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PART 70
TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)

APPLICATION FOR:
Operating Permit Renewal

PREPARED BY:
Trinity Consultants
For
Nevada Power Company

Source Name: Harry Allen Generating Station
Source ID: 00533

SOURCE LOCATION:
14601 North Las Vegas Boulevard
North Las Vegas, Nevada 89124

SIC 4911: Electric Services
NAICS Code 212112: Fossil Fuel Electric Power Generation

TSD Date: November 13, 2025

EXECUTIVE SUMMARY

Harry Allen Generating Station is an electrical power generating station that falls under SIC Code 4911, "Electrical Services" and NAICS Code 212112, "Fossil-Fueled Electric power Generation." The facility is located in Hydrographic Area 216 (Garnet Valley), which is designated as attainment for all regulated pollutants. The source is classified as a categorical source in accordance with AQR 12.2.2(j)(1): "Fossil-fueled steam electric plants of more than 250 MMBtu/hr heat input."

Harry Allen Generating Station consists of combustion turbines (both simple cycle and combined cycle), HRSG duct burners, diesel-powered emergency generators and a diesel-powered fire pump. Also located on-site are a wet surface air cooler and an aboveground ammonia storage tank which are classified as insignificant activities. The source is a major stationary source for PM_{10}, $PM_{2.5}$, NO_x, and CO pollutants and a minor source for SO_2, VOC, and HAP. It is also a source of GHG pollutants. The source is subject to the requirements of 40 CFR Part 60, Subparts GG, IIII, KKKK, and TTTT, 40 CFR Part 63, Subpart ZZZZ, 40 CFR Part 72, and 40 CFR Part 75. By complying with the requirements of 40 CFR Part 60, Subpart IIII, the diesel-powered fire pump will also meet 40 CFR Part 63, Subpart ZZZZ requirements.

A renewal of the Part 70 operating permit was issued to Harry Allen Generating Station by The Clark County Department of Environment and Sustainability, Division of Air Quality on October 29, 2020. The permittee submitted subsequent Title V applications for a significant revision on January 12, 2022, and July 6, 2022. This permitting action is based on each of the aforementioned revisions and the renewal application submitted on April 3, 2025.

DAQ will continue to require the permittee to estimate GHG emissions in terms of each individual pollutant (CO_2, CH_4, N_2O, SF_6 etc.) during subsequent permitting actions will include these PTEs for informational purposes.

Pursuant to AQR 12.5.2, all terms and conditions in Sections 1 through 11 of this operating permit are federally enforceable unless explicitly denoted otherwise.

Table 1 summarizes the source PTE for each regulated air pollutant for all emission units addressed by this Part 70 Operating Permit.

Table 1. Source PTE (tons per year)

Description	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs	GHG[1]
Part 70 OP PTE	150.75	150.75	304.62	277.82	14.10	64.85	6.51	2,398,807.27
Major Source Thresholds (Title V)	100	100	100	100	100	100	10/25[2]	-
Major Stationary Source Thresholds (PSD) (Categorical)	100	100	100	100	100	100	10/25[2]	-

[1]Expressed in units of CO_2e
[2]10 tons for any individual hazardous air pollutant, or 25 tons for the combination of all hazardous air pollutants.

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ACRONYMS AND ABBREVIATIONS

AQR	Clark County Air Quality Regulation
ATC	authority to construct
BACT	Best Available Control Technology
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
DAQ	Division of Air Quality
DES	Clark County Department of Environment and Sustainability
DLN	dry low NOx
EPA	U.S. Environmental Protection Agency
EU	emission unit
GHG	greenhouse gas
GWP	global warming potential
HAGS	Harry Allen Generating Station
HAP	hazardous air pollutant
H_2S	hydrogen sulfide
hp	horsepower
MMBtu	British thermal units (in millions)
MW	megawatt
N_2O	nitrous oxide
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxide(s)
NSPS	New Source Performance Standard
O&M	operations and maintenance
Pb	lead
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
ppm	parts per million
PTE	potential to emit
RACT	Reasonably Available Control Technology
RATA	relative accuracy test audit
SCR	selective catalyst reduction
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
TSD	technical support document
ULN	ultra low NOx
VOC	volatile organic compound

I. PROCESS DESCRIPTION

Harry Allen Generating Station operates four natural gas-fired combustion turbines which generate electricity. The two 206 MW turbines are combined cycle units, each operating in unison with heat recovery steam generators with natural gas-fired duct burners rated at 173 MMBtu/hr. The remaining two turbines are simple cycle units rated at 75 MW and 79.02 MW. Other emission units consist of two diesel-powered emergency generators, rated at 405 and 519 hp, and a diesel-powered fire pump rated at 175 hp.

II. PERMITTING HISTORY

The Title V operating permit for Harry Allen Generating Station was last renewed on October 29, 2020, and will expire on October 28, 2025. The source submitted a renewal application within the time frame specified by AQR 12.5.2.1(a)(2). As a result, the source is covered by an application shield.

Since the last permit renewal, the following permits have been issued:

December 1, 2021 – Reopen For Cause

The reopen for cause permitting action was initiated by DAQ to add annual reporting requirements for sources that emit more than 25 tons of NOx and VOC pollutants per year. These requirements are in accordance with Section 182(a)(3)(b) of the Clean Air Act and AQR Section 12.9.1.

March 4, 2022 – Revision Under AQR 12.5.2.12(a) (Prior Notification)

An application was submitted to add a wet compression system to the two combustion turbines identified as EUs: 53301 and A09. This addition helped to cool the turbines during the summer months, but had no impact on the operation of the units. Therefore, the issuance of a revised permit was not necessary.

November 14, 2022 – ATC

An ATC was issued for upgrades to the combustion turbines (EUs: A01 and A02) to increase output from 185 to 206 MW.

February 23, 2023 – Significant Revision

A Significant Revision permit was issued to incorporate the combustion turbine upgrades from ATC issued on November 14, 2022.

November 7, 2023 – Revision Under AQR 12.5.2.12(a) (Prior Notification)

The permittee submitted a prior notification form to remove the 900 hp emergency generator identified as EU: 53302. A revised permit was not issued.

Current Permitting Action

The application for a permit renewal, submitted on April 3, 2025, requested the replacement of the fire pump identified as EU: A11. This replacement is limited to the fire pump unit only. The same 175 hp Clark/John Deere diesel engine that powered the previous fire pump will remain as a permitted emission unit.

With the completion of the combustion turbine upgrades for EUs: A01 and A02, the requirements for 40 CFR Part 60, Subpart GG are no longer applicable. The turbine upgrades were a modification that occurred after February 18, 2005, thereby subjecting the units and the duct burners (EUs: A03 and A04) to 40 CFR 60, Subpart KKKK: "Standards of Performance for Stationary Combustion Turbines." Being subject to Subpart KKKK, exempts the duct burners (EUs: A03 and A04) from being subject to 40 CFR 60, Subpart Db. The two unaffected combustions turbines (EUs: 53301 and A09) remain subject to Subpart GG requirements.

In previous permitting actions, all four combustion turbines were covered under a permit shield. However, this was specific to Subpart GG. Since EUs: A01 and A02 are now subject to Subpart KKKK, they are no longer covered by the permit shield. The permittee was informed that a new streamlining demonstration would need to be submitted for these units. They responded by stating they did not want the modified combustion turbines to be covered under a permit shield.

In addition to Subpart KKKK, the modifications made to the combustion turbines make them subject to the requirements of 40 CFR Part 60, Subpart TTTT: "Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units." This regulation covers electric generating units that commenced construction, modification, or reconstruction between January 18, 2014, and May 23, 2023. The modifications to the combustion turbines at Harry Allen Generating Station commenced on March 20, 2023, and were completed on May 20, 2023, which is within the window specified by 40 CFR 60.5509(a).

Pursuant to 40 CFR 60.5520(d)(1), a stationary combustion turbine that is permitted to only burn fuels with a consistent chemical composition that results in emissions equal to, or less than, 160 lb CO_2/MMBtu are only required to maintain purchase records for the permitted fuels. The combustion turbines at Harry Allen Generating Station are only permitted to combust natural gas. The calculations demonstrating the CO_2 emissions from EUs: A01 and A02 fall below the 160 CO_2/MMBtu threshold are included in the "Attachments" section of this document. Therefore, the permittee need only maintain purchase records of the permitted fuel to comply with the requirements of Subpart TTTT.

III. EMISSION UNITS

Emission Units

Table III-1 lists the emission units at this stationary source.

Table III-1: Emission Unit List

EU	Description	Rating	Manufacturer	Model No.	Serial No.	SCC
A01	CTG Natural Gas Turbine (Turbine Unit 5)	Nominal 206 MW	General Electric	PG7241FA	298914	20100201
A02	CTG Natural Gas Turbine (Turbine Unit 6)	Nominal 206 MW	General Electric	PG7241FA	298915	20100201
A03	Duct Burner HRSG associated with A01	173 MMBtu/hr (LHV)				20100201
A04	Duct Burner HRSG associated with A02	173 MMBtu/hr (LHV)				20100201
A07[1]	Emergency Generator	275 kW	Katolight	N-37881	AD129178SLM	20100102
	Diesel Engine; DOM: Pre 2001	405 hp	Perkins	8D26971U80 033T	1	
A08[2]	Emergency Generator	350 kW	Caterpillar	SR4B	8ER03545	20100102
	Diesel Engine; DOM: 2002	519 hp		3406	4ZR08055	
A09	Natural Gas Only Turbine (Turbine Unit 4)	75 MW	General Electric	MS7001EA (PG7121)	298532	10100601
53301	Natural Gas Only Turbine (Turbine Unit 3)	79.2 MW	General Electric	MS7001EA	296449	10100601
A11	Fire Pump		Xylem	8X6X12F-M	24-101903-01-01/QLG214	20100102
	Diesel Engine; DOM: 05/2009	175 hp	Clarke/ John Deere	6068TF252	PE6068T751 998	

[1]Located at Hary Allen Substation.
[2]Located at Harry Allen switchyard.

Table III-2: Insignificant Activities

Description	Rating
Aboveground Storage Tank; Ammonia	19,500 Gallons
Wet Surface Cooler	2,800 gpm

The units in Table III-2 are present at this source, but are insignificant activities pursuant to AQR 12.5.2.5. The emissions from these units or activities, when added to the PTE of the source, will not make the source major for any additional pollutant.

IV. EMISSIONS CALCULATIONS

Applicability

Permitting applicability is determined by calculating the emissions for all proposed emission units using 8,760 hours of operation (except for emergency generators or fire pumps, which use 500 hours), any inherent controls, any inherent throughput limitations, and the emission factors provided by the manufacturer, by source test results, by EPA AP-42, or by other approved methods.

Due to the fact that Harry Allen Generating Station is a categorical source, applicability emissions include emissions from insignificant emission units and activities as well as fugitive emissions.

As shown in Tables IV-1 and IV-2, the source continues to be a major stationary source for NO_x and CO, a synthetic minor source for PM_{10}, and $PM_{2.5}$, and a minor source for SO_2, VOC, and HAP. It is also a source of GHG pollutants.

Table IV-1: Source Applicability Emissions (tons per year)

	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP	GHG[1]
Permit Applicability Thresholds	5	5	5	25	25	5	N/A	N/A
Major Source Thresholds	100	100	100	100	100	100	10/25[2]	N/A
PSD Thresholds	250	250	250	250	250	250	N/A	N/A
Applicability Emissions	189.21	189.21	388.75	348.01	15.64	71.35	8.11	2,398,807.27

[1]Expressed in units of CO_2e
[2]10 tons for single HAP pollutant or 25 tons for any combination of HAP pollutants

PTE

Table IV-2: Source PTE (tons per year)

PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP	GHG[1]
150.75	150.75	304.62	277.82	14.10	64.85	6.51	2,398,807.27

Table IV-3. Emissions Increase Calculation and Significance Evaluation (tons per year)

	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP	GHG[1]
PTE for Current Permitting Action	150.75	150.75	304.62	277.82	14.10	64.85	6.51	2,398,807.27
PTE from Permit Issued 02/23/2023	151.40	151.40	311.73	279.99	14.72	64.93	5.65	2,430,928
Difference	-0.65	-0.65	-7.11	-2.17	-0.62	-0.08	0.86	-32,120.73
Total Source Emissions Increase	0	0	0	0	0	0	0.86	0
AQR 12.2.2(uu) Significance Thresholds	15	10	40	100	40	40	10	N/A
AQR 12.5.1(d) Minor NSR Significance	7.5	5	20	50	20	20	10	N/A

[1]Expressed in units of CO_2e

V. CONTROL TECHNOLOGY

There are no new emission units or control devices associated with this permitting action. In addition, the emission increases associated with this permitting action are below the AQR 12.2.2(uu) significant thresholds. Therefore, a BACT analysis is not required. All BACT requirements established with previous permitting actions, and identified in the proposed renewal operating permit, remain enforceable. The calculated emission increase is also below the AQR 12.5.1(d) minor NSR significance levels and therefore, a RACT analysis is not triggered.

This section contains a summary of BACT and RACT requirements established with previous permitting actions. The BACT summaries in Table V-1 were obtained from the TSD issued on October 29, 2021, that accompanied the most recent renewal of the Title V operating permit.

Combustion Turbines

Table V-1. Combustion Turbines

EU	Description	BACT Technology/Pollutant	BACT Limits
A01 & A03	Natural Gas-Fired Combustion Turbines; Combined Cycle (206 MW each)	SCR (NO_x); Oxidation Catalyst (CO)	NO_x: 2.0 ppmvd at 15% O_2 CO: 2.0 ppmvd at 15% O_2
A02 & A04	Duct Burners; 173 MMBtu/hr (each)	SCR (NO_x); Oxidation Catalyst (CO)	NO_x: 2.0 ppmvd at 15% O_2 CO: 2.0 ppmvd at 15% O_2
A09	Natural Gas-Fired Combustion Turbine; 75 MW	ULN Burner (NO_x); Oxidation Catalyst (CO & VOC)	5.0 ppmvd NO_x on a 1-hour average at 15% O_2
53301	Natural Gas Fired Combustion Turbine; 79.2 MW	DLN burner (NO_x)	9.0 ppmvd NO_x on a 3-hour average at 15% O_2

For PM_{10}, SO_2, and VOC emissions, the use of inlet air filters, pipeline natural gas, and good combustion practices have been accepted as BACT for all combustion turbines.

Emergency Engines

1. The permittee shall operate and maintain each emergency diesel engine in accordance with the manufacturer's O&M manual for emissions-related components and shall only combust diesel fuel with a maximum sulfur content of 15 ppm and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume (EUs: A07, A08, and A11).

2. The permittee shall maintain each emergency diesel emergency engine in accordance with 40 CFR63.6640 as described below, unless the manufacturer's specifications are more stringent (EUs: A07 and A08):

    a. Change oil and filter every 500 hours of operation or annually, whichever comes first;

    b. Inspect air cleaners every 1,000 hours of operation or annually, whichever comes first; and

    c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

VI. OPERATIONAL LIMITS

There are no additional operational limitations associated with this permitting action. All limitations established with previous permitting actions remain enforceable. This section contains a summary of operational limitations established with previous permitting actions. These operational limitations were requested by the permittee.

Combustion Turbines

Table VI-1. Operational Limitations (Combined Cycle Combustion Turbines)

EU	Fuel	Maximum Annual MMBtu per Any Consecutive 12- Month Period
A01 & A02	Natural Gas	14,751,840 (per unit, based on LHV of natural gas)
A03 & A04	Natural Gas	692,000 (per unit, based on LHV of natural gas)

Table VI-2. Operational Limitations (Simple Cycle Combustion Turbines)

EU	Fuel Type	Maximum Hourly MMBtu	Hourly Limitations
53301	Natural Gas	873.1 (based on LHV of natural gas)	6,135 hours/year
A09	Natural Gas	1,060 (based on HHV of natural gas)	3,300 hours/year

Emergency Engines

Each emergency engine shall be limited to operating 100 hours per year for testing and maintenance purposes, including nonemergency limitations. On May 1, 2015, the U.S. Court of Appeals for the District of Columbia Circuit issued a decision to vacate provisions in 40 CFR Part 60, Subpart IIII; 40 CFR Part 60, Subpart JJJJ; and 40 CFR Part 63, Subpart ZZZZ that allowed emergency engines to operate for demand response and when there is a deviation of voltage or frequency.

DAQ prohibited sources from operating emergency generators for those activities, consistent with the court decision and EPA's April 15, 2016, implementation memo. On August 10, 2022, EPA published a notice in the *Federal Register* (87 FR 48603) formally promulgating changes to the three CFR subparts listed above. Now, except as provided in 40 CFR Part 60.4211(f)(3)(i), and/or 40 CFR Part 60.4243(d)(3)(i), and/or 40 CFR Parts 63.6640(f)(4)(i) and (ii), the 50 hours per year for nonemergency use cannot be used for peak shavings or nonemergency demand response, or to generate income for a facility by supplying power to an electric grid or to otherwise supply power as part of a financial arrangement with another entity (EUs: A07 and A08).

The operation of the fire pump shall be limited to 100 hours per year for testing and maintenance purposes. Each fire pump may be operated up to 50 hours/year for nonemergency situations, but those hours count towards the 100 hours provided for testing and maintenance (EU: A11).

VII. MONITORING

There are no additional monitoring requirements associated with this permitting action. All monitoring requirements established with previous permitting actions remain enforceable. This section contains a summary of monitoring requirements established with previous permitting actions.

Visual Emission Checks

1. Plant-wide visual emissions checks shall be conducted at least quarterly.
2. A visual emissions check shall be conducted at least quarterly on each diesel-powered generator (EUs: A07 and A08) and fire pump (EU: A11) while in operation.

Combustion Turbines

1. The permittee shall demonstrate compliance with monitoring requirements by operating and maintaining CEMS that measures and records emissions from the exhaust stack of each combustion turbine (EUs: A01, A02, 53301, and A09) and duct burner (EUs: A03 and A04) as follows:

a. Exhaust gas concentrations (in ppm) of NO_X, CO, and either diluent O_2 or CO_2 for all turbine units (EUs: A01 – A04, 53301, and A09) at least once every 15 minutes;

b. Exhaust gas flow rate (by direct or indirect methods);

c. Fuel flow rate;

d. Hours of operation;

e. 3-hour rolling average of NO_X concentrations (in ppm) for Turbine Unit 3 (EU: 53301);

f. 1-hour rolling average CO concentrations (in ppm) for Turbine Unit 3 (EU: 53301);

g. 1-hour rolling averages of each NO_X and CO concentrations (in ppm) for Turbine Unit 4 (EU: A09);

h. 3-hour rolling averages of each NO_X and CO concentrations (in ppm) for Turbine Units 5 and 6 (EUs: A01 and A02) and their associated duct burners (EUs: A03 and A04);

i. Hourly and consecutive 12-month period accumulated mass emissions (in pounds) of NO_X and CO (EUs: A01 – A04, 53310, and A09); and

j. Hours of downtime of the CEMS.

2. An annual RATA is required for each CEMS unit to ensure the system is operating properly.

40 CFR Part 60, Subpart GG—Standards of Performance for Stationary Gas Turbines

40 CFR Part 60.330: Applicability and designation of affected facility.
Discussion: Turbine Units 3 and 4 (EUs: 53301, A09) commenced construction after October 3, 1977, and are therefore subject to this subpart.

40 CFR Part 60.332: Standard for nitrogen oxides (NOx limits using the F formula).
Discussion: NV Energy is permitted such that Turbine Unit 3 shall be limited to 873.1 MMBtu/hr, and Turbine Unit 4 shall be limited to 1,060 MMBtu/hr, based on the lower heat value of natural gas. The NO_x limit established as BACT for Turbine Unit 3 is limited to 9.0 ppmvd, Turbine Unite 4 is limited to 5.0 ppmvd and are within the F formula provisions of the subpart. This requirement has been met.

40 CFR Part 60.333: Standard for sulfur dioxide.
Discussion: The sole use of pipeline-quality natural gas with total sulfur content less than 0.5 grains per 100 dscf satisfies this requirement.

40 CFR Part 60.334: Monitoring of operations.
Discussion: The source installed, calibrated, maintains and operates a continuous monitoring system for NO_X and CO.

40 CFR Part 60 Subpart KKKK

Subpart KKKK requires the permittee to monitor stack emissions of NOx and the total sulfur content of the fuel combusted in the turbines.

NOx Standards

The applicable NOx standards for turbines with heat input ratings greater than 850 MMBtu are shown in Table VII-1.

Table VII-1: Applicable NOx Concentration Standards for Subpart KKKK (ppmvd)

EU	NO_x (ppmvd @ 15% O2), 30-Day Rolling Average	
	Turbine Loads Greater than or equal to 75% of Peak Load	Turbine Loads Less Than 75% of Peak Load
A01 – A04	15	96

Subpart KKKK provides an option for a source to demonstrate compliance with these standards via a CEMS. Each turbine operated by NV Energy at the Harry Allen Generating Station is equipped with a CEMS. Therefore, the permittee will meet the NOx standards by complying with the requirements of Part 60.4345.

Sulfur Standard

In accordance with 40 CFR Part 60.4365, the permittee shall demonstrate compliance with sulfur limitations by keeping records of the fuel quality characteristics via a current valid purchase contract tariff sheet or transportation contract for the fuel, specifying that the total sulfur content for the natural gas used for combustion is 20 grains of sulfur or less per 100 standard cubic feet and has potential sulfur emissions of less than less than 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input.

40 CFR Part 60 Subpart TTTT

Carbon Dioxide

In accordance with 40 CFR 60.5520(d)(1), the permittee shall maintain purchase records of the permitted fuel combusted in the turbines to demonstrate the chemical composition results in emissions equal to, or less than, 160 lb CO_2, and to not be subject to the monitoring or reporting requirements of this subpart.

Emergency Engines

1. Monitoring the sulfur content and cetane index or aromatic content of the fuel burned in each diesel-powered emergency generator (EUs: A01 and A02) and diesel-powered fire pump (EUs: A11) by retaining a copy of vendor fuel specifications.
2. Monitoring the operation of each diesel-powered emergency generator (EUs: A07 and A08) and diesel-powered fire pump (EU: A11) for testing, maintenance, and nonemergency operation, and separately for emergencies with a nonresettable hour meter and monitoring the duration of operation

VIII. PERFORMANCE TESTING

Initial performance tests for turbine units 5 and 6 (EUs: A01 and A02) were conducted from June 7 – 9, 2023, following startup upon completion of the turbine upgrade project. Current DAQ practice is to not require subsequent performance testing if CEMS and annual RATA are required. Harry Allen Generating Station operates CEMS for all four turbine units. The Control Officer may require additional performance testing when operating conditions appear inadequate to demonstrate compliance with the emissions and/or limitations in this permit.

IX. REVIEW OF APPLICABLE REGULATIONS

A. LOCAL REGULATORY REQUIREMENTS

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

1. Chapter 445 of the Nevada Revised Statutes, Sections 401 through 601;

2. Portions of the AQRs included in the Nevada State Implementation Plan (SIP). SIP requirements are federally enforceable. All requirements in OPs issued by DAQ are federally enforceable because these are issued under AQR sections included in the Nevada SIP; and

3. Portions of the AQR's not included in the Nevada SIP. These locally applicable requirements are locally enforceable only.

Chapter 445B of the Nevada Revised Statutes and the 1990 Clean Air Act Amendments establish the general authority for the AQRs.

EPA issued final approval of DAQ's Part 70 (Title V) program on November 30, 2001 (vol. 66, p. 63188 of the *Federal Register*). AQR 19, "Part 70 Operating Permits" [amended 07/01/04], details the program. On September 20, 2010, Clark County submitted a revision to EPA (AQR 12.5) that is still awaiting approval. These regulations are available on DAQ's website at: http://www.clarkcountynv.gov/depts/AirQuality/Pages/Rules_CurrentRulesandRegulations.aspx.

The AQRs contain sections that are federally enforceable and sections that are locally enforceable only. Locally enforceable rules have not been approved by EPA for inclusion in the Nevada SIP. Requirements and conditions in this Part 70 OP related only to non-SIP rules are notated as locally enforceable only.

Table IX-1: Clark County AQRs and Nevada State Implementation Plan

Applicable AQR Title	Applicable Subsection	SIP	Affected EU
00: "Definitions"	Applicable definitions	Yes	Entire source
02: "State Implementation Plan"	Applicable definitions	Yes	Entire source
04: "Control Officer"	All subsections	Yes	Entire source
05: "Interference with Control Officer"	All subsections	Yes	Entire source
06: "Injunctive Relief"	All subsections	Yes	Entire source
08: "Persons Liable for Penalties - Punishment: Defense"	All subsections	Yes	Entire source
09: "Civil Penalties"	All subsections	Yes	Entire source
12.5: "Part 70 Operating Permit Requirements"	Applicable subsections	Yes	Entire source
12.6: "Confidentiality"	All subsections	Yes	Entire source
12.7: "Emission Reduction Credits"	All subsections	Yes	Entire source
12.9: "Annual Emission Inventory Requirement"	All subsections	Yes	Entire source
12.10: "Continuous Monitoring Requirements for Stationary Sources"	Applicable subsections	Yes	Entire source

Applicable AQR Title	Applicable Subsection	SIP	Affected EU
12.12: “Transfer of Permit”	All subsections	Yes	Entire source
12.13: “Posting of Permit”	All subsections	Yes	Entire source
13: “National Emission Standards for Hazardous Air Pollutants”	13..2(b)(1): “Subpart A - General Provisions”	No	Entire source
	13.2(b)(82): “Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines”		Diesel engines (EUs: A07 and A08)
14: “New Source Performance Standards”	14.1(b)1: “General Provisions;	No	Entire Source
	14.1(b)(40): “Subpart GG – Standards of Performance for Stationary Gas and Combustion Turbines”;		Combustion Turbines (EUs: 53301 and A09)
	14.1(b)(82): “Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines”;		Diesel Engine (EU: A11)
	14.1(b)(84): “Subpart KKKK – Standards of Performance for Stationary Combustion Turbines”;		Combustion Turbines (EUs: A01 and A02)
	14.1(b)(86): “Subpart TTTT – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units”		
18: “Permit and Technical Service Fees”	18.1: “Operating Permit Issuance Fees”	Yes	Entire source
	18.2: Annual Emissions Unit and Annual Permit Renewal Fees”		
	18.4: “NSR Application Review Fee”		
	18.5: “Part 70 Application Review Fee”		
	18.6: “Annual Emission Inventory and Emission Fee”		
	18.16: “Billing Procedures”		
21: “Acid Rain Continuous Emissions Monitoring”	All subsections	No	Entire source
22. “Acid Rain Permits”	All subsections	No	Entire source
25: “Affirmative Defense for Excess Emissions due to Malfunctions, Startup, and Shutdown”	All subsections	No	Entire source
26: “Emission of Visible Air Contaminants”	AQR 26.1: “Opacity Limits” (≤ 20% for 3 min in 60-min period)	Yes	Entire source
28: “Fuel Burning Equipment”	Emission limitations for PM	Yes	Entire source
40: “Prohibitions of Nuisance Conditions”	40.1	No	Entire source
41: “Fugitive Dust”	41.1	Yes	Entire source
42: “Open Burning”	42.2	No	Entire source
43, “Odors in the Ambient Air”	43.1	No	Entire source
70, “Emergency Procedures”	All subsections	Yes	Entire source
80, “Circumvention”	All subsections	Yes	Entire source
81, “Provisions of Regulations Severable”	All subsections	Yes	Entire source

B. APPLICABLE FEDERAL REGULATIONS

DAQ has determined that the following federal regulations are applicable:

1. Clean Air Act, as amended (authority: 42 U.S.C. § 7401, et seq.)

2. Title 40 of the Code of Federal Regulations (CFR).

40 CFR PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

40 CFR Part 52.21 Prevention of significant deterioration of air quality.
Discussion: Hydrographic Area 216 (Garnet Valley) is designated as attainment for all criteria pollutants. Harry Allen Generating Station is subject to this regulation because at least one criteria pollutant exceeds the 250-tpy major source threshold.

40 CFR PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart A—General Provisions

40 CFR Part 60.7 Notification and record keeping.
Discussion: This regulation requires the source to notify DAQ of modifications, opacity testing, records of malfunctions of process equipment and/or continuous monitoring device(s), continuous emissions monitoring system data, and performance test data. DAQ requires sources to maintain records for five years, a more stringent requirement than the two years required by 40 CFR Part 60.7. These requirements are found in the Part 70 OP.

40 CFR Part 60.8 Performance tests.
Discussion: This regulation outlines notice of intent to test, applicable test methods, acceptable test method operating conditions, and the requirement for three test runs. DAQ requirements for initial performance testing are identical to this regulation. The source has completed all initial performance testing. There are no requirements for subsequent testing due to the fact that the permittee operates CEMS. However, the control officer reserves the right to require performance testing when operating conditions appear inadequate to demonstrate compliance with the emissions and/or limitations in this permit.

40 CFR Part 60.11 Compliance with standards and maintenance requirements.
Discussion: Compliance with various applicable standards will be demonstrated by performance tests unless otherwise specified in the standard. The source is subject to 40 CFR Part 60, Subparts GG, IIII, and KKKK. Compliance requirements for these standards are discussed in the corresponding sections.

40 CFR Part 60.12 Circumvention.
Discussion: This prohibition is addressed in the Part 70 OP. This is also local rule AQR 80.1.

40 CFR Part 60.13: Monitoring requirements.
Discussion: This section requires that CEMS meet Appendix B and Appendix F standards of operation, testing, and performance criteria. Section III-C of the Part 70 Operating Permit contains the CEMS conditions and citations to Appendix B and F. In addition, the

QA plan approved for the CEMS follows the requirements outlined including span time, recording time, RATA waivers and malfunctions.

Subpart GG—Standards of Performance for Stationary Gas Turbines

40 CFR Part 60.330: Applicability and designation of affected facility.

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

Turbine Units 3 and 4 (EUs: 53301 and A09) commenced construction after October 3, 1977, and are therefore subject to this subpart.

40 CFR Part 60.332: Standard for nitrogen oxides (NOx limits using the F formula).

Discussion: NV Energy is permitted such that turbine unit 3 shall be limited to 873.1 MMBtu/hr and turbine unit 4 shall be limited to 1,060 MMBtu/hr based on the lower heat value of natural gas. The NO_x limit established as BACT for turbine unit 3 is limited to 9.0 ppmvd and turbine unit 4 is limited to 5.0 ppmvd and are within the F formula provisions of the subpart. This requirement has been met.

40 CFR Part 60.333: Standard for sulfur dioxide.

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

40 CFR Part 60.334: Monitoring of operations.

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

40 CFR Part 60.335: Test methods and procedures.

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

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

40 CFR Part 60.4200 Applicability.

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 applies to the diesel-powered fire pump (EU: A11).

40 CFR Part 60.4205 Emission standards for emergency stationary CI internal combustion engines.

Discussion: This section defines the emission standards that owners and operators must meet based on horsepower rating and year of manufacture. This subpart applies to the diesel-powered fire pump (EU: A11).

40 CFR Part 60.4207 Fuel requirements for stationary CI internal combustion engines.

Discussion: This section states that, beginning on October 1, 2010, such owners and operators must use diesel fuel that meets the requirements of 40 CFR 80.510(b).

40 CFR Part 60.4208 Deadline for importing or installing stationary CI ICE produced in previous model years.

Discussion: This section defines the dates after which owners and operators may no longer install compression ignition engines that do not meet applicable emission standards.

40 CFR Part 60.4211 Compliance requirements for owners or operators of stationary CI internal combustion engines.

Discussion: This section defines acceptable methods that owners and operators must employ to maintain compliance with applicable emission standards.

40 CFR Part 60.4214 Notification, reporting, and recordkeeping requirements for owners or operators of a stationary CI internal combustion engines.

Discussion: This section defines the types of records that owners and operators must maintain and how they must be submitted.

Subpart KKKK—Standards of Performance for Stationary Combustion Turbines

40 CFR Part 60.4300 Purpose of Subpart KKKK

Discussion: This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.

40 CFR Part 60.4305 Subpart KKKK Applicability

Discussion: This subpart is applicable to turbines with a heat input at peak loads equal to or greater than 10 MMBtu per hour which commenced construction, modification, or reconstruction after February 18, 2005. Turbine units 5 and 6 (EUs: A01 and A02) were modified in March, 2023.

40 CFR Part 60.4315 Regulated Pollutants Regulated Under Subpart KKKK

Discussion: The pollutants regulated by this subpart are nitrogen oxide (NO_X) and sulfur dioxide (SO_2).

40 CFR Part 60.4320 NOx Emission Standards

Discussion: For turbines with heat input ratings greater than 850 MMBtu/hr, emissions of NO_X are limited to 15 ppmvd for turbine loads greater than 75% of peak load and 96 ppmvd for turbine loads less than 75% of peak load.

40 CFR Part 60.4330 SO_2 Emission Standards

Discussion: Stack emissions from turbines discharged into the atmosphere shall not contain SO_2 in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output.

Fuel used for combustion in the turbines shall not have potential sulfur emissions in excess of 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input.

40 CFR Part 60.4333 General Requirements for Compliance

Discussion: The permittee must operate and maintain each stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. The permittee shall develop methods for apportioning the combined gross energy output from the heat recovery unit for each of the affected combustion turbines, and provide information satisfactory to the Control Officer.

40 CFR Part 60.4345 Demonstrating Compliance with NOx Standards using CEMS

Discussion: An NO_X diluent CEMS that is installed and certified according to appendix A of 40 CFR Part 75 is acceptable for use under this subpart. During each full unit operating hour, both the NO_X monitor and the diluent monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. RATA tests of the CEMS shall be performed as outlined in §75.20.

40 CFR Part 60.4360 Determining Sulfur Content of the Combustion Fuel

Discussion: Test methods for gaseous fuels include ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or GPA 2140, 2261, or 2377.

40 CFR Part 60.4365 Exemptions from Monitoring Sulfur Content of the Combustion Fuel

Discussion: The permittee may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input. The permittee must maintain records of valid purchase contracts, tariff sheets or transportation contracts for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less.

40 CFR Part 60.4375 Reporting Requirements

Discussion: For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under this subpart, you must submit reports of excess emissions and monitor downtime, in accordance with §60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction. These requirements are included in the Part 70 operating permit.

Subpart TTTT—Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units

40 CFR Part 60.5508 Purpose of Subpart TTTT

Discussion: This subpart establishes emission standards and compliance schedules for the control of greenhouse gas emissions from a steam generating unit or an integrated gasification combined cycle facility that commences construction after January 8, 2014, commences reconstruction after June 18, 2014, or commences modification after January 8, 2014, but on or before May 23, 2023. This subpart is applicable to EUs: A01 – A04.

40 CFR Part 60.5509 Applicability

Discussion: Applicable to sources that operate steam generators greater than 250 MMBtu/hr and sell greater than 25 MW of electricity to a utility power distribution system.

40 CFR Part 60.5515 Which Pollutants are Regulated

Discussion: The pollutants regulated by this subpart are greenhouse gases. The greenhouse gas standard in this subpart is in the form of a limitation on emission of carbon dioxide.

40 CFR Part 60.5520 CO_2 Emission Standards

Discussion: Part 60.5520(d) stipulates that a stationary combustion turbine that is permitted to only burn fuels with a consistent chemical composition that results in emissions equal to, or less than, 160 lb CO_2/MMBtu are only required to maintain purchase records for the permitted fuels. The reconstructed combustion turbines at Harry Allen Generating Station are only permitted to combust natural gas that meets the emissions requirements.

40 CFR Part 60.5550 Required Notifications and Submissions

Discussion: This subpart identifies the required notifications for dates of reconstruction and initial startup for affected units and submission methods for certification test data. Harry Allen Generating Station has completed these requirements.

40 CFR Part 60.5555 Reports and Submission Requirements

Discussion: This subpart identifies reporting requirements and frequency of submissions.

40 CFR Part 60.5560 Recordkeeping

Discussion: This subpart defines the recordkeeping requirements for affected units.

40 CFR Part 60.5565 Time Period for Maintaining Records

Discussion: Records must be maintained for three years from the date of conclusion of each compliance period.

40 CFR PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR Part 63.6580 Purpose of Subpart ZZZZ.

Discussion: Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with emission and operating limitations.

40 CFR Part 63.6585 Applicability.

Discussion: The provisions of this subpart are applicable to owners and operators of stationary reciprocating internal combustion engines at major or area sources of HAP. The permittee operates two emergency generators (EUs: A07 and A08) that are subject to this regulation.

40 CFR Part 63.6590 What this subpart covers.

Discussion: All existing, new, or reconstructed stationary RICE are subject to this subpart (EUs: A07 and A08).

40 CFR Part 63.6595 Compliance Date.

Discussion: This subpart establishes May 3, 2013, as the date to comply with all applicable requirements.

40 CFR Part 63.6603 Emission limitations, operating limitations, and other requirements for existing stationary RICE located at an area source of HAP emissions.

Discussion: This section defines inspection and maintenance requirements based on engine horsepower ratings.

40 CFR Part 63.6640 Continuous compliance requirements.

Discussion: This section defines acceptable methods for demonstrating continuous compliance with emission limitations, operating limitations, and other requirements.

40 CFR Part 63.6655 Recordkeeping Requirements.

Discussion: This section defines the type of records that must be kept to verify compliance.

40 CFR Part 63.6660 Record Retention Requirements.

Discussion: All records must be maintained in a suitable form and must be readily accessible, in hard copy or electronic form, for a minimum of five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

40 CFR PART 64—COMPLIANCE ASSURANCE MONITORING

40 CFR Part 64.2 Applicability.

Discussion: The requirements of this part shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 permit if the unit satisfies all of the following criteria: (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant; (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. The following determination provides rational for the exemption of Harry Allen Generating Station from the requirements of Part 64.

The only emission units that emit pollutants above the major source threshold are Turbine Units 3, 4, 5, and 6 (EUs: 53301, A09, A01/A03 and A02/A04). CAM does not apply for any other emission units included in this Part 70 Operating Permit.

CAM does not apply to Turbine Unit 3 because the permit specifies a continuous compliance determination for the NOx limitation in the form of a CEMS, required for 40 CFR Part 60 and Part 75 compliance. The CAM Rule does not apply to this unit for CO, SO_2, PM_{10}, VOC, or HAPs based on the applicability statement in 40 CFR Part 64.2(a)(2): no control device is used to achieve compliance for any of these pollutants. This unit is also exempt from the CAM Rule for NOx and SO_2 based on the exemption at 40 CFR Part 64.2(b)(1)(iii) for Acid Rain Program requirements.

Turbine Unit 4 is exempt from the CAM Rule for NOx and CO based on the exemption at 40 CFR Part 64.2(b)(1)(vi): the permit specifies a continuous compliance determination method for the NOx and CO limitations in the form of a CEMS, required for 40 CFR Part 60 and Part 75 compliance. The CAM Rule does not apply to this unit for SO_2, PM_{10}, or HAPs based on

the applicability statement at 40 CFR Part 64.2(a)(2): no control device is used to achieve compliance for any of these pollutants. The CAM Rule does not apply to this unit for VOC based on the applicability statement at 40 CFR Part 64.2(a)(3): the unit does not have potential pre-control device VOC emissions that are equal to or greater than the major source threshold. This unit is also exempt from the CAM Rule for NOx and SO_2 based on the exemption at 40 CFR Part 64.2(b)(1)(iii) for Acid Rain Program requirements.

CAM does not apply to Unit 5 and 6 because the permit specifies a continuous compliance determination for the NOx and CO limitations in the form of a CEMS, required for 40 CFR Part 60 and Part 75 compliance. The CAM Rule does not apply to these units for SO_2, PM_{10}, VOC, or HAPs based on the applicability statement in 40 CFR Part 64.2(a)(2): no control device is used to achieve compliance for any of these pollutants. These units are also exempt from the CAM Rule for NOx and SO_2 based on the exemption in 40 CFR Part 64.2(b)(1)(iii) for Acid Rain Program requirements.

40 CFR PART 72—ACID RAIN PERMIT REGULATIONS

Subpart A—Acid Rain Program General Provisions

40 CFR Part 72.6: Applicability.

Discussion: Harry Allen Station gas turbines are defined as utility units in the definitions for 40 CFR Part 72; therefore, the provisions of this regulation apply.

40 CFR Part 72.9: Standard Requirements.

Discussion: Harry Allen Station has applied for all of the proper permits under this regulation.

Subpart B—Designated Representative

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

40 CFR PART 73—SULFUR DIOXIDE ALLOWANCE SYSTEM

40 CFR Part 73.2 Applicability.

Discussion: Harry Allen Station is an affected source pursuant to 40 CFR Part 72.6 of this chapter because gas turbines fit the definition of utility units; therefore, this regulation shall apply.

Subpart B—Allowance Allocations

Discussion: Harry Allen Station is listed on the Phase II table. However, no allowance amount is listed in the table, so it will not have an initial allocation per 40 CFR Part 73.10.

Subpart C—Allowance Tracking System

Discussion: Harry Allen 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, Harry Allen 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 source; therefore, this subpart does not apply.

40 CFR PART 75—CONTINUOUS EMISSIONS MONITORING

40 CFR Part 75.2 Applicability.

Discussion: Harry Allen Station is subject to the acid rain emission limitations of 40 CFR Part 72; therefore, the source is subject to the monitoring requirements of this regulation. Each turbine unit has been equipped with a NO_X and CO CEMS, diluent oxygen monitor, and a fuel flow monitor. The data from the CEMS is used to provide quarterly acid rain reports to both EPA and DAQ.

X. COMPLIANCE SUMMARY

Table X-1: AQR Compliance Summary

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR 0	Definitions	Applicable. HAGS will comply with all applicable definitions as they apply.	HAGS will meet all applicable test methods if new definitions apply.	HAGS complies with applicable requirements.
AQR 4	Control Officer	Applicable. The Control Officer or representative may enter into HAGS property, with or without prior notice, at any reasonable time to establish compliance.	HAGS will allow the Control Officer to enter its property as required.	HAGS complies with applicable requirements.
AQR 5	Interference with Control Officer	Applicable. HAGS shall not hinder, obstruct, delay, resist, or interfere with the Control Officer.	HAGS will allow Control Officer to operate as needed.	HAGS complies with applicable requirements.
AQR 8	Persons Liable for Penalties	Applicable. HAGS and employees will be individually and collectively liable to any penalty or punishment from DAQ	HAGS will adhere to the rules stipulated in applicable AQR.	HAGS complies with applicable requirements.
AQR 9	Civil Penalties	Applicable. This rule stipulates penalties for AQR violations.	HAGS will adhere to the rules stipulated in applicable AQR.	HAGS complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR 12.2	Permit Requirements for Major Sources in Attainment Areas (PSD)	Applicable. HAGS is a major source of PM_{10}, $PM_{2.5}$, NO_X, and CO, and VOC.	HAGS complies with the applicable regulations and requirements of 40 CFR 52.21. Turbine Units 5 and 6, and associated duct burners, are controlled with SCR and oxidation catalyst devices. Turbine Units 3 & 4 are required to operate with DLN & ULN combustors, respectively.	HAGS complies with applicable requirements.
AQR 12.4	ATC application and Permit Requirements for Part 70 Sources	Applicable. The owner or operator of an existing or new Part 70 source shall obtain an Authority to Construct Permit from the Control Officer before beginning actual construction.	HAGS applied for, and received, ATC permits from DAQ.	HAGS complies with applicable requirements.
AQR 12.5	Part 70 Operating Permit Requirements	Applicable. HAGS is a major stationary source, and the initial Title V permit application was submitted as required by 40 CFR 70. Renewals are due 6–18 months before expiration. Revisions will be submitted within 12 months of starting operation of any new EU.	HAGS shall submit renewal applications between 6 and 18 months before permit expiration, and revision applications within 12 months of starting operation of any new EU.	HAGS complies with applicable requirements.
AQR 12.9	Annual Emissions Inventory	Applicable. A source that emits more than 25 tons of NOx or VOC shall complete and submit an annual emissions inventory.	Annual emission inventories shall be submitted by March 31 each year.	HAGS complies with applicable requirements.
AQR 12.10	Continuous Monitoring Requirements	Applicable. Any owner or operator of a stationary source listed in 40 CFR 51, Appendix P, Sections 1.1.1 through 1.1.4 shall install, calibrate, operate, and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in Appendix P, Sections 1.1.1 through 1.1.4, for each applicable source category.	HAGS submitted all required protocols/test plans per the issued ATC permit prior to CEMS certification. CEMS certification was approved by DAQ.	HAGS complies with applicable requirements.
AQR 13.2(b)(82)	Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Applicable. The emergency generators identified as EUs: A07 and A08 are subject to this AQR.	Applicable monitoring, recordkeeping & reporting requirements.	HAGS complies with applicable requirements.
AQR 14.1.(b)(40)	NSPS GG – Standards of Performance for Stationary Gas Turbines	Applicable. The turbines identified as EUs: 53301 and A09 are subject to this AQR.	The applicable turbine Units meet the applicable NO_x and SO_2 emission standards.	HAGS complies with applicable requirements.
AQR 14.1(b)(82)	Subpart IIII – Standards of Performance for	Applicable. The fire pump identified as EU: A11 is subject to this AQR.	Applicable monitoring, recordkeeping & reporting requirements.	HAGS complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
	Stationary Compression Ignition Internal Combustion Engines			
AQR 14.1(b)(84)	Subpart KKKK – Standards of Performance for Stationary Combustion Turbines	Applicable – Turbines 5 & 6 were modified after 02/18/2005	HAGS shall continue to demonstrate compliance using CEMS, EPA approved testing methods, and combustion of low sulfur pipeline natural gas.	HAGS complies with applicable requirements.
AQR 14.1(b)(86)	Subpart TTTT – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	Applicable – Turbines 5 & 6 were modified after January 8, 2014, and before May 23, 2023.	HAGS shall demonstrate compliance by maintaining purchase records indicating a consistent chemical composition that results in emissions equal to, or less than, 160 lb CO_2/MMBtu.	HAGS complies with applicable requirements
AQR 18	Permit and Technical Service Fees	Applicable. Required permit and technical service fees.	HAGS is required to pay all required & applicable permit and technical service fees.	HAGS complies with applicable requirements.
AQR 21	Acid Rain Permits	Applicable. HAGS operates generators with capacities greater than 25 MW constructed after 11/15/1990.	HAGS submitted the required acid rain permit forms.	HAGS complies with applicable requirements.
AQR 22	Acid Rain Continuous Emission Monitoring	Applicable. Standards for the monitoring, recordkeeping, and reporting of sulfur dioxide, nitrogen oxides and carbon dioxide emissions and Opacity data from Affected Units under the Acid Rain Program of the Clean Air Act.	HAGS submitted the required protocols/test plans.	HAGS complies with applicable requirements.
AQR 25	Affirmative Defense for Excess Emissions due to Malfunctions, Startup, and Shutdown	Applicable. Any upset, break-down, emergency condition, or malfunction which causes emissions of regulated air pollutants in excess of any permit limits shall be reported to the Control Officer. 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 24 hours of the time the owner learns of the emissions.	HAGS complies with applicable requirements.
AQR 26	Emission of Visible Air Contaminants	Applicable. Opacity for the combustion units shall not exceed 20% for more than 3 min. in any 60-min. period.	Compliance determined by EPA Method 9.	HAGS complies with applicable requirements.
AQR 28	Fuel Burning Equipment	Applicable. The PM emission rate for the fuel burning equipment is below AQR 28 requirements.	Maximum allowable PM emission rate determined from equation in AQR 28.2.2.	HAGS complies with applicable requirements.
AQR 40	Prohibitions of Nuisance Conditions	Applicable. No person shall cause or allow any source to discharge air contaminants (or other material) in quantities that will cause a nuisance. Locally enforceable only.	HAGS air contaminant emissions are controlled by pollution control devices or good combustion in order to not cause a nuisance.	HAGS complies with applicable requirements.
AQR 41	Fugitive Dust	Applicable. HAGS shall take necessary actions to abate fugitive dust from becoming airborne.	HAGS utilizes appropriate best practices to not allow airborne fugitive dust.	HAGS complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
AQR 42	Open Burning	Applicable. If HAGS burns combustible material in open areas, the Control Officer will approve it in advance. Locally enforceable rule only.	HAGS will contact DAQ and obtain advance approval for burning activities identified in AQR 42.	HAGS complies with applicable requirements.
AQR 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 an hour, if the odor causes a nuisance, and if odor detection is separated by at least 15 minutes. Locally enforceable rule only.	HAGS is not expected to cause odors.	HAGS complies with applicable requirements.
AQR 70.4	Emergency Procedures	Applicable		HAGS complies with applicable requirements.
AQR 80	Circumvention	Applicable. HAGS shall not build, erect, install or use any article, machine, equipment or other contrivance which conceals an emission which would otherwise constitute a violation of these Regulations.	HAGS will disclose all emissions as required by state and federal regulations.	HAGS complies with applicable requirements.
AQR 94	Permitting and Dust Control for Construction Activities.	Applicable. Stationary sources shall apply for a dust control permit in the event of engaging in a construction activity greater than 0.25 acre.	HAGS shall apply for a dust control permit in the event of engaging in a construction activity greater than 0.25 acre.	HAGS complies with applicable requirements.

Table X-2: Applicable Federal Air Quality Regulations

Citation	Title	Applicability	Applicable Test Method	Compliance Status
40 CFR Part 52.21	Prevention of Significant Deterioration of Air Quality	Applicable. This section applies to the construction of any new major stationary source or any project at an existing major stationary source in an area designated as attainment for regulated pollutants. H.A. 216 is classified as attainment for all regulated pollutants.	HAGS shall continue to meet BACT and other impact analysis requirements by monitoring & keeping records of emission data.	HAGS complies with applicable SIP requirements.
40 CFR Part 52.1470	Approval and Promulgation of Implementation Plans: Subpart DD—Nevada [SIP rules]	Applicable. HAGS is a Title V source, so SIP rules apply.	HAGS shall continue to comply with the federally enforceable monitoring, testing, recordkeeping, and reporting requirements stipulated in the SIP.	HAGS complies with applicable requirements.
40 CFR 60, Subpart A	Standards of Performance for New Stationary Sources – General Provisions	Applicable. HAGS is an affected facility under NSPS Subpart GG and KKKK. Therefore, Subpart A provisions are applicable.	HAGS shall continue to adhere to applicable monitoring, testing, recordkeeping, and reporting regulations.	HAGS complies with applicable requirements.
40 CFR 60, Subpart GG	NSPS – Standards of Performance for Stationary Gas Turbines	Applicable. The turbines identified as EUs: 53301 and A09 are subject to this AQR.	The applicable turbine Units meet the applicable NO_x and SO_2 emission standards.	HAGS complies with applicable requirements.
40 CFR 60, Subpart IIII	Standards of Performance for Stationary	Applicable. The fire pump identified as EU: A11 is subject to this AQR.	Applicable monitoring, recordkeeping & reporting requirements.	HAGS complies with applicable requirements.

Citation	Title	Applicability	Applicable Test Method	Compliance Status
	Compression Ignition Internal Combustion Engines			
40 CFR 60, Subpart KKKK	Standards of Performance for Stationary Combustion Turbines	Applicable. Turbines 5 & 6 were modified after 02/18/2005	HAGS shall continue to demonstrate compliance using CEMS, EPA approved testing methods, and combustion of low sulfur pipeline natural gas.	HAGS complies with applicable requirements.
40 CFR 60, Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units"	Applicable – Turbines 5 & 6 were modified after January 8, 2014, and before May 23, 2023.	HAGS shall demonstrate compliance by maintaining purchase records indicating a consistent chemical composition that results in emissions equal to, or less than, 160 lb CO_2/MMBtu.	HAGS complies with applicable requirements
40 CFR Part 63, Subpart ZZZZ	"National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"	Applicable. The emergency generators identified as EUs: A07 and A08 are subject to this AQR.	Applicable monitoring, recordkeeping & reporting requirements.	HAGS complies with applicable requirements.
40 CFR Part 70	State Operating Permit Programs	Applicable. HAGS is a major stationary source permitted under this rule. The initial Title V permit application was submitted as required. Renewals are due 6–18 months before expiration; revisions will be submitted within 12 months of starting operation of any new EUs.	The previous Part 70 OP renewal was issued 10/29/2020. The current renewal application was submitted on 04/03/2025, which is within the required timeframe.	HAGS complies with applicable requirements.
40 CFR Part 72	Acid Rain Permit Regulations	Applicable. HAGS operates generators with capacities greater than 25 MW constructed after 11/15/1990.	HAGS submitted the required acid rain permit forms.	HAGS complies with applicable requirements.
40 CFR Part 73	Acid rain Sulfur Dioxide Allowance System	Applicable – The regulations stipulate the allocation, exchange, etc. of acid rain SO_2 allowances	NV Energy complies with all applicable requirements and obtains required acid rain SO_2 allowances.	HAGS complies with applicable requirements.
40 CFR Part 75	Acid Rain Continuous Emission Monitoring	Applicable. HAGS is an affected facility and must meet the requirements for monitoring, recordkeeping, and reporting of flow rate, SO_2, NO_X, and CO_2 emissions.	HAGS shall continue to adhere to the CEMS requirements for monitoring, recordkeeping, and reporting.	HAGS complies with applicable requirements.

XI. PERMIT SHIELD

The source has requested a permit shield for applicable regulations as identified in Table XI-1. Compliance with the terms contained in this permit shall be deemed compliance with the applicable requirements in effect on the date of permit issuance.

Table XI-1: Streamlined Requirements Related to Permit Shield (Natural Gas-Fired)

EU	Regulation (40 CFR)	Pollutant	Reg. Std.	Permit Limit	Value Comparison			Streamlining Statement for Shielding Purposes
					Std Val in Units of Permit Limit	Permit Limit Value	Is Permit Limit Equal or More Stringent?	
A09 & 53301	60.333 (GG)	SO_2	0.8% sulfur by weight (8,000 ppmv)	0.5 grains sulfur per 100 scf	260[1]	0.5	Yes	The permit limit is more stringent than the standard, based on both concentration and averaging time, therefore the facility should be shielded from the standard.

[1]Sulfur content was converted from percent by weight to grains (gr) per 100 standard cubic feet (scf) as follows: 0.8% sulfur = 56 gr per pound (lb) natural gas. Assuming an average molecular weight of 18 lb/lb-mol for natural gas = 2.14 * 10^3 scf. Lastly. 56 gr sulfur per 2.14 * 10^3 scf natural gas equates to 260 gr/100 scf.

XII. INCREMENT ANALYSIS

Harry Allen Generating Station is a major source in Hydrographic Area 216 (Garnet Valley). Permitted emission units include four turbines, two generators, and one fire pump. Since minor source baseline dates for PM_{10} (December 31, 1980), NO_2 (January 24, 1991) and SO_2 (December 31, 1980) have been triggered, Prevention of Significant Deterioration (PSD) increment analysis is required.

DAQ modeled the source using AERMOD to track the increment consumption. Stack data submitted by the applicant were supplemented with information available for similar emission units. Meteorological data (2014) collected at the Harry Allen Generating Station was used in the model. U.S. Geological Survey National Elevation Dataset terrain data were used to calculate elevations. Table XII-1 shows the location of the maximum impact and the potential PSD increment consumed by the source at that location. The impacts are below the PSD increment limits.

Table XII-1: PSD Increment Consumption

Pollutant	Averaging Period	Source's PSD Increment Consumption (µg/m^3)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO_2	3-hour	1.41[1]	691500	4028500
SO_2	24-hour	0.64[1]	688034	4033468
SO_2	Annual	0.06	688003	4033504
NO_X	Annual	1.84	688003	4033504
PM_{10}	24-hour	10.38[1]	688034	4033468
PM_{10}	Annual	2.26	688003	4033504

[1] Highest Second High Concentration.

XIII. PUBLIC PARTICIPATION

This is a renewal of the OP. Therefore, pursuant to AQR 12.5.2.17, public participation is required.

XIV. ATTACHMENTS

Table XIV-1: Source PTE and Applicability Emissions for Turbines Per Unit

	Operating Hours		Throughput		Controls		Emissions		
EU	Hour/day	Hour/yr	MMBtu/hr	MMBtu/yr	Type	Efficiency or Dry Volume Flow Rate	Pollutant	EF (lb/hr)	Yearly Rate (tons/yr)
	CTG Natural Gas Turbine (Unit 5) and Duct Burner HRSG associated with A01				Criteria Pollutant Emissions				
A01/A03 & A02/A04	24	8,760	1,684	14,751,840	--	--	PM	11.50	50.20
					--	--	PM_{10}	11.50	50.20
					--	--	$PM_{2.5}$	11.50	50.20
					--	--	SO_2	1.0	4.40
					SCR	2 ppmvd @ 15% O2	NO_X	19.60	85.90
					Oxidative Catalyst	2 ppmvd @15% O2	CO	10.20	44.68
					--	--	VOC	6.40	28.10

Table XIV-2: HAP PTE and Applicability Emissions for Turbines Per Unit (tons/yr)

A01 & A02	24	8,760	1,684	14,751,840	--	--	**Total HAPS**	-	**2.41**
							1,3-Butadiene	4.30E-07	3.17E-03
							Acetaldehyde	4.00E-05	2.95E-01
							Acrolein	6.40E-06	4.72E-02
							Benzene	9.10E-07	6.71E-03
							Ethylbenzene	3.20E-05	2.36E-01
							Formaldehyde	2.00E-05	1.48E-01
							Naphthalene	1.30E-06	9.59E-03
							PAH	2.20E-06	1.62E-02
							ropylene Oxid	2.90E-05	2.14E-01
							Toluene	1.30E-04	9.59E-01
							Xylenes	6.40E-05	4.72E-01

Table XIV-3: HAP PTE for Duct Burners Per Unit (tons/yr)

A03 & A04	24	4,000	173	692,000	--	--	**Total HAPS**	-	**0.11**
							1,3-Butadiene	4.30E-07	1.49E-04
							Acetaldehyde	4.00E-05	1.38E-02
							Acrolein	6.40E-06	2.21E-03
							Benzene	9.10E-07	3.15E-04
							Ethylbenzene	3.20E-05	1.11E-02
							Formaldehyde	2.00E-05	6.92E-03
							Naphthalene	1.30E-06	4.50E-04
							PAH	2.20E-06	7.61E-04
							ropylene Oxid	2.90E-05	1.00E-02
							Toluene	1.30E-04	4.50E-02
							Xylenes	6.40E-05	2.21E-02

Table XIV-4: PTE for Turbine

Unit No.	Operating Hours		Throughput		Controls		Emissions		
	Hour/day	Hour/yr	MMBtu/hr	MMBtu/yr	Type	Efficiency or Dry Volume Flow Rate	Pollutant	EF (lb/hr)	PTE (tons/yr)
No. & Name:	Natural Gas Only Turbine (Turbine Unit 4)				Criteria Pollutant Emissions				
A09	24	3,300	1,060	3,497,340	--	--	PM	9.98	16.47
					--	--	PM_{10}	9.98	16.47
					--	--	$PM_{2.5}$	9.98	16.47
					--	--	SO_2	0.64	1.06
					Ultra low-NOx (ULN) Burner	5 ppmvd @ 15% O2, 19.50 lb/hr	NO_X	19.50	32.18
					Oxidation Catalyst	8.90 lb/hr	CO	8.9	14.69
					Oxidation Catalyst	1.80 lb/hr	VOC	1.8	2.97

Table XIV-5: HAP PTE for Turbine (ton/yr)

A09	24	3,300	1,060	3,497,340	--	--	**Total HAPS**	-	**0.57**
							1,3-Butadiene	4.30E-07	7.52E-04
							Acetaldehyde	4.00E-05	6.99E-02
							Acrolein	6.40E-06	1.12E-02
							Benzene	9.10E-07	1.59E-03
							Ethylbenzene	3.20E-05	5.60E-02
							Formaldehyde	2.00E-05	3.50E-02
							Naphthalene	1.30E-06	2.27E-03
							PAH	2.20E-06	3.85E-03
							Propylene Oxid	2.90E-05	5.07E-02
							Toluene	1.30E-04	2.27E-01
							Xylenes	6.40E-05	1.12E-01

Table XIV-6: PTE for Turbine (Startup & Shutdown)

Unit No.	Emissions					
	Pollutant	Factor	Unit	Factor	Unit	PTE (tons/yr)
A09 (startup and shutdown)	PM_{10}	9.98	lb/startup	9.98	lb/shutdown	2.70
	$PM_{2.5}$	9.98	lb/startup	9.98	lb/shutdown	2.70
	SO_2	0.64	lb/startup	0.64	lb/shutdown	0.20
	NO_X	40.00	lb/startup	10.00	lb/shutdown	6.90
	CO	80.00	lb/startup	60.00	lb/shutdown	19.30
	VOC	1.80	lb/startup	1.80	lb/shutdown	0.50

Table XIV-7: PTE for Turbine

EU	Operating Hours		Throughput		Controls		Emissions		
	Hour/day	Hour/yr	MMBtu/hr	MMBtu/yr	Type	Efficiency or Dry Volume Flow Rate	Pollutant	EF (lb/hr)	PTE (tons/yr)
	Natural Gas Only Turbine (Turbine Unit 3)				Criteria Pollutant Emissions				
53301	24	6,135	873	5,356,469	--	--	PM	10.00	30.60
					--	--	PM_{10}	10.00	30.60
					--	--	$PM_{2.5}$	10.00	30.60
					--	--	SO_2	1.31	4.01
					DLN	9 ppmvd @ 15% O2	NO_X	28.85	88.34
					--	--	CO	49.70	152.50
					--	--	VOC	1.59	4.88

Table XIV-8: HAP PTE for Turbine (ton/yr)

53301	24	6,135	873	5,356,469	--	--	**Total HAPS**	-	**0.87**
							1,3-Butadiene	4.30E-07	1.15E-03
							Acetaldehyde	4.00E-05	1.07E-01
							Acrolein	6.40E-06	1.71E-02
							Benzene	9.10E-07	2.44E-03
							Ethylbenzene	3.20E-05	8.57E-02
							Formaldehyde	2.00E-05	5.36E-02
							Naphthalene	1.30E-06	3.48E-03
							PAH	2.20E-06	5.89E-03
							ropylene Oxid	2.90E-05	7.77E-02
							Toluene	1.30E-04	3.48E-01
							Xylenes	6.40E-05	1.71E-01

Table XIV-9: PTE and Applicability Emissions for Diesel Engine

						Emission Factor	Potential Emissions		
EU#	A07		**Horsepower:**	400					
Make:	Perkins		**Hours/Day:**	24.0		(lb/hp-hr)	lb/hr	lb/day	ton/yr
Model:	N37881		**Hours/Year**	500	**PM10**	2.20E-03	0.88	21.12	0.22
S/N:	1				**NOx**	3.10E-02	12.40	297.60	3.10
					CO	6.68E-03	2.67	64.13	0.67
Manufacturer Guarantees					**SO_2**	1.21E-05	0.01	0.12	0.01
PM10		g/hp-hr			**VOC**	2.51E-03	1.01	24.14	0.25
NOx		g/hp-hr			**HAP**	2.71E-05	0.01	0.26	0.01
CO		g/hp-hr			**GHG**	1.16	464.00	11136.00	116.00
SO_2		g/hp-hr							
VOC		g/hp-hr							
Engine Type:	Diesel				Diesel Fuel Sulfur Content is 15 ppm (0.0015%)				

Table XIV-10: PTE and Applicability Emissions for Diesel Engine

						Emission Factor	Potential Emissions		
EU#	A08		**Horsepower:**	519					
Make:	Caterpillar		**Hours/Day:**	24.0		(lb/hp-hr)	lb/hr	lb/day	ton/yr
Model:	3406		**Hours/Year**	500	**PM10**	2.58E-03	1.34	32.13	0.33
S/N:	4ZR08055				**NOx**	1.47E-02	7.61	182.62	1.90
					CO	9.15E-03	4.75	113.96	1.19
Manufacturer Guarantees					**SO_2**	1.21E-05	0.01	0.15	0.01
PM10	1.17	g/hp-hr			**VOC**	1.32E-04	0.07	1.65	0.02
NOx	6.65	g/hp-hr			**HAP**	2.71E-05	0.01	0.34	0.01
CO	4.15	g/hp-hr			**GHG**	1.16	602.04	14448.96	150.51
SO_2		g/hp-hr							
VOC	0.06	g/hp-hr							
Engine Type:	Diesel				Diesel Fuel Sulfur Content is 15 ppm (0.0015%)				

Table XIV-11: PTE and Applicability Emissions for Diesel Engine

						Emission Factor	Potential Emissions		
EU#	A11		**Horsepower:**	175					
Make:	John Deere		**Hours/Day:**	24.0		(lb/hp-hr)	lb/hr	lb/day	ton/yr
Model:	6068		**Hours/Year**	500	**PM10**	6.61E-04	0.12	2.78	0.03
S/N:	PE6068T751998				**NOx**	9.11E-03	1.59	38.24	0.40
					CO	2.58E-03	0.45	10.83	0.11
Manufacturer Guarantees					**SO_2**	1.21E-05	0.01	0.05	0.01
PM10	0.3	g/hp-hr			**VOC**	6.39E-04	0.11	2.69	0.03
NOx	4.13	g/hp-hr			**HAP**	2.71E-05	0.01	0.11	0.01
CO	1.17	g/hp-hr			**GHG**	1.16	203.00	4872.00	50.75
SO_2		g/hp-hr							
VOC	0.29	g/hp-hr							
Engine Type:	Diesel				Diesel Fuel Sulfur Content is 15 ppm (0.0015%)				

Table XIV-12: Source PTE Summary

EU	hour/yr	PM_{10}	$PM_{2.5}$	NOx	CO	SO_2	VOC	HAP	CO_2e
A01	8,760	50.20	50.20	85.90	44.68	4.40	28.10	2.41	877,571.89
A02	8,760	50.20	50.20	85.90	44.68	4.40	28.10	2.41	877,571.89
A03	4,000	Included with A01						0.11	41,166.37
A04	4,000	Included with A02						0.11	41,166.37
A07	500	0.22	0.22	3.10	0.67	0.01	0.25	0.01	116.00
A08	500	0.33	0.33	1.90	1.19	0.01	0.02	0.01	150.51
A09	3,300	16.47	16.47	32.18	14.69	1.06	2.97	0.57	208092.45
A09*		2.70	2.70	6.90	19.30	0.20	0.50	0.00	0.00
53301	6,135	30.60	30.60	88.34	152.50	4.01	4.88	0.87	352921.04
A11	500	0.03	0.03	0.40	0.11	0.01	0.03	0.01	50.75
Total		**150.75**	**150.75**	**304.62**	**277.82**	**14.10**	**64.85**	**6.51**	**2,398,807.27**

*Startup/shutdown

Table XIV-13: HAP Applicability Emissions for Duct Burners (tons/yr)

A03 & A04	24	8,760	173	1,515,480	--	--	**Total HAPS**	-	**0.25**
							1,3-Butadiene	4.30E-07	3.26E-04
							Acetaldehyde	4.00E-05	3.03E-02
							Acrolein	6.40E-06	4.85E-03
							Benzene	9.10E-07	6.90E-04
							Ethylbenzene	3.20E-05	2.42E-02
							Formaldehyde	2.00E-05	1.52E-02
							Naphthalene	1.30E-06	9.85E-04
							PAH	2.20E-06	1.67E-03
							ropylene Oxid	2.90E-05	2.20E-02
							Toluene	1.30E-04	9.85E-02
							Xylenes	6.40E-05	4.85E-02

Table XIV-14: Applicability Emissions for Turbine

EU	Operating Hours		Throughput		Controls		Emissions		
	Hour/day	Hour/yr	MMBtu/hr	MMBtu/yr	Type	Efficiency or Dry Volume Flow Rate	Pollutant	EF (lb/hr)	PTE (tons/yr)
	Natural Gas Only Turbine (Turbine Unit 4)				**Criteria Pollutant Emissions**				
A09	24	8,760	1,060	9,283,848	--	--	PM	9.98	43.71
					--	--	PM_{10}	9.98	43.71
					--	--	$PM_{2.5}$	9.98	43.71
					--	--	SO_2	0.64	2.80
					Ultra low-NOx (ULN) Burner	5 ppmvd @ 15% O2, 19.50 lb/hr	NO_X	19.50	85.41
					Oxidation Catalyst	8.90 lb/hr	CO	8.9	38.98
					Oxidation Catalyst	1.80 lb/hr	VOC	1.8	7.88

Table XIV-15: HAP Applicability Emissions for Turbine (ton/yr)

A09	24	8,760	1,060	9,283,848	--	--	**Total HAPS**	-	**1.51**
							1,3-Butadiene	4.30E-07	2.00E-03
							Acetaldehyde	4.00E-05	1.86E-01
							Acrolein	6.40E-06	2.97E-02
							Benzene	9.10E-07	4.22E-03
							Ethylbenzene	3.20E-05	1.49E-01
							Formaldehyde	2.00E-05	9.28E-02
							Naphthalene	1.30E-06	6.03E-03
							PAH	2.20E-06	1.02E-02
							ropylene Oxid	2.90E-05	1.35E-01
							Toluene	1.30E-04	6.03E-01
							Xylenes	6.40E-05	2.97E-01

Table XIV-16: Applicability Emissions for Turbine

EU	Operating Hours		Throughput		Controls		Emissions		
	Hour/day	Hour/yr	MMBtu/hr	MMBtu/yr	Type	Efficiency or Dry Volume Flow Rate	Pollutant	EF (lb/hr)	PTE (tons/yr)
	Natural Gas Only Turbine (Turbine Unit 3)				Criteria Pollutant Emissions				
53301	24	8,760	873	7,648,356	--	--	PM	10.00	43.80
					--	--	PM_{10}	10.00	43.80
					--	--	$PM_{2.5}$	10.00	43.80
					--	--	SO_2	0.92	4.01
					DLN	9 ppmvd @ 15% O2	NO_X	28.85	126.14
					--	--	CO	49.70	217.70
					--	--	VOC	1.59	6.97

Table XIV-17: HAP Applicability Emissions for Turbine

53301	24	8,760	873	7,648,356	--	--	**Total HAPS**	-	**1.25**
							1,3-Butadiene	4.30E-07	1.64E-03
							Acetaldehyde	4.00E-05	1.53E-01
							Acrolein	6.40E-06	2.45E-02
							Benzene	9.10E-07	3.48E-03
							Ethylbenzene	3.20E-05	1.22E-01
							Formaldehyde	2.00E-05	7.65E-02
							Naphthalene	1.30E-06	4.97E-03
							PAH	2.20E-06	8.41E-03
							ropylene Oxid	2.90E-05	1.11E-01
							Toluene	1.30E-04	4.97E-01
							Xylenes	6.40E-05	2.45E-01

Table XIV-18: Applicability Emissions for Insignificant Activity

EU	Description	Drift Loss %	Flow Rate (gal/min)	TDS (mg/l)	Hours of Operation		PM10 Emissions	
					hr/day	hr/yr	lb/hr	ton/yr
IA	Wet Surface Air Cooler	0.0005%	2800	50000	24	8760	0.16	0.72
							0.16	**0.72**

Table XIV-19: Applicability Emissions Summary (tons/yr)

EU	hour/yr	PM_{10}	$PM_{2.5}$	NOx	CO	SO_2	VOC	HAP	CO_2e
A01	8,760	50.2	50.2	85.9	44.68	4.4	28.1	2.41	877,571.89
A02	8,760	50.2	50.2	85.9	44.68	4.4	28.1	2.41	877,571.89
A03	8,760	Included with A01						0.25	41,166.37
A04	8,760	Included with A02						0.25	41,166.37
A07	500	0.22	0.22	3.1	0.67	0.01	0.25	0.01	116.00
A08	500	0.33	0.33	1.9	1.19	0.01	0.02	0.01	150.51
A09	8,760	43.71	43.71	85.41	38.98	2.8	7.88	1.51	208,092.45
53301	8,760	43.8	43.8	126.14	217.7	4.01	6.97	1.25	352,921.04
A11	500	0.03	0.03	0.4	0.11	0.01	0.03	0.01	50.75
IA	8,760	0.72	0.72	0	0	0	0	0	0
Total		**189.21**	**189.21**	**388.75**	**348.01**	**15.64**	**71.35**	**8.11**	**2,398,807.27**

GHG Calculations for Turbines

Table XIV-20: CO_2 Calculations

EU	F_c	H	U_f	MW	W_{CO2} (ton/hr)	W_{CO2} (ton/yr)
A01	1,040	1,684	385	44	100.08	876680.78
A02	1,040	1,684	385	44	100.08	876680.78
A03	1,040	173	385	44	10.28	41124.57
A04	1,040	173	385	44	10.28	41124.57
A09	1,040	1,060	385	44	62.99	207881.14
53301	1,040	967	385	44	57.47	352562.67

CO_2 Calculations – 40 CFR Part 75, Equation G-4

$$W_{CO_2} = \left(\frac{F_C \times H \times U_f \times MW_{CO_2}}{2000} \right)$$

W_{CO2} = CO_2 (tons/hr)
MW_{CO2} = 44 lb/lb-mole
Fc = 1,040 scf/MMBtu
H = Heat Input (MMBtu)
U_f = 1/385 scf CO_2/lb-mole

Table XIV-21: CH_4 and N_2O Calculations

EU	$(HI)_A$	EF (CH_4)	EF (N_2O)	CH_4 (Metric tons/yr)	CH_4 (Short tons/yr)	N_2O (Metric tons/yr)	N_2O (Short tons/yr)
A01	14751840	0.001	0.0001	14.75	16.26	1.48	1.63
A02	14751840	0.001	0.0001	14.75	16.26	1.48	1.63
A03	692000	0.001	0.0001	0.69	0.76	0.07	0.08
A04	692000	0.001	0.0001	0.69	0.76	0.07	0.08
A09	3498000	0.001	0.0001	3.50	3.86	0.35	0.39
53301	5932545	0.001	0.0001	5.93	6.54	0.59	0.65

CH_4 and N_2O Calculations, 40 CFR Part 98, Equation C10: CH_4 or N_2O = 0.001 * $(HI)_A$ * EF

0.001 = Conversion Factor from kg to Metric Tons
$(HI)_A$ = Cumulative Annual Heat Input
EF = Emission Factor (kg/MMBtu)
EF (CH_4) = 0.001
EF (N_2O) = 0.0001
Convert Metric Tons to Short Tons = 1.10231

Table XIV-22: CO_2e Calculations

EU	GWP (CO_2)	GWP (CH_4)	GWP (N_2O)	CO_2e (tons/yr)
A01	876680.78	406.53	484.58	877571.89
A02	876680.78	406.53	484.58	877571.89
A03	41124.57	19.07	22.73	41166.37
A04	41124.57	19.07	22.73	41166.37
A09	207881.14	96.40	114.91	208092.45
53301	352562.67	163.49	194.88	352921.04
Total				**2398490.00**

GWP = Global Warming Potential
GWP (CO_2) = CO_2 * 1
GWP (CH_4) = Short Tons * 25
GWP (N_2O) = Short Tons * 298

Table XIV-23: CO2 Emission Rate per MMBtu

EU	Heat Input (MMBtu/hr)	CO_2 PTE* (tons/hr)	lb CO_2/MMBTU
A01	1,684	100.08	118.86
A02	1,684	100.08	118.86
A03	173	10.28	118.84
A04	173	10.28	118.84
A09	1,060	62.99	118.85
53301	967	57.47	118.86

*From Table XIV-20