TECHNICAL SUPPORT DOCUMENT

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

SUBMITTED BY

SWG Nevada Holdings, LLC

for

SWG NEVADA HOLDINGS, LLC

Part 70 Operating Permit Number: 329
SIC Code 4931: Electric Cogeneration

Clark County
Department of Air Quality
Permitting Section

July 2013

EXECUTIVE SUMMARY

SWG Nevada Holdings, LLC (SWG NV) is a synthetic minor source for PM_{10} and NO_X, and a minor source for CO, SO_x, VOC, and HAP. The source is identified as a major source for greenhouse gases (GHG). The source is under SIC 4931: Electric Cogeneration (NAICS 221112: Fossil Fuel Electric Power Generation) and is located on 1701 East Alexander Road in North Las Vegas, Nevada, in the Las Vegas Valley airshed, hydrographic basin 212 (T20S, R61E, Section 11). Hydrographic basin 212 is nonattainment for PM_{10}, and attainment for all other regulated air pollutants.

SWG NV operates five Turbine Generator Packages with GE LM-6000 stationary combustion turbines, one with a heat recovery steam generator (HRSG) and four with once-through steam generators (OTSG). There is no supplemental firing (no duct burners). There are also two auxiliary boilers. There are no emissions associated with the HRSG and OTSG units or the steam turbine itself. In addition, SWG NV operates two cooling towers, a fire pump, and an emergency generator. The potential emissions for the source are shown in Table 1:

Table 1: Maximum Source PTE (tons per year)[1]

Pollutants	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP	GHG/CO_2e
PTE Totals	**55.23**	**46.02**	**96.28**	**51.81**	**5.52**	**35.72**	**4.93**	**1,231,027**
Major Source Thresholds	**70**	**250**	**100**	**100**	**100**	**100**	**25/10[2]**	**250/100,000**

[1] Not a source-wide emission limit; values are used for determining the major source status.
[2] 25 tons for combination of all HAPs (no single HAP exceeds 10 tons).

The Clark County Department of Air Quality (DAQ) has delegated authority to implement the requirements of the Part 70 Operating Permit (OP) program. SWG NV emits particulate matter (PM_{10}), carbon monoxide (CO), oxides of nitrogen (NO_x), oxides of sulfur (SO_x), volatile organic compounds (VOCs), and hazardous air pollutants (HAP).

On February 11, 2013, SWG NV submitted an application for the minor revision of the Part 70 OP. The proposed minor revision will set a maximum water flow rate for one of the cooling towers (EU: A07) at 78,248 gpm, raise the total dissolved solids (TDS) limit to 6,000 ppm for both cooling towers (EUs: A02 and A07), and change the PTE of the cooling towers to 4.66 ton per year (EU: A02) and to 4.83 tons per year (EU: A07).

This Technical Support Document (TSD) accompanies the proposed Part 70 Operating Permit for SWG Nevada Holdings, LLC.

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I. SOURCE INFORMATION

A. General

Permittee	SWG Nevada Holdings, LLC
Mailing Address	1701 East Alexander Road, North Las Vegas, Nevada 89030
Contacts	Jeffery Pangle, Plant Manager
Phone Number	(702) 642-0331
Fax Number	(702) 642-8738
Source Location	1701 East Alexander Road, North Las Vegas, NV 89030
Hydrographic Area	212
Township, Range, Section	T20S, R61E, Section 11
SIC Code	4931: Electric Services (fossil fuel power generation)
NAICS Code	221112: Fossil Fuel Electric Power Generation

B. Description of Process

SWG NV operates five General Electric (GE) Turbine Generator Packages, one with a heat recovery steam generators (HRSG) and four with once-through steam generators (OTSG) and no supplemental firing (no duct burners). There are also two auxiliary boilers. There are no emissions associated with the HRSG and OTSG units or the steam turbine itself. In addition, the SWG NV operates two cooling towers, a fire pump, and a diesel fired emergency generator.

The GEA Thermo cooling tower (EU: A02) is a two-cell counter-flow, mechanical draft unit. Three pumps, each rated at 7,100 gallons per minute, pump approximately 14,200 gallons per minute through the cells enabling the unit to handle a heat load of 135 MMBtu/hr. Total dissolved solids will be limited to 6,000 ppm with operation allowed at 8,760 hours annually. The tower is 60 feet long, 34 feet wide and 25 feet tall. The high efficiency mist eliminators limit drift losses to 0.005 percent.

The GEA Thermo cooling tower (EU: A07) is a ten-cell mechanical draft tower with a circulation rate of 5,861 gallons per minute per cell or 58,610 gallons per minute total. Total dissolved solids will be limited to 6,000 ppm with operation allowed at 8,760 hours annually. The tower is fitted with high efficiency mist eliminators rated at 0.001 percent.

C. Permitting Action

On February 11, 2013, the source submitted an application for a minor revision of the Part 70 OP. The proposed minor revision is not the result of a physical change to the cooling towers (EUs: A02 and A07), any change to existing control equipment, or methods to demonstrate compliance. The application is intended to provide more accurate information on the design parameters of the emission units and to recalculate emission limits accordingly. The application for a minor permit revision includes:

- the increase in water flow rates from 58,610 gpm to 78,248 gpm for EU: A07. This limit represents the total flow rate of one main and two auxiliary pumps operating on each of the 5 cells within the 10-cell cooling tower.
- the increase of the TDS limit to a more common industrial process water limit of 6,000 ppm for both EUs: A02 and A07 (previously 3,000 ppm).

- the decrease of the permitted PTE PM_{10} for EU: A02 from 4.66 tpy to 4.38 tpy.
- the decrease of the permitted PTE PM_{10} for EU: A07 from 12.61 tpy to 4.83 tpy.

On May 2, 2013, the source notified DAQ that two (2) Volcano auxiliary boilers (EUs: B01 and B02) have been rendered inoperative. The fuel source has been physically disconnected by removing a section of natural gas supply piping and sealing the end of pipe. This action rendered the units incapable of operation. However, the source requested no modification to the Part 70 OP and both auxiliary boilers (EUs: B01 and B02) remain in the permit without any changes. (per telephone conversation with Jon Caccamise on May 7. 2013).

D. Operating Scenario

SWG NV is a major source for GHG, synthetic minor for PM_{10} and NOx and minor for CO, SO_x, VOC and HAP. The Permittee has taken voluntary operational limitations on various emission units to reduce PM_{10} and NOx emissions and therefore the source is synthetic minor for PM_{10} and NOx emissions.

BACT/LAER analyses for all emission units have already been completed and are unaffected by this permitting action. The summary of control technologies is presented in Table I-D-2.

Table I-D-1: Affected Cooling Towers

EU	Description	Control Technology
A02	GEA 2-cell mechanical draft cooling tower; 14,200 gpm	6,000 ppm TDS, 0.005% drift loss
A07	GEA 10-cell mechanical draft cooling tower, 78,248 gpm	6,000 ppm TDS, 0.001% drift loss

II. EMISSIONS INFORMATION

A. Source-wide Potential to Emit

1. SWG NV is a synthetic minor source for PM_{10} and NO_x and a minor source for CO, SO_X, VOC, and HAP.

Table II-A-1: Source PTE (tons per year)[1]

Pollutant	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
Source Total	**55.23**	**46.02**	**96.28**	**51.81**	**5.52**	**35.72**	**4.93**
Major Source Threshold	**70**	**250**	**100**	**100**	**100**	**100**	**25/10[2]**

[1] Not a source-wide emission limit; values are used for determining the major source status.
[2] 25 tons for combination of all HAPs (no single HAP exceeds 10 tons).

2. SWG NV is a major source for GHG. The total estimated PTE of CO_2e is 1,116,780.38 Metric Tons/Year or 1,231,026.95 Tons/Year.

B. Emission Units and PTE

Table II-B-1: Affected Cooling Towers

EU	Description	Rating	Make	Model No.	Serial No.
A02	Two-cell mechanical draft cooling tower, 6,000 ppm TDS, 0.005% drift loss	14,200 gpm total	GEA	TD-363-2-2422CF	N/A

EU	Description	Rating	Make	Model No.	Serial No.
A07	10-cell mechanical draft cooling tower, 6,000 ppm TDS, 0.001% drift loss	78,248 gpm total	GEA	363028-10I-22-WCF	N/A

Table II-B-4: Cooling Towers Revised PTE (tons per year)

EU	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
A02	4.38	0.00	0.00	0.00	0.00	0.00	0.00
A07	4.83	0.00	0.00	0.00	0.00	0.00	0.00
Total	**9.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Table II-B-5: Cooling Towers Revised PTE (lbs/hr)

EU	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
A02	1.00	0.00	0.00	0.00	0.00	0.00	0.00
A07	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Total	**2.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

III. REGULATORY REVIEW

A. Local Regulatory Requirements

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

1. Nevada Revised Statutes (NRS), Chapter 445; Sections 401 through 601;
2. Portions of the AQR included in the State Implementation Plan (SIP) for Clark County, Nevada. SIP requirements are federally enforceable. All requirements from Authority to Construct permits by DAQ are federally enforceable because these permits were issued pursuant to SIP-included sections of the AQR; and
3. Portions of the AQR not included in the SIP. These locally applicable requirements are locally enforceable only.

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

Local regulations contain sections that are federally enforceable and sections that are locally enforceable only. Locally enforceable only rules have not been approved by EPA for inclusion into the State Implementation Plan (SIP). Requirements and conditions that appear in the Part 70 OP which are related only to non-SIP rules are notated as locally enforceable only. These regulations may be accessed on the Internet at:
http://www.clarkcountynv.gov/Depts/daqem/Pages/CurrentRulesandRegulations.aspx

Table III-A-1: Source PTE[1]

Pollutant	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
PTE Totals	**55.23**	**46.02**	**96.28**	**51.81**	**5.52**	**35.72**	**4.93**
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IV. COMPLIANCE

A. Compliance Certification

Requirements for compliance certification:

a. Regardless of the date of issuance of this Part 70 OP, the schedule for the submittal of reports to the Control Officer shall be as follows:

Table IV-A-1: Reporting Schedule

Required Report	Applicable Period	Due Date1
Semi-annual Report for 1st Six-Month Period	January, February, March, April, May, June	July 30 each year
Semi-annual Report for 2nd Six-Month Period, Any additional annual records required.	July, August, September, October, November, December	January 30 each year
Annual Compliance Certification Report	Calendar Year	January 30 each year
Annual Emission Inventory Report	Calendar Year	March 31 each year
Notification of Deviations with Excess Emissions	As Required	Within 24 hours of the Permittee learns of the event
Report of Deviations with Excess Emissions	As Required	Within 72 hours of the notification
Deviation Report	As Required	Along with semi-annual reports
Performance Testing	As Required	Within 60 days from the end of the test.

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

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

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

B. Monitoring for Compliance

Table IV-B-1: Compliance Monitoring for Cooling Towers

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A02, A07	Cooling towers	PM_{10},	AQR 12.5 AQR 26	Opacity shall not exceed 20%, except for 6 minutes out of every 60 minutes period.	Additional monitoring per the request of the Control Officer