

**Alaska Department of Environmental Conservation
Air Permits Program**

**Anchorage Municipal Light and Power (AML&P)
George M. Sullivan Generation Plant Two**

**STATEMENT OF BASIS
of the terms and conditions for
Permit No. AQ0203TVP02**

**Prepared by Chris Kent
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**Revision 1
Prepared by Wallace Evans
ADEC/AQ, APP, Anchorage
Issued: <Date>**

INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. AQ0203TVP02.

STATIONARY SOURCE IDENTIFICATION

Section 1 of Operating Permit No. AQ0203TVP02 contains information on the stationary source as provided in the Title V permit application.

The stationary source (George M. Sullivan Generation Plant Two) is owned and operated by Municipality of Anchorage, d/b/a Anchorage Municipal Light and Power (AML&P). AML&P is the Permittee for the stationary source's operating permit. The SIC code for this stationary source is 4911. The George M. Sullivan Generation Plant Two is a facility that produces electrical power and provides that electrical power to local markets via a high voltage transmission and distribution system.

EMISSION UNIT INVENTORY AND DESCRIPTION

Under 18 AAC 50.326(a), the Department requires operating permit applications to include identification of all emissions-related information, as described under 40 CFR 71.5(c)(3).

The emission units at the George M. Sullivan Generation Plant Two that are classified and have specific monitoring, recordkeeping, and reporting requirements, are listed in Table A of Operating Permit No. AQ0203TVP02.

Table A of Operating Permit No. AQ0203TVP02 contains information on the emission units regulated by this permit as provided in the application. The table is provided for informational and identification purposes only. Specifically, the source rating/size provided in the table is not intended to create an enforceable limit.

EMISSIONS

A summary of the potential to emit (PTE)¹ and assessable PTE as indicated in the application as calculated by the Department from the George M. Sullivan Generation Plant Two is shown in the table below.

Table C - Emissions Summary, in Tons per Year (TPY)

Pollutant	NO _x	CO	PM-10	SO ₂	VOC	HAPs	Total
PTE	5127	190	116	722	25	14	6,180
Assessable PTE	5127	190	116	722	25	14	6,180

¹ *Potential to Emit or PTE means the maximum capacity of a stationary source to emit a pollutant under its physical or operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source, as defined in AS 46.14.990(23), effective 12/3/05.*

The assessable PTE listed under Condition 33.1 is the sum of the emissions of each individual regulated air pollutant for which the stationary source has the potential to emit quantities greater than 10 TPY. The emissions listed in Table C are estimates that are for informational use only. The listing of the emissions does not create an enforceable limit to the stationary source.

For criteria pollutants, the potential emissions were determined using the maximum rated capacity of the equipment and 8,760 hours of operation, or hours of operation as limited in the permit. Potential emissions are based on using the worst-case fuel for each pollutant for EU IDs 1 and 2. The sources of the emission factors are source test data or AP-42 (10/96). Emission factors based on source test data were provided in the original application.

The Department calculated HAP emissions using AP-42 emission factors. HAP estimates were not included in the total in Table C because most HAPs are VOCs. Formaldehyde is the predominate HAP. George M. Sullivan is not a major source of HAPs.

BASIS FOR REQUIRING AN OPERATING PERMIT

In accordance with AS 46.14.130(b), an owner or operator of a Title V source² must obtain a Title V permit consistent with 40 C.F.R. Part 71, as adopted by reference in 18 AAC 50.040.

Except for sources exempted or deferred by AS 46.14.120(e) or (f), AS 46.14.130(b) lists three categories of sources that require an operating permit:

- (1) A major source;
- (2) A stationary source subject to federal new source performance standards or national emission standards;
- (3) Another stationary source designated by the federal administrator by regulation.

This stationary source is further classified under 18 AAC 50.326(a) and 40 CFR 71.3(a) as

- a) Directly emitting, or has the potential to emit, 100 tpy or more of any air pollutant,
- b) Contains an emission unit designated by
 - a. federal administrator by regulation, or
 - b. the Department under a finding that public health or air quality effects provide a reasonable basis to regulate the source.

AIR QUALITY PERMITS

Previous Air Quality Permit to Operate

The Department issued Air Quality Control Permit to Operate 8421-AA014 for AML&P to install EU 3 (GTG8), a water controlled GE Frame 7 combustion turbine. The Department imposed an NO_x BACT limit of 75 (14.4/Y) ppmvd corrected for 15% oxygen: and a particulate matter BACT limit of 10% opacity: and a sulfur dioxide BACT limit of 0.1% sulfur in fuel oil burned in that unit. The permit limited operations on fuel oil to 336 hours per year. On

² "Title V source" means a stationary source classified as needing a permit under AS 14.130(b) [ref. 18 AAC 50.990(111)].

December 21, 1993, the Department amended EU ID 3's NO_x BACT limit from the electric utility NSPS equation to a numerical value: 94 ppmvd.

The Department relaxed the fuel sulfur content limit to 0.1% sulfur in the fuel oil combusted in EU 3 in permit 9421-AA014. The Department relaxed this limit due to Alaska not having a fuel supplier that could provide fuel oil at the lower fuel sulfur limit. This modification resulted in a net increase in emissions of 18.3 tons per year of sulfur dioxide, less than the PSD applicability threshold in 18 AAC 50.300(a)(6)(C)(iii) & (iv).

The 9421-AA014 permit also modified the low load spinning reserve operation of EU ID 3 by increasing the allowable carbon monoxide emissions by 98.6 tpy. This increase was below the PSD applicability threshold.

Construction Permits

No new construction permits have been issued for this stationary source since revision 1 of the previous operating permit, AQ0230TVP01, was issued.

The Department issued Construction Permit No. 203CP01 incorporated as AQ0230TPV01Revision 1 on August 23, 2002. Construction Permit No. 203CP01 allowed the replacement of an existing blackstart unit with a 559 kW blackstart unit and restated the 185 ton per year CO cap for Unit 3. AML&P accepted limits on hours of operation to avoid triggering PSD requirements for the two units.

Title V Operating Permit Application, Revisions and Renewal History

The most recent permit issued for this stationary source is Air Quality Operating Permit No. AQ0203TVP01. This permit includes all construction authorizations issued through December 3, 2002. All stationary source-specific requirements established in this previous permit are included in the new operating permit as described in Table D.

The Permittee was issued Operating Permit AQ0203TVP01 on April 1, 2001.

1. Revision No. 1: The Permittee was issued a significant permit revision on December 3, 2002. The terms and conditions of the construction permit No. 203CP01, for replacement of Blackstart Unit 5, were incorporated into Operating Permit AQ0203TVP01.
2. The Permittee requested an Administrative Revision to AQ0203TVP01 Revision 1, which was issued on September 25, 2002. This revision addressed updating the condition concerning emission fees and deadlines for making predictions of the expected emissions for the coming state fiscal year.
3. The Permittee requested an Administrative Revision 2 to AQ0203TVP01 Revision 1, which was issued on March 20, 2003. This revision incorporated all terms and conditions of construction permit No. 203CP01.
4. The Permittee submitted an application to renew Operating Permit AQ0203TVP01 on October 7, 2005. An amendment to the permit renewal application with additional information was received on June 11, 2007.

The Permittee was issued Operating Permit AQ0203TVP02 on December 22, 2008.

1. The Permittee requested a Significant Permit Modification (SPM) on June 16, 2009. The SPM requested changes to the sulfur monitoring compliance standards in Subpart GG. The SPM request to eliminate Method 11 testing and instead be allowed to perform annual sulfur dioxide testing by using ASTM method D4810-88 or equivalent. Justification to the request is that the Enstar transportation agreement of 20 grains.100scf is equivalent to about 300 ppmw of sulfur which is far below the 4000 ppmw sulfur standard in 18 AAC 50.055(c).
2. The Department also corrected a typographical error in Condition 9.1 for Fuel Oil Sulfur Content. The Department corrected the fuel grade provision to be consistent with the 0.1 percent liquid fuel limit.

COMPLIANCE HISTORY

The stationary source has operated at its current location since 1975. Review of the permit files for this stationary source, which includes the past inspection reports indicate a stationary source generally operating in compliance with its operating permit.

STATIONARY SOURCE-SPECIFIC REQUIREMENTS CARRIED FORWARD

State of Alaska regulation in 18 AAC 50.326(j) with reference to 40 CFR Part 71.6 requires that an operating permit include all emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance. These requirements include, but not limited to, each facility-specific requirement established in the most recent operating permit or in any other construction permit issued under 18 AAC 50 that are still in effect at the time of permit issuance. Table D below lists the requirements carried over from Operating Permit No. AQ0203TVP01 that incorporated terms from Construction Permit No. AQ0203CPT01P into Operating Permit No. AQ0203TVP02.

Table D - Comparison of Previous Operating Permit No. AQ0203TVP01 Conditions to Operating Permit No. AQ0203TVP02 Conditions³

Permit No. AQ0203TVP01 Condition number	Description of Requirement	Permit No. AQ0203TVP02 Condition Number	How condition was revised
6.1	Diesel fuel sulfur content requirements for EU ID 3	none	Condition removed. This gas turbine generator is physically incapable of burning diesel fuel. Diesel fuel piping was never installed.
6.1, 6.2	Diesel fuel and fuel gas sulfur requirements	9.2 through 9.6	Revised monitoring, recordkeeping and reporting requirements. 18 AAC 50.350 was repealed 10/1/04. New requirements in 18 AAC 50.040(j), 18 AAC 50.326(j), 18 AAC 50.346(c), 40 CFR 71.6(a)(3) & (c)(6)
7	Recordkeeping for EU ID 4	none	Condition removed. 40 CFR 60 Subpart Kb was revised on 10/15/03. VOL storage tanks having a capacity greater than 151 m ³ and a vapor pressure less than 3.5kPa are not subject to NSPS, Subpart Kb.
13. b	Emission standard for NOx for EU ID 3 when burning diesel fuel.	none	Condition removed. This gas turbine generator is physically incapable of burning diesel fuel.
13.3, 13.4	Emission standard exemptions for EU ID 3	none	Condition removed. This gas turbine generator is physically incapable of burning diesel fuel.
15, 16	Initial testing under 40 CFR 60, Subpart GG	none	Condition removed. Initial testing has been completed.
18	Diesel fuel sulfur and nitrogen content monitoring for EU ID 3	none	Condition removed. This gas turbine generator is physically incapable of burning diesel fuel.
19	Natural gas sulfur content monitoring, record keeping and reporting.	0 through 28.3	Revised monitoring, recordkeeping and reporting requirements. 40 CFR 60, Subpart GG was revised on 07/08/04.
21, 22, 23, 24, 25, 26	Water injection requirements for EU ID 3.	none	Condition removed. This gas turbine generator is physically incapable of burning diesel fuel. These requirements apply only when burning diesel fuel.
28.1, 28.2, 28.3, 28.5	Emission test requirements for CO for EU ID 3.	none	Condition removed or revised. Initial testing has been completed.
39.1, 39.2, 39.3	Monitoring, record keeping and reporting requirements for dilution.	none	18 AAC 50.350 was repealed 10/1/04. Dilution is now regulated under 18 AAC 50.045(a).

³ This table does not include all standard and general conditions.

Table E – Comparison of Construction Permit AQ0203CP01 Conditions to Operating Permit AQ0230TVP02 Conditions

Permit No. AQ0203CP01 Condition number	Description of Requirement	Permit No. AQ0203TVP02 Condition Number	How condition was revised
4	Limit EU ID 5 to 300 hours per 12 months	10	Carried forward
5	Limit CO to 185 tpy	11	Carried forward
5.2	Burn only gas in EU ID 3	14	Carried forward

Table F - Comparison of Permit to Operate 9421-AA014 Conditions to Operating Permit No. AQ0203TVP02 Conditions

Permit No. 9421-AA014 Condition number	Description of Requirement	Permit No. AQ0203TVP02 Condition Number	How condition was revised
7	Fuel sulfur limit of 0.1 %	9.1	Carried forward
Exhibit B, Table B1, B	10 % Opacity Limit for EU ID 3	13 & 16	Carried forward
Exhibit B, Table B1, D	94 ppmvd corrected to 15% oxygen EU ID 3	15	Carried forward

STATEMENT OF BASIS FOR THE PERMIT CONDITIONS

The state and federal regulations for each condition are cited in Operating Permit No. AQ0203TVP02. The Statement of Basis provides the legal and factual basis for each term and condition as set forth in 40 C.F.R. 71.6(a)(1)(i).

Conditions 1 - 4, & 8 Visible Emissions Standard and MR&R

Legal Basis: These conditions ensure compliance with the applicable requirements in 18 AAC 50.050(a) and 18 AAC 50.055(a).

- 18 AAC 50.055(a) applies to the operation of fuel-burning equipment and industrial processes. EU IDs 1, 2, 3, and 5 are fuel burning equipment or industrial processes.

U.S. EPA incorporated these standards as revised in 2002 into the State Implementation Plan effective September 13, 2007.

Factual Basis: Condition 1 prohibits the Permittee from causing or allowing visible emissions (VE) in excess of 18 AAC 50.055(a)(1).

Conditions 2 through 4 provide the monitoring, recordkeeping, and reporting requirements for visible emissions.

Condition 1 through 4 and 8 through incorporates the requirements from the Standard Permit Conditions VIII and IX as they apply to the stationary source.

Standard Permit Condition VIII contains the limit, monitoring, record keeping, and monitoring (MR&R) requirements for gas-fired fuel burning equipment.

Standard Permit Condition IX contains the limit, MR&R requirements for liquid-fired fuel burning equipment.

The stationary source contains sources that can only burn gas as fuel (EU ID 3), sources that burn only liquid fuel (EU ID 5) and dual fired sources EU IDs 1 & 2).

Condition 8 provides for the MR&R of the dual fired sources when fired with gas or liquid for fuel.

The permit has modified the requirement in Standard Condition IX to correct an error in the condition. The Department removed an error that inadvertently specified three sets of 18 minute observations when conducting annual observations. The Department also added a provision that clarifies the option to continue an established monitoring frequency for renewal permits. The Department adopted these changes into revised standard conditions adopted 11/09/08.

Beyond as noted above, the Department has previously determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate the unit-specific or stationary-source-specific conditions would better meet the requirements. Therefore, the Department concludes that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).

Gas Fired Fuel Burning equipment:

Monitoring – The monitoring of gas fired sources for visible emissions is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment

inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting – As provided for in Condition 1, the Permittee must annually certify that only gaseous fuels are used in the equipment.

Liquid Fired Fuel Burning Equipment:

Monitoring – The visible emissions may be observed by either Method-9 or the Smoke/No Smoke plans as detailed in Condition 2.2. Corrective actions such as maintenance procedures and either more frequent or less frequent testing may be required depending on the results of the observations.

Recordkeeping - The Permittee is required to record the results of all visible emission observations and record any actions taken to reduce visible emissions.

Reporting - The Permittee is required to report: 1) emissions in excess of the federal and the state visible emissions standard and 2) deviations from permit conditions. The Permittee is required to include copies of the results of all visible emission observations with the stationary source operating report.

For EU ID 5, as long as the unit is operated under 300 hours as required by Condition 10, the Permittee is only required to provide compliance certification that the emission units is in compliance with the opacity standard.

Dual Fuel-Fired Units:

For EU IDs 1 & 2 as long as they operate only on gas, monitoring consists of an annual certification that only gaseous fuels were used in the equipment. When any of these emission units operates on a backup liquid fuel for more than 400 hours in a calendar year, monitoring as detailed in Condition 8 is required for that source in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 2, 10/8/04. When any of these units operates on a backup liquid fuel for less than 400 hours in a calendar year, monitoring for that unit consists of an annual certification of compliance with the opacity standard. The 400-hour trigger for additional monitoring applies to each individual unit and not as a combined total for all units.

Insignificant Emission Units:

As long as the units do not exceed these limits, they are insignificant by emissions rate as specified in 18 AAC 50.326(e) and no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, 10/8/04. The Permittee must annually certify compliance under Condition 61 with the opacity standard.

Table G – Insignificant Emission Units Inventory

EU ID	Emission unit Name	Emission unit Description	Rating/size	Installation Date
4	Fuel Storage Tank #2	Main Fuel Tank	1,000,000 gallons	1995
6	GTG-6 Auxiliary #1 Generator	Diesel-fueled Internal Combustion Engine	100kw (134 hp)	1979

EU ID	Emission unit Name	Emission unit Description	Rating/size	Installation Date
7	GTG-5 Auxiliary #2 Generator	Diesel-fueled Internal Combustion Engine	100kw (134 hp)	1975
8	Space/Building Heaters	Natural Gas-fired Heaters	< 1.0 MMBtu/hr each	varies

Conditions 5, 6, 7, and 8, Particulate Matter (PM) Standard

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.055(b). This requirement applies to operation of all industrial processes and fuel burning equipment in Alaska.

- EU IDs 1, 2, 3, and 5 are fuel-burning equipment.

Factual Basis: Condition 5 prohibits emissions in excess of the state PM (also called grain loading) standard applicable to fuel-burning equipment and industrial processes. The Permittee shall not cause or allow fuel-burning equipment nor industrial processes to violate this standard.

MR&R requirements are listed in Conditions 6 - 8 of the permit.

The Permittee must establish by actual visual observations, which can be supplemented by other means, such as a defined Operation and Maintenance Program that the emission unit is in continuous compliance with the State's emission standards for particulate matter.

For liquid fuel units the MR&R conditions are Standard Condition IX adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 CFR 71.6(a)(3).

Gas Fired:

For gas fired emission units, MR&R conditions are Standard Condition VIII adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 CFR 71.6(a)(3).

Although periodic PM monitoring of gas-fired units is waived, the Department has the discretion to request a source test for PM emissions from any fuel burning equipment under 18 AAC 50.220(a) and 345(l).

Liquid Fired:

For liquid fuel units the MR&R conditions are Standard Condition IX adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source

specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 CFR 71.6(a)(3).

Dual Fuel-Fired Units:

For EU IDs 1 & 2 as long as they operate only on gas, monitoring consists of an annual certification that only gaseous fuels were used in the equipment akin to the gas fired standard permit Condition VIII. When any of these emission units operates on a backup liquid fuel for more than 400 hours in a calendar year, liquid fuel monitoring as detailed in Conditions 6 is required for that unit in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 2, 10/8/04. When any of these units operates on a backup liquid fuel for less than 400 hours in a calendar year, monitoring for that unit consists of an annual certification of compliance with the particulate matter standard. The 400-hour trigger for additional monitoring applies to each individual unit and not as a combined total for all units.

For EU ID 5, as long as the unit is operated under 300 hours as required by Condition 10, the Permittee is only required to provide compliance certification that the emission units is in compliance with the particulate matter standard.

Condition 9, Sulfur Compound Emissions

Legal Basis: This condition requires the Permittee to comply with the sulfur compound emission standard for all fuel-burning equipment and industrial processes in the State of Alaska.

- EU ID(s) 1, 2, 3, and 5 are fuel-burning equipment and industrial processes.

These sulfur compound standards also apply because they are contained in the federally approved SIP effective September 13, 2007.

Factual Basis: The condition requires the Permittee to comply with the sulfur compound emission standard applicable to fuel-burning equipment. The Permittee may not cause or allow the affected equipment to violate this standard.

Sulfur dioxide comes from the sulfur in the fuel (e.g. coal, natural gas, fuel oils).

Liquid Fuels: For oil fired fuel burning equipment the MR&R conditions are Standard Condition XI and XII adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 CFR 71.6(a)(3).

Standard Operating Permit Condition XI – SO₂ Emissions From Oil Fired Fuel Burning Equipment, adopted by regulation, was modified in this permit. Permit 9421-AA014 limits fuel with sulfur content to no greater than 0.1 percent by weight. The requirement in Condition XI 3.2c., requiring the Permittee to determine the amount of sulfur dioxide emitted when combusting fuel greater than 0.75 percent by weight was deleted from the permit. The permit does not allow the combustion of fuel with a sulfur content above 0.1 percent.

The permit did not incorporate Standard Operating Permit Condition XII – SO₂ Material Balance Calculation. This condition was not required, as stated above, as the permit does not require the calculation.

Gaseous fuels: Fuel gas sulfur is measured as hydrogen sulfide (H₂S) concentration in ppm by volume (ppmv). Calculations⁴ show that fuel gas containing no more than 4000 ppm H₂S will comply with this emission standard at stoichiometric or excess air combustion conditions. This is true for all fuel gases.

Equations to calculate the exhaust gas SO₂ concentrations resulting from the combustion of fuel gas were not included in this permit. Fuel gas with an H₂S concentration of even 10 percent of 4000 ppm is currently not available in Alaska and is not projected to be available during the life of this permit. The Permittee is required to record the fuel gas H₂S concentration of the fuel gas. The Permittee is required to report as State excess emissions whenever the fuel combusted causes sulfur compound emissions to exceed the standards in this condition. The Permittee is required to include copies of the records mentioned in the previous paragraph with the stationary source operating report.

Condition 9.1. The condition re-iterates a fuel sulfur standard applicable to fuel-oil burning equipment. The Permittee may not cause or allow their equipment to violate this standard. The Permittee is required to burn fuel oil with a sulfur content of no more than 0.1% in EU ID 3, and in EU ID 1 and 2 when operating on backup fuel. This is a limit carried forward from Construction Permit No. 203CP01.

Condition 9.3. This condition was modified by removal of the phrase “...or an alternative method approved by the Department” as that text was discarded as Item C.2. during the Revised Action Plan, submitted to EPA on July 15, 2007 as a result of the EPA Audit of the September 2006 Title V Program Review.

Condition 9.4. This condition states the requirement for monitoring fuel gas. Revision 1 changes the semi-annual monitoring provisions from Method 11 to several approved ASTM methods as adopted in 18 AAC 50.040(a)(1).

Condition 10, 11, 12, and 14 Pre-Construction Permit Requirements

Legal Basis: The Permittee is required to comply with all effective stationary source-specific requirements that were carried forward from previous EPA PSD permits, SIP approved permits to operate issued before January 18, 1997, SIP approved construction permit(s), SIP approved minor permits, operating permits issued between January 18, 1997 and September 30, 2004, or owner requested limits established under 18 AAC 50.225. These requirements include Best Available Control Technology limits, limits to ensure compliance with the attainment or maintenance of ambient air quality standards or maximum allowable ambient concentrations, and owner requested limits. State pre-construction requirements apply because they were originally developed through case-by-case action under a federally approved SIP or approved Operating Permit program. EPA approved the latest SIP effective September 13, 2007.

⁴ See ADEC Air Permits Web Site at <http://www.dec.state.ak.us/air/ap/docs/sulfgas.pdf>, under "Stoichiometric Mass Balance Calculations of Exhaust Gas SO₂ Concentration."

Factual Basis: These conditions set out the requirements for PSD Avoidance and ambient air quality protection. These requirements were contained in the Operating Permit 8421-AA004 issued on October 15, 1984 and carried forward or revised in Operating Permit 9421-AA014 issued on April 4, 1995. Operating Permit 203TVP01, issued on April 11, 2001 incorporated these limits. The Department revised some of the requirements in Construction Permit No. 203CP01 issued on August 23, 2002. The terms and conditions of this Construction Permit were incorporated into Operating Permit No. AQ0203TVP01, Revision 1 and Revision 2.

For permit streamlining, the Department did not carry over into this renewal permit the 1984 EU ID 3 fuel oil sulfur content best available control technology limit as amended in 1995 because the applicant certified that this unit is physically incapable of burning fuel oil. See Table D, Condition 6.1 of AQ0203TVP01 permit explanation.

Conditions 15, and 16, BACT Limits

Legal Basis: BACT conditions apply because they were developed during PSD reviews of the facility by ADEC. These conditions required the Permittee to comply with the emissions limits derived from BACT analyses. The Permittee may not cause or allow their equipment to violation these limits.

Factual Basis: On October 15, 1984, the Department issued permit 8421-AA004. This permit established limits based upon the best available control technology after reviewing the permit for PSD. On February 10, 2000, the Department issued Air Quality Control Permit to Operate 9421-AA014 which revised or carried forward the BACT limits. On September 3, 2002, the Department issued permit 203CP01 which made changes to the BACT limits.

Conditions 17, 18, 19, and 20, Insignificant Emission Units

Legal Basis: The Permittee is required to meet state emission standards set out in 18 AAC 50.055 for all industrial processes fuel-burning equipment, and incinerators regardless of size.

Factual Basis: The conditions re-iterate the emission standards and require compliance for insignificant emission units. The Permittee may not cause or allow their equipment to violate these standards. Insignificant emission units are not listed in the permit unless specific monitoring, recordkeeping and reporting are necessary to ensure compliance.

The Department finds that the insignificant units at this stationary source do not require specific monitoring, recordkeeping and reporting to ensure compliance under these conditions.

Condition 17.1 requires certification that the sources did not exceed state emission standards during the previous year and did not emit any prohibited air pollution. For EU ID 5, as long as it does not exceed the limits of its hours of operation as stated in Condition 17, it is considered an insignificant source and no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, 10/8/04 for standby sources.

Conditions 21 – 25, NSPS Subpart A Requirements

Legal Basis The Permittee must comply with those New Source Performance Standard (NSPS) provisions incorporated by reference the NSPS effective July 1, 2007, for specific industrial activities, as listed in 18 AAC 50.040⁵.

Most (with the exception of some storage tanks) sources subject to an NSPS are subject to Subpart A. At this stationary source, EU ID 3 is subject to NSPS Subpart GG and therefore subject to Subpart A.

Condition 21.1 through 21.3 - The Permittee has already complied with the notification requirements in 40 C.F.R. 60.7 (a)(1) - (4) for EU ID 3. However, the Permittee is still subject to these requirements in the event of a new NSPS source or reconstruction of one of these sources.

Condition 21.4 - The requirements to notify the EPA and the Department of any proposed replacement of an affected stationary source (40 C.F.R. 60.15) applies to EU ID 3 in the event of a proposed replacement of this source.

Condition 22 - Start-up, shutdown, or malfunction record maintenance requirements in 40 C.F.R. 60.7(b) are applicable to all NSPS sources subject to Subpart A.

Condition 23 - Good air pollution control practices in 40 C.F.R. 60.11 are applicable to all NSPS sources subject to Subpart A (EU ID 3).

Condition 24 - States that any credible evidence may be used to demonstrate compliance or establishing violations of relevant NSPS standards for EU ID 3.

Condition 25 - Concealment of emissions prohibitions in 40 C.F. R. 60.12 are applicable to EU ID 3.

Factual Basis: Subpart A contains the general requirements applicable to all affected facilities (sources) subject to NSPS. In general, the intent of NSPS is to provide technology-based emission control standards for new, modified and reconstructed affected facilities.

Conditions 26, 27, and 28, NSPS Subpart GG Requirements

Legal Basis: These conditions prohibit the Permittee from exceeding emission standards set out in Subpart GG. NSPS Subpart GG applies to stationary gas turbines with a heat input at peak load (maximum load at 60 percent relative humidity, 59 degrees F, and 14.7 psi) equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr), based on the lower heating value of the fuel fired and constructed, modified, or reconstructed after October 3, 1977.

Factual Basis: These conditions incorporate NSPS Subpart GG NO_x emission and sulfur compound limits. The Permittee may not allow equipment to violate these standards.

NO_x Standard: For a turbine subject to 40 C.F.R. 60.332, the NO_x standard is determined by the following equation:

$$STD_{NOX} = 0.0075(14.4/Y) + F$$

⁵ EPA has not delegated to the Department the authority to administer the NSPS program as of the issue date of this permit.

$$STD_{NOX} = 0.015(14.4 / Y) + F$$

where,

STD_{NOX} = allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis)

Y = manufacturer's maximum rated heat input (kJ/W-hr), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the affected stationary source. The value of Y shall not exceed 14.4 kJ/W-hr

F = NO_x emissions allowance for fuel bound nitrogen, percent by volume, **assumed to be zero for distillate fuel oil and gaseous fuels.**

Based on the manufacturer's heat rating at manufacturer's rated peak load, and assuming fuel bound nitrogen of zero, the NO_x standard is 94 ppmv for EU ID 3.

SO₂ Standard: The Permittee is required to comply with one of the following sulfur requirements for EU ID(s) 1 through 13 (turbines):

- (1) do not cause or allow SO₂ emission in excess of 0.015 percent by volume, at 15 percent O₂ and on a dry basis (150 ppmv), or
- (2) do not cause or allow the sulfur content for the fuel burned in EU ID 3 to exceed 0.8 percent by weight.

Exemptions: Gas turbines exempted from NSPS Subpart GG emission standards are as provided in 40 C.F.R. 60.332(e) – (l).

Condition 26, NO_x Monitoring, Recordkeeping, and Reporting

Legal Basis: Periodic monitoring is included in Condition 26.2 for all turbines that normally operate for greater than 400 hours in a 12 month period. This additional monitoring is necessary to ensure that turbine emissions comply with the NSPS NO_x standard and is required under 40 CFR 71.6(a)(3) as the subpart does not contain MR&R sufficient for an operating permit.

Factual Basis: The Department does not have enough information to make categorical determinations that certain types of turbines, or turbines with emission test results below a certain percentage of the Subpart GG NO_x emission limit will inherently comply with the Subpart GG limit at all times and will never need additional testing. After a sufficient body of NO_x data is gathered under monitoring conditions for compliance with 40 C.F.R. 60, Subpart GG, the Department may find that it has enough information to make such categorical determinations. In that event, the Department would revise the NO_x monitoring conditions. The Department may determine that to assure compliance it is necessary to retain or increase the current monitoring frequency.

These conditions do not include the initial NSPS performance test requirements as the Subpart A conditions cover these requirements. If an existing or new turbine under this permit is still subject to the performance test requirement of 40 C.F.R. 60.8 is covered under the Subpart A related conditions.

The intent of these conditions is that turbines or groups of turbines be routinely tested on no less than a 5-year cycle. If the most recent performance test on a turbine showed NO_x emissions at less than or equal to 90% of the limit shown in Condition 26, then periodic monitoring is required at the first applicable of three criteria: either within 5 years of the last performance test, or within a year of the issue date of the permit, or within a year of exceeding 400 hours of operation within a 12-month period. If the most recent performance test showed operations at greater than 90% of the emissions listed in Condition 26, then periodic monitoring source testing is required every year until two consecutive tests show emissions at less than or equal to 90% of the limit.

The condition does not state how load must be measured. For some turbines, it may be possible to directly measure load as either mechanical or electrical output. For others, it may be necessary to calculate load indirectly based on measurements of other parameters. The Department is not attempting to dictate what method is most appropriate through the permit condition, but should evaluate the adequacy of methods of calculating load based on the load monitoring proposed by the Permittee.

Subpart GG defines “emergency gas turbine⁶” and exempts turbines meeting that definition from the GG emission standards. Some turbines may be operated as standby equipment but not meet the definition of emergency turbine, so the Department has added a Method 20 monitoring threshold of 400 hours per 12-month period. For turbines expected to operate less than 400 hours the Department has also added recordkeeping for hours of operation. The Department does not intend to require the Permittee to operate a turbine solely for the purpose of testing.

The condition requires testing at a range of loads, consistent with the performance test requirements in Subpart GG, that is, test at 30, 50, 75, and 100 percent load. If testing at these four loads is not reasonable, the condition allows the Permittee to propose to the Department what test loads will be reasonable and adequate, and the Department will have the responsibility to make a finding on that proposal. If EPA has already approved alternative test loads for the initial performance test the Department would allow those test loads if the information that went into that decision were still representative of the turbine operation.

In Condition 26, the Department considers “fuel type” to mean, for liquid fuels a type of fuel as described in an ASTM or similar fuel specification.

Load measurements or load calculations from load surrogate measurements are for one-hour periods. The intent is to match the averaging period for the test method. Method 20 identifies a number of traverse points that vary with the size of the stack. From these points the tester is to choose at least 8 points for NO_x measurements. The time at each point is to be at least one minute plus the average response time of the instrument. The recorded value is the average steady state response. Presumably, the steady state response would exclude some or all of the response time of the instrument. Three runs are to be done at each test load.

⁶ *Emergency Gas Turbine* means any stationary gas turbine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation, as defined in 40 C.F.R. 60.331(e), effective 7/1/03.

The three runs would represent 24 minutes of measurement time or more. A one-hour average load is therefore a reasonable approximation of a load period corresponding to the test method.

Conditions 28 SO₂ Monitoring, Recordkeeping, and Reporting

Legal Basis: This condition requires the Permittee to comply with NSPS Subpart GG SO₂ or fuel quality monitoring, record keeping and reporting.

Factual Basis: Monitoring, recordkeeping, and reporting requirements for this condition are described in NSPS Subpart GG and have been referenced here. No additional monitoring outside of the Subpart GG requirements is necessary to ensure compliance with the NSPS SO₂ standard. A letter from the EPA issued in 1997 granted an alternative monitoring schedule for using the ASTM method D4810-88 for H₂S analysis.

Monitoring: Condition 28.1 incorporates NSPS Subpart GG fuel sulfur monitoring requirements.

Recordkeeping: The Permittee is required to maintain records of all sulfur monitoring data required by NSPS Subpart GG for five years as set out in 18 AAC 50.350(h)(5). This requirement is stated in Condition 55.

Reporting: NSPS Subpart GG SO₂ standard reporting requirements are incorporated in the permit in Condition 28.3. In Condition 28.3 the Department requests that a summary report of the results from the monitoring requirements in Condition 28.1 be included in the Operating Report required under Condition 60.

Conditions 29 - 31, Standard Terms and Conditions

Legal Basis: These are standard conditions required under 18 AAC 50.345(a) and (e)-(g) for all operating permits. This provision is incorporated in the federally approved Alaska operating permit program of November 30, 2001.

Factual Basis: These are standard conditions that apply to all permits.

Conditions 32, Administration Fees

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.400-405 as derived from AS 46.14.130. This condition requires the Permittee, owner, or operator to pay administration fees as set out in regulation. Paying administration fees is required as part of obtaining and holding a permit with the Department or as a fee for a Department action.

Factual Basis: The owner or operator of a stationary source who is required to apply for a permit under AS 46.14.130 shall pay to the Department all assessed permit administration fees. The regulations in 18 AAC 50.400-405 specify the amount, payment period, and the frequency of fees applicable to a permit action.

Conditions 33 - 34, Emission Fees

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.410-420. The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to re-compute assessable emissions.

Factual Basis: These emission fee conditions are Standard Condition I under 18 AAC 50.346(b) adopted pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of AS 46.14.250. No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of AS 46.14.250.

These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The default assessable emissions are generally potential emissions of each air pollutant in excess of 10 tons per year. authorized by the permit (AS 46.14.250(h)(1)(A)).

The conditions allow the Permittee to calculate **actual** annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air pollutant. Therefore, fees based on actual emissions must also be paid on any pollutant emitted whether or not the permit contains any limitation of that pollutant.

This standard condition specifies that, unless otherwise approved by the Department, calculations of assessable emission based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable emission are based on the previous year, the Department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match.

Condition 35, Good Air Pollution Control Practice

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(5) and applies to all emission units, **except** those subject to federal emission standards, those subject to continuous emission or parametric monitoring, and for insignificant emission units, i.e., except EU ID 3.

Factual Basis: The condition requires the Permittee to comply with good air pollution control practices for all sources.

The Department adopted this condition under 18 AAC 50.346(b) as Standard operating Permit Condition VI pursuant to AS 46.14.010(d). The Department determined that this standard condition adequately meets the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard condition meets the requirements of 40 CFR 71.6(a)(3).

Maintaining and operating equipment in good working order is fundamental to preventing unnecessary or excess emissions. Standard conditions for monitoring compliance with emission standards are based on the assumption that good maintenance is performed. Without appropriate maintenance, equipment can deteriorate more quickly than with appropriate maintenance. If appropriate maintenance is not applied to the equipment, the Department may have to apply more frequent periodic monitoring requirements (unless the monitoring is already continuous) to ensure that the monitoring results are representative of actual emissions.

The Permittee is required to keep maintenance records to show that proper maintenance procedures were followed, and to make the records available to the Department. The Department may use these records as a trigger for requesting source testing if the records show that maintenance has been deferred.

Condition 36, Dilution

Legal Basis: This condition prohibits the Permittee from using dilution as an emission control strategy as set out in 18 AAC 50.045(a). This state regulation applies to the Permittee because the Permittee is subject to emission standards in 18 AAC 50.

Factual Basis: The condition prohibits the Permittee from diluting emissions as a means of compliance with any standard in 18 AAC 50.

Condition 37, Reasonable Precautions to Prevent Fugitive Dust

Legal Basis: This condition requires the Permittee to use reasonable precautions when handling, storing or transporting bulk materials or engineering in an industrial activity in accordance with the applicable requirement in 18 AAC 50.045(d). Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the stationary source.

This condition applies to stationary source operating permits that do not have an approved dust control plan, and contain one of the following sources: coal-fired boilers; coal handling facilities; construction of gravel pads or roads that are part of a permitted stationary source or other construction that has the potential to generate fugitive dust that reaches ambient air; commercial/industrial/municipal solid waste, air curtain, and medical waste incinerators; sewage sludge incinerators not using wet methods to handle that ash; mines; urea manufacturing; soil remediation units; or dirt roads under the control of the operator with frequent vehicle traffic.

Factual Basis: The condition requires the Permittee to comply with 18 AAC 50.045(d), and take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air.

The Department adopted this standard condition as Standard Operating Permit Condition X under 18 AAC 50.346(c) pursuant to AS 46.14.010(d). The Department determined that this standard condition adequately meets the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard condition meet the requirements of 40 CFR 71.6(a)(3).

Condition 38, Stack Injection

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.045(e)-(f). It prohibits the Permittee from releasing materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack (i.e. disposing of material by injecting it into a stack). Stack injection requirements apply to the stationary source because the stationary source contains a stack or source constructed or modified after November 1, 1982.

Factual Basis: No specific monitoring for this condition is practical. Compliance is ensured by inspections, because the source or stack would need to be modified to accommodate stack injection.

Condition 39, Air Pollution Prohibited

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.110. The condition prohibits the Permittee from causing any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. Air Pollution Prohibited requirements apply to the stationary source because the stationary source will have emissions.

Factual Basis: While the other permit conditions and emissions limitation should ensure compliance with this condition, unforeseen emission impacts can cause violations of this standard. These violations would go undetected except for complaints from affected persons. Therefore, to monitor compliance, the Permittee must monitor and respond to complaints.

ADEC adopted this standard condition into 18 AAC 50.346(a) pursuant to AS 46.14.010(d). The Department determined that this condition adequately meet the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard condition meets the requirements of 40 CFR 71.6(a)(3).

The Permittee is required to report any complaints and injurious emissions. The Permittee must keep records of the date, time, and nature of all complaints received and summary of the investigation and corrective actions undertaken for these complaints and to submit copies of these records upon request of the Department.

Condition 40, Technology-Based Emission Standard

Legal Basis: The Permittee is required to take reasonable steps to minimize emissions if certain activity causes an exceedance of any technology-based emission standard in this permit. This condition ensures compliance with the applicable requirement in 18 AAC 50.235. Technology Based Emission Standard requirements apply to the stationary source because the stationary source contains equipment subject to a technology-based emission standard, such as BACT, MACT, LAER, NSPS or other “technologically feasible” determinations.

Factual Basis: The conditions of this permit list applicable technology-based emission standards and require excess emission reporting for each standard in accordance with Condition 59. Excess emission reporting under Condition 59 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under Condition 59.

Condition 41, Asbestos NESHAP

Legal Basis: The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. This condition ensures compliance with the applicable requirement in 18 AAC 50.040(b)(1) and (2)(F). The asbestos demolition

and renovation requirements apply if the Permittee engages in asbestos demolition or renovation.

Factual Basis: Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with these federal regulations.

Condition 42, Refrigerant Recycling and Disposal

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.040(d) and applies if the Permittee engages in the recycling or disposal of certain refrigerants. The condition requires the Permittee to comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F that will apply if the Permittee uses certain refrigerants.

Factual Basis: Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with this federal regulation.

Condition 43, NESHAPS Applicability Determinations

Legal Basis: This condition requires the Permittee to keep and make available to the Department copies of the major stationary source determination and applicability of specific federal regulations that may apply to its stationary sources.

Factual Basis: The Permittee has conducted an analysis of the stationary source and determined that it is not a major HAPs stationary source based on emissions. This condition requires the Permittee to keep and make available to the Department copies of the major stationary source determination.

Condition 44, Open Burning

Legal Basis: The condition requires the Permittee to comply with the regulatory requirements when conducting open burning at the stationary source. This condition ensures compliance with the applicable requirement in 18 AAC 50.065. The open burning state regulation in 18 AAC 50.065 applies to the Permittee if the Permittee conducts open burning at the stationary source.

Factual Basis: No specific monitoring is required for this condition. Condition 44.1f requires the Permittee to keep "sufficient records" to demonstrate compliance with the standards for conducting open burning, but does not specify what these records should contain.

More extensive monitoring and recordkeeping is not warranted because the Permittee does not conduct open burning as a routine part of their business. Also, most of the requirements are prohibitions, which are not easily monitored. Additional monitoring is achieved through Condition 39, which requires a record of complaints.

Condition 45, Requested Source Tests

Legal Basis: The Permittee is required to conduct source tests as requested by the Department. The Department adopted this condition under 18 AAC 50.345(k) as part of its operating permit program approved by EPA November 30, 2001.

Factual Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.220(a) and applies because this is a standard condition to be included in all operating permits. Monitoring consists of conducting the requested source test.

Conditions 46 - 48, Operating Conditions, Reference Test Methods, Excess Air Requirements

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.220(b) and apply because the Permittee is required to conduct source tests by this permit. The Permittee is required to conduct source test as set out in Conditions 46 through 48.

Factual Basis: These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with Conditions 46 through 48 consist of the test reports required by Condition 53.

Condition 49, Test Exemption

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.345(a) and applies when the source exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), amended May 3, 2002, the requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

Conditions 50 - 53, Test Deadline Extension, Test Plans, Notifications and Reports

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.345(l)-(o) and apply because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions 18 AAC 50.345(l) - (o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with this condition.

Condition 54, Particulate Matter (PM) Calculations

Legal Basis: This condition requires the Permittee to reduce particulate matter data in accord with 18 AAC 50.220(f). It applies when the Permittee tests for compliance with the PM standards in 18 AAC 50.050 or 50.055.

Factual Basis: The condition incorporates a regulatory requirement for PM source tests. The Permittee must use the equation given in this condition to calculate the PM emission concentration from the source test results. This condition supplements specific monitoring requirements stated elsewhere in this permit.

Condition 55, Recordkeeping Requirements

Legal Basis: Applies because the Permittee is required by the permit to keep records.

Factual Basis: The condition restates the regulatory requirements for recordkeeping, and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide an evidence of compliance with this requirement.

Condition 56, Certification

Legal Basis: This condition requires the Permittee to comply with the certification requirement in 18 AAC 50.205 and applies to all Permittees under EPA's approved operating permit program of November 30, 2001.

Factual Basis: This standard condition is required in all operating permits under 18 AAC 50.345(j).

This condition requires the Permittee to certify all reports submitted to the Department. To ease the certification burden on the Permittee, the condition allows the excess emission reports to be **certified** with the stationary source report, even though it must still be **submitted** more frequently than the stationary source operating report. This condition supplements the reporting requirements of this permit.

Condition 57, Submittals

Legal Basis: This condition requires the Permittee to submit requested information to the Department. This is a standard condition from 18 AAC 50.345(i) of the state approved operating permit program effective November 30, 2001.

Factual Basis: This condition requires the Permittee to submit information requested by the Department. Monitoring consists of receipt of the requested information.

Condition 59, Excess Emission and Permit Deviation Reports

Legal Basis: This condition requires the Permittee to comply with the applicable requirement in 18 AAC 50.235(a)(2) and 18 AAC 50.240. Also, the Permittee is required to notify the Department when emissions or operations deviate from the requirements of the permit.

Factual Basis: This condition satisfies two state regulations related to excess emissions - the technology-based emission standard regulation and the excess emission regulation. Although there are some differences between the regulations, the condition satisfies the requirements of each regulation.

The Department adopted this condition as Standard Operating Permit Condition III under 18 AAC 50.346(c) pursuant to AS 46.14.010(d). The Department determined that this standard condition adequately meet the requirements of 40 CFR 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 CFR 71.6(a)(3).

Section 12, Notification Form

The Department modified the notification form, deviating from Standard Permit Condition IV, to more adequately meet the requirements of Chapter 50, Air Quality Control. The modification consisted of correcting typos and moving failure to monitor/report and recordkeeping to the permit deviations Section 2.

Condition 60, Operating Reports

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(6) and applies to all permits.

Factual Basis: The condition restates the requirements for reports listed in regulation. The condition supplements the specific reporting requirements elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition.

The Department modified Standard Permit Condition VII to clarify reporting for transition periods between an expiring permit and a renewal permit. The changes ensure that the Permittee reports against the permit terms and conditions of the permit that was in effect during those partial date periods of the transition. No format is specified. The Permittee may provide one report accounting for each permit term or condition and the effective permit at that time. The Permittee may chose to provide two reports: the first report accounting for reporting elements of permit terms and conditions from the end date of the previous operating report until the date of expiration of the old permit, and a second operating report accounting for reporting elements of terms and conditions in effect from the effective date of the renewal permit until the end of the reporting period.

The Department further modified this condition to allow the Permittee to submit one of the required two copies of the report electronically in lieu of paper. This change more adequately meets the requirements of 18 AAC 50 and agency needs provided the electronic version is compatible with ADEC software, as the Department can more efficiently distribute the electronic copy to staff in other locations.

A final change was inserted to ensure that permit deviation or excess emissions notices provided as part of Condition 59 were also reported under this condition. These changes were adopted into a new Standard Condition on 11/9/08.

Condition 61, Annual Compliance Certification

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.040(j)(4) and applies to all Permittees.

Factual Basis: This condition specifies the periodic compliance certification requirements, and specifies a due date for the annual compliance certification. Each annual certification provide monitoring records for compliance with this condition.

Condition 61.2 provides clarification of transition periods between an expiring permit and a renewal permit to ensure that the Permittee certifies compliance with the permit terms and conditions of the permit that was in effect during those partial date periods involved in the transition. No format is specified: the Permittee may provide one report certifying compliance with each permit term or condition and the effective permit at that time, or may chose to provide two reports – one certifying compliance with permit terms and conditions from January 1 until the date of expiration of the old permit, and a second report certifying compliance with terms and conditions in effect from the effective date of the renewal permit until December 31.

The Permittee may submit one of the required copies electronically at their discretion. This change more adequately meets the requirements of 18 AAC 50 and agency needs, as the Department can more efficiently distribute the electronic copy to staff in other locations.

Condition 62, NSPS and NESHAP Reports

Legal Basis: The Permittee is required to provide the federal administrator and Department a copy of each emission unit report for units subject to NSPS or NESHAP federal regulations under 18 AAC 50.326(j)(4). 40 CFR 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: The condition supplements the specific reporting requirements in 40 C.F.R. 60, 40 C.F.R. 61, and 40 C.F.R. 63. The reports themselves provide monitoring for compliance with this condition.

Conditions 63 - 65, Permit changes and revisions requirements

Legal Basis: The Permittee is obligated to notify the Department of certain off-permit source changes and operational changes under 18 AAC 50.326(j)(4). 40 CFR 71.6(a)(10), (12), and (13) incorporated by reference under 18 AAC 50.040(j) require these provisions within this permit. 40 CFR 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: These are conditions required in 40 CFR 71.6 for all operating permits to allow changes within a permitted stationary source without requiring a permit revision.

The Permittee did not request trading of emission increases and decreases as described in 71.6(a)(13)(iii).

Condition 66, Permit Applications

Legal Basis: These conditions set out the protocol the Permittee must follow to submit amendment, modification and renewal applications to the Department under 18 AAC 50.326(j)(3) and to the Federal Administrator under 40 CFR 71.5, 71.7 and 71.10.

Factual Basis: This condition directs the Permittee to submit application materials to the Department's Anchorage office. The current address at time of permit issuance is provided in a footnote because it may change during the life of this permit. The current address can be obtained by contacting the Department, checking the website, or by other reasonable means. The Permittee may submit copies of application materials in electronic formats compatible with ADEC software as the Department can more efficiently distribute the electronic copy to staff in other locations. Condition 68 directs the applicant to send copies of all application materials directly to the EPA, in electronic format if practicable.

Condition 67 and 68, Permit Renewal

Legal Basis: The Permittee must submit a timely and complete operating permit renewal application if the Permittee intends to continue source operations in accord with the operating permit program under 18 AAC 50.326(j)(3). The obligations for a timely and complete operating permit application are set out in 40 CFR 71.5 incorporated by reference in 18 AAC 50.040(j)(3). 40 CFR 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: In accordance with AS 46.14.230(a), this operating permit is issued for a fixed term of five years after the date of issuance, unless a shorter term is requested by the permit applicant. The Permittee is required to submit an application for permit renewal by the specific dates applicable to George M. Sullivan Plant Two as listed in this condition. As

stated in 40 CFR 71.5(a)(1)(iii), submission for a permit renewal application is considered timely if it is submitted at least six months but no more than eighteen months prior to expiration of the operating permit. According to 71.5(a)(2), a complete renewal application is one that provides all information required pursuant to 40 CFR 71.5(c) and must remit payment of fees owed under the fee schedule established pursuant to 18 AAC 50.400. 40 CFR 71.7(b) states that if a source submits a timely and complete application for permit issuance (including renewal), the source's failure to have a permit is not a violation until the permitting authority takes final action on the permit application.

Therefore, for as long as an application has been submitted within the timeframe allowed under 40 CFR 71.5(a)(1)(iii), and is complete before the expiration date of the existing permit, then the expiration of the existing permit is extended and the Permittee has the right to operate under that permit until the effective date of the new permit. However, this protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information needed to process the application. Monitoring, recordkeeping, and reporting for this condition consist of the application submittal.

Conditions 69 - 74, General Compliance Requirements and Schedule

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.326(j)(3). The Permittee is required to comply with these standard conditions set out in 18 AAC 50.345 included in all operating permits. 40 CFR 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: These are standard conditions for compliance required for all operating permits.

Conditions 75 - 76, Permit Shield

Legal Basis These conditions ensure compliance with the applicable requirement in 18 AAC 50.326(j) and apply because the Permittee has requested that the Department shield the source from the applicable requirements listed under this condition under the Federally approved State operating program effective November 30, 2001

Factual Basis: Table B of Operating Permit No. AQ0203TVP02 shows the permit shield that the Department granted to the Permittee. The permit conditions set forth the requirements that the Department determined were not applicable to the stationary source. The following table shows the requests that were denied and the reasons that they were denied. The Department based the determinations on the permit application, past operating permit, likelihood for the source to become subject during the life of the permit, Title I permits and inspection reports.

Table H - Permit Shields Denied

Shield requested for:	Reason for shield request:	Reason for request denial:
Stationary Source-Wide		
AQC Permit AQ0203TVP01, Condition 6.3	Compliance is assured when firing fuel with less than 4,000 ppm H ₂ S. Natural gas as defined under 40 CFR 60.331(u) contains less than 338 ppmv. The natural gas received by AML&P from its supplier contains virtually no sulfur as indicated by historical sampling results. Also, based on a review of other recently issued permits, only an annual certification is required.	The conditions in the permit are derived from the state regulations. The condition provides the necessary means to insuring that the Permittee is in compliance with sulfur emission limit.
AQC Permit AQ0203TVP01,Condition 9	EU ID 3 is an affected facility and the source has already complied with the notification requirements in 40 CFR 60.7(a)(1) and (a)(3).	Although the source has already complied with these requirements for EU ID 3, the Permittee is still subject to these requirements in the event of a new NSPS source or the reconstruction of one of the turbines.
AQC Permit AQ0203TVP01,Conditions 17 and 18.1(a) and (b)	Add a requirement that EU ID 3 shall fire only natural gas as defined in 40 CFR 60.331(u) and that the source has elected not to monitor fuel sulfur content of the gaseous fuels as allowed under 40 CFR 60.334(h)(3)	The NSPS requirements in the permit allow the source to not monitor fuel sulfur content if it burns natural gas as defined in 40 CFR 60.331(u). The Permittee must comply with the applicable portions of the NSPS and cannot accept limits on operations that exempt it from NSPS requirements once those requirements have become applicable.
AQC Permit AQ0203TVP01,Condition 18	Nitrogen testing is required only if the Permittee chooses to claim an allowance for fuel-bound nitrogen. AML&P has not and will not claim such an allowance.	Pursuant to 40 CFR 60.332(a)(1), the NSPS requires that EU ID 3 meet an emission standard for NO _x . If the source elects not to take an allowance for fuel-bound nitrogen, no monitoring of nitrogen content is required.
AQC Permit AQ0203TVP01,Condition 58	The George M. Sullivan Generation Plant Two is not required to submit any reports under the NSPS or NESHAP.	The conditions in the permit are derived from the state regulations. If the regulation is negated then the condition that derives from the regulation is likewise negated.

Attachment A

Pollutant (Circle One—SO₂/NO_x/fuel sulfur)

Reporting period dates:

From _____ to _____

Company: _____

Emission Limitation _____

Address: _____

Monitor Manufacturer and Model No _____

Date of Latest CMS (CEMS and PEMS) Certification or Audit _____

Process Unit(s) Description: _____

Total source operating time in reporting period¹ _____

Figure 1 -- Summary Report -- Excess Emission and Monitoring System Performance

Emission data summary¹	CMS (CEMS and PEMS) performance summary¹
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown _____ b. Control equipment problems _____ c. Process problems _____ d. Other known causes _____ e. Unknown causes _____	1. CMS (CEMS and PEMS) downtime in reporting period reporting period due to: a. Monitor equipment malfunctions _____ b. Non-Monitor equipment malfunctions _____ c. Quality assurance calibration _____ d. Other known causes _____ e. Unknown causes _____
2. Total duration of excess emission _____	2. Total CMS (CEMS and PEMS) Downtime _____
3. Total duration of excess emissions X (100)/[Total source operating time] _____ % ²	3. [Total CMS (CEMS and PEMS) Downtime] X (100)/[Total source operating time] _____ % ²

¹For opacity, record all times in minutes. For gases, record all times in hours.

²For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS (CEMS or PEMS) downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in this condition shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

 Name

 Signature