# TECHNICAL SUPPORT DOCUMENT

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

SUBMITTED BY

## NEVADA POWER COMPANY

for

## CHUCK LENZIE GENERATING STATION

**Part 70 Operating Permit Number: 1513**
SIC Code - 4911: Electric Utility Services

Clark County
Department of Air Quality and Environmental Management
Permitting Section

**October, 2009**

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

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# I. EXECUTIVE SUMMARY

The Chuck Lenzie Generating Station, owned by Nevada Power Company (NPC), is located AT 13605 Chuck Lenzie Court, Las Vegas, Nevada in the Garnet Valley airshed, hydrographic basin number 216. Hydrographic basin 216 is designated as unclassified nonattainment area for 8-hour ozone (regulated through $NO_x$ and VOC) and is PSD area for $PM_{10}$, CO, and $SO_2$. Chuck Lenzie Generating Station is a major source for $PM_{10}$, $NO_x$, CO, VOC, and TCS ($NH_3$) and is minor source for $SO_x$ and HAP..

The source consists of four (4) GE frame 7 gas fired combustion turbine generators (CTGs), four (4) duct-fired heat recovery steam generators (HRSGs), two (2) steam turbine generators, two (2) auxiliary 44 MMBtu/hr boilers, two (2) diesel emergency generators, two (2) diesel fire pumps, and associated ancillary equipment. The potential emissions for the source are shown in the table below.

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

| $PM_{10}$ | $NO_X$ | CO | $SO_2$ | VOC | HAP | $NH_3$ |
|---|---|---|---|---|---|---|
| 497.81 | 545.35 | 1,439.42 | 86.55 | 203.51 | 23.46 | 346.00 |

Clark County Department of Air Quality and Environmental Management (DAQEM) has delegated authority to implement the requirement of the Part 70 operating permit program.

DAQEM received the initial Title V application on July 24, 2006. Based on information submitted by the applicant and a technical review performed by the DAQEM staff, the DAQEM proposes the issuance of a Part 70 Operating Permit to NPC's Chuck Lenzie Generating Station.

# II. SOURCE INFORMATION

## A. General

| | |
|---|---|
| Permittee | Nevada Power Company<br>Chuck Lenzie Generating Station |
| | |
| Mailing Address | 6226 West Sahara Avenue, MS#30<br>Las Vegas, NV 89146 |
| | |
| Contacts | Tom Price |
| | |
| Phone Number | (702) 402-5759 |
| Fax Number | (702) 402-8327 |
| | |
| Source Location | 13605 Chuck Lenzie Court,<br>Las Vegas, NV 89165 |
| | |
| Hydrographic Area | 216 |
| | |
| Township, Range, Section | T18S, R63E, Section 15 |
| | |
| SIC Code | 4911 – Electric Services |

## B. Description of Process

The Chuck Lenzie Generating Station has four (4) GE frame 7 gas-fired combustion turbine generators (CTGs), four (4) duct-fired heat recovery steam generators (HRSGs), two (2) steam turbine generators, two (2) auxiliary 44 MMBtu/hr boilers, two (2) diesel emergency generators, two (2) diesel fire pumps, and associated ancillary equipment. The station is set up with two (2) power blocks: Block 1 consists of CTG 1 and 2, and Block 2 consists of CTG 3 and 4. The CTGs can operate up to 24 hours per day, seven (7) days per week, and 52 weeks per year.

The CTGs convert thermal energy produced by the combustion of natural gas into mechanical energy that drives the generator and turbine compressor. The nominal rating of each gas turbine is 168 MW, with each duct-fired HRSG adding a nominal 50 MW. The Station is designed to meet demands under both base load and peak demand situations with approximately 1170 megawatts (MW) of net electrical power with duct firing, inlet air chilling and an ambient air temperature of 103 ºF. Under these conditions each CTG/HRSG/Steam Turbine combination provides approximately 292 MW.

The turbines' combustion system has state-of-the-art dry low-$NO_X$ combustion burner technology and it accurately controls fuel flow to maintain turbine load and minimize turbine emissions. Fuel for the CTGs and duct burners is exclusively pipeline natural gas.

Air is supplied to each gas turbine through an inlet air filter, inlet air chilling system, and associated air inlet ductwork. Downstream of the inlet air filters and the air chilling section, the air is compressed in the compressor section of the combustion turbine and then exits through the compressor discharge casing to the combustion chambers. Fuel is supplied to the combustion chambers where it is mixed with the compressed air and the mixture is ignited. The high-temperature, pressurized gas produced by the combustion section expands through the turbine blades, driving the electric generator and the gas turbine compressor.

Exhaust gas from the gas turbine is directed through internally insulated ductwork to the HRSG. Each HRSG includes duct burners to allow the combustion of natural gas in the HRSG. This additional fuel combustion is used to generate additional power during periods of increased demand. Steam generated in the HRSG is routed to the steam turbine generator (STG) for electric power generation.

The HRSG transfers heat from exhaust gases of the gas turbine to feedwater to produce steam for the steam turbine operation. The HRSG is designed and constructed to operate at the maximum exhaust gas flow and temperature ranges of the gas turbine. The exhaust gases exit to the atmosphere after leaving the HRSG, having already passed through an oxidation catalyst and selective catalytic reduction (SCR) system for CO and VOC, and $NO_X$ emissions control, respectively.

Power cycle heat rejection consists of an air-cooled condenser and a condensate receiver tank. The condenser air removal system is powered by mechanical vacuum pumps or steam jet air ejectors. The air cooled condenser and its auxiliaries are designed to accept steam turbine bypass flow during unit startup.

The air-cooled condenser provides power cycle heat rejection by circulating air across air-cooled condenser to bundles. Auxiliary cooling water heat exchangers reject heat from auxiliary equipment through a closed-cycle cooling water system.

The auxiliary boilers are used to provide steam to the steam turbine seals prior to start-up. These boilers each operate a maximum of 6,000 hours per year.

The emergency diesel generator, a backup to the STG lube oil pumps and turning gear, will only be operated in the event of a total blackout (i.e., both the plant and utility grid are down). Two (2) diesel engines are included for emergency fire pump operation. Each diesel engine is expected to be tested once each week for one (1) to two (2) hours in duration; therefore, the air quality assessment was based on a conservatively high estimate of 150 hours operation per year.

The Station includes a continuous emissions monitoring system (CEMS) for each gas turbine/HRSG unit that samples, analyzes, and records the concentration of carbon monoxide, oxides of nitrogen, and diluent (oxygen/carbon dioxide) and $NH_3$ in the flue gas. The system generates a log of emissions data and provides alarm signals to the control room when the level of emissions exceeds preselected limits. The CEMS comply with 40 CFR 60 and 40 CFR 75 requirements.

## C. Permitting History

**Table II-C-1: NSR Permits Issued to Chuck Lenzie Generating Station**

| Date Issued | Permit Number | Description |
|---|---|---|
| | | |
| 05/13/2009 | ATC Modification 1, Amendment 4 | Modification 1, Revision 4 revises PTE for EUs: A12, A13 and A14. Also this permit revision incorporates clarifying languages distinguishing source PTE and enforceable emission limits. |
| 05/23/07 | ATC/OP Modification 1, Amendment 2 | NPC requested the reduction of VOC emissions from this source's turbine/duct burner emission units. The original VOC limits from each of EUs: A01/A02, A03/A04, A05/A06 and A07/A08 were 20.02 pounds per hour and 87.70 tons per year. NPC proposed reduced VOC emissions from each of these turbine/duct burner units to 11.29 pounds per hour and 49.45 tons per year. |
| 12/20/06 | ATC/OP Modification 1, Amendment 1 | Addition of one (1) ammonia tank with no emissions; update in start-up/shut-down description; clarification of emergency/upset/breakdown scenarios; and additional language regarding performance testing frequency requirement. |
| 08/19/05 | ATC/OP Modification 1 | Issuance of initial operating permit |
| 01/10/05 | ATC Modification 1, Revision 1 | Change of name and ownership from Duke Energy Moapa, LLC to Nevada Power Company (Chuck Lenzie Generating Station). This permit allows up to 180 days of limited operation after the first fire of turbine. |
| 06/03/04 | ATC Modification 1 | Addition of one (1) diesel generator, one (1) fire pump, one (1) gas line heater and increase in hours of operation for the two (2) auxiliary boilers. |
| 06/01/2001 | ATC Modification 0 | Issuance of initial authority to construct |

DAQEM received the initial Title V application on July 24, 2006.

A draft Title V Operating Permit and TSD was issued to NPC for review. As per the letter dated September 20, 2007, NPC requested the following revisions to the draft Title V OP. Some of the proposed changes would require a revision of the current ATC/OP Mod 1, Amendment 2.

1. NPC requested to correct the nominal loading listed for turbines and duct burners. Current emission unit description for each turbine unit establishes 292 MW (with supplemental duct-firing) power output. NPC claims that the correct nominal rating of each gas turbine (EU: A01, A03, A05 and A07) is 168 MW and that of each duct burner (EU: A02, A04, A06 and A08) is 50 MW. NPC claims that the 292 MW listed in the current operating permit includes the power generated by the steam turbine. DAQEM concluded that the nominal load rating of the turbine should not include the rating of the power generated by the steam turbine which is part of the combined cycle. Therefore the requested changes are incorporated in this permit revision.

2. NPC requested revision of PTE for the two emergency generators and the fire pump (EU: A12, A13 and A14). NPC claims that since the time the emission units were first permitted, NPC has obtained more accurate emission information from manufacturers for these emission units. The new emission factor increases the hourly PTE of the units. However, NPC has reduced the allowable hours of operation testing and thus reduced the annual PTE for each pollutant. DAQEM concludes that the proposed revision of the emission factors does not trigger a BACT analysis. The changes are incorporated in the operating permit.

3. NPC requested to correct the description of the fire pump (EU: A14) to 275 hp engine. NPC stated that there was no evidence why this engine was listed as 600 kW when permitted first. It could be a mistake occurred during the initial application. NPC stated that there was no changes in the emission units after NPC took over the source from the previous owner. DAQEM decided to make the requested changes as a revision to the permit.

DAQEM requested model numbers and serial numbers for all emission units in the permit

**Table II-C-2: BACT Determinations for Chuck Lenzie Generating Station**

| E.U. | Description | BACT Technology | BACT Limit |
|---|---|---|---|
| A01/A02 | 292 MW natural gas-fired electric turbine generator, supplemental duct-firing | SCR, dry low- $NO_X$ burners, oxidation catalyst, natural gas combustion | 3.0 ppmvd $NO_X$ on a 3-hour average at 15% $O_2$;<br>10 ppmvd CO on a 3-hour average at 15% $O_2$;<br>10 ppmvd $NH_3$ on a 3-hour average at 15% $O_2$;<br>7 ppmvd VOC on a 3-hour average at 15% $O_2$. |
| A03/A04 | 292 MW natural gas-fired electric turbine generator, supplemental duct-firing | SCR, dry low- $NO_X$ burners, oxidation catalyst, natural gas combustion | 3.0 ppmvd $NO_X$ on a 3-hour average at 15% $O_2$;<br>10 ppmvd CO on a 3-hour average at 15% $O_2$;<br>10 ppmvd $NH_3$ on a 3-hour average at 15% $O_2$;<br>7 ppmvd VOC on a 3-hour average at 15% $O_2$. |
| A05/A06 | 292 MW natural gas-fired electric turbine generator, supplemental duct-firing | SCR, dry low- $NO_X$ burners, oxidation catalyst, natural gas combustion | 3.0 ppmvd $NO_X$ on a 3-hour average at 15% $O_2$;<br>10 ppmvd CO on a 3-hour average at 15% $O_2$;<br>10 ppmvd $NH_3$ on a 3-hour average at 15% $O_2$;<br>7 ppmvd VOC on a 3-hour average at 15% $O_2$. |

| E.U. | Description | BACT Technology | BACT Limit |
|---|---|---|---|
| A07/A08 | 292 MW natural gas-fired electric turbine generator, supplemental duct-firing | SCR, dry low- $NO_X$ burners, oxidation catalyst, natural gas combustion | 3.0 ppmvd $NO_X$ on a 3-hour average at 15% $O_2$; 10 ppmvd CO on a 3-hour average at 15% $O_2$; 10 ppmvd $NH_3$ on a 3-hour average at 15% $O_2$; 7 ppmvd VOC on a 3-hour average at 15% $O_2$. |
| A09 | 44.1 MMBtu/hour natural gas-fired auxiliary boiler | Good combustion practices | 30 ppmvd $NO_X$ on a 1-hour average at 3% $O_2$; 100 ppmvd CO on a 1-hour average at 3% $O_2$. |
| A10 | 44.1 MMBtu/hour natural gas-fired auxiliary boiler | Good combustion practices | 30 ppmvd $NO_X$ on a 1-hour average at 3% $O_2$; 100 ppmvd CO on a 1-hour average at 3% $O_2$. |

### D. Operating Scenario

The four (4) turbine units with duct-firing may operate up to 24 hours per day, seven (7) days per week, 52 weeks per year and 8,760 hours per year. Each turbine/duct burner combination shall be limited to 3,205 MMBtu/hr heat input on a lower heating value (LHV). Each duct burner shall be limited to 2,298 MMBtu/hr heat input (LHV). Maximum natural gas fuel flow rate for the combined four (4) turbine units and associated duct burners shall be limited to 421,336 pounds per hour. Maximum plant output shall not exceed 1,252,080 kW. Each of the two (2) 44.1 MMBtu/hr boilers may operate up to 6,000 hours per year and shall burn only natural gas. Each of the two (2) emergency diesel generators may operate up to a total of 63 hours per year for testing and maintenance purposes only. The diesel fire pump (EU: A14) may operate up to 100 hours per year for testing and maintenance purposes only, and the diesel fire pump (EU: A15) is permitted to operate up to 150 hours per year for testing and maintenance purposes only. The emergency generators and diesel fire pumps shall burn only low sulfur (less than 0.05 percent) diesel fuel. The 9.8 MMBtu/hr gas line heater shall combust only natural gas and is permitted to operate up to 8,760 hours per year.

### E. Proposed Exemptions

There are no restrictions for the operation of the two (2) diesel emergency generators or the two (2) fire pumps during emergency situations as defined in Section 0 of the AQR.

## III. EMISSIONS INFORMATION

### A. Total Source Potential to Emit

The source potential to emit (PTE) for pollutants (Table III-A-1), as presented in the Part 70 Operating Permit application and its amendments, reflects the permitted potential to emit established in the May 13, 2009 ATC (Modification 1, Amendment 4).

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

| $PM_{10}$ | $NO_X$ | CO | $SO_2$ | VOC | HAP | $NH_3$ |
|---|---|---|---|---|---|---|
| **497.81** | **545.35** | **1,439.42** | **86.55** | **203.51** | **23.46** | **346.00** |

There has been some confusion, based upon the language in the ATC/OP, regarding the intent to establish a source-wide cap on the PTE. The source has not applied for a source-wide emissions cap, nor does the applicable Clark County SIP regulations require one be established. The source-wide PTE is intended to establish the status of the source as Major for

$PM_{10}$, $NO_x$, CO, VOC and $NH_3$. This status is made enforceable by the enforceable emissions limits placed upon the individual emissions units.

## B. Equipment Description

The air emission source equipment and associated major equipment is listed below. The Station is configured into two (2) power blocks that are capable of operating independently. In addition, common support equipment exists to support the two (2) power blocks.

Power Block Equipment

1. Four (4) General Electric 7FA (GE 7241 FA+e) combustion turbine generating units, configured into two (2) blocks of two (2) combustion turbine generating units each, with:
    a. Natural gas firing,
    b. Inlet air filters with filter cleaning system,
    c. Inlet air chilling system
    d. Class DLN 2.6 Dry-low $NO_X$ combustors,
    e. Fire detection and protection system,
    f. Hydrogen cooled General Electric 7FH2 electric generator,
    g. Emission Unit Identification A01, A03, A05 and A07.
2. Four (4) heat recovery steam generators (HRSG), configured into two (2) blocks of two (2) HRSGs each, with:
    a. 3-pressure boiler system, with single reheat,
    b. Multi-element duct burners, with burner management system,
    c. Selective catalytic reduction (SCR) system for NOX control,
    d. Oxidizing catalyst system for controlling CO and VOC,
    e. Exhaust stack 170 feet tall and 18 feet in diameter, equipped with continuous emissions monitoring system (CEMS) for NOX and CO, as well as NH3 slip,
    f. Emission Unit Identification A02, A04, A06 and A08.
3. Two (2) General Electric steam turbine generators, configured into two (2) blocks of one (1) steam turbine generating unit each, with:
    a. 3-pressure, single reheat, condensing configuration,
    b. Hydrogen cooled electric generator.
4. Two (2) combustion turbine inlet air chilling systems, configured into two (2) systems, one (1) for each power block, with:
    a. Twelve (12) centrifugal chiller units, six (6) per system,
    b. Six (6) evaporative cooling towers, three (3) per system.
5. Two (2) air-cooled condensers, configured into two (2) blocks of one (1) air-cooled condenser each, with:
    a. Fifty (50) cells each,
    b. A-frame construction,
    c. 80-foot deck height, approximately 130 foot overall height.

Common Support Equipment

1. Two (2) auxiliary boilers, natural gas fired, 44.1 MMBtu/hr maximum heat input each, with 40’ tall and 3’ diameter exhaust stacks (Emission Unit Identification A09 and A10).
2. Two (2) ammonia storage tanks, 19% aqueous ammonia, sealed system (Emission Unit Identification A11 and TBD). For information on the second ammonia storage tank, please see the letter dated 2/24/06 located in Attachment A.
3. Two (2) emergency generators, diesel fired, 600 kW each (Emission Unit Identification A12 and A13).
4. One (1) 275 hp fire pump, diesel driven (Emission Unit Identification A14).

5. One (1) 600 kW fire pump, diesel driven (Emission Unit Identification A15)
6. Fuel gas preheater, natural gas fired, 9.8 MMBtu/hr maximum heat input, with dual 25' tall and 18" diameter exhaust stacks (Emission Unit Identification A16).
7. Closed cooling water system, with;
   a. Two (2) fin-fan air coolers,
   b. Two (2) wet- surface air coolers.

Miscellaneous ancillary equipment

1. Ancillary equipment as necessary to ensure efficient, safe and reliable operation:
   a. Administration and control room building,
   b. Warehouse and maintenance building,
   c. Water treatment building,
   d. Various water storage tanks,
   e. Various chemical storage tanks,
   f. Two (2) diesel fuel storage tanks, 800 gallons each, for emergency generators,
   g. Two (2) diesel fuel storage tanks, 350 gallons each, for fire pumps,
   h. Electrical switchyard,
   i. Wastewater treatment system,
   j. Lube oil storage structure.

## C. Emission Units and PTE

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

**Table III-C-1: Source Emission Units**

| EU | Description | SCC Code | Type[1] |
|---|---|---|---|
| A01 | Unit #1, GE Frame 7 CTG electric turbine generator, S/N: 297756; natural gas; 8,760 hours per year; Nominal rating:168 MW (292 MW with supplemental duct-firing); MEQ = 292 | 20100201 | TR1, MEQ |
| A02 | Duct-fired HRSG for Unit #1, S/N: 102105; 8,760 hours per year; 2,298 MMBtu/hr | 10100601 | DF1 |
| A03 | Unit #2, GE Frame 7 CTG electric turbine generator, S/N: 297757; natural gas; 8,760 hours per year; Nominal rating:168 MW (292 MW with supplemental duct-firing); MEQ = 292 | 20100201 | TR1, MEQ |
| A04 | Duct-fired HRSG for Unit #2, S/N: 102106; 8,760 hours per year; 2,298 MMBtu/hr | 10100601 | DF1 |
| A05 | Unit #3, GE Frame 7 CTG electric turbine generator, S/N: 297758; natural gas; 8,760 hours per year; Nominal rating:168 MW (292 MW with supplemental duct-firing); MEQ = 292 | 20100201 | TR1, MEQ |
| A06 | Duct-fired HRSG for Unit #3, S/N: 102107; 8,760 hours per year; 2,298 MMBtu/hr | 10100601 | DF1 |
| A07 | Unit #4, GE Frame 7 CTG electric turbine generator, S/N: 297759; natural gas; 8,760 hours per year; Nominal rating:168 MW (292 MW with supplemental duct-firing); MEQ = 292 | 20100201 | TR1, MEQ |
| A08 | Duct-fired HRSG for Unit #4, S/N: 102108; 8,760 hours per year; 2,298 MMBtu/hr | 10100601 | DF1 |
| A09 | Auxiliary boiler, M/N: CB1700750200, S/N: OL101697; 6,000 hours per year; 44.1 MMBtu/hr | 10200602 | F1 |
| A10 | Auxiliary boiler, M/N: CB1700750200, S/N: OL101698; 6,000 hours per year; 44.1 MMBtu/hr | 10200602 | F1 |
| A11 | Ammonia storage tank, M/N: none, S/N: DKT02-1210; sealed system | 40301099 | --- |

| EU | Description | SCC Code | Type[1] |
|---|---|---|---|
| A11a | Ammonia storage tank, M/N: none, S/N: DKT02-1211; sealed system | 40301099 | --- |
| A12 | Emergency generator, Caterpillar, M/N: 3412, S/N: 3FZ03533; diesel; 63 hours per year; 600 kW | 20100102 | EE1 |
| A13 | Emergency generator, Caterpillar, M/N: 3412, S/N: 3FZ03528; diesel; 63 hours per year; 600 kW | 20100102 | EE1 |
| A14 | Diesel fire pump, M/N: none, S/N: 101120-003-01-01 FTA100-EL12N-A-AD-AM-AN-EE-J-T-X; 100 hours per year; 275 hp | 20100102 | EE1 |
| A15 | Diesel fire pump, M/N: none, S/N: none; 150 hours per year; 600 kW | 20100102 | EE1 |
| A16 | 9.8 MMBtu/hr gas line preheater, M/N: none, S/N: EL2F38803-01; 8,760 hours per year | 10200602 | F1 |

[1] Billing code is a designation for emission unit billing purposes: TR1 = turbine; MEQ = megawatt equivalent; DF1 = HRSG; EE1 = emergency engine under 1,500 hp; F1 = fuel burning; DM = Deminimus. Fees are listed in AQR Section 18 of the AQR.

### Table III-C-2: Exempt Emission Units

| |
|---|
| Two (2) 350-gallon diesel storage tanks for diesel fire pumps |
| Two (2) 800-gallon diesel storage tanks for emergency generators |

### Table III-C-3: Potential to Emit of the Source

| EU | CO | | $PM_{10}$ | | $NO_X$ | | VOC | | $SO_X$ | | $NH_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | Ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| A01/A02[1] | 79.74 | 349.25 | 28.25 | 123.73 | 28.95 | 126.80 | 11.29 | 49.45 | 4.78 | 20.93 | 19.75 | 86.50 |
| A03/A04[1] | 79.74 | 349.25 | 28.25 | 123.73 | 28.95 | 126.80 | 11.29 | 49.45 | 4.78 | 20.93 | 19.75 | 86.50 |
| A05/A06[1] | 79.74 | 349.25 | 28.25 | 123.73 | 28.95 | 126.80 | 11.29 | 49.45 | 4.78 | 20.93 | 19.75 | 86.50 |
| A07/A08[1] | 79.74 | 349.25 | 28.25 | 123.73 | 28.95 | 126.80 | 11.29 | 49.45 | 4.78 | 20.93 | 19.75 | 86.50 |
| Subtotal | 318.96 | 1,397.00 | 113.00 | 494.92 | 115.80 | 507.20 | 45.16 | 197.80 | 19.12 | 83.72 | 79.00 | 346.00 |
| A09[2] | 6.40 | 19.20 | 0.40 | 1.20 | 5.20 | 15.60 | 0.80 | 2.40 | 0.40 | 1.20 | 0.00 | 0.00 |
| A10[2] | 6.40 | 19.20 | 0.40 | 1.20 | 5.20 | 15.60 | 0.80 | 2.40 | 0.40 | 1.20 | 0.00 | 0.00 |
| A11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| A11a | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| A12[3,4] | 4.12 | 0.13 | 0.68 | 0.02 | 14.57 | 0.46 | 0.53 | 0.02 | 0.30 | 0.01 | 0.00 | 0.00 |
| A13[3,4] | 4.12 | 0.13 | 0.68 | 0.02 | 14.57 | 0.46 | 0.53 | 0.02 | 0.30 | 0.01 | 0.00 | 0.00 |
| A14[3,5] | 1.84 | 0.09 | 0.61 | 0.03 | 8.53 | 0.43 | 0.69 | 0.04 | 0.10 | 0.01 | 0.00 | 0.00 |
| A15[3,6] | 7.60 | 0.57 | 0.40 | 0.03 | 6.13 | 0.46 | 0.67 | 0.05 | 0.01 | 0.01 | 0.00 | 0.00 |
| A16 | 0.71 | 3.10 | 0.09 | 0.39 | 1.17 | 5.14 | 0.18 | 0.78 | 0.09 | 0.39 | 0.00 | 0.00 |
| **Total** | **350.15** | **1439.42** | **116.26** | **497.81** | **171.17** | **545.35** | **49.36** | **203.51** | **20.72** | **86.55** | **79.00** | **346.00** |

[2] Based on 0.75 grains per 100 standard cubic foot of natural gas.
[2] Maximum operation based upon 6,000 hours per year.
[3] Based on 0.05 weight percent sulfur in the diesel fuel.
[4] Maximum operation based upon 63 hours per year
[5] Maximum operation based upon 100 hours per year
[6] Maximum operation based upon 150 hours per year

### Table III-C-4: HAP Emissions

| Pollutant | CATEF (lb/MMcf)[1] | All Turbines (lb/yr) | Total Emissions (ton/yr) |
|---|---|---|---|
| Acetaldehyde | 6.86E-02 | 4,682.96 | 2.34 |
| Acrolein | 2.37E-02 | 1,617.87 | 0.81 |
| Benzene | 1.36E-02 | 928.40 | 0.46 |

| Pollutant | CATEF (lb/MMcf)[1] | All Turbines (lb/yr) | Total Emissions (ton/yr) |
|---|---|---|---|
| 1,3-Butadiene | 1.27E-04 | 8.67 | <0.01 |
| Ethylbenzene | 1.79E-02 | 1,221.94 | 0.61 |
| Formaldehyde | 1.11E-01 | 7,546.12 | 3.77 |
| Hexane | 2.59E-01 | 17,680.56 | 8.84 |
| Naphthalene | 1.66E-03 | 113.32 | 0.06 |
| PAHs[2] | 2.32E-03 | 45.05 | 0.02 |
| Propylene Oxide | 4.78E-02 | 3,263.05 | 1.63 |
| Toluene | 7.10E-02 | 4,846.79 | 2.42 |
| Xylenes | 2.61E-02 | 1,781.71 | 0.89 |
| Auxiliary Boilers | | 3,200.00 | 1.60 |
| **Total HAP Emissions** | | **46,936.97** | **23.46** |

[1] Emission factors from the California Air Toxics Emissions Factors (CATEF), Version 1.2.

[2] Emission factor calculated from CATEF by summing all PAH emission factors. Turbine emissions for PAHs do not include naphthalene. Naphthalene emissions are calculated separately.

**Table III-C-5: Enforceable Emission Limitations Excluding Startup and Shutdown**

| EU | Emission Unit | CO | $NO_X$ | $NH_3$ | VOC |
|---|---|---|---|---|---|
| A01[1] | Turbine Unit #1 with or without duct-firing | 10 | 3.0 | 10 | 7.0 |
| A03[1] | Turbine Unit #2 with or without duct-firing | 10 | 3.0 | 10 | 7.0 |
| A05[1] | Turbine Unit #3 with or without duct-firing | 10 | 3.0 | 10 | 7.0 |
| A07[1] | Turbine Unit #4 with or without duct-firing | 10 | 3.0 | 10 | 7.0 |
| A09[2] | Auxiliary 44.1 MMBtu/hr boiler | 100 | 30 | NA | NA |
| A10[2] | Auxiliary 44.1 MMBtu/hr boiler | 100 | 30 | N/A | N/A |

[1] Limitations in ppmvd, 3-hour average @ 15% $O_2$.

[2] Limitations in ppmvd, 1-hour average @ 3% $O_2$.

Only those HAPs with a potential to exceed 0.0005 tons per year (1.0 pounds per year) are listed. These factors are being used by DAQEM to more accurately determine HAP emissions and possible source subjectivity to MACT standards per the April 2001 promulgated rule. No single source-wide HAP emission shall exceed ten (10) tons per year and total source-wide HAP emissions shall not exceed 25 tons per year. Therefore, this source is not subject to MACT for combustion turbines. In addition, no other emission units at this source are subject to MACT.

## D. Performance Testing and Continuous Emission Monitoring

Initial performance testing for the turbines, the auxiliary boilers and the gas heater were completed as follows: Turbines 1 and 2- 1/15/06, Turbine 3- 3/24/06, Turbine 4- 3/23/06, Auxiliary boiler (EU: A09)- 1/10/06, Auxiliary boiler (EU: A10)- 3/24/06 and fuel preheater- 3/25/06. Any additional required testing will be performed using the following methods:

**Table III-D-1: Performance Testing Protocol Requirements for Turbines/Duct Burners**

| Test Point | Pollutant | Method |
|---|---|---|
| Turbine/HRSG Exhaust Outlet Stack | $PM_{10}$ | EPA Method 201/202 or 201A/202 |
| Turbine/HRSG Exhaust Outlet Stack | $NO_X$ | EPA Method 7E and Method 20 |
| Turbine/HRSG Exhaust Outlet Stack | CO | EPA Method 10 analyzer |
| Turbine/HRSG Exhaust Outlet Stack | VOC | EPA Method 18 or Method 25a |
| Turbine/HRSG Exhaust Outlet Stack | Opacity | EPA Method 9 |
| Stack Gas Parameters | -- | EPA Methods 1, 2, 3 and 4 |

**Table III-D-2: Performance Testing Protocol Requirements for Auxiliary Boilers**

| Test Point | Pollutant | Method |
|---|---|---|
| Boiler Exhaust Outlet Stack | $NO_X$ | EPA Method 7E |
| Boiler Exhaust Outlet Stack | CO | EPA Method 10 |
| Stack Gas Parameters | -- | EPA Methods 1, 2, 3A and 4 |

**Table III-D-3: Performance Testing Protocol Requirements for the Gas Line Heater**

| Test Point | Pollutant | Method |
|---|---|---|
| Heater Exhaust Outlet Stack | $NO_X$ | EPA Method 7E |
| Heater Exhaust Outlet Stack | CO | EPA Method 10 |
| Stack Gas Parameters | -- | EPA Methods 1, 2, 3A and 4 |

Annual RATA testing must be performed on each $NO_X$, CO, and $O_2$ Continuous Emissions Monitoring Systems (CEMS).

All performance tests on the turbine units and duct burners must conform to 40 CFR 60 Subparts A, Da and GG, and 40 CFR 72. All performance tests on the auxiliary boilers must conform to AQR Section 49.

### Continuous Emissions Monitoring

Chuck Lenzie Generating Station is operating a $NO_X$, $NH_3$ and CO CEMS on each turbine unit. The CEMS monitor and record the following parameters for each individual CTG:

1. hours of operation;
2. electrical load;
3. fuel consumption and type;
4. exhaust gas flow rate (by direct or indirect methods);
5. exhaust gas concentration of $NO_X$, CO and $O_2$;
6. three (3) hour average concentrations of $NO_X$, CO, and $NH_3$, and the mass flow rate of $NO_X$ and CO; and
7. hourly, daily and quarterly accumulated mass emissions of $NO_X$ and CO.

Chuck Lenzie Generating Station may also operate an ammonia predictive emissions monitoring system (PEMS) on each combined cycle emission unit stack. If the Permittee elects to monitor $NH_3$ with a DAQEM approved PEMS, recording for $NH_3$ concentrations and mass emission as described above may be omitted.

## IV. REGULATORY REVIEW

### A. Local Regulatory Requirements

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

1. Clean Air Act, as amended (CAAA), Authority: 42 U.S.C. § 7401, et seq.;
2. Title 40 of the Code of Federal Regulations (CFR);
3. Nevada Revised Statutes (NRS), Chapter 445B;
4. Portions of the AQR that are included in the State Implementation Plan (SIP) for Clark County, Nevada. SIP requirements are federally enforceable. All requirements from

Authority to Construct permits and Section 16 Operating Permits issued by DAQEM are federally enforceable because these permits were issued pursuant to SIP-included sections of the AQR; and

5. Portions of the AQR that are 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.

The DAQEM Part 70 (Title V) Program received Final Approval on November 30, 2001 with publication of that approval appearing in the Federal Register December 5, 2001 Vol. 66, No. 234. AQR Section 19 - Part 70 Operating Permits [Amended 07/01/04] details the Clark County Part 70 Operating Permit Program. These regulations may be accessed on the Internet at: http://www.co.clark.nv. us/air_quality/Regs.htm

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 IV-A-1: AQR Section 12 and 55 Summary Table for This Source**

| | $PM_{10}$ | $NO_X$ | CO | $SO_2$ | VOC | HAP | TCS ($NH_3$) |
|---|---|---|---|---|---|---|---|
| **Air Quality Area** | PSD | Unclassified nonattainment (ozone) | PSD | PSD | Unclassified nonattainment (ozone) | N/A | N/A |
| **Source PTE (tpy)** | **497.83** | **545.38** | **1,440.78** | **86.55** | **203.58** | **23.46** | **346.00** |
| **Major Source** | ≥ 100 tpy | ≥ 100 tpy | ≥ 100 tpy | ≥ 100 tpy | ≥ 100 tpy | ≥ 10 tpy for each HAP, or ≥ 25 tpy for combined HAPs | ≥ 1 tpy |

**Discussion:** Chuck Lenzie Generating Station is a major source of $PM_{10}$, $NO_X$, CO, VOC and TCS ($NH_3$). As part of the original New Source Review Analysis all of these emissions triggered notice of proposed action.

**Table IV-A-2: Clark County Department of Air Quality and Environmental Management – Air Quality Regulations with Source Compliance or Requirement**

| Applicable Section – Title | Applicable Subsection - Title | SIP | Affected Emission Unit |
|---|---|---|---|
| 0. Definitions | applicable definitions | yes | entire source |
| 1. Definitions | applicable definitions – “Affected Facility”, “Air Contaminant”, “Air Pollution Control Committee”, “Area Source”, “Atmosphere”, “Board”, “Commercial Off-Road Vehicle Racing”, “Dust”, “Existing Facility”, “Existing Gasoline Station”, “Fixed Capital Cost”, “Fumes”, “Health District”, “Hearing Board”, “Integrated Sampling”, “Minor Source”, “Mist”, “New Gasoline Station”, “New Source”, “NIC”, “Point Source”, “Shutdown”, “Significant”, “Single Source”, “Smoke”, “Source of Air Contaminant”, “Special Mobile Equipment”, “Standard Commercial Equipment”, “Standard Conditions”, “Start Up”, “Stop Order”, “Uncombined Water”, and “Vapor Disposal System” | yes | entire source |
| 4. Control Officer | all subsections | yes | entire source |
| 5. Interference with Control Officer | all subsections | yes | entire source |
| 7. Hearing Board and Hearing Officer | all subsections | no | entire source |
| 8. Persons Liable for Penalties - Punishment: Defense | all subsections | yes | entire source |
| 9. Civil Penalties | all subsections | yes | entire source |
| 10. Compliance Schedule | when applicable; applicable subsections | yes | entire source |
| 11. Ambient Air Quality Standards | applicable subsections | yes | entire source |
| 12. Preconstruction Review for New or Modified Stationary Sources | All subsections <u>except</u> the following:<br><br>§ 12.2.18 HAP Sources in Clark County.<br>§ 12.2.20 Additional Requirements for STATIONARY SOURCEs with Beryllium, Mercury, Vinyl Chloride, or Asbestos EMISSIONS in Clark County | yes | entire source |
| 13. Emission Standards for Hazardous Pollutants | all subsections | no | none |
| 14. New Source Performance Standards | CCAQR Section 14.1.56: Subpart GG Standards of Performance for Gas Turbines | no | Applicable – CTG units |
| 16. Operating Permits | all subsections | yes | entire source |

| Applicable Section – Title | Applicable Subsection - Title | SIP | Affected Emission Unit |
|---|---|---|---|
| 18. Permit and Technical Service Fees | § 18.1 Operating Permit Fees<br>§ 18.2 Annual Emission Unit Fees<br>§ 18.4 New Source Review Application Review Fee<br>§ 18.5 Part 70 Application Review Fee<br>§ 18.6 Annual Part 70 Emission Fee<br>§ 18.14 Billing Procedures | yes | entire source |
| 19. Part 70 Operating Permit<br><br>Federal Approval (11/25/01) | § 19.2 Applicability<br>§ 19.3 Part 70 Permit Applications<br>§ 19.4 Part 70 Permit Content<br>§ 19.5 Permit Issuance, Renewal, Re-openings, and Revisions<br>§ 19.6 Permit Renewal by the EPA and Affected States<br>§ 19.7 Fee Determination and Certification | N/A | entire source |
| 20. Emission Standards for Hazardous Air Pollutants for Source Categories | all subsections | no | none |
| 21. Acid Rain Permits | all subsections | no | entire source |
| 22. Acid Rain Continuous Emission Monitoring | all subsections | no | entire source |
| 24. Sampling and Testing - Records and Reports | § 24.1 Requirements for installation and maintenance of sampling and testing facilities<br>§ 24.2 Requirements for emissions record keeping<br>§ 24.3 Requirements for the record format<br>§ 24.4 Requirements for the retention of records by the emission sources | yes | entire source |
| 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 (≤ an average of 20 percent for a period of more than 6 consecutive minutes) | yes | entire source |
| 27. Particulate Matter from Process Weight Rate | all subsections | no | entire source |
| 28. Fuel Burning Equipment | Emission Limitations for PM | yes | entire source |
| 29. Sulfur Contents of Fuel Oil | Sulfur content shall be equal to or less than 0.05 percent sulfur by weight | no | A12, A13, A14, !15 |
| 35. Diesel Engine Powered Electrical Generating Equipment | all subsections | no | 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 |
| 49. Emission Standards for Boilers and Steam Generators Burning Fossil Fuels | Local enforcement only all subsections | no | A09, A10 |
| 55. Preconstruction Review for New or Modified Stationary Sources in the 8-hour Ozone Nonattainment Area | all subsections | no | entire source |
| 60. Evaporation and Leakage | all subsections | yes | entire source |
| 70. Emergency Procedures | all subsections | yes | entire source |
| 80. Circumvention | all subsections | yes | entire source |

AQR SECTION 11 - AMBIENT AIR QUALITY STANDARDS

**Discussion:** As modeled using ISCST3, the post-baseline increment assigned to Chuck Lenzie Generating Station is outlined in Table IV-A-3.

**Table IV-A-3: PSD Increment Consumption**

| Pollutant | Averaging Period | Maximum Concentration from Project | Location Maximum Impact | |
|---|---|---|---|---|
| | | | UTM X (m) | UTM Y (m) |
| $NO_2$ | Annual | 1.306 | 686666 | 4028627 |
| $PM_{10}$ | 24-hour[1] | 19.563 | 686664 | 4028725 |
| $SO_2$ | 3-hour[1] | 22.075 | 686672 | 4028331 |
| $SO_2$ | 24-hour[1] | 6.042 | 686687 | 4028344 |
| $SO_2$ | Annual | 1.324 | 686687 | 4028344 |
| $NO_2$ | Annual | 8.864 | 686687 | 4028344 |

[1] Modeled 2nd High Concentration.

## 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, CEMS data, and performance test data. These requirements are found in the

Part 70 OP in Sections II-C, III-E, and III-F. 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:** Subpart GG also requires fuel monitoring and sampling to meet a standard. Subpart GG requirements are addressed in the Part 70 permit. AQR Section 26 is more stringent than the federal opacity standards, setting a maximum average of 20 percent opacity for a period of more than 6 consecutive minutes. Chuck Lenzie Generating Station shall operate in a manner consistent with this section of the regulation.

### 40 CFR 60.12- Circumvention

**Discussion:** This prohibition is Condition I-A-27 in the Part 70 OP. This is also local rule AQR 80.1.

### 40 CFR 60.13-Monitoring requirements.

**Discussion:** This section requires that CEMS meet Appendix B and Appendix F standards of operation, testing and performance criteria. Sections 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 and recording time.

## Subpart GG-Standards of Performance for Stationary Gas Turbines

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

**Discussion:** Subpart GG applies to the four (4) turbines at this source.

### 40 CFR 60.332-Standard for nitrogen oxides. ($NO_X$ limits using the F formula)

**Discussion:** See Table C.

### 40 CFR 60.333-Standard for sulfur dioxide.

**Discussion:** See Table C.

### 40 CFR 60.334-Monitoring of operations.

**Discussion:** The sole use of pipeline-quality natural gas satisfies this requirement.

### 40 CFR 60.335-Test methods and procedures.

**Discussion:** These requirements are found in the conditions for performance testing found in Section III-D of the Part 70 OP.

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

### 40 CFR 60.40a - Applicability

**Discussion:** The duct burners (EUs: A02, A04, A06 and A08) are subject to the provisions of this subpart. They each have a rated capacity of 2,298 MMBtu per hour.

### 40 CFR 60.42 – Standard for Particulate Matter

**Discussion:** See Table C.

### 40 CFR 60.43 – Standard for Sulfur Dioxide

**Discussion:** See Table C.

### 40 CFR 60.44 – Standard for Nitrogen Oxides

**Discussion:** See Table C.

### 40 CFR 60.46a – Compliance Provisions

**Discussion:** Section III-B-2 of the Part 70 permit outlines start-up/shut-down events. The ton-per-year limits for the turbines/duct burners include start-up/shut-down emissions. Chuck Lenzie Generating Station has completed all compliance demonstrations and has demonstrated compliance with all applicable emission standards for $NO_X$ and $SO_2$. The facility employs the use of CEMS on each of the turbine stacks to monitor $NO_X$ emissions. The measurements to be taken are outlined in Section III-C of the Part 70 operating permit.

### 40 CFR 60.47a – Emission Monitoring

**Discussion:** The duct burners combust only natural gas; therefore, COMS are not required. The duct burners combust only natural gas; therefore, $SO_2$ CEMS are not required. The facility is subject to the requirements of 40 CFR 75; therefore, the data acquired by the $NO_X$ CEMS are allowed to be used to show compliance with both 40 CFR 60 Subpart Da and 40 CFR 75. The reporting requirements are outlined in Section III-F of the Part 70 operating permit. The facility has installed a diluent oxygen CEMS. Monitoring requirements are outlined in Section III-C of the Part 70 operating permit. The duct burners exhaust through the same stack as the combustion turbines; therefore, the monitors required for monitoring turbine emissions will also monitor duct burner emissions.

### 40 CFR 60.48a – Compliance Determination Procedures and Methods

**Discussion:** The compliance demonstration for this facility is discussed in Section II-D of the Part 70 operating permit.

### 40 CFR 60.49a – Reporting Requirements

**Discussion:** These are discussed in Sections II-C and III-F of the Part 70 operating permit.

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

### 40 CFR 60.40c – Applicability and Delegation of Authority

**Discussion:** The auxiliary boilers (EUs: A09 and A10) are each rated at 44.1 MMBtu per hour; therefore, Subpart Dc is applicable to these emission units.

### 40 CFR 60.42c – Standard for Sulfur Dioxide

**Discussion:** This section does not pertain to boilers that exclusively fire natural gas.

### 40 CFR 60.43c – Standard for Particulate Matter

**Discussion:** This section does not pertain to boilers that exclusively fire natural gas.

### 40 CFR 60.48c – Reporting and Recordkeeping Requirements

**Discussion:** These are addressed in Sections II-C, III-E, and III-F in the Part 70 operating permit.

## Subpart KKKK--STANDARDS OF PERFORMANCE FOR STATIONARY COMBUSTION TURBINES

### 40 CFR 60.4305 - Applicability

**Discussion:** The four (4) turbines (EUs: A01, A03, A05 and A07) are not subject to the provisions of this subpart because these turbines commenced construction, modification, or reconstruction before February 18, 2005.

## 40 CFR PART 64-COMPLIANCE ASSURANCE MONITORING

### 40 CFR 64.2 – Applicability

**Discussion:** The CAM Rule is not applicable to the auxiliary boilers (EUs: A09 and A10), the emergency generators (EUs: A12 and A13), the diesel fire pumps (EUs: A14 and A15), or the fuel gas preheater (EU: A16) based on the applicability statement outlined in 40 CFR 64.2(a)(2), i.e., no control devices are used on these units to achieve compliance with any emission limitation or standard for a regulated air pollutant. 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 and Part 75 compliance. These units are also exempt from the CAM Rule for $NO_X$ based on the exemption outlined in 40 CFR 64.2(b)(1)(iii) for Acid Rain Program Requirements. 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). Further, $SO_X$ would be exempt from the CAM Rule based on the exemption outlined in 40 CFR 64.2(b)(1)(iii) for Acid Rain Requirements. The CAM Rule is not applicable to these units for $PM_{10}$, HAPs or $NH_3$ based on the applicability statement outlined 40 CFR 64.2(a)(2). Combustion turbines/duct heaters (EUs: A01-A08) are also not CAM-applicable for VOC emissions based on the exemption outlined in 40 CFR 64.2(a)(3), i.e., the potential precontrol emissions are less than the major source threshold.

## 40 CFR PART 72-ACID RAIN PERMITS REGULATION

## Subpart A – Acid Rain Program General Provisions

### 40 CFR 72.6 – Applicability

**Discussion:** Chuck Lenzie Generating Station is defined as a utility unit in the definitions for Part 72; therefore, the provisions of this regulation apply.

### 40 CFR 72.9 – Standard Requirements

**Discussion:** Chuck Lenzie Generating Station has applied for all of the proper permits under this regulation.

### Subpart B – Designated Representative

**Discussion:** Chuck Lenzie Generating Station has a Certificate of Representation for Designated Representative on file. They have fulfilled all requirements under this subpart.

### Subpart C – Acid Rain Permit Applications

**Discussion:** Chuck Lenzie Generating Station has applied for an acid rain permit.

### Subpart D – Acid Rain Compliance Plan and Compliance Options

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

### Subpart E – Acid Rain Permit Contents

**Discussion:** Chuck Lenzie Generating Station has applied for an acid rain permit, and it will contain all information to demonstrate compliance with this subpart.

## 40 CFR 73 – ACID RAIN SULFUR DIOXIDE ALLOWANCE SYSTEM

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

### Subpart B – Allowance Allocations

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

### Subpart C – Allowance Tracking System

**Discussion:** Chuck Lenzie Generating Station is considered a new unit. A complete certificate of representation has been received and an account has been established for this facility. Chuck Lenzie Generating Station shall follow all guidelines and instructions presented in this subpart while maintaining its allowance account.

### Subpart D – Allowance Transfers

**Discussion:** When an allowance transfer is necessary, Chuck Lenzie Generating Station shall follow all procedures in this subpart.

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

**Discussion:** This subpart outlines the auction process for allowance credits.

### Subpart F – Energy Conservation and Renewable Energy Reserve

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

## 40 CFR 75-CONTINUOUS EMISSION MONITORING

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

Each combined cycle turbine unit has been equipped with both a $NO_X$ CEMS and diluent oxygen monitors. Each turbine unit is also equipped with a fuel flow monitor. Each turbine unit also has a CO CEMS and a CEMS-equivalent monitoring device to measure ammonia emissions. The data from the CEMS are used to provide quarterly acid rain reports to both EPA and DAQEM.

All required monitoring plans, RATA testing protocols, and certification testing reports have been provided to EPA and DAQEM. Initial CEMS certification testing was completed on March 28, 2006. The CEMS Quality Assurance Plan was submitted to DAQEM on August 26, 2005 and approved on April 24, 2006.

# 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:

| Quarter | Applicable Period | Due Date | Required Contents |
|---|---|---|---|
| 1 | January, February, March | April 30 each year | Quarterly Report for 1st Calendar Quarter |
| 2 | April, May, June | July 30 each year | Quarterly Report for 2nd Calendar Quarter |
| 3 | July, August, September | October 30 each year | Quarterly Report for 3rd Calendar Quarter |
| 4 | October, November, December | January 30 each year | Quarterly Report for 4th Calendar Quarter, any additional annual records required, and Annual Certification of Compliance |
| 4 | Calendar Year | March 31 each year | Annual Emission Inventory Report |

(b) A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods.

(c) A schedule for submission of compliance certifications during the permit term.

(d) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.

## B. Compliance Summary

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| AQR Section 0 | Definitions | Applicable – Station will comply with all applicable definitions as they apply. | Station will meet all applicable test methods should new definitions apply. | Station complies with applicable requirements. |
| AQR Section 4 | Control Officer | Applicable – The Control Officer or his representative may enter into Station property, with or without prior notice, at any reasonable time for purpose of establishing compliance. | Nevada Power Company will allow Control Officer to enter Station property as required. | Station complies with applicable requirements. |
| AQR Section 11 | Ambient Air Quality Standards | Applicable – Station is a source of air pollutants. | Station demonstrated compliance in the ATC permit application with air dispersion modeling using ISCST3. | Station complies with applicable requirements using ISCST3. |
| AQR Section 12.1 | General application requirements for construction of new and modified sources of air pollution | Applicable – Station applied for and the ATC certificate was issued before commencing construction. | Station received the ATC permit to construct. | Station complies with applicable requirements. |
| AQR Section 12.2.5 | Requirements for specific air pollutants: $PM_{10}$ emission source located in the PSD area | Applicable – Station has $PM_{10}$ PTE > 100 TPY. The CTGs/HRSGs meet BACT requirements based on combusting natural gas. Emissions were assessed with dispersion modeling and results complied with PSD Class I, Class II increments and NAAQS using ISCST3. | The Station CTGs/HRSGs meet BACT requirements based on combusting natural gas. Emissions were assessed with dispersion modeling and results complied with PSD Class I, Class II increments and NAAQS using ISCST3. | Station complies with applicable control technology requirements. Station complies with applicable air quality impact analyses using ISCST3. |
| AQR Section 12.2.6 | Requirements for specific air pollutants: CO sources located in the PSD area | Applicable – Station has CO PTE > 100 TPY. | The Station CTGs/HRSGs meet BACT requirements based on installation of oxidation catalyst to achieve 10-ppmvd limit. Emissions were assessed with dispersion modeling and results complied with NAAQS using ISCST3 | Station complies with applicable control technology requirements. Station complies with applicable air quality impact analyses using ISCST3. |
| AQR Section 12.2.13 | Requirements for specific air pollutants: VOC sources located in the PSD area | Applicable – Station has VOC PTE > 100 TPY | The CTGs/HRSGs meet BACT requirements based on installation of oxidation catalyst to achieve 7.0-ppmvd limit. Station VOC emissions are not required to perform dispersion model assessment. | Station complies with applicable requirements. |

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| AQR Section 12.2.15 | Requirements for specific air pollutants: $NO_X$ sources located in the PSD area | Applicable – Station has $NO_X$ PTE > 100 TPY | The Station CTGs/HRSGs meet BACT requirements based on installation of DLN combustors and SCR technology and achieves 3.0-ppmvd limit. Emissions were assessed with dispersion modeling and results complied with PSD Class I and II increments and NAAQS using ISCST3. | The Station deviated from the 3.0 ppmvd $NO_X$ limit on four (4) occasions due to extenuating circumstances. The Station currently complies with applicable control technology requirements. Station complies with applicable air quality impact analyses using ISCST3. |
| AQR Section 12.2.16 | Requirements for specific air pollutants: $SO_2$ sources located in the PSD area | Not Applicable – $SO_2$ PTE < 100 TPY | The CTGs/HRSGs meet BACT requirements based on natural gas fuel only and good combustion technology. Emissions were assessed with dispersion modeling and results complied with PSD Class I and II increments and NAAQS using ISCST3. | Station complies with applicable control technology requirements. Station complies with applicable air quality impact analyses using ISCST3. |
| AQR Section 12.2.19 | Requirements for specific air pollutants: TCS sources in Clark County | Applicable – Station has Ammonia ($NH_3$) emissions at 346 TPY and $NH_3$ is a locally regulated TCS. The BACT requirement for $NH_3$ is 10 ppm or less $NH_3$ slip, and acceptable monitoring. The slip emission was evaluated by model analysis and impact was in compliance to the $NH_3$ TLV. | The BACT requirement for $NH_3$ is 10 ppm or less $NH_3$ slip, and acceptable monitoring. The slip emission was evaluated by model analysis and impact was in compliance to the $NH_3$ TLV. The CTGs/HRSGs meet BACT requirements based on meeting the 10-ppm $NH_3$ slip limit with PEMS monitoring. | Station complies with applicable requirements. |
| AQR Section 12.5 | Air Quality Models | Applicable – Dispersion modeling performed in ATC permit application using ISCST3 in accordance with provisions of 40 CFR Part 51, Appendix W. | As applicable, future dispersion modeling performed in ATC permit modifications will be in accordance with provisions of 40 CFR Part 51, Appendix W. | Station complies with applicable requirements. |
| AQR Section 12.7 | Continuous Emission Monitoring (CEM) Systems | Applicable – The Station has $NO_X$ and CO PTE > 100 TPY. $NO_X$ and CO CEMS installed on all stacks and meets provisions of 40 CFR Parts 60 and 75. | Station submitted all required protocols/test plans per ATC permit prior to CEMS certification. CEMS certification was approved by DAQEM. | Station complies with applicable requirements. |

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| AQR Section 14.1.1 Subpart A | New Source Performance Standards (NSPS) General Provisions | Applicable – Station is an affected facility under the regulations. Section 14 is locally enforceable; however, the NSPS standards referenced are federally enforceable. | Applicable monitoring, recordkeeping and reporting requirements. | Station complies with applicable requirements. |
| AQR Section 14.1.13 Subpart Da | New Source Performance Standards – Standards of Performance for Electric Utility Steam Generating Units | Applicable – The duct burners are natural gas-fired units with heat input greater than 250 MMBtu/hr. | Duct burners meet applicable $NO_X$ and PM emission standards. $NO_X$ emissions determined by EPA Method 7E and $PM_{10}$ by EPA Method 201/201a and 202. | Station complies with applicable requirements. |
| AQR Section 14.1.56 Subpart GG | Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines | Applicable – The four (4) Station turbines are natural gas-fired units with heat input greater than 10 MMBtu/hr. | The four (4) turbines meet the applicable $NO_X$ emission standard. $NO_X$ emissions determined by EPA Method 7E. | Station complies with applicable requirements. |
| AQR Section 15.13 | Prevention of Significant Deterioration | Applicable – Station PTE > 100 TPY and is listed as a PSD source. Section 15 is the former SIP and has been superseded by Section 12 rule and is federally enforceable. | The requirements of PSD have been met under Section 12 review. | Station complies with applicable requirements. |
| AQR Section 15.13.9 | Control Review Requirements | Applicable – Station PTE > 100 TPY and is listed as a PSD source. Section 15 is the former SIP and has been superseded by Section 12 rule and is federally enforceable. | The requirements of emission control review have been met under Section 12 review. | Station complies with applicable requirements. |
| AQR Section 15.13.11 | Air Quality Models | Applicable – Station PTE > 100 TPY and is listed as a PSD source. Section 15 is the former SIP and has been superseded by Section 12 rule and is federally enforceable. | The requirement of using the appropriate air quality model at the time of Station's application for Authority to Construct has been met under Section 12 rule. | Station complies with applicable air quality models using ISCST3. |
| AQR Section 15.13.12 | Air Quality Analysis | Applicable – Station PTE > 100 TPY and is listed as a PSD source. Section 15 is the former SIP and has been superseded by Section 12 rule and is federally enforceable. | The requirements of the air quality analysis using the appropriate air quality model at the time of Station's application for Authority to Construct has been met under Section 12 rule. | Station complies with applicable air quality models using ISCST3. |

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| AQR Section 15.13.14 | Additional Impact Analysis | Applicable – Station PTE> 100 TPY and is listed as a PSD source. Section 15 is the former SIP and has been superseded by Section 12 rule and is federally enforceable. | The requirements of the additional impact analysis using the appropriate air quality model at the time of Station's application for Authority to Construct has been met under Section 12 rule. | Station complies with applicable air quality models using ISCST3. |
| AQR Section 18 | Permit and Technical Service Fees | Applicable – Station will be required to pay all required/applicable permit and technical service fees. | Station is required to pay all required/applicable permit and technical service fees. | Station complies with applicable requirements. |
| AQR Section 19 | 40 CFR Part 70 Operating Permits | Applicable – Station is a major stationary source and under Part 70 the initial Title V permit application will be submitted within 12 months of startup. Section 19 is both federally and locally enforceable | Station has submitted the Part 70 permit within 12 months of startup. | Station complies with applicable requirements. |
| AQR Section 21 | Acid Rain Permits | Applicable – Station is an affected facility. The combustion turbines and duct burners are applicable units under the Acid Rain Program. | Station submitted required acid rain permit forms/applications. | Station complies with applicable requirements. |
| AQR Section 22 | Acid Rain Continuous Emission Monitoring | Applicable – Station is an affected facility and is required to meet the requirements for the monitoring, recordkeeping, and reporting of flow rate, $SO_2$, $NO_X$, and $CO_2$ emissions. | Station submitted all required protocols/test plans per ATC permit prior to CEMS certification. CEMS certification was approved by DAQEM. | Station complies with applicable requirements. |
| 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. | In the past, the Station has deviated from this requirement on three (3) isolated occasions due to extenuating circumstances. The Station currently complies with applicable requirements. |
| AQR Section 26 | Emissions of Visible Air Contaminants | Applicable – Opacity for the Station combustion turbines must not exceed an average of 20 percent for a period of more than 6 consecutive minutes. | Compliance determined by EPA Method 9 | Station complies with applicable requirements. |

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| AQR Section 27 | Particulate Matter from Process Weight Rate | Applicable – Station 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. | Station complies with applicable requirements. |
| AQR Section 28 | Fuel Burning Equipment | Applicable – The PM emission rate for the combustion turbines and duct burners are well below those established based on Section 28 requirements. | Maximum allowable PM emission rate determined from equation in Section 28. | Station complies with applicable requirements. |
| AQR Section 29 | Sulfur Content of Fuel Oil | Applicable – The diesel fuel that will be burned in the fire pump and emergency generator engines at the Station will require low sulfur fuel with sulfur content less than 0.05 percent by weight. Section 29 is locally enforceable only. | Fuel sulfur content verification obtained from fuel oil supplier. | Station complies with applicable requirements. |
| AQR Section 40 | Prohibition of Nuisance Conditions | Applicable – No person shall cause, suffer or allow the discharge from any source whatsoever such quantities of air contaminants or other material which cause a nuisance. Section 40 is locally enforceable only. | Station air contaminant emissions controlled by pollution control devices or good combustion in order not to cause a nuisance. | Station complies with applicable requirements. |
| AQR Section 41 | Fugitive Dust | Applicable – Station shall take necessary actions to abate fugitive dust from becoming airborne. | Station utilizes appropriate best practices to not allow airborne fugitive dust. | Station complies with applicable requirements. |
| AQR Section 42 | Open Burning | Applicable – In event Station burns combustible material in any open areas, such burning activity will have been approved by Control Officer in advance. Section 42 is a locally enforceable rule only. | Station will contact the DAQEM and obtain approval in advance for applicable burning activities as identified in the rule. | Station 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. | Station will not operate its facility in a manner which will cause odors. | Station complies with applicable requirements. |
| AQR Section 49 | Emission Standards for Boilers and Steam Generators Burning Fossil Fuels | Applicable – The Station auxiliary boilers are subject to performance testing and burner efficiency testing requirements. The heat recovery steam generators (HRSG) are exempt under Section 49.3.2. | Station submitted required test protocols prior to initial performance testing. Tests reported within 60 days. DAQEM approves test reports. | Station complies with applicable requirements. |
| AQR Section 55 | Preconstruction review for New or Modified Stationary Sources in the 8-Hour Ozone Nonattainment Area | Applicable – Station is located in Garnet Valley airshed (hydrographic area 216 Apex Valley) and will need to meet the applicable emission control requirements at times of future modifications. | In the event Station undertakes a modifications, Station will have to apply proper control technologies and meet offset requirements, as applicable. | Station complies with applicable requirements. |
| AQR Section 70.4 | Emergency Procedures | Applicable – Station submitted an emergency standby plan for reducing or eliminating air pollutant emissions in the Section 16 Operating Permit Application. | Station submitted an emergency standby plan and received the Section 16 Operating Permit. | Station complies with applicable requirements. |
| 40 CFR 52.21 | Prevention of Significant Deterioration (including Preconstruction permits) | Applicable – Station PTE > 100 TPY and is listed as one of the 28 source categories. | BACT analysis, air quality analysis using ISCST3, and visibility and additional impact analysis performed for original ATC permits. | Station complies with applicable sections as required by PSD regulations. |
| 40 CFR 52.1470 | SIP Rules | Applicable – Station is classified as a Title V source, and SIP rules apply. | Applicable monitoring and record keeping of emissions data. | Station is in compliance with applicable state SIP requirements including monitoring and record keeping of emissions data. |
| 40 CFR 60, Subpart A | Standards of Performance for New Stationary Sources (NSPS) – General Provisions | Applicable – Station is an affected facility under the regulations. | Applicable monitoring, recordkeeping and reporting requirements. | Station complies with applicable requirements. |

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| 40 CFR 60, Subpart Da | Standards of Performance for New Stationary Sources (NSPS) – Electric utility steam generating units with heat input greater than 250 MMBtu/hr. | Applicable – The duct burners are natural gas-fired units with heat input greater than 250 MMBtu/hr. | Duct burners meet applicable $NO_X$ and PM emission standards. $NO_X$ emission determined by EPA Method 7E and $PM_{10}$ by EPA Method 201/201a and 202. | Station complies with applicable requirements. |
| 40 CFR 60, Subpart GG | Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines | Applicable – The four (4) Station CTGs are natural gas- fired units with heat input greater than 10 MMBtu/hr. | The four (4) CTGs meet the applicable $NO_X$ emission standard. $NO_X$ emission determined by EPA Method 7E. | Station complies with applicable requirements. |
| 40 CFR 60 | Appendix A, Method 9 or equivalent, (Opacity) | Applicable – Emissions from stacks are subject to opacity standards. | Opacity determined by EPA Method 9. | Station complies with applicable requirements. |
| 40 CFR 60 | Appendix A, Method 20 or equivalent | Applicable – The CTG emissions at Station are subject to requirements for determination of $NO_X$, $SO_2$, and diluent emissions from CTGs. | Emissions determined from EPA Method 20 or Equivalent. | Station complies with applicable requirements. |
| 40 CFR 64 | Compliance Assurance Monitoring | Not Applicable – See the regulatory review for 40 CFR 64—Compliance Assurance Monitoring under Section IV-B of this document. | Station does not have CAM requirements, but does have compliance demonstration requirements for regulated pollutants. | Station complies with applicable requirements. |
| 40 CFR 68 | Chemical Accident Prevention Provisions | Not Applicable – Station stores or handles 19% aqueous ammonia ($NH_3$) which is less than the applicable threshold. | Construction approval and a Risk Management Plan (RMP) were not required for the Nevada Department of Environmental Protection for storage and use of $NH_3$. Station adheres to Station management programs. | Station complies with applicable requirements. |
| 40 CFR 72 | Acid Rain Permits Regulation | Applicable – Station is an affected facility. The CTGs and duct burners are applicable units under the Acid Rain Program. | Station submitted required acid rain permit forms/applications. | Station complies with applicable requirements. |
| 40 CFR 73 | Acid Rain Sulfur Dioxide Allowance System | Applicable – Station is an affected facility. The permittee will obtain $SO_2$ allowances based on the calculated actual emissions. | Station shall be required to obtain required $SO_2$ allowances. | Station complies with applicable requirements. |

| Citation | Title | Applicability | Applicable Test Method | Compliance Status |
|---|---|---|---|---|
| 40 CFR 75 | Acid Rain CEMS | Applicable – Station is an affected facility and is required to meet the requirements for the monitoring, recordkeeping and reporting of flow rate, $SO_2$, $NO_X$, and $CO_2$ emissions. | Station submitted all required protocols/test plans per ATC permit prior to CEMS certification. Station submitted Initial Certification applications within 45 days of last certification test. DAQEM and EPA approve CEMS certifications. | Station complies with applicable requirements. |

## C. 40 CFR 60 Subparts Da and GG Streamlining Demonstration for Shielding Purposes

| Regulation (40 CFR) | Regulatory Standard | Permit Limit | Value Comparison | | | | Averaging Period Comparison | | | Streamlining Statement for Shielding Purposes |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Relevant Heat Input or Load Level[1] | Standard Value, in Units of the Permit Limit | Permit Limit Value | Is Permit Limit Equal or More Stringent? | Standard Averaging Period | Permit Limit Averaging Period | Is Permit Limit Equal or More Stringent? | |
| 60.332 (GG) | 75 ppmvd $NO_X$ @ 15% $O_2$ (2) | 3.0 ppmvd $NO_X$ @ 15% $O_2$ | N/A | 75 (2) | 3.0 | Yes | 4 hour | 3 hour | Yes | The permit limit is more stringent than the standard, based upon both concentration and averaging time. Compliance with the permit demonstrates compliance with the standard. |
| 60.333 (GG) | 0.8% sulfur by weight (8000 ppmw) | 0.5 gr/ 100 scf | N/A | 260 (3) | 0.5 | Yes | N/A | N/A | Yes | The permit limit is more stringent than the standard. Compliance with the permit demonstrates compliance with the standard. |
| 60.42 (Da) | 0.03 lb PM per MMBtu | 28.25 lb $PM_{10}$ per hr | Low Heat Input | 33 | 28.25 | Yes | 30-day rolling | 1 hour | Yes | The permit limit is more stringent than the standard, based upon both mass and averaging time. Compliance with the permit demonstrates compliance with the standard. |
| | | | High Heat Input | 96 | | | | | | |

| Regulation (40 CFR) | Regulatory Standard | Permit Limit | Value Comparison | | | | Averaging Period Comparison | | | Streamlining Statement for Shielding Purposes |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Relevant Heat Input or Load Level[1] | Standard Value, in Units of the Permit Limit | Permit Limit Value | Is Permit Limit Equal or More Stringent? | Standard Averaging Period | Permit Limit Averaging Period | Is Permit Limit Equal or More Stringent? | |
| 60.42 (Da) | 20% Opacity | 20% Opacity | N/A | 20 | 20 | Yes | 60-minute period, excepting 6 minutes | 60-minute period, excepting 6 minutes | Yes | The permit limit is equal to the standard. Compliance with the permit demonstrates compliance with the standard. |
| 60.43 (Da) | 0.20 lb $SO_2$ per MMBtu | 4.78 lb $SO_2$ per hour | Low Heat Input | 220 | 4.78 | Yes | 30-day rolling | 1 hour | Yes | The permit limit is more stringent than the standard, based upon both mass and averaging time. Compliance with the permit demonstrates compliance with the standard. |
| | | | High Heat Input | 641 | | | | | | |
| 60.44 (Da) | 0.20 lb $NO_X$ per MMBtu | 3.0 ppm $NO_X$ @ 15% $O_2$ | N/A | 54 | 3.0 | Yes | 30-day rolling | 3 hour | Yes | The permit limit is more stringent than the standard, based upon both concentration and averaging time. Compliance with the permit demonstrates compliance with the standard. |

| Regulation (40 CFR) | Regulatory Standard | Permit Limit | Value Comparison | | | | Averaging Period Comparison | | | Streamlining Statement for Shielding Purposes |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Relevant Heat Input or Load Level[1] | Standard Value, in Units of the Permit Limit | Permit Limit Value | Is Permit Limit Equal or More Stringent? | Standard Averaging Period | Permit Limit Averaging Period | Is Permit Limit Equal or More Stringent? | |
| 60.44 (Da) | 1.6 lb $NO_X$ per MW-hr | 28.95 lb $NO_X$ per hour | Low Load | 256 | 28.95 | Yes | 30-day rolling | 1 hour | Yes | The permit limit is more stringent than the standard, based upon both mass and averaging time. Compliance with the permit demonstrates compliance with the standard. |
| | | | High Load | 349 | | | | | | |

[1] Heat input and load levels used were as follows:

Low Heat input indicates the minimum heat input for normal (Mode 6) operation. Mode 6 is described in the ATC/OP, Modification 1, Amendment 2, Condition III-A-3. A conservative value of 1,100 MMBtu/hr was used.

High Heat Input indicates heat input at the permit limit, or 3,205 MMBtu/hr.

Low Load for Subpart Da purposes is the maximum load with no duct firing. A conservatively low value of 160 MW was used.

High Load for Subpart Da purposes is the nominal rated load for the turbine and duct burner combined, or 218 MW as listed in the ATC/OP.

[2] The 60.332 $NO_X$ standard is a formula; the value used here (75 ppmvd) is the minimum possible value of the standard for any emission unit.

Note: Formulas used:

$EF = C_d * C_f * F_d * 20.9 / (20.9 - \%O_2)$

$E = EF * HI$

where:

EF = emission rate (lb/MMBtu);

$C_d$ = emission concentration (ppmvd);

$C_f$ for $NO_X$ = 1.194E-07 (lb $NO_X$/dscf ppm);

$F_d$ = 8,710 dscf/MMBtu, dry basis F factor for $O_2$ dilution for natural gas;

$\%O_2$ = 15% (the oxygen volume at the stated limit;

E = mass emission rate (lb/hr); and

HI = heat input (MMBtu/hr).

[3] Sulfur content was converted from percent by weight to gr per 100 scf as follows: 0.8% sulfur = 56 gr sulfur per lb natural gas. AP-42 defines natural gas as generally more than 85 percent methane and varying amounts of ethane propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium). Assuming an average molecular weight of 18 lb/lb-mol, 1 lb natural gas = 2.14 x $10^3$ scf. Lastly, 56 gr sulfur per 2.14 x $10^3$ scf natural gas = 260 gr/100 scf.

## D. Summary of Monitoring for Compliance

| Emission Unit | Process Description | Monitored Pollutants | Applicable Subsection Title | Requirements | Compliance Monitoring |
|---|---|---|---|---|---|
| A01/A02 A03/A04 A05/A06 A07/A08 | Combustion turbines/duct burner units | CO, $NO_X$, $SO_2$, $PM_{10}$, VOC, HAPs, $NH_3$ | AQR Sections 12, 19, and 55<br><br>40 CFR 60 Subpart GG<br><br>40 CFR 60 Subpart Da | Annual and short-term emission limits. | CEMS for $NO_X$, CO and $NH_3$.<br><br>Stack testing for $PM_{10}$, $NO_X$, CO and VOC by EPA Methods as outlined in Part 70 Permit.<br><br>Compliance for $SO_2$ and HAPs shall be based on sole use of natural gas as fuel and emission factors.<br><br>Recording is required for compliance demonstration. |
| A01/A02 A03/A04 A05/A06 A07/A08 | Combustion turbines/duct burner units | Opacity | AQR Section 26 | Less than an average of 20 percent opacity for a period of more than 6 consecutive minutes. | Sole use of pipeline quality natural gas as fuel, monitoring of visible emission in accordance with 40 CFR 60.552Da, and EPA Method 9 performance testing as outlined in the Part 70 Operating Permit. |
| A09, A10 | Auxiliary boilers | CO, $NO_X$, $SO_2$, $PM_{10}$, VOC, HAPs | AQR Sections 12, 19, 49, and 55<br><br>40 CFR 60 Subpart Dc | Annual and short-term emission limits. | Stack testing for $NO_X$ and CO by EPA Methods as outlined in Part 70 Permit.<br><br>Compliance for $PM_{10}$, $SO_2$, VOC and HAPs shall be based on sole use of natural gas as fuel and emission factors.<br><br>Recording is required for compliance demonstration. |
| A09, A10 | Auxiliary boilers | Opacity | AQR Section 26 | Less than an average of 20 percent opacity for a period of more than 6 consecutive minutes. | Sole use of natural gas as fuel and quarterly visual emission checks as outlined in Part 70 OP. |
| A12, A13 | Emergency generator | CO, $NO_X$, $SO_2$, $PM_{10}$, VOC, HAPs | AQR Sections 12, 19, and 55 | Annual and short-term emission limits. | Compliance for regulated pollutants shall be based on sole use of low-sulfur diesel fuel and emission factors.<br><br>Recording is required for compliance demonstration. |
| A12, A13 | Emergency generator | Opacity | AQR Section 26 | Less than an average of 20 percent opacity for a period of more than 6 consecutive minutes. | Sole use of low-sulfur diesel fuel and quarterly visual emission checks as outlined in Part 70 OP. |
| A14, A15 | Diesel fire pump | CO, $NO_X$, $SO_2$, $PM_{10}$, VOC, HAPs | AQR Sections 12, 19, and 55 | Annual and short-term emission limits. | Compliance for regulated pollutants shall be based on sole use of low-sulfur diesel fuel and emission factors.<br><br>Recording is required for compliance demonstration. |

| Emission Unit | Process Description | Monitored Pollutants | Applicable Subsection Title | Requirements | Compliance Monitoring |
|---|---|---|---|---|---|
| A14, A15 | Diesel fire pump | Opacity | AQR Section 26 | Less than an average of 20 percent opacity for a period of more than 6 consecutive minutes. | Sole use of low-sulfur diesel fuel and quarterly visual emission checks as outline in Part 70 OP. |
| A16 | Gas heater | CO, $NO_X$, $SO_2$, $PM_{10}$, VOC, HAPs | AQR Sections 12, 19, and 55 | Annual and short-term emission limits. | Stack testing for $NO_X$ and CO by EPA Methods as outlined in Part 70 Permit.<br><br>Compliance for $PM_{10}$, $SO_2$, VOC and HAPs shall be based on sole use of natural gas as fuel and emission factors.<br><br>Recording is required for compliance demonstration. |
| A16 | Gas heater | Opacity | AQR Section 26 | Less than an average of 20 percent opacity for a period of more than 6 consecutive minutes. | Sole use of natural gas as fuel and quarterly visual emission checks as outlined in Part 70 OP. |

## VI. EMISSION REDUCTION CREDITS (OFFSETS)

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

## VII. ADMINISTRATIVE REQUIREMENTS

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

DAQEM proposes to issue the Part 70 Operating Permit conditions on the following basis:

Legal:

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

Factual:

Chuck Lenzie Generating Station has supplied all the necessary information for DAQEM to draft Part 70 Operating Permit conditions encompassing all applicable requirements and corresponding compliance.

Conclusion:

DAQEM has determined that Chuck Lenzie Generating 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 preliminary decision that a Part 70 Operating Permit should be issued as drafted to Chuck Lenzie Generating Station for a period not to exceed five (5) years.