

# Statement of Basis for the Air Operating Permit—Final

## **Northwest Pipeline LLC Mount Vernon Compressor Station**

Mount Vernon, Washington

**August 16, 2019**



*Serving Island, Skagit & Whatcom Counties*

## PERMIT INFORMATION

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**NAICS: 486210**

**NWCAA ID: 1440**

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## SECTION 1 INTRODUCTION

The Northwest Pipeline LLC, Mount Vernon Compressor Station (also identified herein as the permittee, “NWP-MVCS”, “Mount Vernon Compressor Station”, or “the facility”) is required to have an Air Operating Permit because the facility has the potential to emit greater than 100 tons of carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and more than 10 tons per year of formaldehyde, a Hazardous Air Pollutant (HAP) (see table 1-1 below). The facility also has the potential to emit more than 100,000 tons of CO<sub>2e</sub> and more than 100 tons of greenhouse gases on a mass basis per year. These air pollutants are defined as regulated air pollutants in the Washington Administrative Code (WAC) 173-401. These and other emissions are all produced by the burning of natural gas in the fuel-burning units at the facility.

**Table 1-1 Title V Applicability**

Pollutant	Facility Annual PTE (TPY) <sup>1</sup>	Title V Threshold (TPY)	Title V (Yes/No)
NO <sub>x</sub>	390	100	Yes
CO	460	100	Yes
VOC	25	100	No
SO <sub>2</sub>	1	100	No
PM <sub>10</sub> & PM <sub>2.5</sub>	12	100	No
Formaldehyde (HAP)	15	10	Yes
Total HAPs	23	25	No

<sup>1</sup> Facility-wide annual PTE provided in AOP renewal application submitted by NWP-MVCS.

The purpose of this Statement of Basis is to set forth the legal and factual evidence for the conditions in the NWP-MVCS AOP #002R3 and to provide background information for permit review by interested parties. This Statement of Basis is not a legally enforceable document in accordance with WAC 173-401-700(8).

### 1.1 AOP History

The Northwest Clean Air Agency (NWCAA) issued the original Air Operating Permit (AOP 002) for the facility on December 3, 1998. The original permit was modified in May 2000 to include an additional surrogate monitoring parameter in Section 5, and again in August 2001 to update the name of the Corporate Responsible Official (RO). The original permit expired on December 3, 2003.

A new permit (AOP 002R1) was issued January 1, 2007. AOP 002R1 was modified to change the name of the company (Northwest Pipeline Corporation became Northwest Pipeline GP), and the name of the responsible official (Barry Orgill replaced Larry Hjalmarson as RO). In addition, the AOP was updated to the current NWCAA AOP format, and issued as AOP 002R1M1 on April 30, 2009. AOP 002R1M1 expired on January 1, 2012.

The facility submitted a renewal application on May 23, 2011, which was deemed complete on June 14, 2011. During this renewal, changes to the AOP were made to incorporate changes

made to PSD-01-09 (Amendment 6) and the corresponding changes incorporated in OAC 794e. AOP 002R2 was issued on July 12, 2012. AOP 002R2 was modified (becoming 002R2M1) and issued on June 5, 2014 to reflect a company name change (Northwest Pipeline GP to Northwest Pipeline LLC).

AOP 002R2M1 expired on July 12, 2017. NWP-MVCS submitted a renewal application on July 12, 2016, which was deemed timely and complete August 9, 2016. Because the facility provided a timely and complete application, facility operation can continued under the permit continuation clause in WAC 173-401-620(j) until NWCAA issues a permit renewal.

## **1.2 Permit Changes in AOP #002R3**

Throughout the AOP, formatting and language was updated to current NWCAA standards. Changes specific to each permit section are listed below.

### **1.2.1 General Informaiton and Attest**

EPA's facility database changed resulting in the end of EPA AFS, which was replaced by EPA ICIS. NWP-SCS's EPA AFS ID was removed and replaced by the facility's EPA ICIS ID. The NAICS code was also updated.

Both the responsible official and corporate inspection contacts were updated to reflect personnel and responsibility changes at NWP-SCS.

Dates were updated to reflect the new application received, issuance, expiration, and renewal application dates.

### **1.2.2 Section 2 Standard Terms and Conditions**

AOP Section 2 (Standard Terms and Conditions) was updated with the latest NWCAA standard version of applicable requirements, containing any new or modified regulations and updated reference dates.

### **1.2.3 Section 3 Standard Terms and Conditions for NSPS and NESHAP**

AOP Section 3 (Standard Terms and Conditions for NSPS and NESHAP) was updated with the latest versions of applicable requirements, containing any new or modified regulations and updated reference dates.

40 CFR Part 60 Subpart GG – Standards for Performance for Stationary Gas Turbines is the only NSPS that applies at this facility.

Terms and conditions related specifically to 40 CFR Part 63 Subpart DDDDD – National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, And Institutional Boilers and Process Heaters (aka the Boiler MACT) were added as they apply to both process heaters at the facility. The units to which the Boiler MACT apply are the B-Plant Sellers C-125-W water heater/boiler, and the C-Plant Sellers C-80-W water heater/boiler.

SSM requirements of 40 CFR Part 63 Subpart A do not apply under this NESHAP.

Source testing general requirements (notification and conduct) were removed under the Part 63 subsection, as there are no applicable requirements for source testing of the units at this facility under these regulations.

#### 1.2.4 Section 4 Generally Applicable Requirements

Changes made to the Generally Applicable Requirements sections in AOP #002R3 are summarized in the following list:

- NWCAA 410, which states that it is unlawful to emit sulfur oxides such that ambient standards are exceeded outside plant boundaries, was removed from Section 4 in AOP #002R2. NWCAA 410 was not included in AOP #002R3 either because, while the regulation applies, NWP-MVCS is only able to burn pipeline grade natural gas. Sulfur in natural gas is limited in NWCAA 520.14. In addition, without requiring an ambient monitoring station, NWCAA 410 is not enforceable. Language and citation dates were updated. Citations were added or updated where needed. The order of conditions is updated reflect current practice.
- Changes to parts of WAC 173-400 that are referenced in Section 4 of the AOP.
- Terms 4.15 - 4.20 addressing visible emissions and particulate matter were updated with new MR&R language that clarifies expectations and recordkeeping. Descriptions were updated to reflect rule updates.
  - The previous AOP's MR&R simply stated to make observations of visible emissions (VE) and if any VE was seen to take corrective action and notify NWCAA. WAC 173-401-615(1)(b) requires, when an applicable standard does not require periodic testing or monitoring, that periodic monitoring be added to assure compliance.
  - To meet the requirements of WAC 173-401-615(1)(b), the MR&R was updated to require quarterly visible observations and appropriate record keeping. If any emissions are visible then one of three options may be taken by the facility to bring VE back to zero, or verify compliance with VE limits by a certified observer.
  - As all units at the facility are fired using pipeline grade natural gas, which does not normally create VE, quarterly observations are deemed appropriate. However, if, at any time, VE is observed, even if not part of a quarterly observation, NWP-SCS must still take action as described in the MR&R.
- Terms 4.21 – 4.24 addressing SO<sub>2</sub> were updated with current rule language and removing references to rule parts that cannot apply (e.g. sulfur content limits for fuel types not used by the facility).

#### 1.2.5 Section 5 Specifically Applicable Requirements

The following changes in Section 5 of the Northwest Pipeline LLC AOP #002R3 were made:

- Citations were updated and made consistent across all terms. Language updated and edited where needed. The Sellers process heater naming convention was updated to indicate their location at the facility to remove confusion. Naming convention of the emergency generator was also made consistent to clarify.
- Conditions applicable to the three Sellers process heaters from 40 CFR Part 63 Subpart DDDDD were added to Section 5.
- Condition 5.3 in AOP 002R2M1 was listed under “entire” facility, when condition 9 of PSD 93-01 Amendment 1 applied only to Units 1-3. Unit 3 was later replaced with a new model turbine and incorporated into PSD-01-09 Amendment 6. Therefore, Condition 9 of PSD 93-01 applies only to units 1-2, and moved to condition 5.4 of AOP 002R3 to accurately reflect to which units this term applies.

## **SECTION 2 FACILITY DESCRIPTION**

### **2.1 Facility History**

The Northwest Pipeline LLC operates a natural gas pipeline system from the Washington-Canada border near Sumas, Washington to the San Juan Gas Fields in New Mexico. The gas pipeline system serves commercial, industrial, utility, and cogeneration customers in Washington, Oregon, Nevada, and California. The NWP-MVCS is located about 5 miles east of Mount Vernon, Washington, and assists in the transport of natural gas from the Sumas compressor station to the Snohomish compressor station. The Sumas and Mount Vernon stations are two of many natural gas compressor stations located approximately every 50 miles along the pipeline.

The Northwest Pipeline LLC - Mount Vernon Compressor Station was constructed in 1966, and initially consisted primarily of one Clark TCV-12 4000 horsepower (HP) reciprocating engine driving a reciprocating compressor. A second, identical engine/compressor set was added to the station in 1968. A 5.25 MMBtu/hour natural gas boiler to provide building heat and pre-heated water for compressor engines was permitted in 1991. A 270-kilowatt standby emergency generator and a 2.5 MMBtu/hr natural gas boiler were permitted in 1992. In 1993, the facility added one Solar Centaur T-4500 gas turbine and compressor set. Installation was completed June 22, 1993. A Solar SoLoNO<sub>x</sub> dry low-NO<sub>x</sub> combustor was installed on the Solar Centaur T-4500 gas turbine and placed in operation on October 21, 1994. A second mobile Solar Centaur gas turbine, model 40-T4700S, was permitted to be located at the site in May 1998.

In early 2003, the facility underwent significant modifications to increase capacity. A larger Solar Mars 90 gas turbine/compressor set was added and the existing Solar Centaur T-4500 turbine was replaced with a larger Solar Centaur 50 turbine. The existing 270 kW standby emergency generator and 2.5 MMBtu/hr natural gas boiler were replaced with larger, 450 kW and 3.35 MMBtu/hr, respectively, units.

Figure 2-1 shows the map location of the facility within Skagit County, Washington.

Figure 2-2 shows an aerial photograph of the facility.

Figure 2-3 shows the plot plan of the facility.



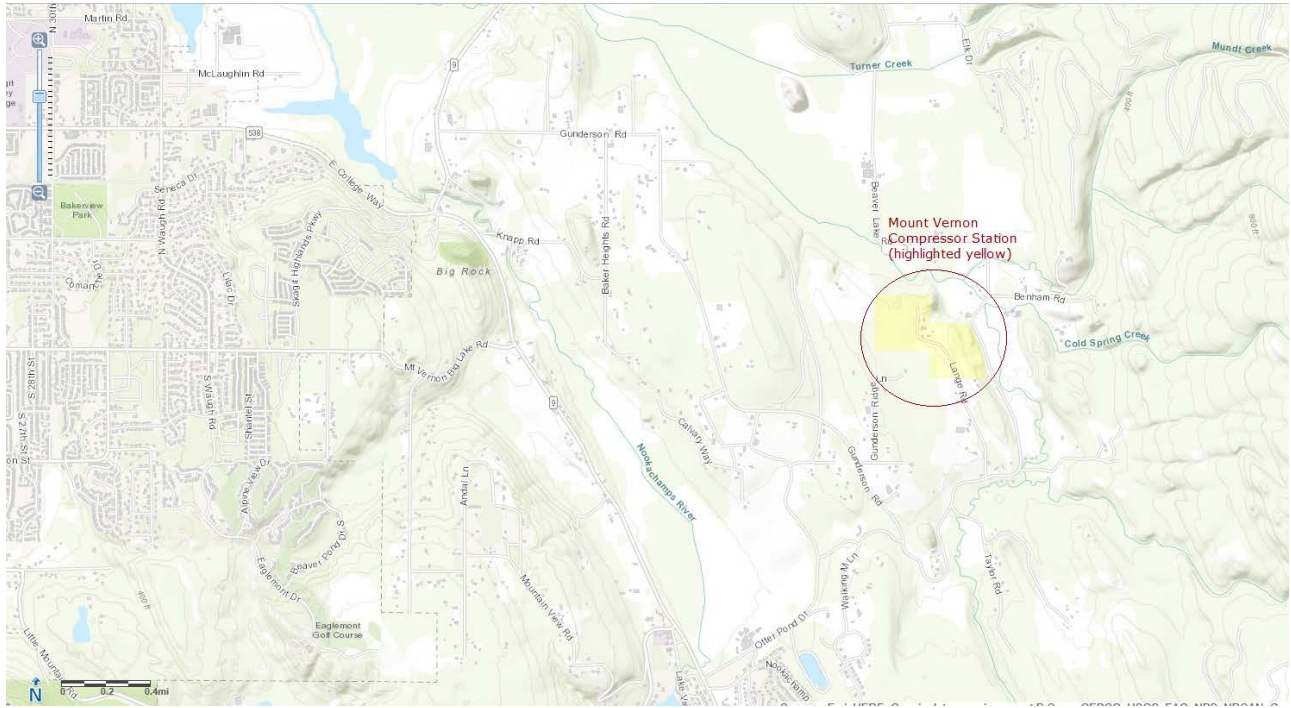


Figure 2-1: Location Map



Figure 2-2: Aerial photograph of NWP-MVCS from Google Earth (July 2018)

### MOUNT VERNON FACILITY PLOT PLAN

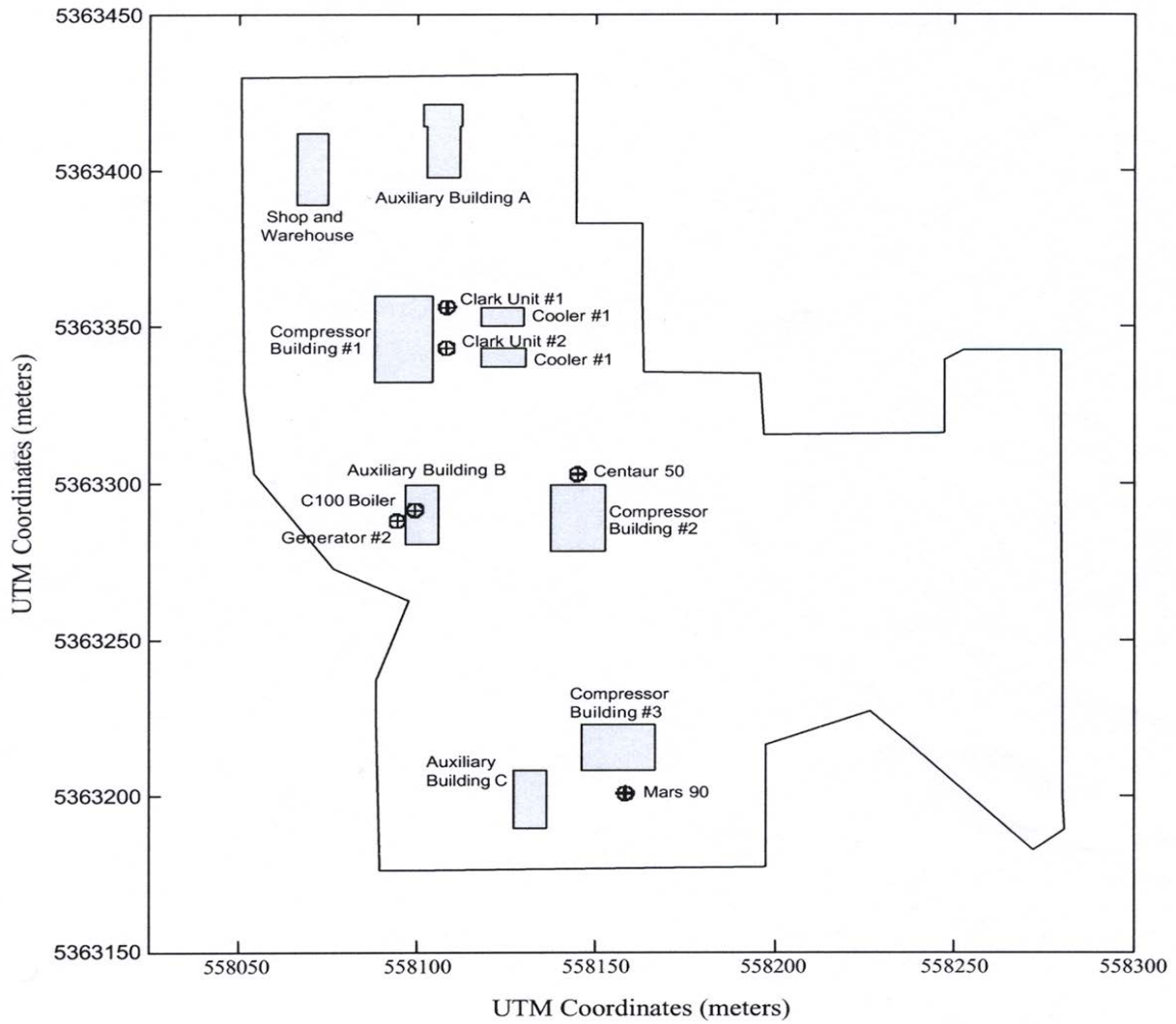


Figure 2-3: Site Plot Plan

## 2.2 Emission Units and Control

Primary emission sources at the facility are listed in Table 2-1 and include the two Clark TCV-12 natural gas fired reciprocating engines (Unit 1 and 2), the Solar Centaur 50 turbine (Unit 3) and the Solar Mars 90 turbine (Unit 4). Though the mobile Solar Centaur 40-T4700S turbine is permitted to operate at the site on an as-needed basis, it is very rarely on site and is typically not a significant source of emissions from the facility. Minor emission sources include auxiliary equipment - the Sellers C80 heater/boiler, the C125-W heater/boiler and the 450kW standby generator. In addition, fugitive emissions originate from the gas pipeline and the fuel system servicing the turbines and reciprocating engines. All combustion sources at the facility are fueled with natural gas from the pipeline.

**Table 2-1 Emission Unit Identification**

Unit/ Location	Source and Description	Control Equipment	Fuel Type	Maximum Fuel Rate, MMBTU/hr	Install Date
1/ A-Plant	Clark TCV-12 4000 hp Reciprocating Engine, spark-ignited, two-stroke, lean burn***	None	Natural Gas	32.50	1966
2/ A-Plant	Clark TCV-12 4000 hp Reciprocating Engine, spark-ignited, two-stroke, lean burn***	None	Natural Gas	32.50	1966
3/ B-Plant	Solar Centaur T-6100S (50S) Gas Turbine	Dry low-NO <sub>x</sub> control (SoLoNO <sub>x</sub> )	Natural Gas	54.93	2003
4/ C-Plant	Solar Mars T-13002S (90S) Gas Turbine	Dry low-NO <sub>x</sub> control (SoLoNO <sub>x</sub> )	Natural Gas	113.22 100.03 @ 59 °F	2003
5/ Mobile	Solar Centaur 40-T4700S Gas Turbine*	Dry low-NO <sub>x</sub> control (SoLoNO <sub>x</sub> )	Natural Gas	39.78	2003*
6/ B-Plant	Sellers C-125-W water heater/boiler	None	Natural Gas	5.25	1991
7/ C-Plant	Sellers C-80-W water heater/boiler	None**	Natural Gas	3.35	2003
8/ B-Plant	Caterpillar-G3412, 450 kW emergency electrical generator***	Air-to-Fuel ratio controller & three-way catalyst	Natural Gas	1.6	2003

\* This unit is physically located at the Mount Vernon Compressor Station only on an as-needed basis.

\*\*In the previous AOP, the 3.35 MMBtu/hr Sellers C-80-W water heater/boiler was listed as having non-selective catalytic reduction. This was an error and, upon verification with the facility, corrected in this AOP.

\*\*\*This unit is technically an affected source under 40 CFR 63 Subpart ZZZZ. However, per 40 CFR 63.6590(b)(3), it is not required to meet any of the requirements of Subpart ZZZZ or Subpart A, including initial notification requirements

## 2.3 Emissions Inventory

NWP-MVCS qualifies as a major source subject to the requirements of the Clean Air Act (CAA) Title V program because it has the potential to emit more than 100 tons of carbon monoxide (CO) and nitrogen oxides (NO<sub>x</sub>), and greater than 10 tons per year of formaldehyde, a HAP.

Table 2-2 shows the facility-wide emissions of criteria pollutants reported by the facility as identified in the annual emissions inventory submitted to the NWCAA, in tons per year. Table 2-3 shows emissions history of HAPs, which are also Washington State air toxics, in pounds per year.

**Table 2-2 NWP-MVCS Annual Emissions of Criteria Pollutants, Tons per Year**

Year	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	SO <sub>2</sub>
2011	9	9	1	0	0
2012	56	93	5	2	0
2013	46	59	4	2	0
2014	87	116	9	4	1
2015	99	119	8	4	1
2016	158	127	8	4	1
2017	153	134	7	4	1

**Table 2-3 NWP-MVCS Annual Emissions of HAPs, Pounds per Year**

Toxic Air Pollutant	2011	2012	2013	2014	2015	2016	2017
ACETALDEHYDE		627	533	1,200	1,238	1,065	988
ACROLEIN		629	535	1,200	1,239	1,032	1,013
BENZENE		157	133	400	309	269	248
FORMALDEHYDE	1,000	4,678	4,036	8,800	9,021	8,019	7,821
TOLUENE		78	66	400	254	262	246
XYLENE						101	94

## 2.4 Monitoring History

In 1994, the facility applied for and received permission from the Washington State Department of Ecology (WDOE) and the Northwest Clean Air Agency (NWCAA) to develop and install a predictive emissions monitoring system (PEMS) for the Solar Centaur 40 gas turbine. The PEMS was completed and tested with Relative Accuracy Test Audits (RATAs) to meet the requirements of Title 40 Code of Federal Regulations Appendices B and F.

Beginning in July 1996 the permittee requested approval to replace the PEMS at the Mount Vernon Compressor Station with periodic testing and calculated emissions, based on the stack test data, hours of operation, and fuel usage. This decision was based on the RATA results and additional testing done by NWP-MVCS. Approval was given by the Washington Department of Ecology and the NWCAA, with the condition that the gas turbine would be tested once every twelve months for two years. Furthermore, the parties agreed that NWP-

MVCS would conduct stack tests on one of the two identical reciprocating engines every five years.

As part of the original AOP development process, it became evident that the periodic stack testing agreement between NWP-MVCS, NWCAA, and WDOE was not acceptable to EPA Region 10 as periodic monitoring requirements under WAC 173-401-605(1) and 173-401-615(1) and (2). In response, the permittee developed and submitted a monitoring plan describing surrogate parameter monitoring and operation and maintenance procedures. The plan was designed to comply with both PSD permit conditions and the periodic monitoring requirements of the operating permit program. Surrogate parametric emissions monitoring (PEMS<sup>1</sup>) proposed in the Monitoring Plan replaced the proposed predictive system, and were incorporated into the AOP.

In March 1999, an engine malfunction at Unit #8 at the Sumas Compressor Station was detected during a compliance source test. Because of a failed clamp ring within the turbine, NO<sub>x</sub> emissions were abnormally high. While the malfunction would have eventually caused an engine shutdown, it was evident to both the NWCAA and the facility managers that the surrogate monitoring parameters were not adequate to detect this type of mechanical failure. Because WAC 173-401-600 requires that each permit contain terms and conditions that assure compliance with all applicable requirements at the time of permit issuance, and as the surrogate monitoring parameters were insufficient to assure compliance, the NWCAA requested a submittal of additional monitoring parameters for both compressor stations. The facility managers submitted a letter on October 25, 1999 suggesting additional monitoring parameters. A letter to the NWCAA, dated December 11, 1999, further clarified the parameters.

With the shutdown of the Solar Centaur 40 turbine and the contemplated addition of two new turbines (Solar Centaur 50 and Solar Mars 90) at the Mount Vernon Station in 2003, NWP-MVCS again proposed a PEMS system to continuously monitor NO<sub>x</sub> emissions from the two turbines. Required operating conditions for the PEMS were written into PSP Permit 01-09 and OAC 794.

In November 2003, Unit #8 at the Sumas Compressor Station again failed to demonstrate compliance during a compliance test due to a malfunction. As in 1999, the PEMS system did not indicate a compliance problem and failed to serve its primary purpose. WDOE, NWCAA, and NWP-MVCS subsequently agreed that the PEMS was ineffective and would be replaced by a monitoring procedure using a portable emission analyzer measuring emissions on a prescribed schedule as detailed in PSD-01-09 Second Amendment and NWCAA OAC 793b. For the three Solar Mars turbines, this schedule requires monitoring at least every 336 hours of operation.

In 2006, NWP-MVCS requested that the testing frequency for the portable analyzers be reduced from once every 336 hours of operation (approximately every 2 weeks) to every 672 hours of operation (approximately every month). Three years of testing with the portable analyzers has shown them to be effective. Accordingly, the NWCAA issued OAC 794d and WDOE issued PSD-01-09 Amendment 5, which both include an option for reduced testing.

In 2011, NWP-MVCS requested a sixth amendment to PSD-01-09, to clarify and simplify NO<sub>x</sub> monitoring and reporting. Specifically WDOE determined it no longer necessary to report NO<sub>x</sub> mass flow during the periodic portable monitor testing. However, if noncompliance is indicated, NWP-MVCS must shutdown the turbine as soon as reasonably possible and repair, rather than have further emissions testing. OAC 794d was revised

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<sup>1</sup> Note that the acronym "PEMS" was used for both the predictive emissions monitoring system and later parametric emissions monitoring system.

(becoming OAC 749e) to reflect changes in the PSD that were mirrored for CO monitoring and to remove a one-time initial stack test condition that was completed.

**Table 2-4 NWP-MVCS Turbine Stack Test Frequency\***

POLLUTANT	TEST METHOD	FREQUENCY
Opacity of emissions	Method 9	Annual
Carbon monoxide (CO)	Method 10	Annual
Nitrogen oxides (NO <sub>x</sub> )	Method 20	Annual

\* Note that this does not apply to the mobile turbine.

## 2.5 Compliance History

### 2.5.1 Notices of Violation

The Northwest Pipeline LLC, Mount Vernon Compressor Station was initially registered by the NWCAA on May 31, 1990. There were no notices of violations issued between that initial registration and October 2003.

Two odor complaints were received by the NWCAA allegedly coming from NWP-MVCS on November 3, 1992. NWCAA inspectors investigated the complaints and found that the facility vented a quantity of natural gas, in what the investigation report says is a "rare procedure". There are three other odor complaints. One occurring on March 11, 1998, and two reported on September 13, 1999. All of these were investigated and complainants contacted. No action was taken. There were no complaints since September 1999.

On October 16, 2003, the facility was issued a "Notice of Violation-Warning" as a result of a facility inspection by NWCAA. The inspection found that the facility was not performing continuous monitoring as required by PSD 01-09 and OAC 794a. Specifically, the PEMS was not set up to display the ongoing emissions of NO<sub>x</sub> in the same units as required by relevant sections of the PSD and NWCAA permits. In addition, carbon monoxide was not being monitored as required by OAC 794a. MWP-MVCS agreed to correct these issues and include this information in their data acquisition system. Since that time, the PEMS system has been abandoned and replaced with periodic monitoring.

On October 8, 2007, NWP failed to demonstrate compliance with an allowable emission standard during a scheduled EPA reference method test. The reference method test of Unit #4 at the Mount Vernon compressor station was aborted when it became clear that the unit was not in compliance with the 50 ppm limit on emissions of carbon monoxide. A penalty of \$6,500 was levied on February 25, 2008 and paid by the facility on May 21, 2008.

During periodic portable analyzer monitoring on December 2 and 14, 2015 and February 2, 2016, Unit #4 exceeded the 25 ppmvd @ 15% oxygen limit. These exceedances were not discovered until the quarterly report was being prepared on February 10, 2016 resulting in an estimated 998 pounds of NO<sub>x</sub> excess emissions. An NOV was issued September 16, 2016, followed by a "Notice of Imposition of Penalty" assessing a penalty of \$10,000. Half of the penalty was suspended provided NWP-MVCS signed a Consent Order and Assurance of Discontinuance (CO/AOD) stating the NO<sub>x</sub> limit is not again violated for a period of five years and pay half of the penalty. NWP-MVCS paid \$5,000 and signed the CO/AOD prior to the deadline in December 2016.

In June 2016, NWCAA identified that the 2015 annual compliance certification was not submitted by the due date of February 28, 2016. NWP-MVCS submitted the report late on June 14, 2016. A notice of violation was issued on September 15, 2016, followed by a

“Notice of Imposition of Penalty” assessing a penalty of \$1,000. NWP-SCS paid the penalty in November 2016.

No other NOVs were issued against the facility.

## 2.5.2 Compliance Reports

The Northwest Pipeline LLC, Mount Vernon Compressor Station AOP requires periodic, quarterly, semiannual, and annual reports to be submitted to the NWCAA as part of the facility’s ongoing compliance demonstration. When a permit deviation occurs, the facility is required to submit a periodic report within 30 days after the end of the month during which the deviation occurred identifying any excess emissions and provide a discussion as to the cause and what was done to correct the problem. In the case where the deviation represents a potential threat to human health or safety “prompt” means as soon as possible, but in no case later than twelve hours after the deviation is discovered.

The facility submits quarterly summary reports of emissions and process information. In addition, semiannual reports are submitted providing for the certification by the responsible corporate official of the truth, accuracy, and completeness of reports submitted during the previous six-month period. Annually, the responsible corporate official also certifies compliance with all requirements in the AOP term-by-term and whether the facility was fully or intermittently in compliance with each term

## 2.6 Permitting History

### 2.6.1 Prevention of Significant Deterioration

PSD permit 93-01 from the WDOE was issued July 14, 1993. This permit allowed the installation of one Solar Centaur T-4500 gas-fired turbine (Unit 3).

PSD permit 93-01 Amendment 1 was issued on May 11, 1998. This amendment incorporated several minor changes into the permit. These included a clarification of source test frequency requirements, a reduction of the NO<sub>x</sub> averaging period from a rolling 24-hour average to an hourly average, and stack tests of the existing reciprocating compressor engines.

The turbine permitted under PSD permit 93-01 Amendment 1 was removed from the facility and replaced with turbines that are permitted under PSD permit 01-09. It is the policy of WDOE, however, that old PSD permits are not superseded by newer PSD permits and that all of the requirements of PSD Permit 93-01 Amendment 1 are still applicable and in effect. In anticipation of the difficulties associated with enforcing requirements on nonexistent equipment, those requirements of PSD Permit 93-01 Amendment 1 that apply to nonexistent equipment are not included in this Air Operating Permit. Those requirements of Permit 93-01 that applied to the whole facility or equipment still in place will be referenced.

PSD Permit 01-09 was approved on July 31, 2002. This permit was initiated by the following project:

- Adding one Mars 90-TI3002S (Mars 90S) gas turbine site-rated at 12,787 horsepower (59° F.),
- Adding one Centaur 40-T4700S (Centaur 40S) gas turbine site-rated at 4,554 horsepower (59° F.),
- Replacing an existing standby generator with one of larger capacity (450 kW), and
- Replacing an existing 2.5 million British thermal units per hour (MMBtu/hr.) heater/boiler with one of larger capacity (4.186 MMBtu/hr. Sellers C100).



The conditions contained in PSD 01-09 are detailed and extensive and identify fuel usage (natural gas from the pipeline), emission limitations for NO<sub>x</sub> (in terms of ppm, lbs/day and tons/year), monitoring and reporting requirements, PEMS operating criteria, hours of operation for the standby emergency generator, and other operating and monitoring criteria.

PSD-01-09 Amendment 1 was issued on May 9, 2003 and was necessary because NWP-MVCS changed the project scope. The new scope (shown below) was changed in that NWP-MVCS chose to remove the existing Solar Centaur 40-T4500 permitted under PSD 93-01 and replace it with a larger Solar Centaur 50S rather than keeping the existing turbine and adding another Centaur 40S as was originally permitted in PSD 01-09. The revised scope included:

Adding one Mars 90-T13002S (Mars 90S) gas turbine site-rated at 12,787 horsepower (59° F.) as originally permitted.

Substituting an existing Centaur 40-T4500 upgraded to a Centaur 50-T6100S (Centaur 50S) at 5,950 hp (59° F.) for the originally permitted Centaur 40-T4700S (Centaur 40S) gas turbine site-rated at 4,554 horsepower.

Replacing an existing standby generator with one of larger capacity (450 kW) as originally permitted.

Replacing an existing 2.5 million British thermal units per hour (MMBtu/hr.) heater/boiler with one of larger capacity (4.186 MMBtu/hr. Sellers C100) as originally permitted.

After completion of one year of operation, it was determined that the parametric monitoring system (PEMS) could not provide accurate real time monitoring of emissions from the turbines. WDOE, the NWCAA, and NWP-MVCS subsequently agreed that the PEMS would be replaced by a monitoring procedure using a portable emission analyzer measuring emissions on a prescribed schedule.

PSD-01-09 Second Amendment was issued on July 15, 2004 and replaced the PEMS monitoring with periodic monitoring using portable analyzers. There were no changes to emission limits. For the Solar turbines, the schedule requires monitoring not less frequently than once every 336 hours of operation.

PSD-01-09 Amendment 3 was issued on August 23, 2004 and clarified some monitoring requirements. WDOE made the annual NO<sub>x</sub> tests for the turbines easier to find in the permit and at NWP-MVCS's request changed the portable NO<sub>x</sub> analyzer to a portable "emissions" analyzer.

PSD-01-09 Amendment 4 was issued on January 4, 2005 and was issued to reflect the fact that NWP-MVCS installed a Sellers C-80 boiler rather than the originally permitted Sellers C-100 boiler. The C-80 is smaller and emits less, so there was no related enforcement. As the permit was to be opened anyway, NWP-MVCS requested that the NO<sub>x</sub> monitoring frequency for the Sellers C-80 be reduced from annually to every 5 years. This request was granted by WDOE and is reflected in this permit amendment.

PSD-01-09 Amendment 5 was issued on June 14, 2006 and was issued to allow for reduced NO<sub>x</sub> monitoring of the turbines using the portable monitors. Amendment 5 allows the monitoring frequency to be reduced from every 336 operating hours (in practice about every 2 weeks) to every 672 operating hours (in practice about every month). The monitoring frequency reverts to the 336-hour schedule should a unit fail a test.

PSD-01-09 Amendment 6 was issued on February 22, 2012. The reason for the sixth administrative amendment is to clarify and simplify NO<sub>x</sub> monitoring procedures used by portable NO<sub>x</sub> monitors in preparation for renewal of the facility's Title V permit. Testing

using a portable analyzer to monitor the volume percent of NO<sub>x</sub> every 336 hours has proven adequate to indicate compliance, so the additional calculation of NO<sub>x</sub> mass flow during these periodic tests is no longer required. If non-compliance is indicated by a portable monitor test, the turbine will now be shut down as soon as reasonably possible and repaired rather than have further emissions testing. No compliance testing conditions for NO<sub>x</sub> (reference Method 20) are affected by these changes, but the NO<sub>x</sub> limit's averaging time is reduced from a three to one hour time period, which is more stringent. No physical changes are requested.

Since these conditions apply specifically to equipment at the facility, they are contained in Section 5 of the AOP.

## 2.6.2 Northwest Clean Air Agency Orders of Approval to Construct

The Northwest Pipeline LLC, Mount Vernon Compressor Station has received Orders of Approval to Construct (OAC) from the NWCAA for specific equipment. Applicable requirements, reference test methods, and monitoring for continuing OAC requirements are addressed in Sections 3 and 4 of the permit.

### 2.6.2.1 NWCAA Order of Approval to Construct No. 311

Issue Date: February 6, 1991; revised March 28, 1991

Permitted Equipment: Sellers C-125-W water heater/boiler

### 2.6.2.2 NWCAA Order of Approval to Construct No. 320

Issue Date: July 15, 1992; revised April 2, 1993, May 8, 1995, and July 22, 1997

Permitted Equipment: Solar Centaur T4500 gas-fired turbine

\*\* Superseded by OAC 794 \*\*

### 2.6.2.3 NWCAA Order of Approval to Construct No. 402

Issue Date: October 21, 1992

Permitted Equipment: Sellers C-60 2.5 MMBtu/hr water heater/boiler  
250 kW standby emergency generator

\*\* Superseded by OAC 794 \*\*

### 2.6.2.4 NWCAA Order of Approval to Construct No. 657

Issue Date: May 12, 1998

Permitted Equipment: Solar Centaur 40-T4700S gas-fired turbine

(occasional use in case of reciprocating engine failure. This unit is typically not stored on-site, but is brought in when needed).

### 2.6.2.5 NWCAA Order of Approval to Construct No. 794

Issue Date: August 12, 2002; revised March 4, 2003, August 9, 2004, January 11, 2005, and August 30, 2006

Permitted Equipment: Solar Mars 90-TI3002S (Mars 90S) gas turbine  
Solar Centaur 50-T6100S (Centaur 50S) gas turbine  
450 kW standby emergency generator  
Sellers C-80 water heater/boiler

Order of Approval to Construct (OAC) 794a was issued by the Northwest Clean Air Agency on March 4, 2003. OAC 794a superseded previously issued Orders (OACs 320 and 402), and imposed additional conditions beyond those contained in PSD 01-09 on the facility. These include limits for CO and VOC emission (in lbs/day and tons/year), reporting requirements, and requirements for initial source tests and subsequent ongoing testing for the turbines according the schedule shown on the following page. In addition, OAC 794a included a

requirement that NWP-MVCS perform boroscope analysis on the two turbines on a regularly scheduled basis, and visually inspect the fuel injectors at prescribed intervals.

A revised OAC 794b was issued on August 9, 2004 as a result of the change of the monitoring program from the PEMS methodology to a portable emissions analyzer using EPA Conditional Test Method 34.

OAC 794c was issued on January 11, 2005 to identify a source change (Sellers C-80 boiler/heater) and to change the monitoring requirements for this source.

OAC 794d was issued on August 30, 2006, and allowed an option for reduced monitoring of the gas turbines.

OAC 794e was issued on March 26, 2012. The purpose of this revision was to modify CO testing requirements to be consistent with NO<sub>x</sub> testing requirements in PSD-01-09 Amendment 6 and to remove the VOC limit because initial testing was completed.

## **SECTION 3 BASIS OF REGULATION APPLICABILITY**

### **3.1 New Source Performance Standards (NSPS)**

The Solar Centaur 90 gas turbine (started up on June 2, 2003), and the Solar Centaur 50 gas turbine (started up on June 25, 2003), are subject to New Source Performance Standard Subpart GG - Standards of Performance for Stationary Gas Turbines, codified in Title 40 Code of Federal Regulations (CFR). Subpart GG provides standards for nitrogen oxides in Section 60.332 and sulfur dioxide in Section 60.333, requirements for monitoring in Section 60.334, and test methods and procedures in Section 60.335. Compliance assurance with the continuously applicable parts of each of these subparts is described in Section 5 – Specifically Applicable Requirements of the permit.

Since Subpart GG applies, then the general provisions of the NSPS (40 CFR 60 Subpart A) also apply. The applicable provisions of 40 CFR 60 Subpart A are included in Section 3 of the permit.

NWP-MVCS operates three RICE engines. None of these engines are affected units for 40 CFR Part 60 Subpart IIII or Subpart JJJJ. Subpart IIII applies only to compression ignition units. None of the RICE engines are compression ignition. Subpart JJJJ does not apply because all engines were constructed prior June 12, 2006, and has not been modified or reconstructed, thus excluding them from these requirements.

### **3.2 National Emission Standards for Hazardous Air Pollutants (NESHAP)**

#### **3.2.1 40 CFR Part 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, And Institutional Boilers And Process Heaters**

Subpart DDDDD applies to boilers and process heaters located at major sources of HAP. NWP-MVCS is a major source of HAPs and operates two affected boilers/process heaters:

- B-Plant, Unit 6 – Sellers C-125-W 5.25 MMBtu/hr Natural Gas Heater/Boiler installed in 1991
- C-Plant, Unit 7 – Sellers C-80-W 3.35 MMBtu/hr Natural Gas Heater/Boiler installed in 2003

Specifically, these units are subject to the following tune-up, maintenance, reporting, and record keeping requirements: 40 CFR §63.7500 (a) & (e), 40 CFR §63.7505 (a), 40 CFR §63.7515 (d), 40 CFR §63.7540 (a)(10) & (a)(12), 40 CFR §63.7550 (a) & (b) & (c)(1) & (c)(5) & (h)(3) & Table 9, and 40 CFR §63.7555 (a).

#### **3.2.2 40 CFR 63 Subpart ZZZZ applicability**

Subpart ZZZZ applies to stationary reciprocating internal combustion engines (RICE) at major or area sources of HAP emissions. The NWP-SCS is a major source of HAP and operates the following RICE:

- A-Plant, Unit 1 - 4,000 HP 2SLB Clark TCV-12 installed in 1966
- A-Plant, Unit 2 - 4,000 HP 2SLB Clark TCV-12 installed in 1966
- B-Plant, 545 HP 4SRB Caterpillar emergency backup installed in 2003

Applicability:

- A-Plant Units 1 & 2 are each 4,000 HP 2SLB Clark TCV-12 and are considered to be existing stationary RICE because each engine has a site rating greater than 500 hp,

is at a major source of HAPs and commenced construction prior to December 19, 2002, as per §63.6590 (a)(1)(i). Units 1 & 2 do not have to comply with the emission or operating limitations of 40 CFR 63 Subpart ZZZZ and of Subpart A, nor are subject to initial notification requirements as per §63.6590 (b)(3)(i).

- C-Plant Unit 8 is a 545 hp 4SRB Caterpillar emergency backup RICE with 450 kW electrical generator is considered to be existing stationary RICE because the engine has a site rating greater than 500 HP, is at a major source of HAPs and commenced construction prior to December 19, 2002, as per §63.6590 (a)(1)(i). Per §63.6600(c), the C-Plant 4SRB Caterpillar emergency backup RICE does not have to comply with the emission or operating limitations of 40 CFR 63 Subpart ZZZZ and of Subpart A, nor is subject to initial notification requirements as per §63.6590 (b)(3)(iii).

Therefore, there are no units subject to the requirements of 40 CFR 63 Subpart ZZZZ.

### **3.3 Compliance Assurance Monitoring (CAM)**

The requirements of Compliance Assurance Monitoring are contained in 40 CFR 64. They apply to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit provided the unit satisfies all criteria as delineated in 40 CFR §64.2(a)(1)-(3). The requirements are:

- The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or surrogate), other than those specifically exempted in §64.2(b)(1).
- The unit uses a control device, as defined in §64.1, to achieve compliance with an emission limitation or standard.
- The unit has a pre-control PTE equal to or greater than 100 percent of the TPY required for the source to be classified as a major source.

Table 2-1 (page 12 of this SOB) lists two types of control devices on a total of four separate units. The SoLoNO<sub>x</sub> controls used on the gas compressor turbines (Units 3, 4, and 5) are considered passive control measures, built into the unit, that act to prevent pollutant formation. These types of emission controls are specifically excluded from the definition of "Control device". Therefore, units 3, 4, and 5 are not subject to the CAM rule.

The air-to-fuel ratio controller on the Caterpillar-G3412, 545 hp, 450 kW emergency electrical generator (Unit 8) is considered a passive control measure, built into the unit that acts to prevent pollutant formation. This type of emission control is specifically excluded from the definition of "Control device".

The three-way catalytic converter used to control CO, NO<sub>x</sub>, and VOC emissions on the Caterpillar-G3412, 545 hp, 450 kW emergency electrical generator (Unit 8), is considered a control device that would otherwise make the unit subject to the CAM rule because WDOE PSD-01-09 limits NO<sub>x</sub> emissions to 82 grams per hour. However, this unit is not subject to the CAM rule for the following reasons:

- The generator's pre-control PTE for NO<sub>x</sub> is 0.75 tons/year. This assumes 8,760 hours of operation, although PSD-01-09 limits the operating hours to 500 hours per year.
- Emissions of CO and VOC are not limited by regulation or permit.
- There are Washington State and NWCAA regulations that limit SO<sub>2</sub> and PM, however the catalytic converter is not a device that controls these pollutants.
- Finally, 40 CFR §64.2(b)(1) exempts this unit from the CAM rule because there are no emission limitations or standards proposed by the Administrator prior to November

16, 1990 pursuant to section 111 or 112 of the FCAA. PSD-01-09 was first signed in 2002, and OAC 794 took effect in 2002.

All other units (1, 2, 6, and 7), do not have control devices and are not subject to the CAM rule. In the previous AOP, Unit 7, the 3.35 MMBtu/hr Sellers C-80-W water heater/boiler was listed as having non-selective catalytic reduction. This was an error and upon verification with the facility, corrected in this AOP.

Therefore, there are no units subject to the CAM rule at NWP-MVCS.

### **3.4 Chemical Accident Prevention Provisions**

The goal of 40 CFR 68 and the risk management program it requires is to prevent accidental releases of substances that can cause serious harm to the public and the environment from short-term exposures and to mitigate the severity of releases that do occur. If a tank, drum, container, pipe, or other process at a facility contains any of the extremely hazardous toxic and flammable substances listed in Table 1 to 40 CFR 68.130 in an amount above the “threshold quantity” specified for that substance, the facility operator is required to develop and implement a risk management program.

According to NWP-MVCS’s renewal application, the facility does not have any of the substances in the threshold quantities listed in Table 1 to 40 CFR 68.130 and therefore it is not subject to the requirements of 40 CFR 98.

### **3.5 New Source Review (NSR)**

#### **3.5.1 Basic Information**

New Source Review requires stationary sources of air pollution to acquire permits before they begin construction. NSR is also referred to as construction permitting or preconstruction permitting.

There are three types of NSR permits. A source may have to acquire one or more of these permits:

- Prevention of Significant Deterioration (PSD) permits, which are required for new major sources or a major source making a major modification in an attainment<sup>2</sup> area;
- Nonattainment NSR permits, which are required for new major sources or major sources making a major modification in a nonattainment area; and
- Minor source permits, which are required for sources that emit pollutants below the major source threshold but above the minor source threshold. It is generally the case that a major new or modified source will also require minor NSR permitting that covers a different subset of pollutants.

#### **3.5.2 What are Permits?**

Permits are legal documents that the source must follow. Permits specify what emission limits must not be exceeded and how the source is to demonstrate compliance with the set limits. Permits may contain conditions to ensure that the source is built according to the permit application upon which the permitting agency relies for air impact analysis. For example, the permit may specify a stack height that was used by the permitting agency to

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<sup>2</sup> An attainment area means a geographic area designated by EPA at 40 CFR 81 as having attained the National Ambient Air Quality Standard for a given criteria pollutant (Reference: WAC 173-400-030 (9)).

determine compliance with air pollutant limits. Some limits in the permit may be specified at the request of the source to keep them from being subject to other requirements. For example, the source may take limits in a minor NSR permit to keep the source out of PSD. To assure that sources follow permit requirements, permits also contain monitoring, recordkeeping, and reporting (MR&R) requirements.

### **3.5.3 Who Issues the Permits?**

NSR permits for this facility are issued either by the Washington State Department of Ecology (“Ecology”) or by NWCAA, a local air pollution control agency. Ecology and local air pollution control agencies have their own permit programs that are approved by EPA in the State Implementation Plan (SIP). Ecology issues major-source NSR permits, also known as Prevention of Significant Deterioration (PSD) permits, and NWCAA issues minor NSR permits (Orders of Approval to Construct, or OACs).

### **3.5.4 Prevention of Significant Deterioration**

Before a major source can be constructed or modified in an area that meets all the health-based ambient air requirements (i.e. in an attainment area), the owner or operator must demonstrate that the project will not cause or contribute to violations of any ambient air quality standard or air quality increment. In addition, the owner or operator must demonstrate that the project will not cause significant deterioration in nearby Class I Areas (parks and wilderness areas).

NWP-MVCS is subject to the PSD program, and WDOE has issued two PSDs for the facility. These PSD permits are described in Section 2.6.1.

### **3.5.5 Minor NSR**

New or modified sources of air pollution are required to obtain a permit from the NWCAA before beginning construction. Permits are referred to as Orders of Approval to Construct (OACs) and contain a wide range of local, state, and federal requirements to minimize air pollution impacts on the environment. The type of activity, the size of the operation, and the kinds of pollutants emitted determine permit conditions.

## **3.6 Greenhouse Gases (GHG) Regulations**

### **3.6.1 40 CFR 98, Federal Mandatory Greenhouse Gas Emission Inventory Regulation**

The requirements for the mandatory greenhouse gas reporting are contained in 40 CFR 98. The EPA implements this regulation in its entirety. This regulation is excluded from appearing in a Title V air operating permit because it does not contain applicable requirements under the Title V program (WAC 173-401-200(4)).

The following discussion is included here for completeness. In order for a facility to be subject to 40 CFR 98, it must meet the requirements of 1, 2, or 3 below:

1. A facility that contains any source category that is listed in Table A–3 of 40 CFR 98 Subpart A.
2. A facility that contains any source category that is listed in Table A–4 of 40 CFR 98 Subpart A that emits 25,000 metric tons CO<sub>2</sub>e or more per year in combined emissions from stationary fuel combustion units.
3. A facility that has stationary fuel combustion units with an aggregate maximum rated heat input of 30 MMBtu/hr or greater, and the facility emits 25,000 metric tons

CO<sub>2</sub>e or more per year in combined emissions from all stationary fuel combustion sources.

Subpart C of 40 CFR 98 establishes reporting requirements for stationary fuel combustion sources and specifically excludes portable equipment, emergency generators and emergency equipment. The rule requires monitoring, recordkeeping, and reporting for facilities where the aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 MMBtu/hr or greater, and the facility emits 25,000 metric tons of CO<sub>2</sub>e or more per year in combined emissions from all stationary fuel combustion sources.

On November 8, 2010, EPA signed a rule that finalized greenhouse gas (GHG) reporting requirements for the petroleum and natural gas industry under 40 CFR Part 98 Subpart W. Facilities must report GHG emissions if they meet the definition of one of the identified industry segments and emit 25,000 metric tons of CO<sub>2</sub>e or more per year in combined GHG emissions. Onshore Natural Gas Transmission Compression is a Subpart W industry segment defined as any stationary combination of compressors that move natural gas at elevated pressure from production fields or natural gas processing facilities in transmission pipelines to natural gas distribution pipelines or into storage.

A GHG air emission inventory was performed by the facility, and was included as part of the AOP renewal application submitted to the NWCAA. Stationary fuel combustion units were estimated to have an aggregate maximum rated heat input capacity of about 90 MMBtu/hr and were estimated to potentially emit 117,660 metric tons of CO<sub>2</sub>e. This estimate was based on operating 8,760 hours per year for each piece of equipment.

The facility meets the definition of the transmission compression industry segment and is subject to Subpart W if actual emissions from Subpart C sources and Subpart W sources exceed 25,000 metric tons of CO<sub>2</sub>e. For this reason, actual fuel combustion estimates and associated emissions need to be performed.

### **3.6.2 WAC 173-441, Washington State Reporting of Emissions of Greenhouse Gases**

Chapter 173-441 WAC, "Reporting of Emissions of Greenhouse Gases", is a mandatory greenhouse gas (GHG) reporting rule for:

- Suppliers that supply applicable fuels sold in Washington State of which the complete combustion or oxidation would result in at least 10,000 metric tons of carbon dioxide annually; or
- Any listed facility that emits at least 10,000 metric tons of CO<sub>2</sub>-equivalents (CO<sub>2</sub>e) of greenhouse gases annually in the state.

WAC 173-441 was adopted by Ecology on December 1, 2010 and became effective on January 1, 2011. This regulation applies to the facility because the facility emits at least 10,000 metric tons of CO<sub>2</sub>e of greenhouse gases per year. In the 2010 annual emission inventory submitted to the NWCAA and received on March 21, 2011, the facility reported that 8,582 metric tons of CO<sub>2</sub>e were emitted. Similar to the federal reporting rule (40 CFR 98, see discussion in Section 3.6.1), WAC 173-441 requires annual GHG inventories with reports due no later than March 31 of the following year for facilities that are also subject to 40 CFR 98. Under WAC 173-441, annual emissions shall be reported to Ecology beginning in calendar year 2012. This regulation is implemented in its entirety by Ecology and is considered an applicable requirement under the Title V program; as such, it is included in Section 2 of the AOP for the facility.



### **3.6.3 WAC 173-442, Washington State Clean Air Rule (CAR)**

This rule establishes GHG emissions standards starting in 2017 for certain stationary sources, petroleum product producers and importers, and natural gas distributors. The rule applies if the three-year average for GHG beginning in 2012 is more than 100,000 metric tons CO<sub>2</sub>e per year. This regulation is implemented in its entirety by Ecology and is considered an applicable requirement under the Title V program. As such, it is included in Term 2.9.1 of NWP-SCS's AOP.

However, in March 2018, Thurston County Superior Court ruled that parts of the Clean Air Rule are invalid. The Superior Court's ruling prevents Ecology from implementing the CAR regulations. Currently compliance with the rule is suspended while the ruling is appealed. Although suspended, applicable facilities must still report GHG emissions under Washington state law.

Updates to the status of the CAR are found here: <https://ecology.wa.gov/Air-Climate/Climate-change/Carbon-reduction-targets/Clean-Air-Rule>

## **SECTION 4 General Permit Assumptions**

### **4.1 Permit Content**

The permit contains (1) standard terms; (2) generally applicable conditions for the type of facility permitted; and (3) specifically applicable conditions originating from PSD permits, approvals to construct and any orders referencing the facility. Applicable requirements that were satisfied by a single past action on the part of the source are not included in the permit but are discussed in the Statement of Basis. An example would include performance testing to demonstrate compliance with applicable emission limitations as a requirement of initial startup. Regulations that require action by a regulatory agency, but not of the regulated source, are not included as applicable permit conditions.

### **4.2 One Time Requirements**

Applicable requirements that were satisfied by past actions on the part of the source are not included in the AOP, but are discussed in the Statement of Basis. One-time requirements related to the original turbines are not included because they were removed and replaced with new turbines in 2003

- NWCAA OAC 311a Condition 4 required payment of plan and examination fees prior to startup of the 2.5 MMBtu/hr boiler/water heater. The plan and examination fees were paid on April 15, 1991.
- NWCAA OAC 657 Condition 7 and 40 CFR 60.8 required an initial performance test of the Solar Centaur 40 turbine. This test was conducted on September 22, 1998 and the test report is on file.
- NWCAA OAC 657 Condition 14 and 40 CFR 60.7a(1) and (3) required notification before initial construction, startup, and operation of the Solar Centaur 40 turbine. Letter submitted to NWCAA and EPA Region 10 on August 17, 1998.
- PSD 01-09 Condition 2.4 required an initial stack test of the 450kW emergency standby generator to document NO<sub>x</sub> emissions from the unit. The test was conducted on December 29, 2003 and indicated compliance with the emission limit in Condition 2.3 of PSD 01-09.
- PSD 01-09 Condition 3.2 required an initial stack test of the Sellers C-80 heater/boiler to document NO<sub>x</sub> emissions from the unit. The test was conducted on October 29, 2003 and indicated compliance with the emission limit in Condition 3.1 of PSD 01-09.
- PSD 01-09 Condition 8.1.1 and 40 CFR 60.7a(1) required notification before initial construction of the Solar Centaur 50 and Mars 90 turbines. Such notice was submitted to NWCAA and WDOE on October 23, 2002.
- PSD 01-09 Condition 8.1.2 and 40 CFR 60.7a(3) required notification before initial startup of the Solar Centaur 50 turbine. Such notice was submitted to NWCAA and WDOE on June 26, 2003.
- PSD 01-09 Condition 8.1.2 and 40 CFR 60.7a(3) required notification before initial startup of the Solar Mars 90 turbine. Such notice was submitted to NWCAA on May 29, 2003.
- NWCAA OAC 794d Condition 8, PSD 01-09 Condition 5.1.5.1 and 40 CFR 60.8 required an initial performance test of the Solar Mars 90 turbine. The initial performance test was October 27-30, 2003 and the test report is on file.

- NWCAA OAC 794d Condition 8, PSD 01-09 Condition 5.2.5.1 and 40 CFR 60.8 required an initial performance test of the Solar Centaur 50 turbine. The initial performance test was August 16-21, 2003 and the test report is on file.
- PSD 01-09 Conditions 8.1.3 and 8.1.4 included initial O&M requirements. NWP-MVCS has complied with both as evidenced by their quarterly reports and inspection of the O&M manual.

### **4.3 Federal Enforceability**

Federally enforceable requirements are terms and conditions required under the Federal Clean Air Act or under any of its applicable requirements such as NESHAP. Local and state regulations may become federally enforceable by formal approval and incorporation into the State Implementation Plan (SIP) or through other delegation mechanisms. Federally enforceable requirements are enforceable by the EPA and citizens of the United States. All applicable requirements in the permit including Standard Terms and Conditions, Generally Applicable Requirements, and Specifically Applicable Requirements are federally enforceable unless identified in the permit as enforceable only by the state and labeled as “state only”.

Chapter 173-401 WAC is not federally enforceable although the requirements of this regulation are based on federal requirements for the air operating permit program. Upon issuance of the permit, the terms based on Chapter 173-401 WAC will become federally enforceable for the source.

Most rules and requirements are followed by a date in parentheses. Two different versions (identified by the date) of the same regulatory citation may apply to the source if federal approval/delegation lags behind changes made to the Washington Administrative Code (WAC) or the NWCAA Regulation. The date associated with a WAC regulation denotes the “State Effective Date” of the regulation. For SIP-approved WAC regulations (identified by the absence of the “state only” designation), the date represents the “State Effective Date” of the regulation version that was SIP-approved. For NWCAA regulations, the date represents the most recent Board of Directors adoption date, which is identified as the “Passed” or “Amended” date in the NWCAA Regulation. For SIP-approved NWCAA regulations (also identified by the absence of the “state only” designation), the parenthetical date represents the “Passed” or “Amended” date of the regulation version that was SIP-approved. The date associated with an OAC or PSD permit represents the latest revision date of that order. For a federal rule, the date is the rule’s most recent promulgation date.

### **4.4 Gap-Filling**

Certain air pollution regulations and permit conditions do not specifically call out sufficient MR&R methods to adequately demonstrate compliance with the applicable requirement. In these cases, the permitting agency is obligated to develop site-specific MR&R requirements that the source must follow pursuant to WAC 173-401-615(1)(b) & (c) (10/17/02). The inclusion of the customized MR&R requirements is called “gap-filling”. For instance, nuisance rules and opacity requirements have site-specific gap-filled obligations for the source. If gap-filling has been incorporated for a requirement of the AOP, the MR&R for that term will state “directly enforceable” above the gap-filled text.

On August 19, 2008, the U.S. Court of Appeals vacated EPA’s 2006 interpretive rule that prohibited states from enhancing monitoring in Title V permits. As a result, permitting authorities again must ensure that monitoring in each permit is sufficient to assure compliance with the terms and conditions of the permit.

As an example of gap-filling, consider permit term 4.1 that references WAC 173-401-615(3) (10/17/02). The WAC rule states that submittal of reports must be at least once every six

months. In order to make the requirement less ambiguous, permit term 4.1 was gap-filled to require reports to cover regular intervals and be submitted over specified date windows.

#### **4.5 Future Requirements**

Applicable requirements promulgated with future effective compliance dates may be included as applicable requirements in the permit. Some requirements that are not applicable until triggered by an action, such as the requirement to file an application prior to constructing a new source, are addressed within the standard terms and conditions section of the permit.

There are presently no pending applications to construct or modify NWP-SCS in such a way as to trigger New Source Review. NWP-MVCS has certified in the permit renewal application that the facility will meet any future applicable requirements on a timely basis.

#### **4.6 Compliance Options**

NWP-MVCS did not request emissions trading provisions or specify more than one operating scenario in the air operating permit application; therefore, the permit does not address these options as allowed under WAC 173-401-650. This permit does not condense overlapping applicable requirements (streamlining) nor does it provide any alternative emission limitations.

## **SECTION 5 Permit Elements and Basis for Terms and Conditions**

### **5.1 Permit Organization**

The NWP-MVCS Air Operating Permit (AOP) is divided into the following sections:

Permit Information

Attest

Table of Contents

Section 1 Emissions Unit Identification

Section 2 Standard Terms and Conditions

Section 3 Standard Terms and Conditions for New Source Performance Standards

Section 4 Generally Applicable Requirements

Section 5 Specifically Applicable Requirements

Section 6 Inapplicable Requirements

### **5.2 Permit Information and Attest**

#### **5.2.1 Permit Information**

The Permit Information page identifies the source and provides general information relevant to the permit such as the facility address, the responsible corporate official, the permit issuance date and the permit expiration date, and the agency personnel responsible for permit preparation, review, and issuance.

#### **5.2.2 Attest**

The Attest page provides authorization for the source to operate under the terms and conditions contained in the permit.

### **5.3 Section 1 Emission Unit Identification**

The Emission Unit Identification section lists emission units, rated capacities, installation date, and air pollution control methods at the NWP-MVCS facility.

### **5.4 Section 2 Standard Terms and Conditions**

The Standard Terms and Conditions section of the AOP (Section 2) specifies administrative requirements or prohibitions with no ongoing compliance monitoring requirements. The legal authority for the Standard Terms and Conditions is provided in the citations in Section 2 of the AOP. The description of the regulation in each of these conditions (with the exception of those labeled “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”) is sometimes a paraphrase of the actual regulatory requirement. Where there is a difference between the actual requirement and the paraphrased description, the cited regulatory requirement takes precedence. In an effort to make the section more readable, the terms and conditions have been grouped by function. In some cases, similar requirements at the state and local authority level have been grouped together.

Several permit conditions in Section 2 of the AOP are labeled “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”. These conditions are a clarification of the

regulatory requirements, as the NWCAA interprets those requirements. “Directly enforceable” conditions are legal requirements with which the permittee must comply and are directly enforceable through the permit per NWCAA’s gap-filling authority.

A number of requirements that would not be applicable until triggered have also been included in Section 2 of the AOP. An example of one such requirement is the requirement for a source to submit an application for new source review.

## **5.5 Section 3 Standard Terms and Conditions**

Section 3 of the AOP includes the standard terms and conditions that are contained in Subpart A of 40 CFR 60 and Subpart A of 40 CFR 63. Such standard terms and conditions are administrative, notification, and/or other requirements that typically have no ongoing compliance monitoring requirements.

The NESHAP portion of Section 3 in the AOP is designed to summarize Subpart A to 40 CFR 63 (General Provisions). Table 10 of Subpart DDDDD to Part 63 of 40 CFR specifies which parts of the General Provisions apply to the facility.

In the event of a conflict between Section 3 of the AOP and 40 CFR 63 Subpart A, the latter rules.

## **5.6 Sections 4 and 5: Generally and Specifically Applicable Requirements**

Requirements that limit emissions and broadly apply to all sources within the jurisdiction of the NWCAA are identified in Section 4 - Generally Applicable Requirements. Requirements that limit emissions and apply specifically to emission units at NWP-MVCS are identified in Section 5 - Specifically Applicable Requirements. The tables in these sections are organized by pollutant type. The first column contains the term number followed by the pollutant type. The second column identifies the regulatory citation. The third column provides a brief description of the applicable requirements for informational purposes and is not itself enforceable. The fourth column identifies monitoring, recordkeeping and reporting requirements in accordance with WAC 173-401-605(1), -615(1) & (2). Test methods associated with an applicable requirement or in accordance with WAC 173-401-615(1)(a) are included in this column.

Many generally applicable requirements do not specify test and/or monitoring methods within the text of the regulation or statute. Since WAC 173-401-615 requires that the permit require monitoring and recordkeeping adequate to demonstrate compliance with requirements, legally enforceable site-specific monitoring methods were established (“gap-filled”) based on the characteristics of the facility, the nature of the underlying requirement, the requirements of WAC 173-401-615, and EPA guidance on monitoring.

## **5.7 Section 6 Inapplicable Requirements**

Washington Administrative Code 173-401-640(2) allows a determination regarding the applicability of requirements with which the source must comply. Section 6 of the permit lists requirements deemed inapplicable based on the applicability of the cited regulation. It is stated in the AOP that the permit shield applies to the specific, listed inapplicable requirements.

## SECTION 6 INSIGNIFICANT EMISSION UNITS AND INAPPLICABLE REQUIREMENTS

### 6.1 Insignificant Emission Units

Washington Administrative Code 173-401-640 allows a determination regarding the applicability of requirements with which the source must comply. Section 6 of the permit lists requirements deemed inapplicable based on the applicability of the cited regulation.

Categorically exempt insignificant emissions units listed in WAC 173-401-532 are present at the Northwest Pipeline LLC, Sumas Compressor Station. These categorically exempt emissions units normally have extremely low emissions and are considered insignificant by regulation and not of sufficient importance to list in the permit. Other emission units or activities generate only fugitive emissions for which there are no specifically applicable requirements. These activities are categorized as insignificant by Chapter 173-401-530(1)(d) WAC. Categorically insignificant and fugitive emission units and activities are listed in the following table.

**Table 6-1 Insignificant Activities/Emission Units**

Unit/Activity	WAC Citation Category
Lubricating Oil Storage & Handling	WAC 173-401-532(3)(4)(69)
Glycol Storage and Handling	WAC 173-401-532(4)
Natural Gas Pipeline and Fuel System Emissions	WAC 173-401-530(1)(d)
Trucks, Fork Lifts, Autos	WAC 173-401-532(10)
Plant Upkeep/Painting	WAC 173-401-532(33)
Landscaping Activities	WAC 173-401-532(43)
Comfort Air Conditioning	WAC 173-401-532(46)
Natural Draft Hoods/Safety Valves	WAC 173-401-532(47)
Vents/Bathroom Facilities	WAC 173-401-532(48)
Office Activities	WAC 173-401-532(49)
Personal Care Activities	WAC 173-401-532(50)
Battery Banks	WAC 173-401-532(77)
Air Compressors	WAC 173-401-532(88)
Waste Oil Storage and Handling	WAC 173-401-532(4)
Roadway Emissions	WAC 173-401-530(1)(d)
Repair and Maintenance Activities	WAC 173-401-532(74)

## **6.2 Inapplicable Requirements**

Chapter 173-401-640 WAC requires the permitting authority to issue a determination regarding the applicability of requirements with which the source must comply. Table 6 in the permit lists requirements deemed inapplicable to the emission units identified in Table 1 in the permit and provides the basis for each determination.



## **SECTION 7 PUBLIC DOCKET**

Copies of this permit as well as the permit application and any technical support documents are available online at <http://www.nwcleanairwa.gov> and at the following location:

Northwest Clean Air Agency  
1600 South Second Street  
Mount Vernon, WA 98273-5202

## **SECTION 8 PUBLIC COMMENT PERIOD AND EPA REVIEW**

A 30-day public comment period ran from July 10, 2019 to August 12, 2019. Notice was posted in the Washington Department of Ecology's Permit Register, as well as the NWCAA website. Copies of the draft permit and statement of basis were available on NWCAA's website and at NWCAA's office during the comment period. NWCAA received no comments on the AOP draft.

Following the public comment period, NWCAA submitted a proposed version of the AOP and SOB to EPA, Region 10, and requested expedited review of the proposed permit. NWCAA received permission to issue the AOP and SOB as proposed on August 15, 2019.

## SECTION 9 DEFINITIONS AND ACRONYMS

Definitions are assumed to be those found in the underlying regulation. A short list of definitions has been included to cover those not previously defined.

An "applicable requirement" is a provision, standard, or requirement in any of the listed regulations or statutes as it applies to an emission unit at a stationary source.

An "emission unit" is any part or activity of a stationary source that emits or has the potential to emit pollutants.

A "permit" means for the purposes of the air operating permit program an air operating permit issued pursuant to Title 5 of the 1990 Federal Clean Air Act.

"Technology-Based Emission Standard" means a standard, the stringency of which is based on determinations of what is technologically feasible considering relevant factors.

"State" means for the purposes of the air operating permit program the NWCAA or the Washington State Department of Ecology.

The following is a list of Acronyms used in the Air Operating Permit and/or Statement of Basis:

4SLB	four-stroke lean burn
4SRB	four-stroke rich burn
2SRB	two-stroke rich burn
AFS	Air Facility System
AOP	Air Operating Permit
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
CFR	Code of Federal Regulations
CO	carbon monoxide
dscf	dry standard cubic foot
EPA	The United States Environmental Protection Agency
FCAA	Federal Clean Air Act
ICIS	Integrated Compliance Information System
ISO	International Standards Organization
MR&R	monitoring, recordkeeping and reporting
NOC	Notice of Construction
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
NWCAA	Northwest Clean Air Agency
NWP-SCS	Northwest Pipeline LLC Sumas Compressor Station
OAC	Order of Approval to Construct
PEMS	Parametric Emissions Monitoring System

PM	particulate matter
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
ppmvd	parts per million by volume (dry basis)
RCW	Revised Code of Washington
RICE	Reciprocating internal combustion engines
SIP	State Implementation Plan
SI	Spark Ignition
STP	Standard temperature and pressure
SO <sub>2</sub>	sulfur dioxide
WAC	Washington Administrative Code