E-02	--	1.07E-05
Totals	0.93	4.48	0.01	0.01	2.98	0.01	0.01

¹Formaldehyde, benzene and toluene emissions 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.

²Based on HHV heat inputs of 997.9 (Unit 4) and 1,199.9 (Units 5-8 gas).

³Emission factors from AP-42, Volume 1, Chapter 3, Tables 3.1-4 and 3.1-5, Supplement F.

⁴Emission factors from AP-42 Volume 1, Section 3, Table 3.3-2, Supplement F.

⁵Not a federally enforceable limit; value is an estimate for informational purposes only.

Table III-C-6: Facility-wide HAP Emissions (pounds per hour)¹

HAP	Unit 4 (EU:A00704D) ^{2,2,3}	Per Each Turbine Unit 5-8 (EUs: A00701, A00702B, A00705 and A00708), Worst Case ^{4,2,3,5,6}	474 hp Generator (EU: A21) ⁷	250 kW Generator (EU: A22) ⁷	Per Each of 12 New Peakers (EUs:A27 through A38) ^{2,4}	460 hp Fire Pump (EU: A45)
1,3-Butadiene	5.15E-04	2.22E-02	1.32E-04	1.10E-04	3.10E-04	1.38E-04

HAP	Unit 4 (EU:A00704D) ^{2,2,3}	Per Each Turbine Unit 5-8 (EUs: A00701, A00702B, A00705 and A00708), Worst Case ^{4,2,3,5,6}	474 hp Generator (EU: A21) ⁷	250 kW Generator (EU: A22) ⁷	Per Each of 12 New Peakers (EUs:A27 through A38) ^{2,4}	460 hp Fire Pump (EU: A45)
Acetaldehyde	4.79E-02	5.76E-02	2.58E-03	2.16E-03	2.88E-02	2.71E-03
Acrolein	7.66E-03	9.22E-03	3.11E-04	2.60E-04	4.62E-03	3.27E-04
Arsenic	--	1.53E-02	--	--	--	--
Cadmium	--	6.66E-03	--	--	--	--
Beryllium	--	4.30E-04	--	--	--	--
Chromium	--	1.53E-02	--	--	--	--
Lead	--	1.94E-02	--	--	--	--
Manganese	--	1.10E+00	--	--	--	--
Formaldehyde	1.83E-02	3.89E-01	3.96E-03	3.32E-03	1.10E-02	4.17E-03
Mercury	--	1.67E-03	--	--	--	--
Nickel	--	6.38E-03	--	--	--	--
Benzene	1.56E-03	7.63E-02	3.14E-03	2.63E-03	9.38E-04	3.29E-03
Ethylbenzene	3.83E-02	4.61E-02	--	--	2.31E-02	--
Selenium	--	3.47E-02	--	--	--	--
Napthalene	1.56E-03	4.86E-02	--	--	9.38E-04	2.99E-04
Toluene	2.51E-02	3.02E-02	1.38E-03	1.15E-03	1.51E-02	1.44E-03
Propylene Oxide	3.47E-02	4.18E-02	--	7.26E-03	2.09E-02	--
Xylenes	7.66E-02	9.22E-02	9.54E-04	8.02E-04	4.62E-02	1.01E-03
PAHs	2.63E-03	5.55E-02	5.65E-04	4.73E-04	1.59E-03	5.93E-04
Total per Unit	0.25	2.06	0.01	0.02	0.15	0.01
Total Combined	0.25	8.26	0.01	0.04	1.84	0.01

¹Emissions are based on Emission Factors + 20%.

²Based on HHV heat inputs of 997.9 (Unit 4), 1,199.9 (Units 5-8, gas), 1,156.7 (Units 5-8, oil), and 601 (Units 11-22) MMBtu/hr.

³Emission factors from AP-42, Volume 1, Chapter3, Tables 3.1-4 and 3.1-5 Supplement F.

⁴Formaldehyde, 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.

⁵Worst-case emissions of oil-fired and gas-fired operation.

⁶Not an enforceable limit; for informational purposes only.

⁷Emission factors from AP-42, Volume 1, Section 3, Table 3.4-3 and 3.4-4, Supplement F; 1,3-Butadiene emission factor from AP-42, Vol. 1, Sec 3, Table 3.3-2 (not listed in 3.4).

Table III-C-7: Startup/Shutdown PTE per Turbine Unit for Units 5 through 8

EU	PM10 (lbs/event)	NOX (lbs/event)	CO (lbs/event)	SO2 (lbs/event)	VOC (lbs/event)
Hot Startup	24.40	140.00	800.00	8.00	5.00
Cold Startup	48.80	325.00	1,700.00	16.00	10.00
Shutdown	24.40	165.00	1,200.00	8.00	5.00

Note: Not federally enforceable limits; values are estimates for informational purposes only.

Table III-C-8: Emission Rates for Turbine Units 5 through 8, Allowable Exceedences¹

EU	NO _x ppm ²	lbs NO _x per MMBtu ³
A00701A	32.0	0.12
A00702B	32.0	0.12

EU	NO _x ppm ²	lbs NO _x per MMBtu ³
A00705	32.0	0.12
A00708	32.0	0.12

¹ Allowable exceedences are subject to the requirements of Condition III-B-1-m of the Operating Permit.

² At 15% O₂ on a one-hour average.

³ NO_x EF = (32 ppm/1,000,000)*(1 lb mol/385.3 dscf)*(46.01 lb NO₂/lb mol)*(8,710 dscf/MMBtu)*(20.9/20.9-15)

Table III-C-9: Startup/Shutdown PTE per Peaker Unit (EUs: A27 - A38)¹

Pollutant	PM ₁₀	NO _x	CO	SO ₂	VOC
Maximum startup hour emissions (lb/hr) ²	14.71	63.06	34.62	2.08	2.09
Maximum shutdown hour emissions (lb/hr) ²	7.05	21.54	9.56	0.68	1.74
Maximum combined startup/shutdown hour emissions (lb/hr) ²	18.15	73.59	41.57	2.40	2.33

¹ Emissions shown are per turbine unit unless noted otherwise.

² Maximum startup/shutdown hour emissions are based on 20 minutes for startup event, three minutes for shut down event (whichever is applicable) and normal operation during the remaining part of the clock-hour.

Table III-C-10: Emission unit A45 PTE (pounds per hour)

EU	Rating	Conditions	PM ₁₀	CO	VOC and NO _x
A45	460 hp	36 hrs/yr	0.101	0.721	3.101

¹ Emissions based on manufacturer's specifications.

D. Performance Testing

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

Performance testing is required for Turbine Units 5 through 8 for NO_x, CO, VOCs and PM₁₀ once every five years. In addition, Unit 7 must be tested for PM annually unless a waiver is obtained from EPA, Region IX. Initial performance tests for Turbine Units 5 through 8 have been conducted.

Turbine Unit 4 (EU: A00704D) has no enforceable short-term limitations. Turbine Unit 4 shall be performance tested for NO_x and CO as a demonstration of compliance with its annual emission limitations within 180 days after operating more than 500 hours in any calendar year.

Table III-D-1: Performance Testing Requirements for Turbine Unit 4

Test Point	Pollutant	Method (40 CFR 60, Appendix A)	Frequency
Turbine/HRSG Exhaust Stack	NO _x	Chemiluminescence Analyzer (EPA Method 7E)	Within 180 days after operating more than 500 hours in any calendar year
Turbine/HRSG Exhaust Stack	CO	EPA Method 10 analyzer	
Stack Gas Parameters	---	EPA Methods 1, 2, 3, 4	

Turbine Units 11 through 22 (EUs: A27 through A38) must be performance tested every two years for NO_x, CO, NH₃ slip, VOC, PM₁₀ and opacity.

Particulate matter performance testing for turbine operation of Unit 7 using natural gas shall be conducted annually and within 60 days of the anniversary date of the previous performance test. This annual testing is a requirement from the PSD permit (NV 78-01, Condition VIII-D-2, 10/01/79). The performance testing is subject to DAQEM’s “Guideline on Performance Testing” (as revised). The required performance testing will be performed using the following methods:

Table III-D-2: Turbine Performance Testing Requirements (40 CFR 60, Appendix A)

Test Point	Pollutant	Method	Frequency	
			Turbine Units 5 through 8	Turbine Units 11 through 22
Turbine/HRSG Exhaust Stack	NO _x	Chemiluminescence Analyzer (EPA Method 7E)	Every 5 years	Every 2 years
Turbine/HRSG Exhaust Stack	CO	EPA Method 10 analyzer	Every 5 years	Every 2 years
Turbine/HRSG Exhaust Stack	VOC	EPA Method 25a	Every 5 years	Every 2 years
Turbine/HRSG Exhaust Stack	PM ₁₀	EPA Method 201/202 or 201A/202	Every 5 years -- Annually for Turbine Unit 7	Every 2 years
Turbine/HRSG Exhaust Stack	Opacity	EPA Method 9	Every 5 years	Every 2 years
Turbine/HRSG Exhaust Stack	NH ₃ Slip	Method Preapproved by DAQEM/EPA	--	Every 2 years
Stack Gas Parameters	---	EPA Methods 1, 2, 3, 4	Every 5 years	Every 2 years

There are no performance test requirements for the cooling towers or the emergency generators and fire pump. The baghouses must be performance tested for PM₁₀ with an EPA Method 5 to determine capture efficiency every 8,760 hours of use.

E. Continuous Emissions Monitoring

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

For this source, CEMS measures NO_x, CO, and O₂ emissions from the exhaust stacks of Turbine Units 5 through 8 and NO_x, CO, NH₃, and O₂ on a continuous basis. Annual RATA for each CEMS unit is required to ensure the monitoring system is operating properly. To demonstrate continuous, direct compliance with the emission limitations for NO_x and CO specified for each turbine, except Turbine 4 (EU: A00704D), the Permittee shall calibrate, maintain, operate and certify the CEMS for each turbine in accordance with 40 CFR 60.

The Turbine Units combust only pipeline quality natural gas. The NO_x emissions were controlled by water injection in Turbine Units 5 through 8, prior to installation of the ULNBs. The natural gas flow, turbine load, and water injection rate are continuously monitored as the indicators of NO_x emissions. After installation of ULNBs, water injection is no longer required on Turbine Units 5 through 8.

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 N₂ and O₂ 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 N₂ 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.

IV. REGULATORY REVIEW

This Section of the TSD is limited to the regulatory review applicable only to the emission units addressed by the minor revision addressed in this permitting action

A. Local Regulatory Requirements

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

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

B. Federally Applicable Regulations

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

Subpart A - General Provisions

40 CFR 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 in Sections III-B and III-C. DAQEM requires records to be maintained for five years, a more stringent requirement than the two (2) 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 III-D. Notice of intent to test, the applicable test methods, acceptable test method operating conditions, and the requirement for three runs are outlined in this regulation. DAQEM requirements for initial performance testing are identical to 40 CFR 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: 40 CFR 60 Subpart GG requires fuel monitoring and sampling to meet a standard, applicable to Turbine Units 5 through 8. 40 CFR 60 Subpart KKKK establishes NO_x and SO₂ limitations, applicable to Turbine Units 11 through 22. Subpart GG and KKKK requirements are in the Part 70 OP.

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

These requirements have been included in the Part 70 OP.

40 CFR 60.12 - Circumvention

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

40 CFR 60.13 - Monitoring requirements

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

Subpart GG-Standards of Performance for Stationary Gas Turbines

40 CFR 60.330 - Applicability and designation of affected facility

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

Units 5 through 8 underwent modification in 1988-1991. All four turbine units are subject to Subpart GG in its entirety.

Unit 4 is not subject to 40 CFR 60 Subpart GG, Standards of Performance for Stationary Gas Turbines, as it was permitted prior to the October 1977 applicability date.

Units 11 through 22 are not subject to 40 CFR 60 Subpart GG, Standards of Performance for Stationary Gas Turbines, as they are applicable to 40 CFR 60 Subpart KKKK, which exempts these units from this subpart.

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

Discussion: NPC is permitted such that combustion turbine Units 5 through 8 shall be limited to 1,081 MMBtu/hr lower heat value natural gas fuel rate. The NO_x limits established for Turbine Units 5 through 8 as BACT comply with and are within the F formula provisions above. This requirement has been met.

40 CFR 60.333-Standard for sulfur dioxide

Discussion: The sole use of pipeline-quality natural gas with total sulfur content less than 0.5 grains per 100 dscf satisfies this requirement.

40 CFR 60.334 - Monitoring of operations

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

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.

40 CFR 60.46a – Compliance Provisions

Discussion: The Part 70 OP outlines start-up and shut-down events. The tons per year limits for the turbines include start-up and shut-down emissions. Clark Station 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 in the Part 70 OP.

40 CFR 60.47a – Emission Monitoring

Discussion: The source has installed water injection system to control NO_x emissions. Monitoring requirements are outlined in Section III-C of the Part 70 OP. The reporting requirements are outlined in Section III-F of the Part 70 OP.

40 CFR 60.48a – Compliance Determination Procedures and Methods

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

40 CFR 60.49a – Reporting Requirements

Discussion: These are discussed in Part 70 OP.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Subpart IIII applies to the diesel fire pump (EU: A45) at this source because construction prior July 11, 2005. The requirements are found in the Part 70 OP. The two diesel emergency generators were constructed prior to the applicability and are not subject to the requirements of this subpart.

Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

40 CFR 60.4305 – Applicability

Discussion: Subpart KKKK does not apply to Turbine Units 4 through 8 at this source because the turbines did not commence construction, modification, or reconstruction after February 18, 2005. Subpart KKKK does apply to Turbine Units 11 through 22, as construction commenced after the applicability date.

40 CFR 60.4320 – Standard for nitrogen oxides

Discussion: The NO_x limit from Subpart KKKK is 25 ppmvd at 15 percent oxygen. The source has a limit in the Part 70 OP. This limit has been achieved by the BACT requirement of 5 ppm NO_x at 15 percent oxygen.

40 CFR 60.4330 – Standard for sulfur dioxide

Discussion: The source meets this condition by combusting low sulfur pipeline quality natural gas.

40 CFR 60.4333 – Compliance Determination Procedures and Methods

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

40 CFR 60.4345 - Monitoring of operations

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

40 CFR 60.4375 – Reporting Requirements

Discussion: These are discussed in Part 70 OP.

40 CFR 60.4400 – Test methods and procedures

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

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

Subpart A - General Provisions

40 CFR 63.4 – Prohibited activities and circumvention

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

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

40 CFR 63.6585 Am I subject to this subpart

Discussion: Subpart ZZZZ applies to the diesel emergency generators (EU: A21 and A22) and to the diesel fire pump (EU: A45) at this source.

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

The diesel emergency generators (EU: A21 and A22) are subject to the provisions of 40 CFR 63, Subpart ZZZZ and shall comply with the following requirements no later than May 3 2013:

- a. Change the oil and filter every 500 hours of operation or annually whichever comes first;
- b. Inspect air cleaner every 1,000 hours of operation or annually whichever comes first; and
- c. Inspect all hoses and belts every 500 hours of operation or annually whichever comes first and replace if needed.

The diesel fire pump (EU: A45) is subject to Subpart IIII and therefore, no further requirements apply.

Subpart CCCCCC-National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

40 CFR 63.11111 – Applicability and designation of affected facility

Discussion: The provisions of this subpart are applicable to any GDO that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDO and also includes each storage tank. The GDO at this source (EU: A43) has a monthly throughput of less than 10,000 gallons of gasoline, and therefore, must comply with the requirements in 40 CFR 63.11116.

40 CFR 63.11113 – Compliance Dates

Discussion: Subpart CCCCCC became effective on January 10, 2008. All existing sources are required to comply with the standard by January 10, 2011.

40 CFR 63.11116 – Requirements for facilities with monthly throughput of less than 10,000 gallons of gasoline

Discussion: The source is required to handle gasoline in a manner that would curb extended periods of vapor releases to the atmosphere. The measures to be taken are described in detail in Condition III-B-3-I of the Part 70 OP. The source is not required to submit notifications or reports, but must maintain records of gasoline throughput.

40 CFR 63.11130 – Applicability of General Provisions

Discussion: In addition to the section discussed above, the parts of the general provision in 40 CFR 63.1 through 63.15 presented in Table 3 of 40 CFR 63 Subpart CCCCCC, are also applicable to the source.

40 CFR 64 – COMPLIANCE ASSURANCE MONITORING

40 CFR 64.2 – Applicability

Discussion: The CAM Rule is not applicable to Turbine Unit 4 (EU: A00704D) based on the applicability statement outlined in 40 CFR 64.2(a)(2), i.e., a control device is not used on this unit to achieve compliance with any emission limitation or standard for a regulated air pollutant. The NO_x CEMS, which are operated and required by the Part 70 OP on Turbine Units 5 through 8 and 11 through 22, meet the CAM 40 CFR 64.2(b)(1)(vi) exemption requirements. For Turbine Units 5 through 8 and 11 through 22, the CAM Rule is not applicable for CO, PM₁₀, SO_x, VOC, or HAP because no control device is used to achieve compliance for any of these pollutants.

40 CFR 72-ACID RAIN PERMITS REGULATION

Subpart A – Acid Rain Program General Provisions

40 CFR 72.6 – Applicability

Discussion: Turbine Units 4 through 8 were operating as simple cycle natural gas fired turbines prior to November 15, 1990, and have not added auxiliary firing. Therefore, according to 72.6(b)(1) the provisions of this regulation do not apply to these units. Turbine Units 11 through 22 are new units according to 40 CFR 72.6 and the provisions of this regulation apply.

40 CFR 73 – ACID RAIN SULFUR DIOXIDE ALLOWANCE SYSTEM

Discussion: Turbine Units 11 through 22 are applicable units and therefore the provisions of this regulation apply.

40 CFR 75 – CONTINUOUS EMISSION MONITORING

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

V. 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 DAQEM shall be as follows:

Table V-A-1: Reporting Schedule

Required Report	Applicable Period	Due Date ¹
Semi-annual Report for 1st half of the year.	January, February, March, April, May, June	July 30 each year
Semi-annual Report for 2nd half of the year. 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 onset of the event
Excess Emission Report	As Required	As soon as practicable but not to exceed 72 hours from notification
Deviation Report	As Required	Along with semi-annual reports
Performance Testing	As Required	Within 60 days from the end of the test

¹If the due date falls on a Saturday, Sunday or a Federal or Nevada holiday, then the submittal are due on the next regularly scheduled business day.

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

B. Compliance Summary

Refer to the TSD for the Title V OP issued on January 10, 2010. (Attached)

C. Summary of Monitoring for Compliance

Table V-C-1: Compliance Monitoring

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A00704D	Combustion Turbine	CO, NO _x , SO ₂ , PM ₁₀ , VOC, HAPs	AQR Sections 12 and 19	Annual emission limits	Record keeping hours of operation, fuel use
A00701A A00702B A00705 A00708	Combustion turbines Units 5 through 8	CO, NO _x , SO ₂ , PM ₁₀ , VOC, HAPs	AQR Sections 12 and 19, 40 CFR 60 Subpart GG	Annual and short-term emission limits. Stack testing once every five years for VOC and PM ₁₀ <i>except for Unit 7 which must test for PM₁₀ annually or apply for waiver.</i> Fuel consumption recordkeeping and reporting	CEMS for NO, and CO. Stack testing by EPA Methods as approved by DAQEM and EPA in current ATC/OP. Compliance for HAPs and non-CEMS monitored emissions shall be based on fuel consumption and emission factors. Recording is required for compliance demonstration. SO ₂ will be monitored through sulfur content in the fuels, recordkeeping of hours of operation, and recording of water injection rates
A00701A A00702B A00705 A00708	Combustion turbines Units 5 through 8	SO ₂	Subpart GG	Natural gas sulfur content limited by 0.50 grains per 100 standard cubic feet.	Annual sulfur content results to be submitted with annual reports. Recordkeeping of sulfur content quarterly. Excess emissions report if sulfur exceeds 0.05 percent by weight.

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A00701A A00702B A00705 A00708	Combustion turbines Units 5 through 8		AQR Section 26	Opacity 20%	Regular, periodic visual survey of opacity shall be made while burning gas. Immediate logging of any opacity noted, and correction of opacity exceedance. Reporting of upset/breakdown to EPA and DAQEM.
A00708	Lime Silo	PM ₁₀	AQR Sections 12 and 19	Baghouse 99.9% efficiency Hours of operation and throughput limit	Performance testing if operated more than 500 hours and then every 8,760 hours thereafter. Recordkeeping of hours of operation, and throughput.
A00710, A00711	Soda ash silos	PM ₁₀	AQR Sections 12 and 19 AQR Section 26	Baghouse 99.9% efficiency Hours of operation and throughput limit Opacity	Performance testing if operated more than 500 hours and then every 8,760 hours thereafter. Recordkeeping of hours of operation and throughput.
A00712, A00713	Cooling tower	PM ₁₀	AQR Sections 12 and 19	Emission limits based upon hours of operation and TDS	Control technology of drift eliminators. Recordkeeping of hours of operation. Monitoring of total dissolved solids and recordkeeping

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A27 through A38	Combustion turbines Units 11 through 22	CO, NO _x , SO ₂ , PM ₁₀ , VOC, HAPs, NH ₃	AQR Sections 12 and 19, 40 CFR 60 Subpart KKKK	Annual and short-term emission limits. Stack testing once every five years. Fuel consumption recordkeeping and reporting	CEMS for NO, CO, and NH ₃ . Stack testing by EPA Methods as approved by DAQEM and EPA in current ATC/OP. Compliance for HAPs and non-CEMS monitored emissions shall be based on fuel consumption and emission factors. Recording is required for compliance demonstration. SO ₂ will be monitored through sulfur content in the fuels, recordkeeping of hours of operation, and recording of water injection rates
A27 through A38	Combustion turbines Units 11 through 22	SO ₂	Subpart KKKK	Natural gas sulfur content limited to 0.060 lbs SO ₂ /MMBtu.	Annual sulfur content results to be submitted with annual reports. Recordkeeping of sulfur content quarterly. Excess emissions report if sulfur exceeds 0.05 percent by weight.
A27 through A38	Combustion turbines Units 11 through 22		AQR Section 26	Opacity 20%	Regular, periodic visual survey of opacity shall be made while burning gas. Immediate logging of any opacity noted, and correction of opacity exceedances. Reporting of upset/breakdown to EPA and DAQEM.
A21, A22, and A45	Emergency generators and Fire Pump	NO _x , CO, VOC, PM ₁₀ , HAPs, SO ₂	AQR Sections 12, 19, and 29	Emission limitations based upon fuel throughput and hours of operation for testing and maintenance. Sulfur limited to 0.05 percent or less by weight.	Recordkeeping of fuel use and hours of operation. Calculated emissions based upon AP-42 and fuel. Fuel certification by supplier.

VI. EMISSION REDUCTION CREDITS (OFFSETS)

The source is subject to offset requirements in accordance with AQR Section 59. Offset requirements and associated mitigation are pollutant-specific.

VII. ADMINISTRATIVE REQUIREMENTS

AQR Section 12.5/AQR Section 19 requires that DAQEM identify the original authority for each term or condition in the Part 70 OP. Such reference of origin or citation is denoted by [italic text in brackets] after each Part 70 OP condition.

DAQEM 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:

NPC-Clark Station has supplied all the necessary information for DAQEM to draft Part 70 OP conditions encompassing all applicable requirements and corresponding compliance.

Conclusion:

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

ATTACHMENTS:

TSD issued for the Title V OP revised on January 10, 2010.