

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

Final - August 14, 2009

**Air Force Research Laboratory (AFRL)
HAARP Research Site**

**STATEMENT OF BASIS
of the terms and conditions for
Permit No. AQ0440TVP01**

**Prepared by Shonda Oderkirk
ADEC AQ/APP Fairbanks**

INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. AQ0440TVP01.

STATIONARY SOURCE IDENTIFICATION

Section 1 of Operating Permit No. AQ0440TVP01 contains information on the stationary source as provided in the Title V permit application.

The stationary source is owned and operated by Air Force Research Laboratory, and **Air Force Research Laboratory (AFRL)** is the Permittee for the stationary source's operating permit. Marsh Creek LLC operates the emission units under contract for the Permittee. The SIC code for this stationary source is 9711 – *National Defense*.

The stationary source utilizes the diesel generators listed in Table A to generate electric power in support of the HAARP site antenna array. The antennas function to aid in the study of the properties and behavior of the ionosphere.

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 C.F.R. 71.5(c)(3).

The emission units at the HAARP Research Site that are classified and have specific monitoring, recordkeeping, and reporting requirements are listed in Table A of Operating Permit No. AQ0440TVP01.

Table A of Operating Permit No. AQ0440TVP01 contains information on the emission units regulated by this permit as provided in the application. The tables are 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 calculated by the Department from the HAARP Research Site is shown in the table below.

Table B - Emissions Summary, in Tons Per Year (TPY)

Pollutant	NO _x	CO	PM-10	SO ₂	VOC	HAPs	Total
PTE	239.47	28.74	2.79	24.26	10.95	0.52	306.2
Assessable PTE	239.47	28.74	0	24.26	10.95	0	303.4

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 24.1 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 B 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, emissions are as provided in the application. For emission units 1-5, listed in Table A: NO_x, CO and PM-10 emission factors came from Department approved source testing. The VOC emission factor came from AP-42. The emission factor for SO₂ is based on mass balance. For emission units 6-9, listed in Table A: all emission factors came from AP-42.

HAP estimates were calculated by the Department based on EPA's AP-42 emission calculations. HAP estimates were not included within the total column of the table above because most HAPs are VOCs, and the non-VOC HAP contribution was insignificant. The stationary source 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 C.F.R. 71.3(a) as,

- a) Directly emitting, or has the potential to emit, 100 tpy or more of any air pollutant.

AIR QUALITY PERMITS

Previous Air Quality Permit to Operate

No previous air quality control permit-to-operate exists for this stationary source.

Title I (Construction and Minor) Permits

The Department issued no construction permit for this stationary source after January 17, 1997 (the effective date of the new divided operating and construction-permitting program). HAARP initially installed one diesel electric generator set under AQ0440PL01 issued October 14, 1998. The Department issued Minor Permit No. AQ0440MSS01 for this stationary source on April 30, 2007 to install additional diesel generators. The Department established stationary source-specific requirements in this Title I permit. On-going requirements are included in this new operating permit as described in Table C.

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

COMPLIANCE HISTORY

The stationary source has operated at its current location since 1998. Review of the permit files for this stationary source, which include the past inspection reports and compliance evaluations, indicate a stationary source generally operating in compliance with its pre-approved emission limit and minor permit.

APPLICABLE REQUIREMENTS FROM PRE-CONSTRUCTION PERMITS

Incorporated by reference at 18 AAC 50.326(j), 40 C.F.R. Part 71.6 defines “applicable requirement” to include the terms and conditions of any pre-construction permit issued under rules approved in Alaska’s State Implementation plan.

Alaska’s State Implementation Plan included the following types of pre-construction permits:

- Permit-to-operate issued before January 18, 1997 (these permits cover both construction and operations);
- Construction Permits issued after January 17, 1997; and
- Minor permits issued after October 1, 2004.

Pre-construction permit terms and conditions include both source-specific conditions and conditions derived from regulatory applicable requirements such as standard conditions, generally applicable conditions and conditions that quote or paraphrase requirements in regulation.

These requirements include, but not limited to, each source-specific requirement established in these permits issued under 18 AAC 50 that are still in effect at the time of this operating permit issuance. Table C below lists the requirements carried over from Minor Permit No. AQ0440MSS01 into Operating Permit No. AQ0440TVP01 to ensure compliance with the applicable requirements.

Table C - Comparison of Permit No. AQ0440MSS01 Conditions to Operating Permit No. AQ0440TVP01 Conditions³

Permit No. AQ0440MSS01 Condition number	Description of Requirement	Permit No. AQ0440TVP01 Condition Number	How condition was revised
1-4	Standard Conditions	1-8	More comprehensive
5-6	Sulfur Standards	9	More comprehensive
7	NO _x AAQS	11	More comprehensive
8	Stack Heights	11	Not revised
9-10	Public Access Plan	12, 12.5	Not revised
11-16	ORL requirements	13-15	Added periodic source testing for Units 1-5
17	Operating Permit	None	Requirement met
18	Assessable Emissions	24	Not revised
19	Emission Estimates	25	Not revised
20-26	General Requirements	45-50, 63	Not revised
27	Air Pollution Prohibited	30	Not revised
28-32	Enforceable Permit	20-22, 61-62	Not revised
33-39	General Source Testing	35-37, 40-43	Not revised

NON-APPLICABLE REQUIREMENTS

Each permit is required to contain a discussion of all applicable requirements as set forth in 40 C.F.R. 71.6(a) adopted in 18 AAC 50.040(j). This section discusses standard conditions that have been removed from the permit or are not included for specific reasons.

NSPS Subparts K, Ka, Kb: Although the Permittee has several Fuel Storage Tanks (EU IDs10-12), they are not currently applicable to the provisions of this Subparts K or Ka as they have not been modified or reconstructed since the Subpart applicability date. The tanks are not subject to Kb as they do not meet the minimum size for applicability. A permit shield has not been granted for these regulations.

NSPS Subpart IIII: Although the Permittee has several CI ICE (EU IDs 1-5), they are not currently applicable to the provisions of this Subpart as they have not been modified or reconstructed since the Subpart applicability date. A permit shield has not been granted for these regulations.

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

Halon: The Permittee certifies that they do not use halon at this stationary source, therefore the provisions of 40 C.F.R. 82 have been removed.

STATEMENT OF BASIS FOR THE PERMIT CONDITIONS

The state and federal regulations for each condition are cited in Operating Permit No. AQ0440TVP01. 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 Visible Emissions Standard and MR&R

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

- 18 AAC 50.055(a) applies to the operation of fuel-burning equipment and industrial processes. EU IDs 1-9 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 in excess of 18 AAC 50.055(a)(1).

The Permittee must monitor, record-keep and report emissions in accordance with Conditions 2 through 4 of the permit.

Conditions 2 - 4 MR&R conditions are standard conditions adopted into regulation pursuant to AS 46.14.010(e). Since this is an initial Title V permit, the Department removed the reference to surveillance schedules established under previous permits.

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).

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. 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.

Conditions 5- 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 ID(s) 1-9 are fuel-burning equipment.

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

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 5-8 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.

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 C.F.R. 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 C.F.R. 71.6(a)(3).

Insignificant Emission Units:

For EU ID(s) 6-9, no monitoring is required because these are insignificant sources based on actual emissions. EU ID(s) 6-9 must not exceed operational hour limit(s) as required by Condition(s) 13. As long as they operate within these limits they are considered insignificant emission units 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 51 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) 1-9 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.

For permit streamlining, the Department incorporated monitoring, record keeping and reporting of Condition 10 by reference.

For oil fired fuel burning equipment the monitoring, record keeping, and reporting (MR&R) conditions are typically Standard Condition XI and XII adopted into regulation pursuant to AS 46.14.010(d). Here, Standard Condition XII MR&R language has been omitted due to a

more stringent fuel sulfur content requirement brought forward into Condition 10 from AQ0440MSS01.

Condition 10 SO₂ Ambient Air Quality Protection

Legal Basis: This condition protects ambient air in areas to which the public has access. These limits apply to protect public health and safety from emissions of combustion sources at the stationary source. Monitoring, record keeping and recording terms have been developed thru Minor Permit No. AQ0440MSS01 and are carried forward within this condition as they meet the requirements of 18 AAC 50.236(j) and 40 CFR 71.6(a)(3).

Factual Basis: This condition is designed to protect ambient air from sulfur dioxide (SO₂) emissions generated by emission units at the stationary source. Sulfur dioxide comes from the oxidation of sulfur in the liquid fuel (e.g. diesel fuel oils).

Minor Permit No. AQ0440MSS01 and this condition restrict fuel sulfur content to 0.15% by weight or less. The Department determined that the existing minor permit condition MR&R adequately meets the requirements of 40 C.F.R. 71.6(a)(3).

Condition 11, Oxides of Nitrogen Ambient Protection

Legal Basis: The Permittee is required to maintain existing stack heights established in AQ0440MSS01, in accordance with 40 C.F.R. 71.6(c)(1).

Factual Basis: Current stack heights were used in the ambient analysis completed in March 13, 2007. Changing the stack heights has the potential to change the ambient impact. Recording and reporting the stack heights in the first operating report will document in a discoverable record that the stack heights are consistent with the stack height restriction established in Minor Permit No. AQ0440MSS01.

Condition 12, Public Access Control Plan

Legal Basis: The Permittee shall maintain the ambient air boundaries by following the public access control plan dated March 9, 2007, according to Minor Permit No. AQ0440MSS01.

Factual Basis: This condition is designed to protect ambient air quality within the stationary source. This condition was implemented in Minor Permit No. AQ0440MSS01 and carried forward.

Access to the stationary source is controlled by a system of secure gates, badge identification system, signage, fencing, on-site Security Officer and closed circuit TV system that monitors the entire site.

Conditions 13-15, Owner Requested Limit 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.

Factual Basis: The NO_x PSD major stationary source classification avoidance limit is 240 tons of NO_x per year. This is consistent with the Department practices of allowing a NO_x PSD major stationary source classification avoidance limit to be 96% of the PSD major stationary source classification threshold. Unlimited operation of Emission Units 1 through 5 exceeds the PSD threshold of 250 tons. Limiting the hours of operation for Emission Units 1 through 5 and limiting the NO_x emissions from Emission Units 1 through 9 less than 240 tpy keeps this stationary source below the PSD major classification threshold.

MR & R reflects methods that will ensure the 240 tpy NO_x limit is not exceeded. Calculating, recording and reporting the fuel usage on an average per hour of operation for Emission Units 1 through 5 ensures that the 187 gallons per hour estimate for fuel consumption is not exceeded. The maximum 187 gallons per hour fuel consumption rate was used to establish the pounds per hour emission factor.

The operational hours of units 1-5 are limited to 9,250 hours in a rolling 12 month period; monitoring, recording and reporting the hours of operation ensures the hourly limit is not exceeded.

The NO_x emissions from Emission Units 6 through 9 shall be included in the overall NO_x emission calculations for the source. The 240 tpy of NO_x limit includes Emission Units 6 through 9.

Periodic source testing requires that one engine each from the E3 and E4 series be source tested for NO_x every 5 years. Rotating the tested unit will ensure a different unit is tested each time a source test is conducted, and gives a better representative snapshot of performance for the group of units over the life of the permit and for the long term. Using the most recent source test's emission factors will ensure the emissions calculated are representative of the engines as a group.

Conditions 16 - 19, 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.

For EU ID(s) 6-9 no visible emissions monitoring is required because these units are insignificant emission units based on actual emissions and have permit Condition 13 that limit either their hours of operation or fuel consumption. 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 51 with the opacity standard.

Condition 16.1 requires certification that the units did not exceed state emission standards during the previous year and did not emit any prohibited air pollution.

Conditions 20 - 22, 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, as updated effective November 9, 2008.

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

Conditions 23, 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 24 - 25, 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.

The Department modified the standard condition to correct Condition 25.2 such that it referenced "submitted" (i.e. postmarked) rather than "received" in accordance with the timeframe of Condition 25.1

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 shall 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 26, 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.

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 C.F.R. 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 C.F.R. 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 27, 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 28, 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 engaging 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.

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 C.F.R. 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 C.F.R. 71.6(a)(3).

Condition 29, 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 30, 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 C.F.R. 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 C.F.R. 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 31, 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 49. Excess emission reporting under Condition 49 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under Condition 49.

Condition 32, 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 33, 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 34, 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 34.1 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 30, which requires a record of complaints.

Condition 35, 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 36 - 38, 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 tests as set out in Conditions 36 through 38.

Factual Basis: These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with Conditions 36 through 38 consist of the test reports required by Condition 43.

Condition 39, 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 November 9, 2008, 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 40 - 43, 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 applies 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 44, 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. This condition supplements specific monitoring requirements stated elsewhere in this permit.

Condition 45, 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 46, 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 any permit application, report, affirmation, or compliance certification 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 47, Submittals

Legal Basis: This condition requires the Permittee to comply with standardized reporting requirement in 18 AAC 50.326(j) and applies because the Permittee is required to send reports to the Department.

Factual Basis: This condition lists the Department's appropriate address for reports and written notices. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the standard reporting and notification requirements of this permit.

Condition 48, Information Requests

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 49, 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). The Department made a correction to the Standard Operating Permit Condition III to allow identical reporting methodology for both Excess Emissions and Permit Deviations reports which use identical forms and should have identical submissions methods.

Section 11, Notification Form

The Department modified the notification form, deviating from standard permit Condition IV in a revised rulemaking dated August 20, 2008 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 50, 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 used the Standard Permit Condition VII as adopted into regulation on August 20, 2008. For reporting, MR&R conditions are Standard Permit Condition VII 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)(iii)(A). The transitional clause related to renewal permits has been omitted because this is an initial operating permit. 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).

Condition 51, 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.

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. The transitional clause related to renewal permits has been omitted because this is an initial operating permit.

Condition 52, 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 C.F.R. 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.

Condition 53, Permit Applications and Submittals

Legal Basis: The Permittee may need to submit permit applications and related correspondence.

Factual Basis: Standard Condition XIV directs the applicant to send copies of all application materials required to be submitted to the Department directly to the EPA, in electronic format if practicable. This condition shifts the burden of compliance from the Department to ensure that copies of application materials are submitted to EPA by transferring that responsibility to the Permittee.

Conditions 54 - 56, 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 C.F.R. 71.6(a)(10), (12), and (13) incorporated by reference under 18 AAC 50.040(j) require these provisions within this permit. 40 C.F.R. 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 C.F.R. 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 57, 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 C.F.R. 71.5 incorporated by reference in 18 AAC 50.040(j)(3). 40 C.F.R. 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 HAARP Research Site as listed in this condition. As stated in 40 C.F.R. 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 C.F.R. 71.5(c) and must remit payment of fees owed under the fee schedule established pursuant to 18 AAC 50.400. 40 C.F.R. 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 C.F.R. 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.

Condition 58 - 59, 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 C.F.R. 71.5, 71.7 and 71.10.

Factual Basis: These conditions direct 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 59 directs the applicant to send copies of all application materials directly to the EPA, in electronic format if practicable.

Conditions 60 -64, 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 C.F.R. 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 65, Permit Shield

The Permittee did not request any permit shields.

