DES
DEPARTMENT OF ENVIRONMENT AND SUSTAINABILITY

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MAJOR PART 70 SOURCE TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)

APPLICATION FOR:
Operating Permit Renewal

SUBMITTED BY:
Nevada Power Company
P.O. Box 98910
Las Vegas, Nevada 89151

FOR:
NV Energy

Walter M Higgins III Generating Station
Source ID: 1550

LOCATION:
1275 East Primm Boulevard
Primm, Nevada 89019

SIC code 4911 "Electric Services"
NAICS code 221112 "Fossil Fuel Electric Power Generation"

January 18, 2022

EXECUTIVE SUMMARY

NV Energy owns and operates Walter M. Higgins III Generating Station (Higgins Generating Station), located at 1275 East Primm Boulevard, Primm, Nevada, 89019. The station lies within Hydrographic Area 164A, Ivanpah Valley North, which EPA has designated as being in attainment for all regulated pollutants at the time of issuance of this Operating Permit (OP). This station uses two natural gas-fired, combined cycle combustion turbines (CCCTs) to produce electricity.

The facility has a two-on-one combined cycle unit that consists of two natural gas-fired stationary gas turbines, two heat recovery steam generators (HRSGs) with natural gas-fired duct burners for supplemental firing, and a steam turbine generator. The facility also operates one natural gas-fired auxiliary boiler and one fire pump. All fuel-fired equipment, with the exception of the diesel-fired fire pump, uses pipeline-quality natural gas as the sole fuel source.

This facility is a major stationary source of PM_{10}, $PM_{2.5}$, NO_x, and CO under Prevention of Significant Deterioration (PSD), as defined in Section 12.2.2(ff) of the Clark County Air Quality Regulations (AQRs), and a minor source of SO_2, VOC, and HAP. Higgins Generating Station is also a source of greenhouse gas pollutants. It is a categorical stationary source, as defined in 12.2.2(j)(1). NV Energy (NVE) intends to renew its Part 70 OP.

The following table summarizes the source's potential to emit (PTE) for each regulated air pollutant.

Source-Wide PTE (tons per year)

Pollutants	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP	GHG[1]
PTE Totals	144.91	144.91	158.58	194.04	10.44	43.53	7.22	2,218,704

[1]GHG is expressed as CO_2e for information only.

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ACRONYMS AND ABBREVIATIONS

(These terms may be seen in the Technical Support Document)

AQR	Clark County Air Quality Regulation
BAE	baseline actual emissions
CARB	California Air Resources Board
CCCT	combined cycle combustion turbine
CE	control efficiency
CF	control factor
CFR	Code of Federal Regulations
CO	carbon monoxide
DAQ	Department of Air Quality
EE	excludable emissions
EF	emission factor
EPA	U.S. Environmental Protection Agency
EU	emission unit
GE	General Electric
HAP	hazardous air pollutant
kW	kilowatt
lb	pound
MMBtu	British thermal units (in millions)
MWh	megawatts per hour
NAICS	North American Industry Classification System
ng/J	nanogram per joule
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxide
NSPS	New Source Performance Standards
NSR	New Source Review
NVE	NV Energy
PAE	projected actual emissions
$PM_{2.5}$	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
Project	Combustion Turbine Upgrade Project
PSD	Prevention of Significant Deterioration
PTE	potential to emit
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audits
SCC	Source Classification Codes
SCR	selective catalytic reduction
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
Statement	Annual Emissions Statement
TSD	Technical Support Document
UTM	Universal Transverse Mercator
VMT	vehicle miles traveled
VOC	volatile organic compound

I. SOURCE INFORMATION

A. General

Preparer:	Dawn Leaper
Action Received:	April 24, 2020
Permittee:	Nevada Power Company
Submitted by:	Nevada Power Company
Source ID #:	1550
Source name:	Walter M Higgins III Generating Station
Source address:	1275 East Primm Boulevard, Primm NV 89019

II. PROCESS DESCRIPTION

Higgins Generating Station includes two natural gas-fired CCCTs. The combustion turbines are equipped with dry low-NO_x combustors and inlet air filters. They are single-shaft combustion turbines that are connected to electricity generators, and each is intended to produce up to a nominal 200 megawatts (MW) gross of electricity. The combustion turbines generate electricity by transforming the thermal energy of the combustion gases into rotating mechanical energy as the gases expand through the turbine section. The rotational energy is converted into electrical energy by a shaft in the combustion turbine that is connected to an electrical generator.

The exhaust of each CCCT passes through a (HRSG) with natural gas-fired duct burners that have a nominal heat input rating of 700 million British thermal units per hour (MMBtu/hour). Exhaust gases from the combustion turbines are routed to the HRSG to boost the efficiency of the system by using the residual heat to produce high pressure steam. The steam is used to generate electricity in the steam turbine generator.

III. PERMITTING ACTION

This action entails renewing the OP while incorporating a minor revision to update the turbine conditions after completion of the Combustion Turbine Upgrade Project ("the Project"). The details of the Project are in the TSD issued February 4, 2020.

As part of this renewal action, the source proposed an alternate operating scenario that included testing and tuning operations.

DAQ no longer regulates ammonia under the local rules. However, we are not removing the requirement to maintain a Risk Management Plan (RMP) for storing, handling, and using ammonia or aqueous ammonia as requested by the source. The condition to maintain an RMP remains in the permit as it is required under 40 CFR Part 68.

After reviewing the draft permit and TSD, the source suggested changes that DAQ accepted. As requested, DAQ added "unless otherwise provided for in 40 CFR Part 60, Appendix F or 40 CFR

Part 75, Appendix B" to Condition III-D-5. "If the fire pump does not operate during the calendar quarter, then no observation of that unit shall be required" was added to Condition III-D-7.

Lastly, universal permit updates were made during this action. Annual Emissions Statement (Statement) conditions have been incorporated into the permit for sources that emit 25 tons per calendar year of NO_x and/or VOCs. DAQ also added nonroad engine language (Section III-B), as well as HAP emissions in the Source-wide PTE table above.

IV. FACILITY EMISSION UNITS

Table 1 lists the EUs located at the facility and subject to the provisions of the OP. Table 2 lists the facility's insignificant units and activities.

Table 1. List of Emission Units

EU	Description	Rating	Make	Model #	Serial #	SCC
A01	Natural Gas Stationary Gas Turbine (Turbine #1)	200 MW	Westinghouse	501FD		20100201
A02	Duct Burner for HRSG associated with A01	700 MMBtu/hr				10100601
A03	Natural Gas Stationary Gas Turbine (Turbine #2)	200 MW	Westinghouse	501FD		20100201
A04	Duct Burner for HRSG associated with A03	700 MMBtu/hr				10100601
A05	Auxiliary Boiler	40 MMBtu/hr	English Boiler and Tube	30DE250	22-007	10100602
A06	Fire Pump, DOM: 1999 Diesel Engine, DOM: 1999	265 hp	Clarke	8100	01-034838-01-01	20200102

Table 2. Insignificant Units and Activities

Mobile combustion sources
Station maintenance activities
Maintenance shop activities (e.g. parts washers, sandblasters)
Steam cleaning operations
Diesel storage tank for the fire pump
Lubrication oil sumps and vents
Ammonia storage and handling

V. PERMITTING HISTORY

Table 3. Permitting History Since the Last Renewal

Issue Date	Description
3/26/2020	Title V OP – Significant Revision
2/4/2020	Part 70 ATC (Turbine Upgrade Project)
1/5/2016	Title V OP – Renewal

VI. ALTERNATE OPERATING SCENARIO

The source proposed an annual testing and tuning limit equating to 10 hours. NVE justified a 600-minute limit as reasonable based on the source's needs and the requirements of other regulatory agencies.

NVE interacts with several organizations to mitigate risk and ensure the reliability and security of the electrical power grid. These entities, including the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), and the Western Electricity Coordinating Council (WECC), may require NVE to perform testing. Each entity develops and updates standards that require testing and tuning of the generators; these standards may require operation at low loads, where the turbines are not tuned to operate for extended periods. Higher emissions may occur during this alternate operating scenario.

VII. CONTROL TECHNOLOGY

Turbines and Duct Burners

This action does not require the source to revisit or address additional control technology, which was already evaluated to meet BACT. Higgins Generating Station shall continue to operate and maintain the selective catalytic reduction (SCR) system to control NO_x emissions on each turbine. Good combustion practices will be employed to further control NO_x emissions (EUs: A01–A04).

The source will continue to operate and maintain an oxidation catalyst to manage the CO and VOC emissions on each stationary gas turbine (EUs: A01–A04). Only pipeline-quality natural gas will be combusted in the turbine. All of these controls shall be operated in accordance with manufacturer's specifications for good operating practices.

Fire Pump

The engine at this source is subject to 40 CFR Part 63, Subpart ZZZZ, so must meet the fuel requirements referenced therein from 40 CFR Part 80.510(b) (in Subpart I). The source must purchase diesel fuel that meets the per-gallon standard of 15 ppm maximum sulfur content, a minimum cetane index of 40, or a maximum aromatic content of 35 volume percent. Since all refiners and importers of nonroad diesel fuel are also subject to these federal standards, pursuant to 40 CFR Part 80.510, it is reasonable to assume the engine operators have little if any opportunity to acquire fuel that violates these standards. Therefore, this permit does not require the permittee to monitor or keep records of the sulfur content, cetane index, or aromatic content of the diesel fuel used in the engine (EU: A06).

VIII. EMISSION LIMITS

As part of the minor revision being incorporated into this action, all references to 40 CFR Part 60, Subpart GG have been removed from the Emission Limits section of the permit (III-C). The appropriate Subpart KKKK conditions and references remain in place of the Subpart GG conditions.

Testing and tuning emissions rates were included in the Emission Limits section of the permit (III-C), as requested by the source and described in the alternate operating scenario section of this TSD.

IX. OPERATIONAL LIMITS

The source has requested to maintain the fuel limit established in the current operating permit for the auxiliary boiler (EU: A05). DAQ is honoring the source's request to retain the fuel heat rating and to remove the hourly limit (up to 2,500 hr/yr), which was an equivalent limitation that was never established as a hard limit in the permit (issued April 9, 2010 [Table IV-A-7]). The 100,000 MMBtu/hr fuel limit can be found originally in the ATC dated October 1, 2011. By retaining a heat fuel limit, the source will have the flexibility to operate at different loads. The source, however, is being required to monitor and track fuel usage monthly.

X. REVIEW OF APPLICABLE REGULATIONS

A. County Regulations

AQR 12.4: Authority to Construct Permit Requirements for Part 70 Sources

In accordance with AQR 12.4.1.1, an ATC permit from the Control Officer is required for any modification to a Part 70 source that meets the preconstruction review applicability criteria of AQR 12.4.2.1(e). Under 40 CFR Part 60, this requirement was applied to the existing combustion turbines (EUs: A01 & A03) and duct burners (EUs: A02 & A04) of the Project. An ATC permit was issued on February 4, 2020.

AQR 12.2: Prevention of Significant Deterioration in Attainment Areas

AQR 12.2 contains provisions applicable to new major stationary sources or projects that are major modifications of existing sources of regulated NSR pollutants for which the area is in attainment. Higgins Generating Station is an existing major stationary source, as defined in the PSD rules, with a potential to emit greater than 100 tons per year of one or more regulated NSR pollutants that is located in an area designated as in attainment for all criteria pollutants.

AQR 12.5: Part 70 Operating Permit Requirements

Under the requirements of AQR 12.5.2.14(a)(1)(E), any major-source changes that qualify as modifications under Title I of the Clean Air Act are not eligible for a minor permit revision. The Project was a modification to the existing facility under 40 CFR Part 60.14. The existing combustion turbines are subject to the requirements of 40 CFR Part 60, Subpart KKKK, since they were modified after February 18, 2005. Under AQR 12.5.2.14(c), a significant permit revision to the OP was issued on March 26, 2020, to incorporate the applicable provisions of Subpart KKKK.

B. Federal Regulations

40 CFR Part 60—New Source Performance Standards (NSPSs)

NSPSs apply to new, modified, or reconstructed affected facilities as they are defined in specific standards. NVE quantified the increases in emissions of regulated NSR pollutants from the Project to determine requirements for an ATC (AQR 12.4.1.1), major modification applicability (AQR 12.2.1.4) under PSD, and compliance with applicable air quality regulations.

The Project was deemed subject to the requirements of Subpart KKKK of the NSPS, addressed with the issuance of an ATC on February 04, 2020. A significant revision issued on March 26, 2020, incorporated the terms and conditions of the ATC into the OP. This renewal does not trigger a reevaluation of Subpart KKKK.

40 CFR Part 60, Subpart Dc: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

This applies to the auxiliary boiler (EU: A05). The design heat input capacity of this unit is greater than 10 but less than 100 MMBtu/hr and the unit was constructed, modified, or reconstructed after June 9, 1989; therefore, it is subject to Subpart Dc requirements.

40 CFR Part 60, Subpart KKKK: Standards of Performance for Stationary Combustion Turbines

This applies to the stationary combustion turbines and duct burners (A01/A02 & A03/A04) modified after February 18, 2005. Due to increases in maximum achievable heat input rates for NO_x and SO_2, the modified CCCTs are subject to the requirements of Subpart KKKK. Under 40 CFR Part 60.4305(a), the requirements of this subpart also apply to the duct burners associated with the CCCTs. However, per 40 CFR Part 60.4305(b), the duct burners and HRSGs became exempt from the requirements of Subpart Da once the Project was completed.

The following NSPS limitations apply to the two combustion turbines.

1. Compliance with the reporting requirements in 40 CFR Part 60.4375 regarding excess emissions and monitor downtime.

2. Compliance with the NO_x emission limit of 15 ppm at 15% O_2 or 0.43 lb/MWh (for a combustion turbine firing natural gas with a heat input greater than 850 MMBtu/hr). For combined cycle and combined heat and power units with heat recovery, the source will use the calculated hourly average emission rates to assess excess emissions on a 30-unit operating day rolling average basis, as described in 40 CFR Part 60.4380(b)(1). *[40 CFR Part 60.4320 & 40 CFR Part 60.4350(h), Table 1]*

3. Compliance with the alternate NO_x emission limit of 96 ppm at 15% O_2 or 4.7 lb/MWh (for a combustion turbine firing natural gas with an output greater than 30 MW) on a 30-unit operating day rolling average basis when combustion turbines are operating at less than 75% of peak load. *[40 CFR Part 60.4320 & 40 CFR Part 60.4350(h), Table 1]*

4. Compliance with the SO_2 emission limits of 0.90 lb/MW-hr gross output, or not burning any fuel that contains total potential sulfur emissions in excess of 0.060 lb SO_2/MMBtu heat input. *[40 CFR Part 60.4330(a)]*

5. The requirement to monitor fuel sulfur for SO_2 does not apply if potential sulfur emissions expressed as SO_2 are less than 0.060 lb/MMBtu. NVE proposes to use a fuel tariff sheet or purchase contract information, or representative fuel sampling performed per 40 CFR 75, to show that fuel sulfur will comply with the applicable limit. *[40 CFR Parts 60.4360 and 60.4365]*

6. General Compliance Requirement: The CCCTs, SCR, oxidation catalysts, and monitoring equipment must be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunction. *[40 CFR Part 60.4333]*

7. Option to use a NO_x CEMS: NVE will use the existing CEMS, installed, certified, and operated in accordance with 40 CFR Part 75, Appendix A. *[40 CFR Parts 60.4340(b) & 60.4345(a–e)]*

8. NVE proposes to use the NO_x CEMS RATA as the initial NO_x performance test. *[40 CFR Part 60.4405]*

9. No annual performance test is required due to the presence of the NO_x CEMS. *[40 CFR Part 60.4340(b)(1)]*

40 CFR Part 60, Subpart TTTT: Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units

This applies to GHG emissions from stationary combustion turbines that commenced modifications after June 18, 2014. The modifications of the existing combustion turbines under Subpart TTTT, pursuant to 40 CFR Part 60.5509(b)(7), increased the hourly CO_2 emission rate less than 10%. Therefore, the two combustion turbines and the duct burners (A01/A02 & A03/A04) are not subject to the requirements of this subpart.

40 CFR Part 63—National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

40 CFR Part 63, Subpart YYYY: NESHAP for Stationary Combustion Turbines

This is not applicable to the Higgins Generating Station because it is not a major source of HAPs. The previously calculated HAP PTE will not change as a result of the Project because the combustion turbine contribution was calculated using the permitted heat input limits, which were not revised.

40 CFR Part 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)

This is applicable because the diesel emergency fire pump engine's date of manufacture is 1999 (EU: A06). That model year qualifies the unit as a stationary RICE.

XI. MONITORING

40 CFR Part 64—Compliance Assurance Monitoring

The CAM program is codified in 40 CFR Part 64. CAM requirements apply to any pollutant-specific emissions unit with uncontrolled potential emissions above the major source threshold (100 tpy) that uses a control device to achieve compliance with an emission limitation or standard.

Uncontrolled NO_x and CO emissions from the CCCTs and duct burners are above 100 tpy; thus, the CAM Rule applies. However, under the "Exempt emission limitations or standards" provision relating to CEMs (40 CFR Part 64.2(b)(1)(vi)), the CCCTs and duct burners are exempt from CAM requirements under 40 CFR Part 64.2(b)(1).

Stationary Gas Turbine Inlet Filters

For practical enforceability, monitoring, and recordkeeping, conditions were added to the permit to ensure proper maintenance and replacement of the inlet air filters preceding each stationary gas turbine.

Continuous Emissions Monitoring (CEMS)

To demonstrate continuous direct compliance with all emission limitations for NO_x and CO specified in this permit, the permittee shall install, calibrate, maintain, operate, and certify CEMS for NO_x, CO, and O_2 on each stationary gas turbine unit in accordance with 40 CFR Part 75 and 40 CFR Part 60, as applicable. Each CEMS shall include an automated data acquisition and handling system. Each system shall monitor and record at least the data from the Monitoring section of the permit (III-D): *[AQR 12.5.2.6(d)]*

Visible Emissions Monitoring

The visible emissions conditions have been updated to include the latest departmental changes. Visible emission checks are applicable to the diesel-fired equipment. Other emission units that do not display an opacity (such as boilers) have been removed from this requirement.

XII. PERFORMANCE TESTING

NO_x – Initial and Subsequent Performance Testing

The source has elected to continue to use its NO_x-diluent CEMS under 40 CFR Part 46.4345. The initial performance testing shall be conducted according to 40 CFR Part 60.8 using the RATA alternative method. Subsequent NO_x performance tests shall be conducted annually—no more than 14 calendar months following the previous performance test—per 40 CFR Part 60.4400.

SO_2 – Initial and Subsequent Performance Testing

The source must conduct initial performance testing according to 40 CFR Part 60.8. Subsequent SO_2 performance tests shall be conducted annually—no more than 14 calendar months following the previous performance test—per 40 CFR Part 60.4415. Under Part 60.4415(a)(1) and in lieu of

conventional performance testing, the source opted to periodically determine the sulfur content of the fuel combusted in the turbine. This analysis may be performed by a service contractor, and the source chooses to continue to receive monthly fuel analyses from Kern River under the tariff agreement already in place. This requirement can be found in the monitoring section of the permit.

XIII. RECORDKEEPING AND REPORTING

The recordkeeping conditions for testing and tuning events have been included in the permit during this action. The source is required to record the date, time, duration, and purpose for testing and tuning operations. The permittee shall report this information semiannually.

DAQ has identified this source as possibly emitting 25 tons or more of actual emissions of NO_x and/or VOCs in any calendar year. Clark County is required to implement Section 182(a)(3)(B) of the Clean Air Act (CAA), which requires all ozone nonattainment areas to have in place a program that requires an Annual Emissions Statement from stationary sources of NO_x and/or VOCs.

AQR 12.9.1 codifies this requirement for Clark County and states the following conditions:

1. The responsible official of each stationary source that emits 25 tons or more of NO_x and/or VOCs shall submit an Annual Emissions Statement to the department for the previous calendar year.

2. Pursuant to CAA Section 182, the statement must include all actual emissions for all NO_x- and VOC-emitting activities.

3. The statement shall be submitted to and received by the department on or before March 31 of each year, or other date upon prior notice by the Control Officer, and shall include a certification that the information contained in the statement is accurate to the best knowledge of the individual certifying it.

A condition requiring submittal of the statement has been included in the permit.

Lastly the diesel fuel statements for controls, monitoring, and recording keeping for the fire pump (EU: A06) have been updated as requested by EPA.

XIV. INCREMENT ANALYSIS

Walter Higgins Generating Station is a major source in Hydrographic Area 164A (Ivanpah Valley North). Permitted emission units include two turbines, one boiler, and one generator. Since minor source baseline dates for PM_{10} (November 10, 1981), NO_2 (August 15, 2001) and SO_2 (November 10, 1981) have been triggered, 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. Five years (2011 to 2015) of meteorological data from the McCarran Station were used in the model. U.S. Geological Survey National Elevation Dataset terrain data were used to calculate elevations. Table 4 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 4: 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	0.87[1]	648802	3942151
SO_2	24-hour	0.35[1]	649100	3942900
SO_2	Annual	0.08	648958	3942554
NO_X	Annual	1.56	648958	3942554
PM_{10}	24-hour	4.30[1]	649100	3942900
PM_{10}	Annual	0.66	649000	3942800

[1] Highest second-high concentration.

XV. PUBLIC PARTICIPATION

Under AQR 12.5.2.17, the public participation requirement is triggered for OP renewals.

XVI. PERMIT SHIELD

Compliance with the terms contained in this permit shall be deemed compliance with the following applicable requirements in effect on the date of permit issuance: *[AQR12.5.2.9]*

Table 5: Permit Shield

EU	Regulation (40 CFR)	Pollutant	Regulatory Standard		Permit Limit		Value Comparison			Averaging Period Comparison			Shield Statement
			Value	Units	Value	Units	Standard Value, in Units of 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?	
A01/A02	60.4320 (KKKK), Table 1	NO_x	15[1]	ppmvd @ 15% O2	2.5	ppmvd @ 15% O2	15	2.5	Yes	30-day rolling	3 hour	Yes	The permit limit is more stringent than the standard, based upon both concentration and averaging time, therefore the facility should be shielded from the standard.
A03/A04													
A01/A02	60.4330 (KKKK)	NOx	96[2]	ppmvd @ 15% O2	2.5	ppmvd @ 15% O2	96	2.5	Yes	30-day rolling	3 hour	Yes	
A03/A04													

[1] The 40 CFR Part 60 Table 1 NOx standard for modified turbine firing natural gas with heat input >850 MMBtu/hour.
[2] The 40 CFR Part 60 Table 1 NOx standard for turbine >30 MW operating at less than 75% of peak load.

XVII. ATTACHMENTS

See the following attachments for calculations.

Attachment 1

Table A-1 illustrates the source status determination emissions (SDE). The values are a rough estimate because the numbers are a recreation of the SDE using hourly PTE rates, which exclude startup and shutdown for PM_{10}, $PM_{2.5}$, NO_x, CO, and VOC. The NO_x values exclude the SCR for the turbines and duct burners. Table A-1 shows that the source exceeds major source thresholds of 100 tpy for pollutants PM_{10}, $PM_{2.5}$, NO_X, and CO. The SDE for the remaining pollutants are less than major source threshold, which qualifies the source as a true minor for SO_2, VOC, and HAPs

Table A-1. Source Status Determination (tpy)

EU	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2[1]	VOC	HAP[2]
A01/A02	92.42	92.42	112.57	137.44	6.04	43.36	9.37*
A03/A04	92.42	92.42	112.57	137.44	6.04	43.36	9.37*
A05	0.88	0.88	6.31	12.96	0.13	0.88	0.33
A06[1]	1.53	1.53	52.56	12.05	14.19	1.40	0.01
Total	**187.25**	**187.25**	**284.00**	**299.90**	**26.41**	**89.00**	**19.08**
Major Source Thresholds	100	100	100	100	100	100	10/25
PSD Thresholds[3]	100	100	100	100	100	100	-

For information purposes only.
[1]Pounds per hour rates from permit issued 6/20/2003 (filename: 01550_20030620_PER).
[2]10 tons for any single HAP, or 25 tons for any combination of HAP pollutants.
[3]PSD threshold for categorical sources under 40 CFR Part 52.21(b)(1)(i)(a).

Attachment 2

The following calculations used burner ratings and unlimited operation to find the SDE for the auxiliary boiler (EU: A05); that way, the SDE for the facility could be re-created for values unavailable from previous documents.

				Emission Factor (lb/mmBtu)	Potential Emissions		
EU#:	A05				lb/hr	lb/day	ton/yr
Make:	Clarke		PM10	0.0075	0.30	7.20	1.31
Model:	8100		PM2.5	0.0075	0.30	7.20	1.31
S/N:	01-034838-01-01		NOx	0.0365	1.46	35.04	6.39
40.0	mmBtu/hr		CO	0.074	2.96	71.04	12.96
24.0	hr/day		SO_2	6.00E-04	0.02	0.58	0.11
8760	hr/yr		VOC	0.0054	0.22	5.18	0.95
			HAP	1.900E-03	0.08	1.82	0.33
BACT:		%O2	Lead	4.90E-07	1.96E-05	4.71E-04	8.59E-05
30	ppm NOx	3.0					
100	ppm CO	3.0					
Fuel:	Natural Gas						

Attachment 3

The following calculations used the manufacturer's guarantee of emissions and 500 hours of operation to find the SDE for the fire pump (EU: A06) to re-create the SDE for the facility.

						Emission Factor	Potential Emissions		
EU#	A06		**Horsepower:**	265		(lb/hp-hr)	lb/hr	lb/day	ton/yr
Make:	Clarke		**Hours/Day:**	24.0	**PM10**	1.54E-04	0.04	0.98	0.01
Model:			**Hours/Year**	500	**NOx**	1.48E-02	3.91	93.94	0.98
S/N:					**CO**	6.39E-04	0.17	4.07	0.04
					SO_2	1.21E-05	0.01	0.08	0.01
Manufacturer Guarantees					**VOC**	5.07E-04	0.13	3.22	0.03
PM10	0.07	g/hp-hr			**HAP**	2.71E-05	0.01	0.17	0.01
NOx	6.7	g/hp-hr							
CO	0.29	g/hp-hr							
SO_2		g/hp-hr							
VOC	0.23	g/hp-hr							
Engine Type:	Diesel				Diesel Fuel Sulfur Content is 15 ppm (0.0015%)				

Attachment 4

Tables A-2 and A-3 are for informational purposes only. The data was extrapolated from the previous TSD for the permit renewal issued January 5, 2016. These tables are being retained in the TSD specifically to show the HAP total.

Table A-2: EU PTE (Including Startup, Shutdown, testing, and Tuning (tpy)

EU	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP
A01/A02	72.20	72.20	77.90	95.15	5.20	21.65	3.56
A03/A04	72.20	72.20	77.90	95.15	5.20	21.65	3.56
A05	0.50	0.50	1.80	3.70	0.03	0.20	0.09
A06	0.01	0.01	0.98	0.04	0.01	0.03	0.01
Total	**144.91**	**144.91**	**158.58**	**194.04**	**10.44**	**43.53**	**7.22**

Table A-3: Emission rates (Excluding Startup, Shutdown, testing, and Tuning (lb/hr)

EU	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP
A01/A02	21.10	21.10	25.70	31.38	1.68	9.90	2.14
A03/A04	21.10	21.10	25.70	31.38	1.68	9.90	2.14
A05	0.40	0.40	1.44	2.96	0.03	0.16	0.07

Attachment 5

Applicable local air quality and federal requirements and compliance status

Table A-4: Walter M Higgins III Generating Station Applicable Requirements Summary and Compliance Status

Citation	Title	Applicability	Compliance Method/ Applicable Test Method	Compliance Status
AQR Section 0	Definitions	Applicable – The facility must use the definitions in this section when applying the AQR rules for the facility.	The facility will meet applicable compliance and test methods should new definitions apply.	The Facility complies with applicable requirements.
AQR Section 4	Control Officer	Applicable – The Control Officer or his representative may enter into the Facility property, with or without prior notice, at any reasonable time for purpose of establishing compliance with permit regulations	NV Energy will allow Control Officer to enter the Facility property as required.	The Facility complies with applicable requirements.

Citation	Title	Applicability	Compliance Method/ Applicable Test Method	Compliance Status
AQR Section 5	Interference with Control Officer	Applicable – NV Energy shall not hinder, obstruct, delay, resist, interfere with, or attempt to interfere with the Control Officer.	NV Energy will allow Control Officer to operate as needed.	The Facility complies with applicable requirements.
AQR Section 8	Persons Liable for Penalties – Punishment: Defense	Applicable – NV Energy and employees will be individually and collectively liable to any penalty or punishment from AQR.	NV Energy will adhere to the rules stipulated in applicable AQR regulations.	The Facility complies with applicable requirements.
AQR Section 9	Civil Penalties	Applicable – The facility as a whole is subject to rule. The rule stipulates penalties for AQR violations.	NV Energy will adhere to the rules stipulated in applicable AQR regulations.	The Facility complies with applicable requirements.
AQR Section 10	Compliance Schedule	Applicable – Any existing source not in compliance with emissions limitations will submit a compliance schedule as stipulated in the regulation.	NV Energy will adhere to emissions limitations and submit a compliance schedule if required.	The facility complies with applicable requirements.
AQR Section 12.0	Applicability, General Requirements and Transition	Applicable- The facility as a whole is subject to these requirements. Rule outlines source applicability, requirement for a source to obtain a permit, and transition for sources that received permit prior to rulemaking	The facility applied for and received ATC permits from DAQ prior to commercial operations. NV Energy will comply with the requirements for ATCs.	The facility complies with applicable requirements.
AQR Section 12.2	Permit Requirements For Major Sources in Attainment Areas (PSD)	Applicable – The facility is located in an attainment area for all regulated pollutants and is a major source of $PM_{2.5}$, PM_{10}, NO_x, CO.	The facility complies with the applicable regulations of the Section and with the requirements of 40 CFR §52.21. The Part 70 permit has relevant compliance, recordkeeping and reporting requirements. BACT analysis, air quality analysis, and visibility and additional impact analysis was performed for original ATC permits.	The facility complies with applicable requirements.
AQR Section 12.3	Permit Requirements For Major Sources in Non- Attainment Areas	Not Applicable – The facility is not located in a non- attainment area.	Not applicable	Not applicable
AQR Section 12.4	Authority to Construct Application And Permit Requirements For Part 70 Sources	Applicable – The facility as a whole is subject. Rule outlines the ATC requirements. The facility applied for ATC permits from DAQ.	The facility applied for and received ATC permits from DAQ as required. NV Energy will continue to comply with the requirements for ATCs.	The facility complies with applicable requirements.
AQR Section 12.5	Part 70 Operating Permit Requirements	Applicable – The facility as a whole is subject. Rule outlines the Title V Operating Permit requirements. This section is both federally and locally enforceable.	NV Energy complies with the requirements for Title V Permits outlined in this AQR Section and with the current Title V permit. This application is being submitted within 18 months and 6 months of the expiration date of the current permit.	The facility complies with applicable requirements.
AQR Section 12.9	Annual Emissions Inventory	Applicable-Every major stationary source shall complete and submit an annual emissions inventory.	Annual emissions inventory is submitted by March 31 each year.	The facility complies with applicable requirements.
AQR Section 12.10	Continuous Monitoring Requirements	Applicable-Control Officer may require any source of regulated air pollutants to monitor, sample, or perform other studies.	CEMS were installed and certified as required by DAQ and EPA.	The facility complies with applicable requirements.

Citation	Title	Applicability	Compliance Method/ Applicable Test Method	Compliance Status
AQR Section 12.13 [adopted 3/6/10]	Posting of Permit	Applicable-Every source shall post the permit issued to them in a clearly visible and accessible location.	The facility has posted its permit as required.	The facility complies with applicable requirements.
AQR Section 13	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	Applicable – The facility is subject to the regulations. Sec. 13 is locally enforceable; and the NESHAPS standards they reference are federally enforceable.	The facility complies with the applicable requirements of 40 CFR Part 61 for asbestos for all demolition and renovation projects. The facility complies with the applicable requirements of 40 CFR Part 63 subpart ZZZZ for emergency diesel engines and fire pumps.	The facility complies with applicable requirements.
AQR Section 14	New Source Performance Standards (NSPS)	Applicable – The facility is an affected facility under the regulations. Sec. 14 is locally enforceable; however, the NSPS standards they reference are federally enforceable.	Applicable monitoring, recordkeeping and reporting requirements.	The facility complies with applicable requirements.
AQR Section 18	Permit and Technical Service Fees	Applicable – The facility will be required to pay all required/applicable permit and technical service fees.	The facility is required to pay all required/applicable permit and technical service fees.	The facility complies with applicable requirements.
AQR Section 21	Acid Rain Permits	Applicable- The facility is an affected facility.	The facility currently has an Acid Rain permit in place. Applicable forms for the renewal of the acid rain permit are included with this renewal application.	The facility complies with applicable requirements.
AQR Section 22	Acid Rain Continuous Emission Monitoring	Applicable- The facility is an affected facility and is required to meet the requirements for the monitoring, recordkeeping, and reporting of SO2, NOx, and CO2 emissions.	CEMS were installed and certified as required by DAQ and EPA. NV Energy submitted all required CEMS plans, test protocols, and CEMS certifications to DAQ and EPA.	The facility complies with applicable requirements.
AQR Section 25	Affirmative Defense for Excess Emissions Due to Malfunctions, Startup, and Shutdown	Applicable- Any upset, breakdown, emergency condition, or malfunction which causes emissions of regulated pollutants in excess of permit limits must be reported to Control Officer.	Any upset, breakdown, or malfunction in which emissions exceed any permit limit shall be reported to the Control Officer per AQR Section 25 requirements included in the permit.	The facility complies with applicable requirements.
AQR Section 26	Emission of Visible Air Contaminants	Applicable- Opacity for the facility must not exceed an average of 20 percent for more than 6 consecutive minutes.	Compliance determined by quarterly visible emission checks and corrective actions to minimize emissions if visible emissions are observed.	The facility complies with applicable requirements.
AQR Section 28	Fuel Burning Equipment	Applicable-The PM emission rates are well below those established based on Section 28 requirements.	Compliance with permit emission limits.	The facility 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 causes a nuisance.	The facility air contaminant emissions are controlled by pollution control devices or good combustion practices and will not cause a nuisance. The facility also implements dust control measures at the site.	The facility complies with applicable requirements.
AQR Section 41	Fugitive Dust	Applicable- The facility shall take necessary actions to abate fugitive dust and prevent from becoming airborne.	The facility utilizes appropriate best practices to not allow airborne fugitive dust.	The facility complies with applicable requirements.
AQR Section 42	Open Burning	Applicable- Facility will obtain approved by Control Officer in advance of any open burning.	The facility will contact the DAQ and obtain approval in advance for applicable burning activities as identified in the rule.	The facility complies with applicable requirements.

Citation	Title	Applicability	Compliance Method/ 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 the period of an hour, if the odor causes a nuisance, and if the detection of odors is separated by at least 15 minutes.	The facility is a predominately natural gas-fired facility and is not expected to cause odors.	The facility complies with applicable requirements.
AQR Section 70	Emergency Procedures	Applicable- The facility submitted an emergency standby plan for reducing or eliminating air pollutant emissions.	The facility has previously submitted an emergency standby plan and received the Part 70 Operating Permit. An updated emergency standby plan is being submitted with this application.	The facility complies with applicable requirements.
AQR Section 80	Circumvention	Applicable - The facility as a whole is subject. Rule stipulates that NV Energy will not conceal emissions in any way at the facility.	NV Energy will disclose all emissions as required by state and federal regulations.	The facility complies with applicable requirements.
AQR Section 94	Permitting and Dust Control for Construction Activities	Applicable - The facility will need to apply for dust control permit in the event of construction activity greater than 1/4 acre or trench at least 100 ft in length (and aggregate greater than 1/4 acre).	The facility complied during initial construction and will continue to do so in the future as applicable.	The facility complies with applicable requirements.
NRS, Chapter 445B	Nevada Revised Statutes, Air Pollution	Applicable - The facility as a whole is subject to these requirements.	The facility will continue to comply with applicable regulations.	The facility complies with applicable requirements.
CAA, 42 USC §7401, et seq.	Clean Air Act	Applicable - The facility as a whole is subject to these requirements.	The facility will continue to comply with applicable regulations.	The facility complies with applicable requirements.
40 CFR Part 52.21	Prevention of Significant Deterioration (PSD)	Applicable – The facility is major source and is listed as one of the 28 source categories. Therefore, the facility is a major source for PSD.	The facility complies with the applicable regulations of the Section and with the requirements of AQR 12.2. BACT analysis, air quality analysis, and visibility and additional impact analysis was performed for original ATC permits.	The facility complies with applicable requirements.
40 CFR Part 52.1470	SIP Rules	Applicable – The facility is subject to the State Implementation Plan (SIP) for Nevada.	The facility will continue to comply with the federally enforceable monitoring, testing, recordkeeping, and reporting requirements stipulated in the SIP.	The facility complies with applicable requirements.
40 CFR Part 60, Subpart A	Standards of Performance for New Stationary Sources (NSPS) – General Provisions	Applicable – The facility as a whole and specific units are subject to federal NSPS regulations. The facility is an affected facility under NSPS subparts Da, Db, and GG. Therefore, Subpart A provisions are applicable. After the turbine upgrade project is completed, the turbines and associated duct burners will be subject to subpart KKKK rather than GG and Da.	The facility will continue to adhere to applicable monitoring, testing, recordkeeping, and reporting requirements.	The facility complies with applicable requirements.
40 CFR Part 60, Subpart Da	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	Applicable - The duct burners (EUs: A02 and A04) are subject to subpart Da until the turbine upgrade project is completed.	The facility will continue to adhere to applicable monitoring, testing, recordkeeping, and reporting requirements.	The facility complies with applicable requirements.

Citation	Title	Applicability	Compliance Method/ Applicable Test Method	Compliance Status
40 CFR Part 60, Subpart Dc	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	Applicable - The auxiliary boiler (EU:A05) is subject to the federal NSPS regulation, subpart Dc.	The facility will continue to adhere to applicable monitoring, testing, recordkeeping, and reporting requirements.	The facility complies with applicable requirements.
40 CFR Part 60, Subpart GG	Standards of Performance for New Stationary Sources (NSPS) – Stationary Gas Turbines	Applicable – The Turbine Units (EUs: A01 and A03) are subject to subpart GG until the turbine upgrade project is complete.	The facility will continue to adhere to applicable monitoring, testing, recordkeeping, and reporting requirements.	The facility complies with applicable requirements.
40 CFR Part 60, Subpart KKKK (after turbine upgrades)	New Source Performance Standards – Standards of Performance for Stationary Combustion Turbines	Applicable – Following turbine upgrade project, the stationary combustion turbines and associated duct burners (EUs: A01 through A04) will become subject to subpart KKKK.	The turbines will meet applicable NOx and SO2 emission standards. The compliance is demonstrated using CEMS, EPA approved test methods, and combusting low sulfur pipeline quality natural gas.	The facility will comply with applicable requirements.
40 CFR Part 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Applicable – The diesel emergency fire pump engine (EU: A06) is subject to Subpart ZZZZ.	The facility will continue to comply with the applicable emissions limitations, operating and maintenance requirements, continuous compliance requirements, recordkeeping, reporting, and general provisions.	The facility complies with applicable requirements.
40 CFR 64	Compliance Assurance Monitoring	Not Applicable/exempt as detailed in the attached CAM Analysis.	Not applicable	Not applicable
40 CFR Part 68	Chemical Accident Prevention Provisions	Applicable - The facility stores 29% aqueous ammonia in an amount greater than the applicable threshold.	The facility complies with all applicable requirements of the Chemical Accident Prevention Provisions.	The facility complies with applicable requirements.
40 CFR Part 70	Federally Mandated Operating Permits	Applicable – The regulations in this part provide for the establishment of comprehensive State air quality permitting systems consistent with the requirements of title V of the Clean Air Act (Act) (42 U.S.C. 7401, et seq.).	The facility complies with this regulation by maintaining a comprehensive, updated Title V Federal Operating Permit.	The facility complies with applicable requirements.
40 CFR Part 72	Acid Rain Permits Regulation	Applicable – The facility is an affected source. The turbines are applicable units. The regulations in this part identify affected sources and establish regulations for the Acid Rain Program, pursuant to title IV of the Clean Air Act, 42 U.S.C. 7401, et seq.	NV Energy complies with all the applicable requirements of the Acid Rain Permit Application located in Attachment 2 of the Title V Permit. The facility has included a renewal application for the acid rain permit with this Title V renewal application.	The facility complies with applicable requirements.
40 CFR Part 73	Acid Rain Sulfur Dioxide Allowance System	Applicable – The facility is an affected source. The regulations in this part outline the stipulations for the allocation, exchange, etc. of acid rain SO2 allowances.	NV Energy complies with all the applicable requirements of the Acid Rain SO2 Allowance System.	The facility complies with applicable requirements.

Citation	Title	Applicability	Compliance Method/ Applicable Test Method	Compliance Status
40 CFR Part 75	Acid Rain Continuous Emission Monitoring	Applicable – The facility is an affected facility and is required to meet the requirements for the monitoring, recordkeeping and reporting of flow rate, SO2, NOx, and CO2 emissions.	The facility will continue to adhere to the CEMS requirements stipulated in the rule including monitoring, recordkeeping, and reporting.	The facility complies with applicable requirements.
40 CFR Part 82	Protection of Stratospheric Ozone	Applicable – The facility as a whole is subject to the applicable rules regarding protection of the stratospheric ozone.	NV Energy complies with this regulation by keeping applicable records onsite.	The facility complies with applicable requirements.