

TECHNICAL SUPPORT DOCUMENT

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

SUBMITTED BY

Broadbent & Associates, Inc.

for

NEVADA COGENERATION ASSOCIATES #2

Part 70 Operating Permit Number: 391

SIC Code - 4931: Electric Cogeneration

NAICS Code – 221112: Fossil Fuel Electric Power Generation



Clark County
Department of Air Quality
Permitting Section

March, 2016

EXECUTIVE SUMMARY

Nevada Cogeneration Associates #2 (NCA #2) is a topping cycle cogeneration plant that falls under SIC Code 4931: Electric Cogeneration and NAICS Code 221112: Fossil Fuel Electric Power Generation. The source, located in hydrographic area 215 (Black Mountains Area), is a major source for NO_x and CO and a minor source for PM₁₀, PM_{2.5}, SO₂, and VOC pollutants. The source also emits pollutants that are categorized as greenhouse gasses. The Black Mountains hydrographic area is classified as attainment for all criteria air pollutants. The potential electrical generating capacity exceeds 250 MMBtu/hr. As a result, the source is a categorical source, as defined by AQR 12.2.2(j)(1).

NCA #2 has a generation capacity of 85 megawatts of electricity. The source operates three natural gas-fired Turbine Generator Packages that exhaust into HRSG units, each equipped with a 77 MMBtu/hr supplemental duct burner. A nominal 29.74 MW steam turbine generator is operated to produce electrical power. Other operating emission units include a diesel-powered emergency generator, a diesel-powered emergency fire pump, a diesel-fire water pump, and a two-cell cooling tower. This Part 70 Operating Permit is issued based on the renewal application submitted on May 29, 2015. The potential emissions for the source are shown in Table 1.

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

	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC	HAP	NH ₃	GHG
Source PTE	67.37	60.99	170.48	141.80	9.17	26.44	6.14	83.46	505,548.50
Major Source Thresholds	100	100	100	100	100	100	10/25²		

¹ The values in this table are not source-wide emission limits.

² 10 tons for any individual HAP or 25 tons for any combination of HAPs.

The Clark County Department of Air Quality has delegated authority to implement the requirements of the Part 70 operating permit program. The initial Part 70 Operating Permit was issued to NCA #2 on August 20, 2002. The most recent renewal for the Title V Operating Permit was issued on December 3, 2010. An application for the renewal of the current Operating Permit was submitted on May 29, 2015. Based on the information submitted by the applicant and a technical review performed by the Air Quality staff, the Air Quality proposes the renewal of a Part 70 Operating Permit to Nevada Cogeneration Associates #2.

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Table 1: Acronyms and Abbreviations

Term	
Air Quality	Clark County Department of Air Quality
AQR	Clark County Air Quality Regulations
AST	Aboveground Storage Tank
ATC/OP	Authority to Construct/Operating Permit
BACT	Best Available Control Technology
CAAA	Clean Air Act, as amended
CEMS	Continuous Emissions Monitoring System
CFM	Cubic Feet per Minute
CFR	United States Code of Federal Regulations
CO	Carbon Monoxide
CTG	Combustion Turbine-Generator
DLN	Dry Low-NO _x
EPA	United States Environmental Protection Agency
EU	Emission Unit
HAP	Hazardous Air Pollutant
HHV	Higher Heating Value
HP	Horse Power
HRSG	Heat Recovery Steam Generator
kW	kilowatt
LHV	Lower Heating Value
MMBtu	Millions of British Thermal Units
MW	Megawatt
NAICS	North American Industry Classification System
NEI	Net Emissions Increase
NO _x	Nitrogen Oxides
NRS	Nevada Revised Statutes
OP	Operating Permit
PM ₁₀	Particulate Matter less than 10 microns
PM _{2.5}	Particulate Matter less than 2.5 microns
ppm	Parts per Million
ppmvd	Parts per Million, Volumetric Dry
PTE	Potential to Emit
RATA	Relative Accuracy Test Audits
RMP	Risk Management Plan
SCC	Source Classification Codes
scfm	Standard Cubic Feet per Minute
SCR	Selective Catalyst Reduction
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
ULN	Ultra Low-NO _x
VOC	Volatile Organic Compound

I. SOURCE INFORMATION

A. General

Permittee	Quantum NCA2 GP1, LLC/Quantum NCA2 GP2, LLC
Mailing Address	6985 East Lake Mead Boulevard, Suite 6 #107, Las Vegas, Nevada 89156
Contacts	Mark Breen, Plant Manager
Phone Number	(713) 485-8690
Fax Number	(713) 485-8691
Source Location	East Lake Mead Boulevard, approximately 10 miles northeast of Las Vegas, Nevada
Hydrographic Area	215
Township, Range, Section	T20S, R64E, Section 7
SIC Code	4931: Electric Cogeneration
NAICS Code	221112: Fossil Fuel Electric Power Generation

B. Description of Process

Nevada Cogeneration Associates # 2 (NCA #2) is located in the Black Mountains Hydrographic Area, approximately 10 miles northeast of the Las Vegas. The facility is located in a PSD area which is in attainment of the National Ambient Air Quality Standards for all criteria pollutants. The source is a major source of NO_x and CO pollutants and a minor source for all other criteria pollutants.

NCA #2 is a combined cycle natural gas power plant that is capable of producing 85 MW of electricity. It is classified as a cogeneration plant because it produces electric power, thermal energy, and chilled water. The electrical power is sold to the grid, while the thermal energy and chilled water are sold to PABCO Gypsum, located adjacent to NCA #2, for use in its gypsum wallboard production facility. Approximately 520,000 pounds per hour of turbine exhaust gas (process gas) is piped to PABCO through an insulated, stainless steel duct. This process gas is not ducted through the SCR system because the resulting ammonia in the exhaust stream would be harmful to both employees and wallboard production. An absorption liquid chiller cools 145 gallons of water per minute, which is piped to PABCO for wallboard process use. Low-pressure steam extracted from the steam turbine is used to drive the chiller.

NCA #2 operates three GE Turbine Generation Packages fitted with HRSG, SCR, and oxidation catalysts. Each Turbine Generation Package consists of GE LM-2500 gas turbine system, a 9,500-rpm gas generator, and a 3,600-rpm power turbine which is coupled to an air-cooled Brush AC generator rated at 22,000 kW. Each turbine uses a maximum of 4,800 scfm of natural gas and 180,000 cfm of ambient air. The inlet air has two stages of filtration and can be cooled using an evaporative cooling section or heated with steam coils. A nominal 17,000 pounds per hour of superheated steam at 555°F and 450 psig is injected to the combustion chamber to

reduce the formation of NO_x to less than 22 parts per million. The turbine exhausts at approximately 500,000 pounds per hour of flue gases at 958°F.

In accordance with a 1999 EPA consent decree and ATC/OP Modification 5, issued by Air Quality in 1999, the source must operate the SCR controls at a minimum of 85 percent of the time the turbine unit is operating. Conditions in the permit from the EPA consent decree include startup and shutdown limitations, the allowable operation of the turbine units without SCR but with steam injection during SCR downtimes, and operationally specific NO_x concentration levels. BACT requirements for the existing turbine units includes steam injection, SCR, CO catalysts, and natural gas combustion.

The HRSG units are operated with heat acquired from the exhaust of the gas turbines. A duct burner supplies supplemental heat. Each HRSG consists of a high-pressure evaporator and super-heater, and an intermediate pressure evaporator and super-heater, an economizer section, and a low-pressure evaporator integrated with a deaerator.

The potential electrical generating capacity of the source is above 250 MMBtu/hr. As a result, the source is a categorical source. This conclusion is based on the USEPA Region 5 memo dated September 30, 1987, which states that “the definition of the PSD source category ‘steam electric plants’ should include the heat input of the gas turbine because the source category is for a plant”

The three Turbine Generation Packages are currently permitted for 8,760 hours per year of natural gas operation and up to 216 hours per year of emergency No. 2 fuel oil combustion, to be used only in the event of a natural gas emergency, defined as a loss of gas from the pipeline. Only the turbines may operate on fuel oil. The HRSGs are only fired with natural gas and are not permitted to operate during a natural gas emergency.

An Ecodyne cooling tower with double drift eliminators provides cooling for the turbine units. The manufacturer guaranteed maximum drift is 0.0007 percent (through the use of a double drift eliminator) of the circulating water rate of 26,600 gallons per minute. This unit is permitted to operate 8,760 hours per year. As air passes through the water in the tower, some of the water containing total dissolved solids (TDS) is entrained in the air and carried out of the tower as drift. This drift is a source of PM₁₀ emissions. PM₁₀ emissions are calculated as a function of TDS, water circulation rates, and operating hours. By a permit condition, TDS levels must not exceed 38,500 ppm on an annual average nor 57,750 ppm at any time.

Other equipment on site includes one two-cell cooling tower with a circulation rate of 26,600 gpm, a 315 hp Detroit emergency fire pump, a 440 hp Caterpillar emergency diesel generator, an 80 hp diesel-fired water pump, and one 1,000 gallon aboveground storage tank for gasoline.

The NCA #2 NO_x and CO emissions are monitored with CEMS

C. Permitting History

a. Previous Permitting Actions

- The Title V Operating Permit renewal was issued on December 3, 2010.
- On February 9, 2012, a revised Title V Operating Permit was issued for an administrative correction.
- On June 17, 2014, the source submitted a notification of a change of ownership.

b. Current Permitting Action

- The Permittee submitted a Title V renewal application on May 29, 2015.
- In accordance with the EPA Seitz memo of September 6, 1995, the PTE from EUs: A004 and A005 have been recalculated using 500 hours per year.
- Previous permitting actions excluded the PTE for PM_{2.5} and greenhouse gases (measured as CO_{2e}). These pollutants have been added to the permit with this action.
- Additional Performance testing requirements for NO_x and CO pollutants generated by the turbines have been removed. It was determined that these tests are unnecessary due to the fact that the turbines are equipped with a CEMS that continuously demonstrates compliance with emission limitations for these pollutants.
- Air Quality no longer regulates toxic chemical substances. As a result, the ammonia storage and injection system, previously identified as EU: A008, has been removed from the emission unit list and added to the list of insignificant activities. Also, ammonia emission limits and testing requirements have been removed from the permit.
- Section VII of the current Operating Permit, issued in December 2010, indicates that the source has been granted a permit shield for the requirements of 40 CFR 60, subpart GG: *Standards of Performance for Stationary Gas Turbines*. The current application specifically states, "NCA 2 does not request a permit shield at this time." A review of past applications, submitted by the source, failed to locate neither a request nor a justification for including a permit shield in the permit. As a result, the permit shield language has been removed with this permitting action.
- On November 13, 2015, source submitted supplemental information to correct certain PM₁₀ emission factors in the permit. Source stated that "Nevada Cogeneration Associates #2 (NCA 2) is pleased to provide additional information regarding PM₁₀ emission limitations for each turbine and duct burner unit. Table III-B-3 currently indicates a PM₁₀ emission limit of 20.4 lb/hr with SCR and 14.1 lb/hr without SCR. It is uncertain how these limits were determined; however, it has been agreed upon that these emission limitations are incorrect per a phone conversation between Scott McNulty with Broadbent and Associates, Inc. and Scott Chappell with the Clark County Department of Air Quality. A PM₁₀ emission limit of 3.88 lbs/hr was established in Table III-B-2 and it is requested that this limit be applied to Table III-B-3 for operations both with SCR and without SCR. Performance tests conducted on the turbine units within the previous 8 years indicate that the PM₁₀ emissions are within the 3.88 lb/hr emission limit.

D. Operating Scenario

a. Permitted Emission Units

Turbine Generator Packages

NCA #2 operates three (3) General Electric (GE) Turbine Generator Packages with GE LM-2500 gas turbines and one GE Steam Turbine to produce 85 megawatts (MW) of electricity. The facility uses approximately 19,200 MMBtu/day of approximately 420 psig natural gas. The El Paso pipeline provides a secondary source of natural gas. Each turbine is limited to the manufacturer's maximum heat input rating of 285 MMBtu/hr low heat value (LHV) at 67°F. Each turbine/HRSG unit (EU A001, A001a, A002, A002a, A003, and A003a) may operate 8,760 hours per year. Startups of the turbines are limited to 300 events per month and total cumulative

startup time shall not exceed 450 hours per calendar month. Each startup shall not exceed 120 minutes,

Turbines Generator Packages are equipped with Selective Catalytic Reduction (SCR) to control NO_x (EU A001, A002, and A003). The SCR systems installed on the gas HRSG (EU A001, A002, and A003) are operational at a minimum 85 percent of the plant operating hours over a 12-month rolling average with an allowance of no more than 15 percent downtime due to low temperature excursions. Low-temperature excursions are defined as temporary temperature drops below 570°F. Operating hours are determined by averaging across the three units at the facility. During periods when SCR is not operational due to startup/shutdown cycling or low temperature excursions, NO_x emissions shall not exceed 25 ppmvd @ 15 percent oxygen as measured on a 3-hour rolling average. During all times when the SCRs are in use, the NO_x stack exhaust concentration shall not exceed 12 ppmvd @ 15 percent oxygen as measured on a 3-hour rolling average. Steam injection operates continuously as long as the temperature in a gas turbine's associated heat recovery boiler remains at or above 550°F and the pressure of the recovery boiler remains at or above 450 psi as measured by gauge (psig).

Turbines (EUs: A001, A002, and A003) are equipped with oxidation catalysts in order to reduce carbon monoxide (CO) emissions. Oxidation catalysts for the control of CO are installed on each HRSG and are maintained and operated in accordance with manufacturer's specifications. The catalysts are operated at all times that the associated turbine units are operating excluding periods of startup and shutdown. SO₂ exhaust emissions from each combined cycle system (EUs: A001, A002, and A003) is controlled by exclusive use of pipeline quality natural gas (8,000 ppmv or 0.8 percent sulfur content) and good combustion practice. PM₁₀ exhaust emissions from each combined cycle system (EUs: A001, A002, and A003) is controlled by properly maintaining the inlet air filters preceding each turbine.

Diesel Engines

The source operates three diesel engines: a 315 hp emergency fire pump (EU: A004), a 440 hp emergency generator (EU: A005), and an 80 hp water pump used to extract water prior to the evaporation pond to fill third-party water trucks used for off-site dust control, and to drain annually the cooling tower basin for inspection and repairs. The engines powering the fire pump and emergency generator are equipped with turbocharger and aftercoolers. All diesel engines shall combust low sulfur diesel fuel.

Cooling Tower

The NCA #2 cooling tower circulates 26,600 gallons per minute of water with a drift rate of 0.0007 percent of the cooling capacity (EUs: A006a and A006b). The total dissolved solids (TDS) concentration in the cooling tower process water is maintained at or below 57,750 ppm at all times. The annual average concentration shall not exceed 38,500 ppm.

Gasoline Storage and Dispensing

The 1,000-gallon horizontal above-ground gasoline storage tank (EU: A009) is on site for dispensing fuel into company vehicles. Throughput is limited to 9,000 gallons per any consecutive 12-month period.

b. Insignificant Activities

Ammonia Storage and Injection System

A 1,000 gallon pressure vessel is used to store anhydrous ammonia for the SCR system used to control NO_x emissions from the CTGs. The estimated annual throughput is 44,200 gallons.

Generator Lube Oil Tanks

Three 215-gallon generator lube oil tanks are on site. All three vent to the atmosphere as a fugitive source of VOCs.

Steam Turbine Lube Oil Tank

This is a 1,000 gallon tank with a reported throughput of 330 gallons per year with a maximum throughput of 440 gallons per year.

Steam Turbine Lube Oil Conditioner Tank

This is a 270-gallon tank used for filtering the steam turbine lube oil.

Oil/Water Sump

This 1,000-gallon sump contains an average of 12 percent lube oil and 88 percent water.

Gas Turbine Lube Oil Tanks

There are three 150 gallon tanks on site. Actual throughput was reported at 715 gallons per year per tank with a maximum throughput of 1,000 gallons per year per tank.

Diesel Storage Tanks:

The source has two storage tanks for diesel fuel. A 350 gallon aboveground tank is used to store fuel to be consumed by the diesel-powered fire pump. A second tank, with a storage capacity of 250,000 gallons, is currently not in use..

Steam and Water Treatment

Although there are many sources of steam at the facility, the only substance the steam will contain are those added to the water for treatment. A review of the MSDS sheets showed only Hydroquinone, a HAP, is consumed at the rate of 834 pounds per year. With a hydroquinone content of 2.5 percent, assuming 100 percent evaporation rate, and a minimum solution absorption rate of 90 percent, the PTE of VOC and HAPs as hydroquinone is 21 pounds per year.

Evaporation Pond

NCA #2 is permitted as a zero discharge facility. The evaporation pond is used to contain all the liquid discharged from the cooling tower and water treatment systems. The pond is approximately 8 acres in surface area and 5 feet deep with a double lined system of hypalon and PVC layers.

Maintenance Operations

The NCA #2 facility conducts maintenance operations requiring the use of a variety of materials and products. These materials include paints, lubricants, cements/adhesives, greases, hydraulic fluids, cutting oils, spray foam, welding rods, fuel oil, contact cleaners, and antifreeze. These

materials are purchased from local vendors and typically range in size from several ounces to gallon size containers. Lubricating oils used in the CTG's and other equipment are stored in larger sized containers (55-gallon drums). Emissions estimates associated with these materials were not performed.

Other Activities

Other activities at the NCA #2 have the potential to generate air emissions. Some of these activities are metal cutting and welding (arc, gas, and plasma), use of pressure washing systems, the water chemistry laboratory, hand-portable gasoline-powered water pumps, parts cleaning, and glove booth abrasive cleaning. Most of these activities are intermittent in nature and occur infrequently with the exception of the water chemistry lab. The lab uses standard test kits developed by chemical supply companies containing buffer solutions and standardized reagents in small quantities (typically less than one gallon and generally less than one quart). These chemical solutions are all aqueous solutions.

II. EMISSIONS INFORMATION

A. Emission Units and PTE

Table II-A-1: List of Emission Units

EU	Description	Rating	Make	Model #	Serial #	SCC
A001	Turbine Generator Package #1	22.2 MW 285 MMBtu/hr	General Electric	LM-2500 PE MG5602	260156-1	2010020 3
A001a	Supplemental Duct Burner	77 MMBtu/hr	Coen		BM ALPHA	2010020 3
A002	Turbine Generator Package #2	22.2 MW 285 MMBtu/hr	General Electric	LM-2500 PE MG5602	260156-2	2010020 3
A002a	Supplemental Duct Burner	77 MMBtu/hr	Coen		BM BRAVO	2010020 3
A003	Turbine Generator Package #3	22.2 MW 285 MMBtu/hr	General Electric	LM-2500 PE MG5602	260156-3	2010020 3
A003a	Supplemental Duct Burner	77 MMBtu/hr	Coen		BM CHARLIE	2010020 3
A004	Diesel Emergency Fire Pump	315 hp	Detroit	DDFPL6AT	469408	2010020 1
A005	Emergency Diesel Generator	440 hp	Caterpillar	10647312	06A0466677	2010010 1
A006a	Cooling Tower; Cell 1	26,600 gpm total	Ecodyne	2CFF-60595L2610-20	DOO-15664-A	1010060 1
A006b	Cooling Tower; Cell 2					
A007	Diesel-Fired Water Pump	80 hp	John Deere	4045DF150 B	T04045D81921 4	2010010 7

EU	Description	Rating	Make	Model #	Serial #	SCC
A009	Aboveground Storage Tank; Gasoline	1,000 Gallons	Air Boy			4060030 6

Table II-A-2: Insignificant Units or Activities

Emission Unit Description
Diesel aboveground storage tank, 250,000 gallons (not in use)
Generator Lube Oil Tank, 215 gallons
Steam Turbine Lube Oil Tank
Steam Turbine Lube Oil Conditioner Tank, 270 gallon
Oil/Water Sump
Generator Lube Oil Tank
Steam Turbine Lube Oil Tank 1, 150 gallon
Steam Turbine Lube Oil Tank 2, 150 gallon
Steam Turbine Lube Oil Tank 3, 150 gallon
Diesel aboveground storage tank, 350 gallons
Steam and Water Treatment
Evaporation Pond
Maintenance Operations
Ammonia Storage Tank (1,000 gallon) and Injection System

Table II-A-3: Source PTE, Including Startup and Shutdowns (tons per ton)

EU	PM ₁₀	PM _{2.5}	NO _x (SCR)	NO _x (no SCR)	CO	SO ₂	VOC	HAP	NH ₃ ²	GHG ²
A001 & A001a ¹	17.00	17.00	40.77	14.13	46.71	3.03	8.75	2.00	27.82	168,433
A002 & A002a ¹	17.00	17.00	40.77	14.13	46.71	3.03	8.75	2.00	27.82	168,433
A003 & A003a ¹	17.00	17.00	40.77	14.13	46.71	3.03	8.75	2.00	27.82	168,433
A004	0.33	0.33		3.33	1.16	0.01	0.07	0.01	0	90.56
A005	0.07	0.07		2.07	0.40	0.01	0.03	0.01	0	126.50
A006a, A006b	15.96	9.58		0	0	0	0	0	0	0
A007	0.01	0.01		0.38	0.11	0.06	0.03	0.11	0	32.44
A009	0	0		0	0	0	0.06	0.01	0	0
Total	67.37	60.99	122.31	48.17	141.80	9.17	26.44	6.14	83.46	505,548.50

¹7,446 hours of turbine operation with SCR (85 percent) and 1,314 hours of turbine operation with steam injection only (15 percent) pursuant to 1999 EPA consent decree.

²NH₃ and GHG are not regulated pollutants. These values are provided for informational purposes only.

Table II-A-4: Emission Unit PTE, Excluding Startup and Shutdowns (pounds per hour)¹

EU	PM ₁₀	PM _{2.5}	NO _x (SCR)	NO _x (no SCR)	CO	SO ₂	VOC	HAP	NH ₃ ²
A001 & A001a ¹	3.88	3.88	10.30	21.50	10.70	0.69	2.00	0.46	6.35
A002 & A002a ¹	3.88	3.88	10.30	21.50	10.70	0.69	2.00	0.46	6.35
A003 & A003a ¹	3.88	3.88	10.30	21.50	10.70	0.69	2.00	0.46	6.35
A004	1.33	1.33	0.00	13.33	4.62	0.01	0.27	0.01	0
A005	0.27	0.27	0.00	8.26	1.60	0.01	0.13	0.02	0
A006a & A006b	3.64	3.64	0.00	0.00	0.00	0.00	0.00	0.00	0
A007	0.03	0.01	0.00	1.07	0.32	0.16	0.08	0.31	0
A009	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0

EU	PM ₁₀	PM _{2.5}	NO _x (SCR)	NO _x (no SCR)	CO	SO ₂	VOC	HAP	NH ₃ ²
Total	16.91	16.89	30.90	87.16	38.64	2.25	6.49	1.73	19.05

¹ Pound-per-hour emissions for turbine units #1-3 calculated at 108°F to reflect worst-case scenario (with duct burner firing). Annualized emissions calculated at 67°F.

² NH₃ is not a regulated pollutant. These values are provided for informational purposes only.

Table II-A-5: Enforceable Emission Limitations Excluding Startup and Shutdown in ppmvd @ 15 percent O₂

	PM ₁₀	NO _x	CO	VOC
With SCR	3.88 lb/hr	12	23	0.0077 lb/MMBtu
Without SCR	3.88 lb/hr	25	23	0.0028 lb/MMBtu

¹ Limits based on a 3-hour averaging period.

The source proposed re-calculation of the VOC lb/MMBtu limits to reflect accurate correlation between lb/hr and lb/MMBtu limits. In order to calculate the lb/MMBtu limit, the permitted lb/hr limit was used to calculate VOC concentration. The VOC ppm concentration was then utilized to calculate lb/MMBtu limit:

$$2.0 \text{ lb/hr} = (8.223\text{E-}05 \times Q \times MW \times ppm) / (T_{std} = 460 + 68)$$

$$2.0 \text{ lb/hr} = (8.223\text{E-}05 \times 114,056 \times 44.09 \times ppm) / 528$$

$$ppm = 2.56$$

The following calculation was performed to obtain relation between VOC lb/hr and lb/MMBtu limits. The RATA data and propane MW was used.

$$\text{lb/MMBtu} = ((F - \text{factor} \times MW \times 1.3711\text{E-}06) / (T_{std} + 460)) \times (20.9 / (20.9 - O_2)) \times ppm$$

$$\text{lb/MMBtu} = ((8,633.51 \times 44.09 \times 1.3711\text{E-}06) / (528 \times (20.9 / (20.9 - 14.02)))) \times 2.56$$

$$\text{lb/MMBtu} = 0.0077 \text{ (with SCR)}$$

$$\text{lb/MMBtu} = 0.0028 \text{ (no SCR)}$$

Table II-A-6: Startup Emissions per EU (pounds per hour)^{1,2}

EU	PM ₁₀	NO _x (SCR)	NO _x (no SCR)	CO	SO ₂	VOC	NH ₃
A001 & A001a	3.88	13.31	21.50	32.69	0.69	2.75	6.35
A002 & A002a	3.88	13.31	21.50	32.69	0.69	2.75	6.35
A003 & A003a	3.88	13.31	21.50	32.69	0.69	2.75	6.35
Total	11.64	39.93	64.50	98.07	2.07	8.25	19.05

¹ Pounds per hour emissions for turbine units #1-3 are based on 40 minutes startup and 20 minutes of normal operation (with duct burner firing).

² NO_x, CO, and VOC emission factors were provided by the manufacturer.

Table II-A-7: Shutdown Emissions per EU (pounds per hour)^{1,2}

EU	PM ₁₀	NO _x (SCR)	NO _x (no SCR)	CO	SO ₂	VOC	NH ₃
A001 & A001a	3.88	11.01	21.50	17.33	0.69	2.32	6.35
A002 & A002a	3.88	11.01	21.50	17.33	0.69	2.32	6.35
A003 & A003a	3.88	11.01	21.50	17.33	0.69	2.32	6.35
Total	11.64	33.03	64.50	51.99	2.07	6.96	19.05

¹ Pounds per hour emissions for turbine units #1-3 are based on 8 minutes shutdown and 52 minutes of normal operation (with duct burner firing).

² NO_x, CO, and VOC emission factors were provided by the manufacturer.

B. NEI

Table II-B-1: NEI

	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOC
PTE for Current Permitting Action	67.37	60.99	170.48	141.80	9.17	26.44
PTE from Permit Issued 12/03/2010	67.11		166.70	140.71	9.28	26.37
Excluded for Recalculating EUs: A004 and A005 at 500 hours	0.26	0.26	3.78	1.09	0	0.07
Total Source NEI	0		0	0	0	0

C. Control Requirements

No changes are being made to any of the existing emission units. As a result, all previous BACT requirements remain enforceable. A top-down BACT analysis has been conducted for all existing emission units in previous permitting actions and is not repeated in this document.

D. Testing

1. The Permittee shall follow performance testing requirements of 40 CFR 60 Subpart A, 40 CFR 60 Subpart GG, and Air Quality’s Guidelines for Source Testing.
2. The Control Officer may require additional performance testing when operating conditions appear to be inadequate to demonstrate compliance with the limitations in this permit. [AQR 4.5]

E. Continuous Emissions Monitoring

The pollutant-specific emission units at the facility are three GE natural gas-fired combined-cycle combustion turbine/generators, each equipped with low-NO_x burners (EUs: A001 through A003). These units are permitted to fire on natural gas. The exhaust gases will exit to the atmosphere after leaving the turbine, having already passed through an oxidation catalyst for CO control and selective catalytic reduction (SCR) system for NO_x control.

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.

To demonstrate continuous, direct compliance with the hourly and annual emission limitations for NO_x and CO for the three turbine units (EUs: A001, A002, and A003) NCA #2 calibrates, maintains, and operates a Continuous Emissions Monitoring System (CEMS) for NO_x, CO, and O₂ on each turbine/HRSG pair in accordance with 40 CFR 60 and 40 CFR 75. Each system includes an automated data acquisition and handling system. Each CEMS monitors and records at least the following data:

- a. exhaust gas concentration of NO_x, CO, and diluent O₂ for all turbine units (EUs: A001 through A003) at least once every 15 minutes when required by 40 CFR 60 or 40 CFR 75, as appropriate;
- b. exhaust gas flow rate (by direct or indirect methods);
- c. fuel flow rate;
- d. hours of operation;
- e. 3-hour rolling averages for both NO_x, and CO concentrations;
- f. hourly and quarterly accumulated mass emissions of NO_x, and CO; and
- g. hours of downtime of the CEMS;
- h. catalyst inlet temperature at each SCR unit; (consent decree, 2/99);
- i. temperature and pressure of each heat recovery boiler which produces steam (consent decree 2/99);
- j. Required periodic audit procedures and QA/QC procedures for CEMS shall conform to the provisions of 40 CFR 60; and
- k. RATA of the CO, NO_x and O₂ CEMS shall be conducted at least annually.

III. REGULATORY REVIEW

A. Local Regulatory Requirements

Air Quality 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);
3. Nevada Revised Statutes (NRS), Chapter 445B;
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 Air Quality are federally enforceable because these permits were issued pursuant to SIP-included sections of the AQR; and
5. Portions of the AQR not included in the SIP. These locally applicable requirements are locally enforceable only.

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

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: Clark County Department of Air Quality and State Implementation Plan with Facility Compliance or Requirement

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected Emission Unit
0. Definitions	applicable definitions	yes	entire source
2. Air Pollution Control Board	all subsections	yes	entire source
4. Control Officer	all subsections	yes	entire source
5. Interference with Control Officer	all subsections	yes	entire source
6. Injunctive Relief	all subsections	yes	entire source
8. Persons Liable for Penalties - Punishment: Defense	all subsections	yes	entire source
9. Civil Penalties	all subsections	yes	entire source
10. Compliance Schedule	when applicable; applicable subsections	yes	entire source
12.2. Permit Requirements for Major Sources in Attainment Areas	all subsections	yes	entire source
12.4. Authority to Construct Application and Permit Requirements for Part 70 Sources	all subsections	yes	entire source
12.5. Part 70 Operating Permit Requirements	all subsections	yes	entire source
12.9. Annual Emissions Inventory Requirement	all subsections	yes	entire source
12.10. Continuous Monitoring Requirements for Stationary Sources	applicable subsections	yes	entire source
13. Emission Standards for Hazardous Pollutants	13.2(b)(82): National Emission Standards for Stationary RICE	no	EUs: A004, A005 & A007
14. New Source Performance Standards	AQR Section 14.1(b)(40): Subpart GG Standards of Performance for Gas Turbines	no	Turbines
17. Dust Control Permit and Construction Activities	all subsections	yes	entire source
18. Permit and Technical Service Fees	18.1 Operating Permit Fees 18.2 Annual Emission Unit Fees 18.4 New Source Review Application Review Fee 18.5 Part 70 Application Review Fee 18.6 Annual Part 70 Emission Fee 18.14 Billing Procedures	yes	entire source
21. Acid Rain Permits	all subsections	yes	An acid rain permit is not required.
22. Acid Rain Continuous Emissions Monitoring	all subsections	yes	An acid rain permit is not required.
25.1 Upset/Breakdown, Malfunctions	25.1 Requirements for the excess emissions caused by upset/breakdown and malfunctions	no	entire source
25.2 Upset/Breakdown, Malfunctions	25.2 Reporting and Consultation	yes	entire source
26. Emission of Visible Air Contaminants	26.1 Limit on opacity (\leq 20 percent for 3 minutes in a 60-minute period)	yes	entire source
28. Fuel Burning Equipment	Emission Limitations for PM	yes	entire source

Applicable Section – Title	Applicable Subsection - Title	SIP	Affected Emission Unit
40. Prohibitions of Nuisance Conditions	40.1 Prohibitions	no	entire source
41. Fugitive Dust	41.1 Prohibitions	yes	entire source
42. Open Burning	42.2	no	entire source
43. Odors In the Ambient Air	43.1 Prohibitions coded as Section 29	no	entire source
70. Emergency Procedures	all subsections	yes	entire source
80. Circumvention	all subsections	yes	entire source
81. Provisions of Regulations Severable	all subsections	yes	entire source
90. Fugitive Dust from Open Areas and Vacant Lots	all subsections	no	entire source
91. Fugitive Dust from Unpaved Roads, Unpaved Alleys, and Unpaved Easement Roads	all subsections	no	entire source
92. Fugitive Dust from Unpaved Parking Lots	all subsections	no	entire source

B. Federally Applicable Regulations

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;

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 Air Quality of modifications, opacity testing, records of malfunctions of process equipment and/or continuous monitoring device, and performance test data. These requirements are found in the Part 70 OP. Air Quality 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. Air Quality requirements for initial performance testing are identical to § 60.8. Air Quality 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: Subpart GG also requires fuel monitoring and sampling to meet a standard. Subpart GG requirements are addressed in the Part 70 permit. Section 26 of the AQR is more stringent than the federal opacity standards, setting a maximum of 20 percent obscuration except for six (6) minutes in any 60-minute period. NCA #2 shall operate in a manner consistent with this section of the regulation.

40 CFR 60.12 – Circumvention.

Discussion: This prohibition is addressed in the Part 70 OP. This is also 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. 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 and recording time.

Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR 60.40c – Applicability and delegation of authority.

Discussion: Subpart Dc is not applicable to supplemental duct burners.

Subpart GG - Standards of Performance for Stationary Gas Turbines

40 CFR 60.330 - Applicability and designation of affected facility.

Discussion: Subpart GG applies to three (3) turbines at this source.

40 CFR 60.332 - Standard for nitrogen oxides.

Discussion: See Table IV-C-1 of this document.

40 CFR 60.333 - Standard for sulfur dioxide.

Discussion: See Table IV-C-1 of this document. The sole use of pipeline-quality natural gas with total sulfur content less than 0.8 percent (8000 ppmw) 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 60.4200 – Applicability Determination

Discussion: The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) with a displacement less than 30 liters per cylinder where the model year is 2007 or later, for engines that are not fire pumps, and July 1, 2006 for ICE certified by National Fire Protection Association as fire pump engines. This subpart does not apply.

Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

40 CFR 60.4305 – Applicability.

Discussion: The three (3) turbines (EUs: A001 through A003) are not subject to the provisions of this subpart because these turbines commenced construction, modification, or reconstruction before February 18, 2005.

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 – Applicability

Discussion: Subpart ZZZZ applies to diesel-powered generators, water pump, and fire pump constructed prior to 2007 (EUs: A004, A005, and A007). The provisions of 40 CFR 63, Subpart ZZZZ limits the hours of testing and maintenance to 100 hours per year.

40 CFR 63.6603 – Other Requirements

Discussion: Diesel engines subject to Subpart ZZZZ are subject to maintenance and inspection requirements. These conditions are listed in the permit as Condition III-B-3-m and III-B-3-n.

40 CFR 63, 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: A009) 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 beginning on 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 the Part 70 OP. The source is not required to submit notifications or reports, but must maintain records of gasoline throughput.

40 CFR PART 64 - COMPLIANCE ASSURANCE MONITORING

40 CFR 64.2 – Applicability.

Discussion: The gas turbines are exempt from the CAM Rule for NO_x and CO based on the exemption outlined in 40 CFR 64.2(b)(1)(vi). The permit specifies a continuous compliance determination method for the NO_x and CO limitations in the form of a CEMS, required for Part 60 compliance. The CAM Rule is not applicable to these units for SO_x based on the applicability statement outlined in 40 CFR 64.2(a) (2). The CAM Rule is not applicable to these units for

PM₁₀, HAPs or NH₃ based on the applicability statement outlined 40 CFR 64.2(a) (2). Combustion turbines/duct heaters (EUs: A001 through A003) 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: NCA #2 is a cogeneration facility and is exempted based on the applicability criteria defined in Part 72.6(b)(4)(ii); therefore, the provisions of this regulation do not apply. Each emission unit at the cogeneration facility commenced construction after November 15, 1990, and supplies equal to or less than one-third its potential electrical output capacity or equal to or less than 219,000 MWe-hrs actual electric output on an annual basis to any utility power distribution system for sale (on a gross basis). However, if in any three calendar year period after November 15, 1990, such unit sells to a utility power distribution system an annual average of more than one-third of its potential electrical output capacity and more than 219,000 MWe-hrs actual electric output (on a gross basis), that unit shall be an affected unit, subject to the requirements of the Acid Rain Program.

40 CFR PART 73 – ACID RAIN SULFUR DIOXIDE ALLOWANCE SYSTEM

Discussion: NCA #2 is not a subject of 40 CFR Part 72; therefore, the provisions of this regulation do not apply.

40 CFR PART 75 - CONTINUOUS EMISSION MONITORING

Discussion: NCA #2 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. However, EPA Consent Decree requires facility to comply with provisions of 40 CFR 75, Appendix B.

IV. COMPLIANCE

A. 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
Semiannual Report for 1st half of the year.	January, February, March, April, May, June	July 30 each year
Semiannual 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	January 30 each year
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
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 semiannual reports

Required Report	Applicable Period	Due Date ¹
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 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 statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.

B. Compliance Summary

Table IV-B-1: Compliance Summary Table - AQR

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 0	Definitions.	Applicable – NCA #2 will comply with all applicable definitions as they apply.	NCA #2 will meet all applicable test methods should new definitions apply.	NCA #2 complies with applicable requirements.
AQR Section 4	Control Officer.	Applicable – The Control Officer or his representative may enter into NCA #2 property, with or without prior notice, at any reasonable time for purpose of establishing compliance.	NCA #2 will allow Control Officer to enter Station property as required.	NCA #2 complies with applicable requirements.
AQR Section 12.5	Part 70 Operating Permit Requirements	Applicable – NCA #2 is a major stationary source under Part 70. Renewal applications are due between 6 and 18 months prior to expiration. Revision applications will be submitted within 12 months of commencing operation of the new or modified emission unit.	NCA #2 submitted the initial Part 70 application within 12 months of notification. Renewal applications have been submitted in a timely manner.	NCA #2 complies with applicable requirements.
AQR Section 13.2 Subpart ZZZZ	National Emission Standards for Stationary RICE	Applicable – EUs: A004, A005 and A007	Applicable monitoring, recordkeeping and reporting requirements.	NCA #2 complies with applicable requirements
AQR Section 14.1.(b)(40) Subpart GG	Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines	Applicable – The three (3) NCA #2 turbines are natural gas-fired units with heat input greater than 10 MMBtu/hr.	The three (3) turbines meet the applicable NO _x emission standard. NO _x emissions determined by EPA Method 7E.	NCA #2 complies with applicable requirements.
AQR Section 18	Permit and Technical Service Fees	Applicable – NCA #2 will be required to pay all required/applicable permit and technical service fees.	NCA #2 is required to pay all required/applicable permit and technical service fees.	NCA #2 complies with applicable requirements.
AQR Section 21	Acid Rain Permits	Not Applicable – NCA #2 is exempt from acid rain regulations based on 40 CFR 72.6 (b)(5).	Not Applicable.	Not Applicable.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR Section 22	Acid Rain Continuous Emission Monitoring	Not Applicable – NCA #2 is exempt from acid rain regulations based on 40 CFR 75.2 (b)(2).	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.	NCA #2 complies with applicable requirements.
AQR Section 26	Emissions of Visible Air Contaminants	Applicable – Opacity for the NCA #2 combustion turbine must not exceed 20 percent for more than six (6) minutes in any 60-minute period.	Compliance determined by EPA Method 9.	NCA #2 complies with applicable requirements.
AQR Section 27	Particulate Matter from Process Weight Rate	Applicable – NCA #2 emission units are required to meet the maximum weight based on maximum design rate of equipment.	Compliance determined by meeting maximum particulate matter discharge rate based on process rate from AQR Table 27-1.	NCA #2 complies with applicable requirements.
AQR Section 28	Fuel Burning Equipment	Applicable – The PM emission rate for the combustion the turbines and boilers is well below those established based on Section 28 requirements.	Maximum allowable PM emission rate determined from equation in Section 28.	NCA #2 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.	NCA #2 air contaminant emissions controlled by pollution control devices or good combustion in order not to cause a nuisance.	NCA #2 complies with applicable requirements.
AQR Section 41	Fugitive Dust	Applicable – NCA #2 shall take necessary actions to abate fugitive dust from becoming airborne.	Station utilizes appropriate best practices to not allow airborne fugitive dust.	NCA #2 complies with applicable requirements.
AQR Section 42	Open Burning	Applicable – In event NCA #2 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.	NCA #2 will contact the Air Quality and obtain approval in advance for applicable burning activities as identified in the rule.	NCA #2 complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
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.	NCA #2 will not operate its facility in a manner which will cause odors. NCA #2 is a natural gas fired facility and is not expected to cause odors.	NCA #2 complies with applicable requirements.
AQR Section 70.4	Emergency Procedures	Applicable – NCA #2 submitted an emergency standby plan for reducing or eliminating air pollutant emissions in the Section 16 Operating Permit Application.	NCA #2 submitted an emergency standby plan and received the Section 16 Operating Permit.	NCA #2 complies with applicable requirements.

Table IV-B-2: Compliance Summary Table – Federal Regulations

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 52.21	Prevention of Significant Deterioration (PSD)	Applicable – NCA #2 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.	NCA #2 complies with applicable sections as required by PSD regulations.
40 CFR Part 52.1470	SIP Rules	Applicable – NCA #2 is classified as a Title V source, and SIP rules apply.	Applicable monitoring and record keeping of emissions data.	NCA #2 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 – NCA #2 is an affected facility under the regulations.	Applicable monitoring, recordkeeping and reporting requirements.	NCA #2 complies with applicable requirements.
40 CFR Part 60, Subpart GG	Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines	Applicable – The NCA #2 three turbines are natural gas- fired units with heat input greater than 10 MMBtu/hr.	Applicable monitoring, recordkeeping and reporting requirements.	NCA #2 complies with applicable requirements.
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.	NCA #2 complies with applicable requirements.
40 CFR Part 63	Emission Standards for Hazardous Air Pollutants	Applicable – NCA #2 has gasoline dispensing 40 CFR 63, Subpart CCCCCC applies.	Applicable recordkeeping and reporting requirements.	NCA #2 complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 63, Subpart ZZZZ	National Emission Standards for Stationary RICE	Applicable – EUs: A004, A005 and A007	Applicable monitoring, recordkeeping and reporting requirements.	NCA #2 complies with applicable requirements
40 CFR Part 64	Compliance Assurance Monitoring	Not Applicable – NCA #2 has CEMS to monitor NO _x and CO emissions, the NH ₃ emissions are continuously monitored with PEMS. NCA #2 is exempt from CAM regulations based on 40 CFR 64.2 (b) (1) (Vi).	NCA #2 continuously monitors NO _x and CO emissions with CEMS. NH ₃ emissions are monitored with PEMS.	NCA #2 complies with applicable requirements.
40 CFR Part 70	Federally Mandated Operating Permits	Applicable – NCA #2 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.	NCA #2 reviewed the initial Part 70 permit dated February 29, 2000. The renewal application was submitted on June 18, 2003. Applications for new units will be submitted within 12 months of startup.	NCA #2 complies with applicable requirements.
40 CFR Part 72	Acid Rain Permits Regulation	Not Applicable – NCA #2 is exempt from acid rain regulations based on 40 CFR 72.6(b) (4).	Not Applicable.	Not Applicable.
40 CFR Part 75	Acid Rain CEMS	EPA Consent Decree requires facility to comply with provisions of 40 CFR 75, Appendix B.	Not Applicable.	Not Applicable.
40 CFR Part 82	Protection of Stratospheric Ozone	Applicable – NCA #2 is subject to stratospheric ozone regulations based on 40 CFR 82.4.	Applicable.	Applicable.

C. Summary of Monitoring for Compliance

Table IV-C-1: Compliance Monitoring

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A001, A001a, A002, A002a, A003, A003a	Turbine Generation Packages/duct burner units	CO, NO _x , SO ₂ , PM ₁₀ , VOC, HAPs, NH ₃	40 CFR Subpart GG	Annual and short-term emission limits.	CEMS for NO _x and CO. PEMS for NH ₃ . Stack testing for NO _x and CO by EPA Methods as outlined in Part 70 Permit. Compliance for PM ₁₀ , SO ₂ , VOC and HAPs shall be based on sole use of pipeline quality natural gas as fuel and emission factors. Compliance for PM ₁₀ , SO ₂ , VOC and HAPs shall be based on sole use of low sulfur diesel fuel and emission factors. Recording is required for compliance demonstration.
A001, A001a, A002, A002a, A003, A003a	Turbine Generation Packages/duct burner units	Opacity	AQR Section 26	Less than twenty percent opacity except for six (6) minutes in any 60-minute period.	Use of natural gas as fuel and good combustion practices as well as EPA Method 9 performance testing upon the request of the Control Officer.
A004, A005, A007	Diesel IC Engines	Opacity	AQR Section 26	Less than twenty percent opacity except for six (6) minutes in any 60-minute period.	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 12.7 of the Clark County Air Quality Regulations. Offset requirements and associated mitigation are pollutant-specific.

VI. ADMINISTRATIVE REQUIREMENTS

Section 12.5 requires that Air Quality 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.

Air Quality 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:

NCA #2 has supplied all the necessary information for Air Quality to draft Part 70 Operating Permit conditions encompassing all applicable requirements and corresponding compliance.

Conclusion:

Air Quality has determined that NCA #2 will continue to determine compliance through the use of CEMS, PEMS, performance testing, quarterly reporting, and daily recordkeeping, coupled with annual certifications of compliance. Air Quality proceeds with the decision that a Part 70 Operating Permit should be issued as drafted to NCA #2 for a period not to exceed five (5) years.

VII. PUBLIC PARTICIPATION

The source is subject to public notice in accordance with AQR 12.5.2.17.

VIII. MODELING

Modeling requirements have not been triggered for Hydrographic Area 215.

IX. ATTACHMENTS

Table IX-1: PTE from Diesel Engine

EU#	A004	Pollutant s	Emission Factor (lb/hp-hr)	PTE	
				lb/hr	ton/yr
Make:	Detroit	PM ₁₀	4.22E-03	1.33	0.33
Model:	DDFPL6AT	PM _{2.5}	4.22E-03	1.33	0.33
S/N:	469408	NO _x	4.23E-02	13.33	3.33
Horsepower :	315	CO	1.47E-02	4.62	1.16
Hours/Day:	24	SO ₂	1.21E-05	0.01	0.01
Hours/Year	500	VOC	8.57E-04	0.27	0.07
		HAP	4.52E-05	0.01	0.01
		GHG	1.15E+00	362.25	90.56

Diesel Fuel Sulfur Content is 15 ppm (0.0015%)

Table VIII-2: PTE from Diesel Engine

EU#	A005	Pollutants	Emission Factor (lb/hp-hr)	PTE	
				lb/hr	ton/yr
Make:	Caterpillar				
Model:	10647312	PM ₁₀	6.14E-04	0.27	0.07
S/N:	06A0466677	PM _{2.5}	6.14E-04	0.27	0.07
Horsepower :	440	NO _x	1.88E-02	8.26	2.07
Hours/Day:	24	CO	3.64E-03	1.60	0.40
Hours/Year	500	SO ₂	1.21E-05	0.01	0.01
		VOC	2.95E-04	0.13	0.03
		HAP	4.52E-05	0.02	0.01
		GHG	1.15E+00	506.00	126.50

Diesel Fuel Sulfur Content is 15 ppm (0.0015%)