Application for Renewal of an Air Quality Control Operating Permit

for the:

University of Alaska Fairbanks Campus Power Plant

prepared for:

University of Alaska Fairbanks

Prepared by:

SLR

June 2012

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Fairbanks, Alaska

prepared by

SLR International Corp

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Section 1

Summary of Required Application Elements

Table 1-1
Summary of Required Application Elements

Citation	Summary of Information Required	Comments
40 CFR 71.5(c)(1) & 71.5(c)(2)	Owner/Operator Identification and Source Information/Description	The information required under 40 CFR 71.5(c)(1) has been updated from the previous permit and is as follows: Permittee's Responsible Official(s): Pat Pitney, Vice Chancellor for Administrative Services and Scott Bell, P.E., Associated Vice Chancellor for Facilities Services. Designated Agent: Frances M. Isgrigg, P.E. University of Alaska PO Box 751845 Fairbanks, AK 99775 (907) 474-5487 fisgrigg@alaska.edu Stationary Source and Building Contact: Frances M. Isgrigg, P.E. University of Alaska PO Box 751845 Fairbanks, AK 99775 (907) 474-5487 fisgrigg@alaska.edu Fee Contact: Accounts Payable, Administrative Service Center University of Alaska PO Box 75920 Fairbanks, AK 99775 Permit Contact: Frances M. Isgrigg, P.E., Director, Environmental, Health, Safety and Risk Management The information required under 40 CFR 71.5(c)(2) is provided on Page 1 of Draft Permit AQ0316TVP02, Revision 1 and Page 1 of original Permit AQ0316TVP02. The Standard Industrial Classification (SIC) for the stationary source is 8221 – Colleges, Universities, and Professional Schools. No alternate operating scenarios exist for the source.

Citation	Summary of Information Required	Comments
40 CFR 71.5(c)(3)(i)	Stationary Source Emissions	Emissions-related information is included under Section 2 of this application. The source is major for nitrogen oxides (NO_X), carbon monoxide (CO), and sulfur dioxide (SO_2) and greenhouse gases (GHG).
40 CFR 71.5(c)(3)(ii)	Emissions Unit Inventory/Description	See Section 2 for identification and description of emitting units.
40 CFR 71.5(c)(3)(iii)	Emitting Unit Emission Rates as Necessary to Establish Compliance	See Section 2 for emitting unit emission rates in tons per year (tpy). See Section 2 for emission rates, Section 6 for permit limits in AQ0316TVP02 issued December 4, 2007. With respect to emission rates in terms necessary to establish compliance consistent with applicable standard reference test methods, Unit 4 is subject to the 40 CFR 60 Subpart Db, sulfur, PM, and NO_X standards. Units 6, 7, 8, 23, 24 and 30 are subject to 40 CFR 63 Subpart ZZZZ and Units 1 through 4 and 10 through 22 are subject to 40 CFR 63 Subpart JJJJJJ.
40 CFR 71.5(c)(3)(iv)	Emitting Unit Fuels, Production Rates, Materials, and Operating Schedules	See Section 2 for emitting unit fuels, production rates, materials, and operating schedules as applicable. Note that coal slurry is no longer a fuel at this stationary source.
40 CFR 71.5(c)(3)(v)	Description of Air Pollution Control Equipment and Monitoring Devices/Activities	The stationary source will use a Continuous Opacity Monitoring System (COMS) on the coal-fired boilers (EUs 1 and 2) and on EU 4 if the fuel contains a sulfur content greater than 0.3 weight percent S for liquid fuel or 0.32 lb/MMBtu heat input for gaseous fuel. The exhaust from EUs 1 and 2 is controlled by fabric filter systems and EU 4 is a low NO_X boiler designed to reduce combustion emissions. UAF monitoring activities consist of those required by applicable standards as indicated under monitoring terms and conditions in AQ0316TVP02 issued December 4, 2007.

Citation	Summary of Information Required	Comments
40 CFR 71.5(c)(3)(vi)	Limitations on Source Operation/Work Practice Standards	Limitations on source operation affecting emissions consist of the emission standards and source-specific operational restrictions identified in Section 3. Emissions calculations in Section 2 are based on these standards and limitations where applicable.
40 CFR 71.5(c)(3)(vii)	Other Information as Required by an Applicable Requirement	Other than the information provided under 40 CFR 71.5(c)(3)(i)-(vi), no additional emissions-related information required by an applicable requirement has been identified.
40 CFR 71.5(c)(3)(viii)	Supporting Calculations	See Section 2 of this application.
40 CFR 71.5(c)(4)(i)	Citation and Description of All Applicable Requirements	A list of applicable requirements as defined in 40 CFR 71.2 is provided in Section 3.
40 CFR 71.5(c)(4)(ii)	Description/Reference of Test Methods	For each applicable requirement identified, a description of, or reference to any applicable compliance test method is provided in Section 3.
40 CFR 71.5(c)(5)	Other Information Required to Implement or Determine Applicability of AQC Requirements	No specific information necessary to implement and enforce any other applicable requirements not listed in Section 3 has been identified. Monitoring conditions have been proposed in Table 3-2 of Section 3 in this application for applicable requirements.
40 CFR 71.5(c)(6)	Proposed Exemptions from Otherwise Applicable Requirements	No exemptions from otherwise applicable requirements are proposed.
40 CFR 71.5(c)(7)	Alternate Operating Scenarios or Emissions Trading Requested by Applicant	No alternative operating scenarios have been proposed pursuant to 71.6(a)(9). No emissions trading has been proposed pursuant to 71.6(a)(10).

Citation	Summary of Information Required	Comments
40 CFR 71.5(c)(8)	Compliance Plan – Status and Schedule	Compliance-related information is provided in Section 4. The applicable requirements identified in Section 3 are indicated in Table 4-1 of Section 4. As indicated, the source is in compliance with all applicable requirements. See Section 4 for statements regarding continuing compliance with currently applicable requirements for timely compliance with requirements that may become applicable during the permit term.
40 CFR 71.5(c)(9)(i)	Compliance Certification by Responsible Official	Certification of truth, accuracy and completeness by the responsible official is provided in the cover letter with respect to all elements of this application, including the compliance information in Section 4.
40 CFR 71.5(c)(9)(i) & (c)(9)(ii)	Compliance Certification Statement of Methods	The methods used to determine compliance are shown in Section 4.
40 CFR 71.5(c)(9)(iii)	Compliance Certification Submittal Schedule	Annual compliance certifications are required by March 31st of each year, per Condition 77 of AQC0316TVP02 issued December 4, 2007. UAF proposes to maintain this submittal schedule.
40 CFR 71.5(c)(9)(iv)	Compliance Certification Enhanced Monitoring	Not applicable. The source is not subject to enhanced monitoring.
18 AAC 50.326(c) and 50.410	Emissions Subject to Fees and Payment Schedule	For emissions subject to fees, see the stationary source assessable potential to emit shown in Section 2. Payment of fees is required annually per Condition 47 of AQ0316TVP02 issued December 4, 2007. UAF proposes to maintain this schedule.

Citation	Summary of Information Required	Comments
18 AAC 50.326(d)-(i)	Insignificant Emission Units	See Section 2 for identification and description of emission units, including insignificant units as required under 18 AAC 50.326(d). As indicated in three entries among the first 8 rows of Table 3-1, Section 3, those insignificant emission units that meet the definition of fuel burning equipment are subject to the emission standards under 18 AAC 50.055.

Section 2

Emissions Related Information

Table 2-1. Assessable Emissions Summary
University of Alaska - Fairbanks Campus Power Plant

Emission Unit Type	Regulated Air Pollutant Emissions (tons per year) [1,2]							
	NO_X	CO	PM_{10}	$PM_{2.5}$ [3]	VOC	SO_2	HAP	GHG (CO_2e) [4]
Significant	636.8	324.5	63.8	29.9	8.5	863.5	20.2	329,298
Insignificant	2.1	1.1	1.4	1.4	3.1	3.6E-02		1,733
Total Stationary Source	**639**	**326**	**65**	**31**	**12**	**863**	**20.2**	**331,030**
Assessable Emission Subtotals	**639**	**326**	**65**	**31**	**12**	**863**	**20.2**	**331,030**
Fees Apply to Pollutant? [5]	**Yes**	**Yes**	**Yes**	**No [6]**	**Yes**	**Yes**	**No [7]**	**No [8]**
Total Assessable Emissions	**1,905**							

Notes:

[1] Emissions are potential to emit, except where noted, based on maximum allowable operation and permit operating limits, where applicable.

[2] Regulated air pollutant calculations based on AP-42 emission factors, manufacturer data, and mass balances as shown in accompanying spreadsheets.

[3] $PM_{2.5}$ emissions are assumed to be equal to PM_{10} emissions except where noted on Table 2-7c.

[4] GHG means greenhouse gases and is the summation of CO_2, CH_4, and N_2O and applying the global warming potential for each pollutant.

[5] Fees paid on each regulated air pollutant emitted in quantities greater than 10 tpy per 18 AAC 50.410.

[6] $PM_{2.5}$ emissions are a subset of PM_{10} emissions and are excluded from the assessable emissions total to avoid a double payment.

[7] HAP emissions are a subset of VOC emissions and are excluded from the assessable emissions total to avoid a double payment.

[8] Assessable emission fees for GHGs have not been established under 18 AAC 50.

Table 2-2. Assessable Potential to Emit Emissions Inventory - Significant Emission Units
University of Alaska - Fairbanks Campus Power Plant

Emission Unit				Installation	Fuel	
ID	Description	Make/Model	Bldg. No.	Date	Type	Rating
1	Coal-Fired Boiler	Erie City	FS802	1962	Coal	84.5 MMBtu/hr[1]
2	Coal-Fired Boiler	Erie City	FS802	1962	Coal	84.5 MMBtu/hr[1]
3	Dual-Fired Boiler	Zurn	FS802	1970	Dual Fuel	180.9 MMBtu/hr
4	Dual-Fired Boiler	Zurn	FS802	1987	Dual Fuel	180.9 MMBtu/hr[5]
6	Arctic Health Research Bldg. Emergency Generator	Cummins/NH2501PG	FS901	1968	Diesel	125 kW
7	Arctic Health Research Bldg. Emergency Generator	Cummins/NH2501P	FS901	1968	Diesel	125 kW
8	Peaking/Backup Generator (DEG)	Fairbanks Morse Colt-Pielstick PC2.6	FS817	1999	Diesel[3]	13,266 hp
9A	BiRD Incinerator	Therm-Tec/G-30P-1H	FS919	2006	Medical/Infectious Waste	83 lb/hr[4]
10	AFES Boiler	Burnham/V9OGA	AF256	2000	#1 Diesel	1.08 MMBtu/hr[2]
11	AFES Boiler	Burnham/V9OGA	AF256	2000	#1 Diesel	1.08 MMBtu/hr[2]
12	Harper Boiler #1	Weil McLain/BL776-S-W	FS420	1985	#2 Diesel	0.64 MMBtu/hr[2]
13	Harper Boiler #2	Weil McLain/BL776-S-W	FS420	1985	#2 Diesel	0.64 MMBtu/hr[2]
14	Copper Lane Boiler	Energy Kinetics System 2000	FS518	1985	#2 Diesel	0.136 MMBtu/hr[2]
15	Copper Lane Boiler	Energy Kinetics System 2000	FS519	1985	#2 Diesel	0.136 MMBtu/hr[2]
16	Copper Lane (Honor's House) Boiler	Weil McLain/P-WGO-5	FS520	2005	#1 Diesel	0.233 MMBtu/hr[2]
17	West Ridge Research Building Boiler #1	Weil McLain/BL1688w-GPr10	FS909	2003	#2 Diesel	4.93 MMBtu/hr[6]
18	West Ridge Research Building Boiler #2	Weil McLain/BL1688w-GPr10	FS909	2003	#2 Diesel	4.93 MMBtu/hr[6]
19	BiRD RM 100U3 Boiler #1	Weil McLain/2094W	FS919	2004	#2 Diesel	6.13 MMBtu/hr[2]
20	BiRD RM 100U3 Boiler #2	Weil McLain/2094W	FS919	2004	#2 Diesel	6.13 MMBtu/hr[2]
21	BiRD RM 100U3 Boiler #3	Weil McLain/2094W	FS919	2004	#2 Diesel	6.13 MMBtu/hr[2]
22	BiRD RM 100U3 Boiler #4	Bryan/EB200-S-150-FDGO	FS919	2005	#2 Diesel	8.5 MMBtu/hr
23	Alaska Center for Energy and Power Generator	Detroit Diesel/6043-TK35	FS814	2003	Diesel	235 kW
24	Old University Park Emergency Generator	Cummins/4B3.9-G2	FS423	2001	Diesel	51 kW
25	AFES Greenhouse Furnace	Sunderman/L02OUF	AF117	1991	#1 Diesel	0.209 MMBtu/hr[2]
26	Copper Lane Furnace	Matzger	FS517	2001	#2 Diesel	0.08 MMBtu/hr
27	Skarland Cabin Furnace	Rheem/ROBC-084QPEB	FS712	2001 (est)	#2 Diesel	0.140 MMBtu/hr[2]
28	AFES Grain Dryer	Unknown	AF108	1988	#1 Diesel	2.43 MMBtu/hr[2]
29	Harper Hot Water Heater	Bock	FS420	1985 (est)	#2 Diesel	0.236 MMBtu/hr
30	Duckering Classroom Engine	Mitsubishi-Bosch	FS103	1987	Diesel	45 kW

Notes:

[1] The rating of the coal-fired boilers as shown in Permit No. AQ0316TVP02 is incorrect. UAF has calculated the correct maximum heat input capacity. These calculations are provided in Section 2, Table 2-20 of this application.

[2] These external combustion units have nameplates which list the ratings in gross output or do not specify whether the rating is output or input. A 75 percent efficiency has been assumed for these units to conservatively calculate the heat input rating.

[3] EU 8 is also authorized to combust coal slurry fuel. The unit has not operated on this fuel and will not do so in the future. Emissions estimates for this unit are based on diesel fuel combustion.

[4] The rating of EU 9A is listed incorrectly in the existing Title V permit. The correct rating is provided here.

[5] EU 4 has a 10 percent capacity factor limit per Condition 17 of Permit No. AQ0316TVP02. That limit is applied in all calculations in this application.

[6] The previous Title V renewal application proposed a limit of 500 hours per year for EU 17 and 18. This limit was not incorporated into the permit and UAF does not wish to apply an operating hour limit to these units.

[7] Emission unit EU 5A listed on Permit No. AQ0316TVP02 has been removed.

Table 2-3. Assessable Potential to Emit Emissions Inventory - Insignificant Emission Units
University of Alaska - Fairbanks Campus Power Plant

Emission Unit(s)				Installation	Fuel		Basis for
ID	Description	Make/Model	Bldg. No.	Date	Type	Rating	Insignificance
	Coal Handling/Crushing Facility	American Pulverizer	FS802	1964	Coal	50 tons/hr	18 AAC 50.326(e)
	Fine Arts/Arts Wing Rm 302 Kiln	Alpine Kilns and Equipment/SBF-40	FS313	2009	Propane	1.81 MMBtu/hr	18 AAC 50.326(g)(5)
	Fine Arts/Arts Wing Ceramic Rm 413 Kiln	Kilnmaster/constructed on-site	FS313	2009	Propane	0.53 MMBtu/hr[1]	18 AAC 50.326(g)(5)
	Fine Arts/Arts Wing Ceramic Rm 413 Kiln	Geil Kilns/DLB2	FS313	2009	Propane	0.23 MMBtu/hr	18 AAC 50.326(g)(5)
	Wooded Area Kiln(s)	Hand-built	N/A	Various	Wood	Unknown[3]	18 AAC 50.326(e)
	Facilities Services Paint Booth Exhaust Fan	Unknown	FS803	2001	Various Paints	12,500 cfm	18 AAC 50.326(e)
	Museum Paint Booth Exhaust Fan	Greenheck/TAB-42-030T3	FS907	2006	Various Paints	5,480 cfm	18 AAC 50.326(e)
	Laboratory Fume Hoods (campus-wide)[5]	N/A	Multiple	Various	N/A	N/A	18 AAC 50.326(f)(10)
	Duckering Classroom Turbine	Cussons Two Shaft Gas Turbine Unit	FS103	1970(est)	Propane	0.33 MMBtu/hr[2]	18 AAC 50.326(e)
	Power Plant Field-Erected Tank	Vertical Fixed Roof	FS817	1969	Diesel	212,120 gallons	18 AAC 50.326(e)
	Graduation Flame	Custom-built	N/A	1975(est)	Propane	5.0E-03 MMBtu/hr[4]	18 AAC 50.326(e)
	Ash Bin Vent filter	N/A	FS802	1962	N/A	8,760 hr/yr	18 AAC 50.326(e)
	Ash Vacuum Pump Filter	N/A	FS802	1962	N/A	8,760 hr/yr	18 AAC 50.326(e)
	Ash Loadout to Truck	N/A	FS802	1962	N/A	8,225 tpy ash	18 AAC 50.326(e)

Notes:

[1] This external combustion unit has a nameplate which does not specify whether the rating is output or input. A 75 percent efficiency has been assumed to conservatively calculate the heat input rating.

[2] Rating calculated based on vendor data that fuel consumption at 100 percent load is approximately 15 pounds of propane per hour.

[3] UAF estimates that these units combust a cumulative maximum of 1 cord of dry birch wood per year.

[4] The graduation flame is a small propane flare that operates during graduation week. The rating is an estimate because the unit was hand-built by university personnel.

[5] The laboratory fume hoods are not required to be listed on the application per 18 AAC 50.326(d)(3), however they are listed here in order to quantify VOC and HAP emissions toward the assessable emission total.

[6] A paint booth is currently in place at the Hutchison technical high school on campus. This emission unit will no longer be used after December 2012 because the program is relocating off-campus.

Table 2-4. Assessable Potential to Emit Calculations - Oxides of Nitrogen (NO_X) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit		Fuel	Factor	NO_X Emission	Emission	Allowable Annual	Potential
ID	Description	Type	Reference	Factor	Unit Rating/Capacity	Operation [1]	NO_X Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	AP-42 Table 1.1-3	8.8 lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	212.9 tpy
2	Coal-Fired Boiler	Coal	AP-42 Table 1.1-3	8.8 lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	212.9 tpy
3	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	24 lb/kgal	180.9 MMBtu/hr	8,760 hrs/yr	138.8 tpy [7]
3	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-1 low NO_X	140 lb/MMscf	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	0.031 lb/hp-hr	125 kW	100 hrs/yr [3]	0.3 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	0.031 lb/hp-hr	125 kW	100 hrs/yr [3]	0.3 tpy
4	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	24 lb/kgal	180.9 MMBtu/hr	876 hrs/yr	39.9 tpy [8]
4	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-1 low NO_X	140 lb/MMscf	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	AP-42 Table 3.4-1	0.024 lb/hp-hr	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	AP-42 Table 2.3-1	3.56 lb/ton	83 lb/hr	109 ton/yr [9]	0.2 tpy
10	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	20 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.7 tpy
11	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	20 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.7 tpy
12	Harper Boiler #1	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.4 tpy
13	Harper Boiler #2	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.4 tpy
14	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.1 tpy
15	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.1 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.233 MMBtu/hr	8,760 hrs/yr	0.1 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	3.2 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	3.2 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	6.13 MMBtu/hr	19,650 hrs/yr [10]	8.8 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	8.50 MMBtu/hr	8,760 hrs/yr	5.4 tpy
23	Alaska Center for Energy and Power Generator	Diesel	Vendor Data	1,630 g/hr	235 kW	4,380 hrs/yr [11]	7.9 tpy
24	Old University Park Emergency Generator	Diesel	AP-42 Table 3.3-1	0.031 lb/hp-hr	51 kW	100 hrs/yr [3]	0.1 tpy
25	AFES Greenhouse Furnace	#1 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.209 MMBtu/hr	8,760 hrs/yr	0.1 tpy
26	Copper Lane Furnace	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.080 MMBtu/hr	8,760 hrs/yr	0.1 tpy
27	Skarland Cabin Furnace	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.140 MMBtu/hr	8,760 hrs/yr	0.1 tpy
28	AFES Grain Dryer	#1 Diesel	AP-42 Table 1.3-1	20 lb/kgal	2.427 MMBtu/hr	100 hrs/yr [12]	0.02 tpy
29	Harper Hot Water Heater	#2 Diesel	AP-42 Table 1.3-1	20 lb/kgal	0.236 MMBtu/hr	8,760 hrs/yr	0.2 tpy
30	Duckering Classroom Engine	Diesel	AP-42 Table 3.3-1	0.031 lb/hp-hr	45 kW	100 hrs/yr [13]	0.1 tpy
			Significant Emission Units Total Assessable Potential to Emit Emissions - NO_X				**636.8 tpy**

Insignificant Emission Units							
	Coal Handling/Coal Crushing	Coal	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Propane-Fired Kilns	Propane	AP-42 Table 1.5-1	13 lb/kgal	2.6 MMBtu/hr, total	8,760 hrs/yr	1.6 tpy
	Wood-Fired Kilns	Wood	AP-42 Table 1.6-2	0.49 lb/MMBtu[4]	Unknown	1 cord/yr[5]	3.7E-03 tpy
	Duckering Classroom Turbine	Propane	AP-42 Table 3.1-1	3.2E-01 lb/MMBtu[6]	0.33 MMBtu/hr	8,760 hrs/yr	0.5 tpy
	Graduation Flame	Propane	AP-42 Table 13.5-1	0.068 lb/MMBtu	5.0E-03 MMBtu/hr	8,760 hrs/yr	1.5E-03 tpy
	Various Paint Booths	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A	212,120 gallons	8,760 hrs/yr	0.0 tpy
	Ash Bin Vent filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Loadout to Truck	N/A	N/A	N/A	N/A	8,225 tpy ash	0.0 tpy
			Insignificant Emission Units Total Assessable Potential to Emit Emissions - NO_X				**2.1 tpy**
					Total Assessable Potential to Emit Emissions - NO_X		**638.8 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Diesel Heating Value	0.137	MMBtu/gal
Coal Heating Value	15.3	MMBtu/ton
Propane Heating Value	91.5	MMBtu/kgal
Natural Gas Heat Content	1,000	Btu/scf
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Emission factor for small pottery-firing wood-fired kilns are not available. Calculation assumes that combustion of wood in the kilns is similar to that in dry wood-fired boilers.

[5] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[6] Emission factors for propane-fired turbine are not available. Emission factors for natural gas-fired turbine are used.

[7] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[8] The combined NO_X emissions from EU4 and EU8 are limited to less than 40 tons per year, per Condition 16 of AQ0316TVP02.

[9] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[10] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[11] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[12] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[13] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

Table 2-5. Assessable Potential to Emit Calculations - Carbon Monoxide (CO) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit		Fuel	Factor	CO Emission	Emission	Allowable Annual	Potential
ID	Description	Type	Reference	Factor	Unit Rating/Capacity	Operation [1]	CO Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	AP-42 Table 1.1-3	5 lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	121.0 tpy
2	Coal-Fired Boiler	Coal	AP-42 Table 1.1-3	5 lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	121.0 tpy
3	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	5 lb/kgal	180.9 MMBtu/hr	8,760 hrs/yr	66.6 tpy [7]
3	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-1	84 lb/MMscf	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	6.68E-03 lb/hp-hr	125 kW	100 hrs/yr [3]	0.1 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	6.68E-03 lb/hp-hr	125 kW	100 hrs/yr [3]	0.1 tpy
4	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	5 lb/kgal	180.9 MMBtu/hr	876 hrs/yr	9.1 tpy [8]
4	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-1	84 lb/MMscf	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	AP-42 Table 3.4-1	5.50E-03 lb/hp-hr	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	AP-42 Table 2.3-1	2.95 lb/ton	83 lb/hr	109 ton/yr [9]	0.2 tpy
10	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	5 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.17 tpy
11	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	5 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.17 tpy
12	Harper Boiler #1	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.10 tpy
13	Harper Boiler #2	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.10 tpy
14	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.02 tpy
15	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.02 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.233 MMBtu/hr	8,760 hrs/yr	0.04 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.79 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.79 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	6.13 MMBtu/hr	19,650 hrs/yr [10]	2.20 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	8.5 MMBtu/hr	8,760 hrs/yr	1.36 tpy
23	Alaska Center for Energy and Power Generator	Diesel	Vendor Data	144 g/hr	235 kW	4,380 hrs/yr [11]	0.7 tpy
24	Old University Park Emergency Generator	Diesel	AP-42 Table 3.3-1	6.68E-03 lb/hp-hr	51 kW	100 hrs/yr [3]	0.02 tpy
25	AFES Greenhouse Furnace	#1 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.209 MMBtu/hr	8,760 hrs/yr	0.03 tpy
26	Copper Lane Furnace	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.080 MMBtu/hr	8,760 hrs/yr	0.01 tpy
27	Skarland Cabin Furnace	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.140 MMBtu/hr	8,760 hrs/yr	0.02 tpy
28	AFES Grain Dryer	#1 Diesel	AP-42 Table 1.3-1	5 lb/kgal	2.427 MMBtu/hr	100 hrs/yr [12]	0.00 tpy
29	Harper Hot Water Heater	#2 Diesel	AP-42 Table 1.3-1	5 lb/kgal	0.236 MMBtu/hr	8,760 hrs/yr	0.04 tpy
30	Duckering Classroom Engine	Diesel	AP-42 Table 3.3-1	6.68E-03 lb/hp-hr	45 kW	100 hrs/yr [13]	0.02 tpy
			Significant Emission Units Total Assessable Potential to Emit Emissions - CO				**324.5 tpy**

Insignificant Emission Units							
	Coal Handling/Coal Crushing	Coal	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Propane-Fired Kilns	Propane	AP-42 Table 1.5-1	7.5 lb/kgal	2.6 MMBtu/hr, total	8,760 hrs/yr	0.92 tpy
	Wood-Fired Kilns	Wood	AP-42 Table 1.6-2	0.60 lb/MMBtu[4]	Unknown	1 cord/yr[5]	4.5E-03 tpy
	Duckering Classroom Turbine	Propane	AP-42 Table 3.1-1	8.2E-02 lb/MMBtu[6]	0.33 MMBtu/hr	8,760 hrs/yr	0.1 tpy
	Graduation Flame	Propane	AP-42 Table 13.5-1	0.37 lb/MMBtu	5.0E-03 MMBtu/hr	8,760 hrs/yr	8.1E-03 tpy
	Various Paint Booths	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A	212,120 gallons	8,760 hrs/yr	0.0 tpy
	Ash Bin Vent filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Loadout to Truck	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
			Insignificant Emission Units Total Assessable Potential to Emit Emissions - CO				**1.1 tpy**
					Total Assessable Potential to Emit Emissions - CO		**325.5 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Diesel Heating Value	0.137	MMBtu/gal
Coal Heating Value	15.3	MMBtu/ton
Propane Heating Value	91.5	MMBtu/kgal
Natural Gas Heat Content	1,000	Btu/scf
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Emission factor for small pottery-firing wood-fired kilns are not available. Calculation assumes that combustion of wood in the kilns is similar to that in dry wood-fired boilers.

[5] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[6] Emission factors for propane-fired turbine are not available. Emission factors for natural gas-fired turbine are used.

[7] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[8] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[9] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[10] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[11] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[12] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[13] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

Table 2-6. Assessable Potential to Emit Calculations - Particulate Matter Less Than 10 Microns (PM_{10}) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit		Fuel	Factor	PM_{10} Emission	Emission	Allowable Annual	Potential
ID	Description	Type	Reference	Factor	Unit Rating/Capacity	Operation [1]	PM_{10} Emissions
Significant Emission Units							
1	Coal-Fired Boiler	Coal	November 2010 Source Test	0.65 lb/ton[4]	84.5 MMBtu/hr	8,760 hrs/yr	15.7 tpy
2	Coal-Fired Boiler	Coal	November 2010 Source Test	1.35 lb/ton[4]	84.5 MMBtu/hr	8,760 hrs/yr	32.7 tpy
3	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	2 lb/kgal	180.9 MMBtu/hr	8,760 hrs/yr	11.6 tpy[9]
3	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-2	7.6 lb/MMscf	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	125 kW	100 hrs/yr[3]	0.02 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	125 kW	100 hrs/yr[3]	0.02 tpy
4	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	2 lb/kgal	180.9 MMBtu/hr	876 hrs/yr	1.2 tpy[10]
4	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-2	7.6 lb/MMscf	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	AP-42 Table 3.4-1	7.00E-04 lb/hp-hr	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	AP-42 Table 2.3-2	4.7 lb/ton	83 lb/hr	109 ton/yr[11]	0.3 tpy
10	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.07 tpy
11	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.07 tpy
12	Harper Boiler #1	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.04 tpy
13	Harper Boiler #2	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.04 tpy
14	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.01 tpy
15	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.01 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.233 MMBtu/hr	8,760 hrs/yr	0.01 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.32 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.32 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	6.13 MMBtu/hr	19,650 hrs/yr[12]	0.88 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	8.5 MMBtu/hr	8,760 hrs/yr	0.54 tpy
23	Alaska Center for Energy and Power Generator	Diesel	Vendor Data	8.1 g/hr	235 kW	4,380 hrs/yr[13]	0.04 tpy
24	Old University Park Emergency Generator	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	51 kW	100 hrs/yr[3]	0.01 tpy
25	AFES Greenhouse Furnace	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.209 MMBtu/hr	8,760 hrs/yr	0.01 tpy
26	Copper Lane Furnace	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.080 MMBtu/hr	8,760 hrs/yr	0.01 tpy
27	Skarland Cabin Furnace	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.140 MMBtu/hr	8,760 hrs/yr	0.01 tpy
28	AFES Grain Dryer	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	2.427 MMBtu/hr	100 hrs/yr[14]	0.00 tpy
29	Harper Hot Water Heater	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.236 MMBtu/hr	8,760 hrs/yr	0.02 tpy
30	Duckering Classroom Engine	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	45 kW	100 hrs/yr[15]	0.01 tpy
			Significant Emission Units Total Assessable Potential to Emit Emissions - PM_{10}				**63.8 tpy**

Insignificant Emission Units							
	Coal Handling/Coal Crushing	Coal	See detailed calculations in Table 2-6b				0.41 tpy
	Various Propane-Fired Kilns	Propane	AP-42 Table 1.5-1	0.7 lb/kgal	2.6 MMBtu/hr, total	8,760 hrs/yr	0.09 tpy
	Wood-Fired Kilns	Wood	AP-42 Table 1.6-2	0.36 lb/MMBtu[5]	Unknown	1 cord/yr[6]	2.7E-03 tpy
	Duckering Classroom Turbine	Propane	AP-42 Table 3.1-2a	6.6E-03 lb/MMBtu[7]	0.33 MMBtu/hr	8,760 hrs/yr	0.01 tpy
	Graduation Flame	Propane	AP-42 Table 13.5-1	0.0 lb/MMBtu[8]	5.0E-03 MMBtu/hr	8,760 hrs/yr	0.0 tpy
	Facilities Services Paint Booth Exhaust Fan	Various Paints	N/A	70% capture	Unknown	131 gal/yr	0.14 tpy[16]
	Museum Paint Booth Exhaust Fan	Various Paints	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A	212,120 gallons	8,760 hrs/yr	0.0 tpy
	Ash Bin Vent filter	N/A	See detailed calculations in Table 2-6a				0.35 tpy
	Ash Vacuum Pump Filter	N/A	See detailed calculations in Table 2-6a				0.43 tpy
	Ash Loadout to Truck	N/A	See detailed calculations in Table 2-6a				1.3E-04 tpy
			Insignificant Emission Units Total Assessable Potential to Emit Emissions - PM_{10}				**1.4 tpy**
					Total Assessable Potential to Emit Emissions - PM_{10}		**65.2 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Diesel Heating Value	0.137	MMBtu/gal
Coal Heating Value	15.3	MMBtu/ton
Propane Heating Value	91.5	MMBtu/kgal
Natural Gas Heat Content	1,000	Btu/scf
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] November 2010 source test emission factors reflect average Total PM emission rates for each coal boiler.

[5] Emission factor for small pottery-firing wood-fired kilns are not available. Calculation assumes that combustion of wood in the kilns is similar to that in dry wood-fired boilers.

[6] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[7] Emission factors for propane-fired turbine are not available. Emission factors for natural gas-fired turbine are used.

[8] The graduation flame is best described as a non-smoking flare. Soot emissions are zero.

[9] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[10] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[11] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[12] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[13] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[14] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[15] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

[16] Less than 131 gallons of paint are used on an annual basis in the facilities services paint booth. The density of paint is approximately 7 lb/gal. The facilities services paint booth has fiberglass paint arrestor pads. The calculation conservatively assumes that the entire volume of paint used is emitted as PM. Vendor data for the filters indicates an 70% capture efficiency for particles of 2.5 microns or greater.

Table 2-6a. Assessable Potential to Emit Calculations - Ash Handling System PM_{10} Potential Emission
University of Alaska - Fairbanks Campus Power Plant

Emission Unit			Emission Factor		Potential Operation		PM_{10} Emission
Permit ID	Description	Rated Capacity		Reference	Value	Units	(tpy)
N/A	Ash Bin Vent filter	680 acfm	0.02 gr/dscf	Vendor PM_{10} filter emission rating	8,760	hr/yr	0.35
N/A	Ash vacuum pump filter	1,500 acfm	0.02 gr/dscf	Vendor PM_{10} filter emission rating	8,760	hr/yr	0.43
N/A	Ash Loadout to Truck	N/A	3.24E-05 lb/ton	AP-42, Section 13.2.4	8,225	tpy	1.33E-04

Notes:

1. Ash bin vent filter and ash vacuum pump filter emission calculations:

   (exhaust rate, acfm) x (Temp at STP/Temp of exhaust) x (PM_{10} exhaust concentration, gr/dscf) x (1 lb/ 7,000 gr) x (1 ton/ 2,000 lb) x (60 min/hr) x (operation, hr/yr)

   Temperature at standard conditions = 68 degrees Fahrenheight
   Exhaust temperature of ash bin vent filter = 100 degrees Fahrenheight (estimated)
   Exhaust temperature of fan duct blower/bag filter = 180 degrees Fahrenheight (estimated)

2. Ash loadout emission calculations:

   Emission factor from AP-42, Section 13.2.4 based on empirical equation E = k x 0.0032 x (U/5)1.3/(M/2)1.4 lb/ton transferred where:
   k = 0.35 for PM_{10}

   U = mean wind speed = 5.4 mph in Fairbanks, per National Climactic Data Center (http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/avgwind.html)
   M = ash moisture content = 27 percent (AP-42, Table 13.2.4-1)

   Ash loadout emissions based on maximum boiler (EU 1-2) total coal consumption capacity of 96,761 tpy
   Ash content of coal = 8.5% per Usibelli Coal Mine website
   Operations, ash tons/yr = (Σ coal capacity, hr/yr) x (0.085 ash content)
   Ash loadout emissions, tons/yr = (emission factor, lb/ton) x (ash loading, ton/yr) / (2,000 lb/ton)

Table 2-6b. Assessable Potential to Emit Calculations - Coal Handling System PM_{10} Potential Emission
University of Alaska - Fairbanks Campus Power Plant

Emission Source		Emission Factor		Source[1]	Material Handling[2] (tpy)	Control Method	Control Efficiency (percent)	Annual PM_{10} Emission (tpy)
Identification	Type	Value	Units					
Railcar unloading through grate into crusher	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	96,761	Plant Building	0	0.018
Crusher	Point	0.006	lb/ton	3-05-010-10, FIRE[3]	96,761	Plant Building	0	0.290
Crusher to conveyor 1	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	96,761	Plant Building	0	0.018
Conveyor 1 to bucket elevator	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	96,761	Plant Building	0	0.018
Bucket elevator to screw conveyor	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	96,761	Plant Building	0	0.018
Screw conveyor to coal bin 1 or[4]	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	48,380	Plant Building	0	0.009
Screw conveyor to coal bin 2	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	48,380	Plant Building	0	0.009
Coal bin 1 to scale 1 or[4]	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	48,380	Plant Building	0	0.009
Coal bin 2 to scale 2	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	48,380	Plant Building	0	0.009
Scale 1 to boiler 1 or[4]	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	48,380	Plant Building	0	0.009
Scale 2 to boiler 2	Point	3.63E-04	lb/ton	AP-42, Section 13.2.4	48,380	Plant Building	0	0.009
Total Potential PM_{10} Emissions from Coal Preparation Plant								**0.41**

Notes:

[1]Coal transfer emission factor from AP-42, Section 13.2.4 based on empirical equation $E = k \times 0.0032 \times (U/5)^{1.3}/(M/2)^{1.4}$ lb/ton transferred where:

k = 0.35 for PM_{10}

U = mean wind speed = 5.4 mph per http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/avgwind.html

M = coal moisture content = 4.8 percent

[2]Emissions based on maximum boiler (EU 1-2) total capacity of 96,761 tons per year

[3]FIRE = Factor Information Retrieval Data System.

[4]Coal bins are alternately loaded so half the annual coal material throughput (48,380 tpy) is sent to each side of the process because they are identical and in parallel.

Table 2-6c. Assessable Potential to Emit Calculations - Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit ID	Description	Fuel Type	Factor Reference	PM_{10} Emission Factor	Emission Unit Rating/Capacity	Allowable Annual Operation [1]	Potential $PM_{2.5}$ Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	November 2010 Source Test	0.3 lb/ton[4]	84.5 MMBtu/hr	8,760 hrs/yr	7.3 tpy
2	Coal-Fired Boiler	Coal	November 2010 Source Test	0.3 lb/ton[4]	84.5 MMBtu/hr	8,760 hrs/yr	7.3 tpy
3	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	2 lb/kgal	180.9 MMBtu/hr	8,760 hrs/yr	11.6 tpy[10]
3	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-2	7.6 lb/MMscf	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	125 kW	100 hrs/yr[3]	0.02 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	125 kW	100 hrs/yr[3]	0.02 tpy
4	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-1	2 lb/kgal	180.9 MMBtu/hr	876 hrs/yr	1.2 tpy[11]
4	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-2	7.6 lb/MMscf	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	AP-42 Table 3.4-1	7.00E-04 lb/hp-hr	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	AP-42 Table 2.3-2	4.7 lb/ton	83 lb/hr	109 ton/yr[12]	0.3 tpy
10	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.07 tpy
11	AFES Boiler	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.07 tpy
12	Harper Boiler #1	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.04 tpy
13	Harper Boiler #2	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.04 tpy
14	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.01 tpy
15	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.01 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.233 MMBtu/hr	8,760 hrs/yr	0.01 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.32 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.32 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	6.13 MMBtu/hr	19,650 hrs/yr[13]	0.88 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	8.5 MMBtu/hr	8,760 hrs/yr	0.54 tpy
23	Alaska Center for Energy and Power Generator	Diesel	Vendor Data	8.1 g/hr	235 kW	4,380 hrs/yr[14]	0.04 tpy
24	Old University Park Emergency Generator	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	51 kW	100 hrs/yr[3]	0.01 tpy
25	AFES Greenhouse Furnace	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.209 MMBtu/hr	8,760 hrs/yr	0.01 tpy
26	Copper Lane Furnace	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.080 MMBtu/hr	8,760 hrs/yr	0.01 tpy
27	Skarland Cabin Furnace	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.140 MMBtu/hr	8,760 hrs/yr	0.01 tpy
28	AFES Grain Dryer	#1 Diesel	AP-42 Table 1.3-1	2 lb/kgal	2.427 MMBtu/hr	100 hrs/yr[15]	0.00 tpy
29	Harper Hot Water Heater	#2 Diesel	AP-42 Table 1.3-1	2 lb/kgal	0.236 MMBtu/hr	8,760 hrs/yr	0.02 tpy
30	Duckering Classroom Engine	Diesel	AP-42 Table 3.3-1	2.20E-03 lb/hp-hr	45 kW	100 hrs/yr[16]	0.01 tpy
			Significant Emission Units Total Assessable Potential to Emit Emissions - $PM_{2.5}$				**29.9 tpy**

Insignificant Emission Units								
	Coal Handling/Coal Crushing	Coal	See detailed calculations in Table 2-6b		96,761 tpy coal	8,760 hrs/yr	0.41 tpy
	Various Propane-Fired Kilns	Propane	AP-42 Table 1.5-1	0.7 lb/kgal	2.6 MMBtu/hr, total	8,760 hrs/yr	0.09 tpy
	Wood-Fired Kilns	Wood	AP-42 Table 1.6-2	0.36 lb/MMBtu[6]	Unknown	1 cord/yr[7]	2.7E-03 tpy
	Duckering Classroom Turbine	Propane	AP-42 Table 3.1-2a	6.6E-03 lb/MMBtu[8]	0.33 MMBtu/hr	8,760 hrs/yr	0.01 tpy
	Graduation Flame	Propane	AP-42 Table 13.5-1	0.0 lb/MMBtu[9]	5.0E-03 MMBtu/hr	8,760 hrs/yr	0.0 tpy
	Facilities Services Paint Booth Exhaust Fan	Various Paints	N/A	70% capture	Unknown	131 gal/yr	0.14 tpy[17]
	Museum Paint Booth Exhaust Fan	Various Paints	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A	212,120 gallons	8,760 hrs/yr	0.0 tpy
	Ash Bin Vent filter	N/A	See detailed calculations in Table 2-6a				0.35 tpy
	Ash Vacuum Pump Filter	N/A	See detailed calculations in Table 2-6a				0.43 tpy
	Ash Loadout to Truck	N/A	See detailed calculations in Table 2-6a				1.3E-04 tpy
			Insignificant Emission Units Total Assessable Potential to Emit Emissions - $PM_{2.5}$				**1.4 tpy**
					Total Assessable Potential to Emit Emissions - $PM_{2.5}$		**31.4 tpy[5]**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Diesel Heating Value	0.137	MMBtu/gal
Coal Heating Value	15.3	MMBtu/ton
Propane Heating Value	91.5	MMBtu/kgal
Natural Gas Heat Content	1,000	Btu/scf
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] November 2010 source test emission factor reflects average $PM_{2.5}$ emission rate for both boilers.

[5] $PM_{2.5}$ potential to emit calculations for all emission units other than the coal-fired boilers (EU ID 1 and 2) conservatively assume that $PM_{2.5}$ emissions are equal to PM_{10} emissions.

[6] Emission factor for small pottery-firing wood-fired kilns are not available. Calculation assumes that combustion of wood in the kilns is similar to that in dry wood-fired boilers.

[7] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[8] Emission factors for propane-fired turbine are not available. Emission factors for natural gas-fired turbine are used.

[9] The graduation flame is best described as a non-smoking flare. Soot emissions are zero.

[10] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[11] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[12] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[13] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[14] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[15] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[16] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

[17] Less than 131 gallons of paint are used on an annual basis in the facilities services paint booth. The density of paint is approximately 7 lb/gal. The facilities services paint booth has fiberglass paint arrestor pads. The calculation conservatively assumes that the entire volume of paint used is emitted as PM. Vendor data for the filters indicates an 70% capture efficiency for particles of 2.5 microns or greater.

Table 2-7. Assessable Potential to Emit Calculations - Volatile Organic Compounds (VOC) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit		Fuel	Factor	VOC Emission	Emission	Allowable Annual	Potential
ID	Description	Type	Reference	Factor	Unit Rating/Capacity	Operation [1]	VOC Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	AP-42 Table 1.1-19	0.05 lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	1.2 tpy
2	Coal-Fired Boiler	Coal	AP-42 Table 1.1-19	0.05 lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	1.2 tpy
3	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	180.9 MMBtu/hr	8,760 hrs/yr	4.4 tpy [8]
3	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-2	5.5 lb/MMscf	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	0.00251 lb/hp-hr	125 kW	100 hrs/yr [3]	0.022 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	AP-42 Table 3.3-1	0.00251 lb/hp-hr	125 kW	100 hrs/yr [3]	0.022 tpy
4	Dual-Fired Boiler	Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	180.9 MMBtu/hr	876 hrs/yr	1.2 tpy [9]
4	Dual-Fired Boiler	Natural Gas	AP-42 Table 1.4-2	5.5 lb/MMscf	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	AP-42 Table 3.4-1	7.05E-04 lb/hp-hr	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	AP-42, Table 2.3-2	2.99E-01 lb/ton	83 lb/hr	109 ton/yr [10]	0.02 tpy
10	AFES Boiler	#1 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.012 tpy
11	AFES Boiler	#1 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	0.012 tpy
12	Harper Boiler #1	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.007 tpy
13	Harper Boiler #2	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.007 tpy
14	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.001 tpy
15	Copper Lane Boiler	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.001 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	0.233 MMBtu/hr	8,760 hrs/yr	0.003 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.054 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.054 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	6.13 MMBtu/hr	19,650 hrs/yr [11]	0.150 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	8.5 MMBtu/hr	8,760 hrs/yr	0.092 tpy
23	Alaska Center for Energy and Power Generator	Diesel	Vendor Data	23 g/hr	235 kW	4,380 hrs/yr [12]	0.111 tpy
24	Old University Park Emergency Generator	Diesel	AP-42 Table 3.3-1	0.00251 lb/hp-hr	51 kW	100 hrs/yr [3]	0.009 tpy
25	AFES Greenhouse Furnace	#1 Diesel	AP-42 Table 1.3-3	0.713 lb/kgal	0.209 MMBtu/hr	8,760 hrs/yr	0.012 tpy
26	Copper Lane Furnace	#2 Diesel	AP-42 Table 1.3-3	0.713 lb/kgal	0.08 MMBtu/hr	8,760 hrs/yr	0.002 tpy
27	Skarland Cabin Furnace	#2 Diesel	AP-42 Table 1.3-3	0.713 lb/kgal	0.14 MMBtu/hr	8,760 hrs/yr	0.003 tpy
28	AFES Grain Dryer	#1 Diesel	AP-42 Table 1.3-3	0.34 lb/kgal	2.43 MMBtu/hr	100 hrs/yr [13]	0.000 tpy
29	Harper Hot Water Heater	#2 Diesel	AP-42 Table 1.3-3	0.713 lb/kgal	0.236 MMBtu/hr	8,760 hrs/yr	0.005 tpy
30	Duckering Classroom Engine	Diesel	AP-42 Table 3.3-1	0.00251 lb/hp-hr	45 kW	100 hrs/yr [14]	0.01 tpy
			Significant Emission Units Total Assessable Potential to Emit Emissions - VOC				**8.5 tpy**

Insignificant Emission Units							
	Coal Handling/Coal Crushing	Coal	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Propane-Fired Kilns	Propane	AP-42 Table 1.5-1	1 lb/kgal	2.6 MMBtu/hr, total	8,760 hrs/yr	0.123 tpy
	Wood-Fired Kilns	Wood	AP-42 Table 1.6-2	0.017 lb/MMBtu[4]	Unknown	1 cord/yr[5]	1.3E-04 tpy
	Duckering Classroom Turbine	Propane	AP-42 Table 3.1-2a	2.1E-03 lb/MMBtu[6]	0.33 MMBtu/hr	8,760 hrs/yr	0.003 tpy
	Graduation Flame	Propane	AP-42 Table 13.5-1	0.14 lb/MMBtu	5.0E-03 MMBtu/hr	8,760 hrs/yr	3.1E-03 tpy
	Facilities Services Paint Booth Exhaust Fan	Various Paints	N/A	N/A	Unknown	131 gal/yr	0.46 tpy[7]
	Museum Paint Booth Exhaust Fan	Various Paints	N/A	N/A	Unknown	10 gal/yr	0.035 tpy[7]
	Various Laboratory Fume Hoods	N/A	See detailed calculations in Table 2-8a				2.4 tpy
	Power Plant Field-Erected Tank	Diesel	EPA TANKS[15]	N/A	212,120 gallons	8,760 hrs/yr	0.009 tpy
	Ash Bin Vent filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A	N/A	8,225 hrs/yr	0.0 tpy
	Ash Loadout to Truck	N/A	N/A	N/A	N/A	0 hrs/yr	0.0 tpy
			Insignificant Emission Units Total Assessable Potential to Emit Emissions - VOC				**3.1 tpy**
					Total Assessable Potential to Emit Emissions - VOC		**11.6 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Diesel Heating Value	0.137	MMBtu/gal
Coal Heating Value	15.3	MMBtu/ton
Propane Heating Value	91.5	MMBtu/kgal
Natural Gas Heat Content	1,000	Btu/scf
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Emission factor for small pottery-firing wood-fired kilns are not available. Calculation assumes that combustion of wood in the kilns is similar to that in dry wood-fired boilers.

[5] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[6] Emission factors for propane-fired turbine are not available. Emission factors for natural gas-fired turbine are used.

[7] Less than 131 gallons of paint are used on an annual basis in the facilities services paint booth. Less than 10 gallons of paint are used on an annual basis in the museum paint booth. The density of paint is approximately 7 lb/gal. Calculations include conservative assumption that entire volume of paint used is emitted as VOC.

[8] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[9] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[10] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[11] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[12] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[13] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[14] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

[15] See TANKS report in Section 2 of this application.

Table 2-7a. Assessable Potential to Emit Calculations - Laboratory Fume Hoods VOC Potential Emission
University of Alaska - Fairbanks Campus Power Plant

Chemical	CAS No.	Amount Stored On-site (liters)	Specific gravity of stored substance	Percent in solution	Amount Stored On-site (lbs)	Potential VOC Emissions (ton/yr)	HAP Emissions (ton/yr)
2-Butanone	78-93-3	35	0.806	100	62.2	0.031	
Acetic acid	64-19-7	39	1.05	97	87.5	0.044	
Acetone	67-64-1	495	0.788	100	859.7	0.430	
Benzene	71-43-2	12	0.8765	100	23.2	0.012	0.012
Ethanol	64-17-5	502	0.79	100	874.1	0.437	
Formaldehyde	50-00-0	398	1.08	38	360.0	0.180	0.180
Methyl alcohol in formaldehyde solution	67-56-1			15	142.1	0.071	0.071
Hexane	110-54-3	77	0.659	94	105.1	0.053	0.053
Methanol	67-56-1	443	0.791	100	772.3	0.386	0.386
Methylene chloride	75-09-2	156	1.3266	100	456.1	0.228	0.228
Phenol	108-95-2	4	1.057	100	9.3	0.005	0.005
n-Propyl alcohol and 2-Propanol	-23-8, 67-63	356	0.7945	100	623.4	0.312	
Stoddard solvent	8052-41-3	32	0.787	100	55.5	0.028	
Toluene	108-88-3	178	0.86	100	337.4	0.169	0.169
Xylene	1330-20-7	43	0.864	100	81.9	0.041	0.041
Total Potential VOC Emissions from Laboratory Hoods						**2.42**	**1.14**

Notes:
1. The above chemicals were determined to be common chemicals that contained VOCs.
3. Only chemical inventories of 4 liters or greater were included.
4. This inventory is not up to date, but reflects the most current information available.
5. This inventory does not reflect chemical usage, only those stored on-site.
6. In order to estimate VOC emissions from laboratory hoods, the following assumptions are made:
   - The chemicals stored on-site are used within a year.
   - The chemicals are emitted in their current form and are 100% volatile.
   - The chemicals are not transformed into other chemicals. Other VOCs are not created during laboratory use.
7. Specific gravity and percent of chemical in solution data obtained from chemical product material safety data sheets.

SG of Wat	1	kg/L
Conversior	2.204	lb/kg
	2000	lb/ton

8. Example calculations:

Amount stored on-site (lbs) = (Liters stored) x (Specific gravity) x (2.204 lb/kg) x (percent in solution)
Emission estimate (ton/yr) = (Pounds stored) / (2,000 lb/ton)

Table 2-8. Assessable Potential to Emit Calculations - Sulfur Dioxide (SO_2) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit ID	Emission Unit Description	Fuel Type	Fuel Sulfur Content[12]	Factor Reference	SO_2 Emission Factor	Emission Unit Rating/Capacity	Allowable Annual Operation[1]	Potential SO_2 Emissions[2]
Significant Emission Units								
1	Coal-Fired Boiler	Coal	0.26 weight %	AP-42 Table 1.1-3	35 *S lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	220.1 tpy
2	Coal-Fired Boiler	Coal	0.26 weight %	AP-42 Table 1.1-3	35 *S lb/ton	84.5 MMBtu/hr	8,760 hrs/yr	220.1 tpy
3	Dual-Fired Boiler	Diesel	0.5 weight %	AP-42 Table 1.3-1	142 *S lb/kgal	180.9 MMBtu/hr	8,760 hrs/yr	410.6 tpy[7]
3	Dual-Fired Boiler	Natural Gas	N/A	AP-42 Table 1.4-2	0.6 lb/MMscf	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	0.5 weight %	Mass Balance	0.0036277 lb/hp-hr	125 kW	100 hrs/yr	0.03 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	0.5 weight %	Mass Balance	0.0036277 lb/hp-hr	125 kW	100 hrs/yr	0.03 tpy
4	Dual-Fired Boiler	Diesel	0.5 weight %	AP-42 Table 1.3-1	142 *S lb/kgal	180.9 MMBtu/hr	876 hrs/yr	6.71 tpy[8]
4	Dual-Fired Boiler	Natural Gas	N/A	AP-42 Table 1.4-2	0.6 lb/MMscf	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	0.5 weight %	AP-42 Table 3.4-1	8.09E-03 *S lb/hp-hr	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	N/A	AP-42 Table 2.3-1	2.17 lb/ton	83 lb/hr	109 ton/yr[9]	0.1 tpy
10	AFES Boiler	#1 Diesel	0.5 weight %	AP-42 Table 1.3-1	142 *S lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	2.445 tpy
11	AFES Boiler	#1 Diesel	0.5 weight %	AP-42 Table 1.3-1	142 *S lb/kgal	1.08 MMBtu/hr	8,760 hrs/yr	2.445 tpy
12	Harper Boiler #1	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.004 tpy
13	Harper Boiler #2	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.64 MMBtu/hr	8,760 hrs/yr	0.004 tpy
14	Copper Lane Boiler	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.001 tpy
15	Copper Lane Boiler	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.136 MMBtu/hr	8,760 hrs/yr	0.001 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.233 MMBtu/hr	8,760 hrs/yr	0.002 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.034 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	4.93 MMBtu/hr	8,760 hrs/yr	0.034 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	6.13 MMBtu/hr	19,650 hrs/yr[10]	0.094 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	8.5 MMBtu/hr	8,760 hrs/yr	0.058 tpy
23	Alaska Center for Energy and Power Generator	Diesel	0.0015 weight %[12]	Mass Balance	1.088E-05 lb/hp-hr	235 kW	4,380 hrs/yr[11]	0.008 tpy
24	Old University Park Emergency Generator	Diesel	0.0015 weight %[12]	Mass Balance	1.088E-05 lb/hp-hr	51 kW	100 hrs/yr	3.9E-05 tpy
25	AFES Greenhouse Furnace	#1 Diesel	0.5 weight %	AP-42 Table 1.3-1	142 *S lb/kgal	0.209 MMBtu/hr	8,760 hrs/yr	0.475 tpy
26	Copper Lane Furnace	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.08 MMBtu/hr	8,760 hrs/yr	0.001 tpy
27	Skarland Cabin Furnace	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.14 MMBtu/hr	8,760 hrs/yr	0.001 tpy
28	AFES Grain Dryer	#1 Diesel	0.5 weight %	AP-42 Table 1.3-1	142 *S lb/kgal	2.43 MMBtu/hr	100 hrs/yr[13]	0.063 tpy
29	Harper Hot Water Heater	#2 Diesel	0.0015 weight %[12]	AP-42 Table 1.3-1	142 *S lb/kgal	0.236 MMBtu/hr	8,760 hrs/yr	0.002 tpy
30	Duckering Classroom Engine	Diesel	0.0015 weight %[12]	Mass Balance	1.088E-05 lb/hp-hr	45 kW	100 hrs/yr[14]	3.5E-05 tpy
				Significant Emission Units Total Assessable Potential to Emit Emissions - SO_2				**863.5 tpy**

Insignificant Emission Units								
	Coal Handling/Coal Crushing	Coal	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.00 tpy
	Various Propane-Fired Kilns	Propane	0.2 gr/100 ft^3	AP-42 Table 1.5-1	0.1 *S lb/kgal	2.6 MMBtu/hr, total	8,760 hrs/yr	0.002 tpy
	Wood-Fired Kilns	Wood	N/A	AP-42 Table 1.6-2	0.025 lb/MMBtu[4]	Unknown	1 cord/yr[5]	1.9E-04 tpy
	Duckering Classroom Turbine	Propane	2.4E-02 weight %	AP-42 Table 3.1-2a	9.4E-01 *S lb/MMBtu[6]	0.33 MMBtu/hr	8,760 hrs/yr	0.03 tpy
	Graduation Flame	Propane	0.2 gr/100 ft^3	Mass Balance	2.3E-04 lb/MMBtu	5.0E-03 MMBtu/hr	8,760 hrs/yr	5.0E-06 tpy
	Various Paint Booths	N/A	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.00 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.00 tpy
	Power Plant Field-Erected Tank	Diesel	0.5 weight %	N/A	N/A	212,120 gallons	8,760 hrs/yr	0.0 tpy
	Ash Bin Vent filter	N/A	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.00 tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.00 tpy
	Ash Loadout to Truck	N/A	N/A	N/A	N/A	N/A	8,225 hrs/yr	0.00 tpy
				Insignificant Emission Units Total Assessable Potential to Emit Emissions - SO_2				**3.6E-02 tpy**
					Total Assessable Potential to Emit Emissions - SO_2			**863.5 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Diesel Heating Value	0.137	MMBtu/gal
Coal Heating Value	15.3	MMBtu/ton
Propane Heating Value	91.5	MMBtu/kgal
Natural Gas Heat Content	1,000	Btu/scf
Density of Diesel	7.1	lb/gal
Engine Heat Rate	7,000	Btu/hp-hr
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Emission factor for small pottery-firing wood-fired kilns are not available. Calculation assumes that combustion of wood in the kilns is similar to that in dry wood-fired boilers.

[5] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[6] Emission factors for propane-fired turbine are not available. Emission factors for natural gas-fired turbine are used.

[7] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[8] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[9] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[10] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[11] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[12] UAF is proposing an operating limit requiring the use of ultra-low sulfur diesel for EU12 through EU24, EU26, EU27, EU29, and EU30 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

Table 2-9. Summary of Estimated Potential Hazardous Air Pollutants (HAP) Emissions
University of Alaska - Fairbanks Campus Power Plant

Hazardous Air Pollutant	HAP Emissions by Emission Unit Category (tons per year) [1]									Total HAP Emissions
	Storage Tank [2]	Coal-Fired Boilers	Diesel Boilers & Heaters	Natural Gas Boilers	Diesel Engines <600 hp	Diesel Engines >600 hp	Waste Incinerators	Laboratory Hoods	Propane-Fired Kilns [3]	
Acetaldehyde	----	2.76E-02	----	----	3.83E-03	1.02E-02	----	----	----	4.17E-02
Acetamide	----	----	----	----	----	----	----	----	----	0.00E+00
Acetonitrile	----	----	----	----	----	----	----	----	----	0.00E+00
Acetophenone	----	7.26E-04	----	----	----	----	----	----	----	7.26E-04
2-Acetylaminofluorene	----	----	----	----	----	----	----	----	----	0.00E+00
Acrolein	----	1.40E-02	----	----	4.62E-04	3.21E-03	----	----	----	1.77E-02
Acrylamide	----	----	----	----	----	----	----	----	----	0.00E+00
Acrylic Acid	----	----	----	----	----	----	----	----	----	0.00E+00
Acrylonitrile	----	----	----	----	----	----	----	----	----	0.00E+00
Allyl chloride	----	----	----	----	----	----	----	----	----	0.00E+00
4-Aminobiphenyl	----	----	----	----	----	----	----	----	----	0.00E+00
Aniline	----	----	----	----	----	----	----	----	----	0.00E+00
o-Anisidine	----	----	----	----	----	----	----	----	----	0.00E+00
Asbestos	----	----	----	----	----	----	----	----	----	0.00E+00
Benzene	----	6.29E-02	1.61E-03	1.83E-03	4.66E-03	3.16E-01	----	1.16E-02	----	3.98E-01
Benzidine	----	----	----	----	----	----	----	----	----	0.00E+00
Benzotricholoride	----	----	----	----	----	----	----	----	----	0.00E+00
Benzyl chloride	----	3.39E-02	----	----	----	----	----	----	----	3.39E-02
Biphenyl	----	8.22E-05	----	----	----	----	----	----	----	8.22E-05
Bis(2-ethylhexyl)phthalate (DEHP)	----	3.53E-03	----	----	----	----	----	----	----	3.53E-03
Bis(chloromethyl)ether	----	----	----	----	----	----	----	----	----	0.00E+00
Bromoform	----	1.89E-03	----	----	----	----	----	----	----	1.89E-03
1,3 Butadiene	----	----	----	----	1.95E-04	----	----	----	----	1.95E-04
Calcium cyanamide	----	----	----	----	----	----	----	----	----	0.00E+00
Caprolactam	----	----	----	----	----	----	----	----	----	0.00E+00
Captan	----	----	----	----	----	----	----	----	----	0.00E+00
Carbaryl	----	----	----	----	----	----	----	----	----	0.00E+00
Carbon disulfide	----	6.29E-03	----	----	----	----	----	----	----	6.29E-03
Carbon tetrachloride	----	----	----	----	----	----	----	----	----	0.00E+00
Carbonyl sufide	----	----	----	----	----	----	----	----	----	0.00E+00
Catechol	----	----	----	----	----	----	----	----	----	0.00E+00
Chloramben	----	----	----	----	----	----	----	----	----	0.00E+00
Chlordane	----	----	----	----	----	----	----	----	----	0.00E+00
Chlorine	----	----	----	----	----	----	5.72E-03	----	----	5.72E-03
Chloroacetic acid	----	----	----	----	----	----	----	----	----	0.00E+00
2-Chloroacetophenone	----	3.39E-04	----	----	----	----	----	----	----	3.39E-04
Chlorobenzene	----	1.06E-03	----	----	----	----	----	----	----	1.06E-03
Chlorobenzilate	----	----	----	----	----	----	----	----	----	0.00E+00
Chloroform	----	2.85E-03	----	----	----	----	----	----	----	2.85E-03
Chloromethyl methyl ether	----	----	----	----	----	----	----	----	----	0.00E+00
Chloroprene	----	----	----	----	----	----	----	----	----	0.00E+00
Cresols/Creshlic acid (isomers and mixture)	----	----	----	----	----	----	----	----	----	0.00E+00
o-Cresol	----	----	----	----	----	----	----	----	----	0.00E+00
m-Cresol	----	----	----	----	----	----	----	----	----	0.00E+00
p-Cresol	----	----	----	----	----	----	----	----	----	0.00E+00

Table 2-9. Summary of Estimated Potential Hazardous Air Pollutants (HAP) Emissions
University of Alaska - Fairbanks Campus Power Plant

Hazardous Air Pollutant	HAP Emissions by Emission Unit Category (tons per year) [1]									Total HAP Emissions
	Storage Tank [2]	Coal-Fired Boilers	Diesel Boilers & Heaters	Natural Gas Boilers	Diesel Engines <600 hp	Diesel Engines >600 hp	Waste Incinerators	Laboratory Hoods	Propane-Fired Kilns [3]	
Cumene	----	2.56E-04	----	----	----	----	----	----	----	2.56E-04
2,4-D, salts and esters	----	----	----	----	----	----	----	----	----	0.00E+00
DDE	----	----	----	----	----	----	----	----	----	0.00E+00
Diazomethane	----	----	----	----	----	----	----	----	----	0.00E+00
Dibenzofurans	----	----	----	----	----	----	3.90E-06	----	----	3.90E-06
1,2-Dibromo-3-chloropropane	----	----	----	----	----	----	----	----	----	0.00E+00
Dibutylphthalate	----	----	----	----	----	----	----	----	----	0.00E+00
1,4-Dichlorobenzene(p)	----	----	----	1.05E-03	----	----	----	----	----	1.05E-03
3,3-Dichlorobenzidene	----	----	----	----	----	----	----	----	----	0.00E+00
Dichloroethyl ether(Bis(2-chloroethyl)ether)	----	----	----	----	----	----	----	----	----	0.00E+00
1,3-Dichloropropene	----	----	----	----	----	----	----	----	----	0.00E+00
Dichlorvos	----	----	----	----	----	----	----	----	----	0.00E+00
Diethanolamine	----	----	----	----	----	----	----	----	----	0.00E+00
N,N-Diethyl anniline (N,N-Dimethylanine)	----	----	----	----	----	----	----	----	----	0.00E+00
Diethyl sulfate	----	----	----	----	----	----	----	----	----	0.00E+00
3,3-Dimethoxybenzidine	----	----	----	----	----	----	----	----	----	0.00E+00
Dimethyl aminoazobenzene	----	----	----	----	----	----	----	----	----	0.00E+00
3,3-Dimethyl benzidine	----	----	----	----	----	----	----	----	----	0.00E+00
Dimethyl caramoyl chloride	----	----	----	----	----	----	----	----	----	0.00E+00
Dimethyl formamide	----	----	----	----	----	----	----	----	----	0.00E+00
1,1-Dimethyl hydrazine	----	----	----	----	----	----	----	----	----	0.00E+00
Dimethyl phthalate	----	----	----	----	----	----	----	----	----	0.00E+00
Dimethyl sulfate	----	2.32E-03	----	----	----	----	----	----	----	2.32E-03
4,6-Dinitro-o-cresol, and salts	----	----	----	----	----	----	----	----	----	0.00E+00
2,4-Dinitrophenol	----	----	----	----	----	----	----	----	----	0.00E+00
2,4-Dinitrotoluene	----	1.35E-05	----	----	----	----	----	----	----	1.35E-05
1,4-Dioxane(1,4-Diethyleneoxide)	----	----	----	----	----	----	----	----	----	0.00E+00
1,2-Diphenylhydrazine	----	----	----	----	----	----	----	----	----	0.00E+00
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	----	----	----	----	----	----	----	----	----	0.00E+00
1,2-Epoxybutane	----	----	----	----	----	----	----	----	----	0.00E+00
Ethyl acrylate	----	----	----	----	----	----	----	----	----	0.00E+00
Ethyl benzene	----	4.55E-03	4.79E-04	----	----	----	----	----	----	5.03E-03
Ethyl carbamate (Urethane)	----	----	----	----	----	----	----	----	----	0.00E+00
Ethyl chloride (Chloroethane)	----	2.03E-03	----	----	----	----	----	----	----	2.03E-03
Ethylene dibromide (Dibromoethane)	----	5.81E-05	----	----	----	----	----	----	----	5.81E-05
Ethylene dichloride (1,2-Dichloroethane)	----	1.94E-03	----	----	----	----	----	----	----	1.94E-03
Ethylene glycol	----	----	----	----	----	----	----	----	----	0.00E+00
Ethylene imine (Aziridine)	----	----	----	----	----	----	----	----	----	0.00E+00
Ethylene oxide	----	----	----	----	----	----	----	----	----	0.00E+00
Ethylene thiourea	----	----	----	----	----	----	----	----	----	0.00E+00
Ethylidene dichloride (1,1-Dichloroethane)	----	----	----	----	----	----	----	----	----	0.00E+00
Formaldehyde	----	1.16E-02	2.64E-01	6.55E-02	5.89E-03	3.21E-02	----	1.80E-01	----	5.59E-01
Heptachlor	----	----	----	----	----	----	----	----	----	0.00E+00
Hexachlorobenzene	----	----	----	----	----	----	----	----	----	0.00E+00
Hexachlorobutadiene	----	----	----	----	----	----	----	----	----	0.00E+00

Table 2-9. Summary of Estimated Potential Hazardous Air Pollutants (HAP) Emissions
University of Alaska - Fairbanks Campus Power Plant

Hazardous Air Pollutant	HAP Emissions by Emission Unit Category (tons per year) [1]									Total HAP Emissions
	Storage Tank [2]	Coal-Fired Boilers	Diesel Boilers & Heaters	Natural Gas Boilers	Diesel Engines <600 hp	Diesel Engines >600 hp	Waste Incinerators	Laboratory Hoods	Propane-Fired Kilns [3]	
Hexachlorocyclopentadiene	----	----	----	----	----	----	----	----	----	0.00E+00
Hexachloroethane	----	----	----	----	----	----	----	----	----	0.00E+00
Hexamethylene-1,6-diisocyanate	----	----	----	----	----	----	----	----	----	0.00E+00
Hexamethylphosphoramide	----	----	----	----	----	----	----	----	----	0.00E+00
Hexane	----	3.24E-03	----	1.57E+00	----	----	----	5.26E-02	----	1.62E+00
Hydrazine	----	----	----	----	----	----	----	----	----	0.00E+00
Hydrochloric acid	----	6.68E+00	----	----	----	----	1.83E+00	----	----	8.50E+00
Hydrogen fluoride (Hydrofluoric acid)	----	6.72E+00	----	----	----	----	8.12E-03	----	----	6.73E+00
Hydroquinone	----	----	----	----	----	----	----	----	----	0.00E+00
Isophorone	----	2.81E-02	----	----	----	----	----	----	----	2.81E-02
Lindane (all isomers)	----	----	----	----	----	----	----	----	----	0.00E+00
Maleic anhydride	----	----	----	----	----	----	----	----	----	0.00E+00
Methanol	----	----	----	----	----	----	----	4.57E-01	----	4.57E-01
Methoxychlor	----	----	----	----	----	----	----	----	----	0.00E+00
Methyl bromide (Bromomethane)	----	7.74E-03	----	----	----	----	----	----	----	7.74E-03
Methyl chloride (chloromethane)	----	2.56E-02	----	----	----	----	----	----	----	2.56E-02
Methyl chloroform (1,1,1-Trichloroethane)	----	----	----	----	----	----	----	----	----	0.00E+00
Methyl ethyl ketone (2-Butanone)	----	1.89E-02	----	----	----	----	----	----	----	1.89E-02
Methyl hydrazine	----	8.22E-03	----	----	----	----	----	----	----	8.22E-03
Methyl iodide (Iodomethane)	----	----	----	----	----	----	----	----	----	0.00E+00
Methyl isobutyl ketone (Hexone)	----	----	----	----	----	----	----	----	----	0.00E+00
Methyl isocyanate	----	----	----	----	----	----	----	----	----	0.00E+00
Methyl methacrylate	----	9.68E-04	----	----	----	----	----	----	----	9.68E-04
Methyl tert butyl ether	----	1.69E-03	----	----	----	----	----	----	----	1.69E-03
4,4-Methylene bis(2-chloroaniline)	----	----	----	----	----	----	----	----	----	0.00E+00
Methylene chloride (Dichloromethane)	----	1.40E-02	----	----	----	----	----	2.28E-01	----	2.42E-01
Methylene diphenyl diisocyante (MDI)	----	----	----	----	----	----	----	----	----	0.00E+00
4,4'-Methylenedianiline	----	----	----	----	----	----	----	----	----	0.00E+00
Nitrobenzene	----	----	----	----	----	----	----	----	----	0.00E+00
4-Nitrobiphenyl	----	----	----	----	----	----	----	----	----	0.00E+00
4-Nitrophenol	----	----	----	----	----	----	----	----	----	0.00E+00
2-Nitropropane	----	----	----	----	----	----	----	----	----	0.00E+00
N-Nitroso-N-methylurea	----	----	----	----	----	----	----	----	----	0.00E+00
N-Nitrosodimethylamine	----	----	----	----	----	----	----	----	----	0.00E+00
N-Nitrosomorpholine	----	----	----	----	----	----	----	----	----	0.00E+00
Parathion	----	----	----	----	----	----	----	----	----	0.00E+00
Pentachloromitrobenzene (Quintobenzene)	----	----	----	----	----	----	----	----	----	0.00E+00
Pentachlorophenol	----	----	----	----	----	----	----	----	----	0.00E+00
Phenol	----	7.74E-04	----	----	----	----	----	4.66E-03	----	5.43E-03
p-Phenylemediamine	----	----	----	----	----	----	----	----	----	0.00E+00
Phosgene	----	----	----	----	----	----	----	----	----	0.00E+00
Phosphine	----	----	----	----	----	----	----	----	----	0.00E+00
Phosphorus	----	----	----	----	----	----	----	----	----	0.00E+00
Phthalic anhydride	----	----	----	----	----	----	----	----	----	0.00E+00
Polychlorinated biphenyls (Aroclors)	----	----	----	----	----	----	2.53E-06	----	----	2.53E-06

Table 2-9. Summary of Estimated Potential Hazardous Air Pollutants (HAP) Emissions
University of Alaska - Fairbanks Campus Power Plant

Hazardous Air Pollutant	HAP Emissions by Emission Unit Category (tons per year) [1]									Total HAP Emissions
	Storage Tank [2]	Coal-Fired Boilers	Diesel Boilers & Heaters	Natural Gas Boilers	Diesel Engines <600 hp	Diesel Engines >600 hp	Waste Incinerators	Laboratory Hoods	Propane-Fired Kilns [3]	
Polycyclic Organic Matter (POM)	----	9.22E-04	2.49E-02	6.09E-04	8.37E-04	8.60E-02	----	----	----	1.13E-01
Acenaphthene	----	----	----	----	----	----	----	----	----	
Acenaphthylene	----	----	----	----	----	----	----	----	----	
Anthracene	----	----	----	----	----	----	----	----	----	
Benzo(a)anthracene	----	----	----	----	----	----	----	----	----	
Benzo(a)pyrene	----	----	----	----	----	----	----	----	----	
Benzo(b)fluoranthene	----	----	----	----	----	----	----	----	----	
Benzo(g,h,i)perylene	----	----	----	----	----	----	----	----	----	
Benzo(k)fluoranthene	----	----	----	----	----	----	----	----	----	
Chrysene	----	----	----	----	----	----	----	----	----	
Dibenz(a,h)anthracene	----	----	----	----	----	----	----	----	----	
Acenaphthene	----	----	----	----	----	----	----	----	----	
Fluoranthene	----	----	----	----	----	----	----	----	----	
Fluorene	----	----	----	----	----	----	----	----	----	
Indeno(1,2,3-cd)pyrene	----	----	----	----	----	----	----	----	----	
7,12-Dimethylbenz(a)anthracene	----	----	----	----	----	----	----	----	----	
Naphthalene	----	----	----	----	----	----	----	----	----	
Naphtalene	----	----	----	----	----	----	----	----	----	
Phenathrene	----	----	----	----	----	----	----	----	----	
Pyrene	----	----	----	----	----	----	----	----	----	
1,3-Propane sultone	----	----	----	----	----	----	----	----	----	0.00E+00
beta-Propiolactone	----	----	----	----	----	----	----	----	----	0.00E+00
Propionaldehyde	----	1.84E-02	----	----	----	----	----	----	----	1.84E-02
Propoxur (Baygon)	----	----	----	----	----	----	----	----	----	0.00E+00
Propylene dichloride (1,2-Dichloropropane)	----	----	----	----	----	----	----	----	----	0.00E+00
Propylene oxide	----	----	----	----	----	----	----	----	----	0.00E+00
1,2-Propylenimine (2-Methyl aziridine)	----	----	----	----	----	----	----	----	----	0.00E+00
Quinoline	----	----	----	----	----	----	----	----	----	0.00E+00
Quinone	----	----	----	----	----	----	----	----	----	0.00E+00
Styrene	----	1.21E-03	----	----	----	----	----	----	----	1.21E-03
Styrene oxide	----	----	----	----	----	----	----	----	----	0.00E+00
Chlorinated dibenzo-p-dioxins (Total)	----	----	----	----	----	----	1.16E-06	----	----	1.16E-06
1,1,2,2-Tetrachloroethane	----	----	----	----	----	----	----	----	----	0.00E+00
Tetrachloroethylene (Perchloroethylene)	----	2.08E-03	----	----	----	----	----	----	----	2.08E-03
Titanium tetrachloride	----	----	----	----	----	----	----	----	----	0.00E+00
Toluene	----	1.16E-02	4.67E-02	2.96E-03	2.04E-03	1.14E-01	----	1.69E-01	----	3.46E-01
2,4-Toluene diamine	----	----	----	----	----	----	----	----	----	0.00E+00
2,4-Tolluene diisocyanate	----	----	----	----	----	----	----	----	----	0.00E+00
o-Toluidine	----	----	----	----	----	----	----	----	----	0.00E+00
Toxaphene (chlorinated camphene)	----	----	----	----	----	----	----	----	----	0.00E+00
1,2,4-Trichlorobenzene	----	----	----	----	----	----	----	----	----	0.00E+00
1,1,2-Trichloroethane	----	9.68E-04	1.78E-03	----	----	----	----	----	----	2.75E-03
Trichloroethylene	----	----	----	----	----	----	----	----	----	0.00E+00
2,4,5-Trichlorophenol	----	----	----	----	----	----	----	----	----	0.00E+00
2,4,6-Trichlorophenol	----	----	----	----	----	----	----	----	----	0.00E+00

Table 2-9. Summary of Estimated Potential Hazardous Air Pollutants (HAP) Emissions
University of Alaska - Fairbanks Campus Power Plant

Hazardous Air Pollutant	HAP Emissions by Emission Unit Category (tons per year) [1]									Total HAP Emissions
	Storage Tank [2]	Coal-Fired Boilers	Diesel Boilers & Heaters	Natural Gas Boilers	Diesel Engines <600 hp	Diesel Engines >600 hp	Waste Incinerators	Laboratory Hoods	Propane-Fired Kilns [3]	
Triethylamine	----	----	----	----	----	----	----	----	----	0.00E+00
Trifluralin	----	----	----	----	----	----	----	----	----	0.00E+00
2,2,4-Trimethylpentane	----	----	----	----	----	----	----	----	----	0.00E+00
Vinyl acetate	----	3.68E-04	----	----	----	----	----	----	----	3.68E-04
Vinyl bromide	----	----	----	----	----	----	----	----	----	0.00E+00
Vinyl chloride	----	----	----	----	----	----	----	----	----	0.00E+00
Vinylidene chloride (1,1-Dichloroethylene)	----	----	----	----	----	----	----	----	----	0.00E+00
Xylenes (isomers and mixture)	----	1.79E-03	8.22E-04	----	1.42E-03	7.85E-02	----	4.09E-02	----	1.23E-01
Antimony Compounds	----	8.71E-04	----	----	----	----	6.98E-04	----	----	1.57E-03
Arsenic Compounds (inorganic including arsine)	----	1.98E-02	4.13E-03	1.74E-04	----	----	1.32E-05	----	----	2.42E-02
Beryllium Compounds	----	1.02E-03	3.10E-03	1.05E-05	----	----	3.41E-07	----	----	4.12E-03
Cadmium Compounds	----	2.47E-03	3.10E-03	9.59E-04	----	----	2.99E-04	----	----	6.82E-03
Chromium Compounds	----	1.26E-02	3.10E-03	1.22E-03	----	----	4.22E-05	----	----	1.69E-02
Cobalt Compounds	----	4.84E-03	----	7.32E-05	----	----	----	----	----	4.91E-03
Coke Oven Emissions	----	----	----	----	----	----	----	----	----	0.00E+00
Cynaide Compounds	----	1.21E-01	----	----	----	----	----	----	----	1.21E-01
Glycol ethers	----	----	----	----	----	----	----	----	----	0.00E+00
Lead Compounds	----	2.03E-02	9.29E-03	----	----	----	3.97E-03	----	----	3.36E-02
Magnesium Compounds	----	5.32E-01	----	----	----	----	----	----	----	5.32E-01
Manganese Compounds	----	2.37E-02	6.20E-03	3.31E-04	----	----	3.09E-05	----	----	3.03E-02
Mercury Compounds	----	4.09E-03	3.10E-03	2.27E-04	----	----	5.83E-03	----	----	1.32E-02
Fine mineral fibers	----	----	----	----	----	----	----	----	----	0.00E+00
Nickel Compounds	----	1.35E-02	3.10E-03	1.83E-03	----	----	3.22E-05	----	----	1.85E-02
Radionuclides (including radon)	----	----	----	----	----	----	----	----	----	0.00E+00
Selenium Compounds	----	6.29E-02	1.55E-02	2.09E-05	----	----	----	----	----	7.84E-02
Total HAPs - Maximum Individual HAP	**0**	**6.725**	**0.264**	**1.569**	**0.006**	**0.316**	**1.826**	**0.457**	**0**	**8.5**
Total HAPs - Unit Category/Source	**0**	**14.545**	**0.391**	**1.646**	**0.019**	**0.640**	**1.851**	**1.144**	**0**	**20.2**

Notes:
[1] See individual emissions unit category emissions calculations for details on methodology and assumptions.
[2] HAP emissions from the storage tank are negligible.
[3] No listed HAP emission rates in AP-42

Table 2-10. Estimated Potential HAP Emissions - Coal-Fired Boilers
University of Alaska - Fairbanks Campus Power Plant

		Maximum Total Fuel Input:	96,761 Tons of Coal/yr [1]
		Source Category Emission Calculations	
CAS No.	Chemical Name	Emission Factor [2]	Estimated Emissions
79005	1,1,2-Trichloroethane	2.00E-05 lb/ton	9.68E-04 tpy
121142	2,4-Dinitrotoluene	2.80E-07 lb/ton	1.35E-05 tpy
532274	2-Chloroacetophenone	7.00E-06 lb/ton	3.39E-04 tpy
75-07-0	Acetaldehyde	5.70E-04 lb/ton	2.76E-02 tpy
98862	Acetophenone	1.50E-05 lb/ton	7.26E-04 tpy
107-02-8	Acrolein	2.90E-04 lb/ton	1.40E-02 tpy
N/A	Antimony Compounds	1.80E-05 lb/ton	8.71E-04 tpy
N/A	Arsenic Compounds	4.10E-04 lb/ton	1.98E-02 tpy
71-43-2	Benzene	1.30E-03 lb/ton	6.29E-02 tpy
100447	Benzyl chloride	7.00E-04 lb/ton	3.39E-02 tpy
N/A	Beryllium Compounds	2.10E-05 lb/ton	1.02E-03 tpy
92524	Biphenyl	1.70E-06 lb/ton	8.22E-05 tpy
117817	Bis(2-ethylhexyl)phthalate (DEHP)	7.30E-05 lb/ton	3.53E-03 tpy
75252	Bromoform	3.90E-05 lb/ton	1.89E-03 tpy
N/A	Cadmium Compounds	5.10E-05 lb/ton	2.47E-03 tpy
75150	Carbon disulfide	1.30E-04 lb/ton	6.29E-03 tpy
108907	Chlorobenzene	2.20E-05 lb/ton	1.06E-03 tpy
67663	Chloroform	5.90E-05 lb/ton	2.85E-03 tpy
N/A	Chromium Chompounds	2.60E-04 lb/ton	1.26E-02 tpy
N/A	Cobalt Compounds	1.00E-04 lb/ton	4.84E-03 tpy
98828	Cumene	5.30E-06 lb/ton	2.56E-04 tpy
N/A	Cyanide Compounds	2.50E-03 lb/ton	1.21E-01 tpy
77781	Dimethyl sulfate	4.80E-05 lb/ton	2.32E-03 tpy
100-41-4	Ethyl benzene	9.40E-05 lb/ton	4.55E-03 tpy
75003	Ethyl chloride (Chloroethane)	4.20E-05 lb/ton	2.03E-03 tpy
1006934	Ethylene dibromide (Dibromoethane)	1.20E-06 lb/ton	5.81E-05 tpy
107062	Ethylene dichloride (1,2-Dichloroethane)	4.00E-05 lb/ton	1.94E-03 tpy
5-00-0	Formaldehyde	2.40E-04 lb/ton	1.16E-02 tpy
110543	Hexane	6.70E-05 lb/ton	3.24E-03 tpy
7647010	Hydrochloric acid [3]	0.138 lb/ton	6.68 tpy
7664393	Hydrogen fluoride (Hydrofluoric acid) [3]	0.139 lb/ton	6.72 tpy
78591	Isophorone	5.80E-04 lb/ton	2.81E-02 tpy
N/A	Lead Compounds	4.20E-04 lb/ton	2.03E-02 tpy
N/A	Magnesium Compounds	1.10E-02 lb/ton	5.32E-01 tpy
N/A	Manganese Compounds	4.90E-04 lb/ton	2.37E-02 tpy
N/A	Mercury Compounds [3]	8.459E-05 lb/ton	4.09E-03 tpy
74839	Methyl bromide(Bromomethane)	1.60E-04 lb/ton	7.74E-03 tpy
78933	Methyl ethyl ketone (2-Butanone)	3.90E-04 lb/ton	1.89E-02 tpy

60344	Methyl hydrazine	1.70E-04 lb/ton	8.22E-03 tpy
80626	Methyl methacrylate	2.00E-05 lb/ton	9.68E-04 tpy
1634044	Methyl tert butyl ether	3.50E-05 lb/ton	1.69E-03 tpy
74873	Methylchloride (chloromethane)	5.30E-04 lb/ton	2.56E-02 tpy
75092	Methylene chloride (Dichloromethane)	2.90E-04 lb/ton	1.40E-02 tpy
N/A	Nickel Compounds	2.80E-04 lb/ton	1.35E-02 tpy
108952	Phenol	1.60E-05 lb/ton	7.74E-04 tpy
N/A	Polycylic Organic Matter	1.91E-05 lb/ton	9.22E-04 tpy
83-32-9	Acenaphthene	5.10E-07 lb/ton	
203-96-8	Acenaphthylene	2.50E-07 lb/ton	
120-12-7	Anthracene	2.10E-07 lb/ton	
56-55-3	Benzo(a)anthracene	8.00E-08 lb/ton	
205-99-5	Benzo(b)fluoranthene	1.10E-07 lb/ton	
50-32-8	Benzo(a)pyrene	3.80E-08 lb/ton	
191-24-2	Benzo(g,h,i)perylene	2.70E-08 lb/ton	
218-01-9	Chrysene	1.00E-07 lb/ton	
206-44-0	Fluoranthene	7.10E-07 lb/ton	
86-73-7	Fluorene	9.10E-07 lb/ton	
193-39-5	Ideno(1,2,3-cd)pyrene	6.10E-08 lb/ton	
	5-methylchrysene	2.20E-08 lb/ton	
91-20-3	Naphthalene	1.30E-05 lb/ton	
85-01-8	Phenanathrene	2.70E-06 lb/ton	
129-00-0	Pyrene	3.30E-07 lb/ton	
123386	Propionaldehyde	3.80E-04 lb/ton	1.84E-02 tpy
N/A	Selenium Compounds	1.30E-03 lb/ton	6.29E-02 tpy
100425	Styrene	2.50E-05 lb/ton	1.21E-03 tpy
127184	Tetrachloroethylene (Perchloroethylene)	4.30E-05 lb/ton	2.08E-03 tpy
108-88-3	Toluene	2.40E-04 lb/ton	1.16E-02 tpy
108054	Vinyl acetate	7.60E-06 lb/ton	3.68E-04 tpy
1330-20-7	Xylenes (isomers and mixture)	3.70E-05 lb/ton	1.79E-03 tpy
		Total HAP Emissions	**14.545 tpy**

Notes/Comments:

[1] Total coal-fired boiler fuel consumption based on operation of the following:

(2) Erie City Coal-Fired Boiler 84.5 MMBtu/hr, each

Potential Fuel Use IDs 1 & 2 48,380 Ton of Coal/yr @ 8760 hrs/yr, each

Total Potential Fuel Use TOTAL 96,761 Ton of Coal/yr

Annual fuel use converted to ton of coal/year based on a coal heat content of 15.3 MMBtu/ton.

[2] Reference: AP-42, Tables 1.1-13, 1.1-14, 1.1-18

[3]Emission factors are from source test results from boilers of a similar design at Clear Air Force Station. The UAF and Clear AFS boilers both combust Usibelli coal.

Table 2-11. Estimated Potential HAP Emissions - Diesel-Fired External Combustion Units (Boilers and Heaters)
University of Alaska - Fairbanks Campus Power Plant

		Maximum Total Fuel Use:	**15,074 kgal/yr [1]**
		Maximum Total Heat Input:	**2.0651 10^{12} Btu/yr [1]**
		Source Category Emission Calculations	
CAS No.	**Chemical Name**	**Emission Factor [2]**	**Estimated Emissions**
79-00-5	1,1,2-Trichloroethane	2.36E-04 lb/kgal	1.779E-03 tpy
N/A	Arsenic Compounds	4.0 lb/10^{12} Btu	4.130E-03 tpy
71-43-2	Benzene	2.14E-04 lb/kgal	1.613E-03 tpy
N/A	Beryllium Compounds	3 lb/10^{12} Btu	3.098E-03 tpy
N/A	Cadmium Compounds	3 lb/10^{12} Btu	3.098E-03 tpy
N/A	Chromium Chompounds	3 lb/10^{12} Btu	3.098E-03 tpy
100-41-4	Ethyl benzene	6.36E-05 lb/kgal	4.793E-04 tpy
5-00-0	Formaldehyde	3.50E-02 lb/kgal	2.638E-01 tpy
N/A	Lead Compounds	9 lb/10^{12} Btu	9.293E-03 tpy
N/A	Manganese Compounds	6 lb/10^{12} Btu	6.195E-03 tpy
N/A	Mercury Compounds	3 lb/10^{12} Btu	3.098E-03 tpy
N/A	Nickel Compounds	3 lb/10^{12} Btu	3.098E-03 tpy
N/A	Polycylic Organic Matter	3.30E-03 lb/kgal	2.487E-02 tpy
N/A	Selenium Compounds	15 lb/10^{12} Btu	1.549E-02 tpy
108-88-3	Toluene	6.20E-03 lb/kgal	4.673E-02 tpy
1330-20-7	Xylenes (isomers and mixture)	1.09E-04 lb/kgal	8.215E-04 tpy
		Total HAP Emissions	**0.391 tpy**
Notes/Comments:			
[1] Total fuel consumption based on full-time or permit-limited operation of the following:			
	(2) Zurn Dual-Fired Boiler	1320 gal/hr, each	
		Potential Fuel Use ID 3	11,567,036 gallons/yr @ 8760 hrs/yr
		Potential Fuel Use ID 4	1,156,704 gallons/yr @ 876 hrs/yr
	(2) Burnham/V9OGA AFES Boiler	7.86 gal/hr, each	
		Potential Fuel Use ID 10	68,886 gallons/yr @ 8760 hrs/yr
		Potential Fuel Use ID 11	68,886 gallons/yr @ 8760 hrs/yr

	(2) Weil McLain/BL776-S-W Harper Boiler #1		4.67	gal/hr, each
		Potential Fuel Use ID 12		40,923 gallons/yr @ 8760 hrs/yr
		Potential Fuel Use ID 13		40,923 gallons/yr @ 8760 hrs/yr
	(2) Energy Kinetics System 2000 Copper Lane Boiler		0.99	gal/hr, each
		Potential Fuel Use ID 14		8,696 gallons/yr @ 8760 hrs/yr
		Potential Fuel Use ID 15		8,696 gallons/yr @ 8760 hrs/yr
	(1) Weil McLain/P-WGO-5 Copper Lane (Honor's House) Boiler		1.70	ga/hr
		Potential Fuel Use ID 16		14,920 gallons/yr @ 8760 hrs/yr
	(2) Weil McLain/BL1688w-GPr10 West Ridge Research Building Boiler #1		35.99	gal/hr, each
		Potential Fuel Use ID 17		315,232 gallons/yr @ 8760 hrs/yr
		Potential Fuel Use ID 18		315,232 gallons/yr @ 8760 hrs/yr
	(3) Weil McLain/2094W BiRD RM 100U3 Boiler #1		44.77	gal/hr, each
		Potential Fuel Use ID 19-21		879,708 gallons/yr @ 19,650 hrs/yr
	(1) Bryan/EB200-S-150-FDGO BiRD RM 100U3 Boiler #4		62.04	gal/hr
		Potential Fuel Use ID 22		543,504 gallons/yr @ 8760 hrs/yr
	(1) Sunderman/L02OUF AFES Greenhouse Furnace		1.53	gal/hr
		Potential Fuel Use ID 25		13,385 gallons/yr @ 8760 hrs/yr
	(1) Matzger Copper Lane Furnace		0.58	gal/hr
		Potential Fuel Use ID 26		5,115 gallons/yr @ 8760 hrs/yr
	(1) Rheem/ROBC-084QPEB Skarland Cabin Furnace		1.02	gal/hr
		Potential Fuel Use ID 27		8,952 gallons/yr @ 8760 hrs/yr
	(1) Unknown AFES Grain Dryer		17.71	gal/hr
		Potential Fuel Use ID 28		1,771 gallons/yr @ 100 hrs/yr
	(1) Bock Harper Hot Water Heater		1.72	gal/hr
		Potential Fuel Use ID 29		15,090 gallons/yr @ 8760 hrs/yr
	Total Potential Fuel Use	TOTAL		15,073,660 gal/yr

Annual fuel use converted to MMBtu/yr based on a diesel fuel heat content of 137,000 Btu/gal.

[2] Reference: AP-42, Tables 1.3-8, 1.3-9, and 1.3-10.

Table 2-12. Estimated Potential HAP Emissions - Fuel Gas-Fired Boilers
University of Alaska - Fairbanks Campus Power Plant

			Maximum Total Fuel Use:	1,743.2 MMscf/yr [1]
Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	
No.	**CAS No.**	**Chemical Name**	**Emission Factor [2]**	**Estimated Emissions**
12	106467	1,4-Dichlorobenzene(p)	1.20E-03 lb/MMscf	1.046E-03 tpy
46	N/A	Arsenic Compounds	2.00E-04 lb/MMscf	1.743E-04 tpy
48	71432	Benzene	2.10E-03 lb/MMscf	1.830E-03 tpy
52	N/A	Beryllium Compounds	1.20E-05 lb/MMscf	1.046E-05 tpy
58	N/A	Cadmium Compouns	1.10E-03 lb/MMscf	9.587E-04 tpy
75	N/A	Chromium Chompounds	1.40E-03 lb/MMscf	1.220E-03 tpy
76	N/A	Cobalt Compounds	8.40E-05 lb/MMscf	7.321E-05 tpy
109	5000	Formaldehyde	7.52E-02 lb/MMscf	6.554E-02 tpy
118	110543	Hexane	1.80E+00 lb/MMscf	1.569E+00 tpy
127	N/A	Manganese Compounds	3.80E-04 lb/MMscf	3.312E-04 tpy
128	N/A	Mercury Compounds	2.60E-04 lb/MMscf	2.266E-04 tpy
146	N/A	Nickel Compounds	2.10E-03 lb/MMscf	1.830E-03 tpy
162	N/A	Polycylic Organic Matter	6.98E-04 lb/MMscf	6.085E-04 tpy
		2-Methylnaphthalene	2.4E-05 lb/MMscf	
		3-Methylchloranthrene	1.8E-06 lb/MMscf	
		7,12-Dimethylbenz(a)anthracen	1.6E-05 lb/MMscf	
		Acenaphthene	1.8E-06 lb/MMscf	
		Acenaphthylene	1.8E-06 lb/MMscf	
		Anthracene	2.4E-06 lb/MMscf	
		Benz(a)anthracene	1.8E-06 lb/MMscf	
		Benzo(a)pyrene	1.2E-06 lb/MMscf	
		Benzo(a)fluoranthene	1.8E-06 lb/MMscf	
		Benzo(g,h,i)perylene	1.2E-06 lb/MMscf	
		Benzo(k)fluroanthene	1.8E-06 lb/MMscf	
		Chrysene	1.8E-06 lb/MMscf	
		Dibenzo(a,h)anthracene	1.2E-06 lb/MMscf	
		Fluoranthene	3.0E-06 lb/MMscf	
		Fluorene	2.8E-06 lb/MMscf	
		Indeno(1,2,3-cd)pyrene	1.8E-06 lb/MMscf	
145	91203	Naphthalene	6.10E-04 lb/MMscf	
		Phenanathrene	1.7E-05 lb/MMscf	
		Pyrene	5.0E-06 lb/MMscf	
171	N/A	Selenium Compounds	2.4E-05 lb/MMscf	2.092E-05 tpy
176	108883	Toluene	3.40E-03 lb/MMscf	2.963E-03 tpy
			Total HAP Emissions	**1.65 tpy**

Notes/Comments:

[1] Total fuel use based on maximum full-time operation or permit-limited operation as noted below:

(2) Zurn Dual-Fired Boiler	180,900 scf/hr, each		
	Potential Fuel Use ID 3	1,585	MMscf/yr @ 8,760 hrs/yr
	Potential Fuel Use ID 4	158	MMscf/yr @ 876 hrs/yr
Total Potential Fuel Use	TOTAL	1,743	MMscf/yr

1,000 Btu/scf fuel gas heating value used.

[2] Reference: AP-42, Tables 1.4-3, 1.4-4.

Table 2-13. Estimated Potential HAP Emissions - Diesel-Fired Engines Greater Than 600 Horsepower
University of Alaska - Fairbanks Campus Power Plant

		Maximum Total Heat Input:	**813,471 MMBtu/yr** [1]
		Source Category Emission Calculations	
CAS No.	**Chemical Name**	**Emission Factor** [2]	**Estimated Emissions**
75-07-0	Acetaldehyde	2.52E-05 lb/MMBtu	1.02E-02 tpy
107-02-8	Acrolein	7.88E-06 lb/MMBtu	3.21E-03 tpy
71-43-2	Benzene	7.76E-04 lb/MMBtu	3.16E-01 tpy
5-00-0	Formaldehyde	7.89E-05 lb/MMBtu	3.21E-02 tpy
108-88-3	Toluene	2.81E-04 lb/MMBtu	1.14E-01 tpy
1330-20-7	Xylenes (isomers and mixture)	1.93E-04 lb/MMBtu	7.85E-02 tpy
N/A	Polycylic Organic Matter	2.12E-04 lb/MMBtu	8.60E-02 tpy
	Polycyclic aromatic compounds(PAH)	2.12E-04 lb/MMBtu	
	Acenaphthene	4.68E-06 lb/MMBtu	
	Acenaphthylene	9.23E-06 lb/MMBtu	
	Anthracene	1.23E-06 lb/MMBtu	
	Benzo(a)anthracene	6.22E-07 lb/MMBtu	
	Benzo(b)fluoranthene	1.11E-06 lb/MMBtu	
	Benzo(k)fluoranthene	2.18E-07 lb/MMBtu	
	Benzo(a)pyrene	2.57E-07 lb/MMBtu	
	Benzo(g,h,l)perylene	5.56E-07 lb/MMBtu	
	Chrysene	1.53E-06 lb/MMBtu	
	Dibenz(a,h)anthracene	3.46E-07 lb/MMBtu	
	Fluoranthene	4.03E-06 lb/MMBtu	
	Fluorene	1.28E-05 lb/MMBtu	
	Ideno(1,2,3-cd)pyrene	4.14E-07 lb/MMBtu	
91-20-3	Naphthalene	1.30E-04 lb/MMBtu	
	Phenanthrene	4.08E-05 lb/MMBtu	
	Pyrene	3.71E-06 lb/MMBtu	
		TOTAL HAP Emissions	**0.640 tpy**

Notes/Comments:

[1] Total heat consumption based on full-time or permit-limited operation of the following:

(1) Fairbanks Morse Colt-Pielstick PC2.6 Peaking/Backup Generator (DEG) 677.8 gal/hr

Potential Fuel Use ID 5 813,471.1 MMBtu/yr @ 8,760 hrs/yr

Total Potential Fuel Use TOTAL 813,471 MMBtu/yr

Engine heat rate is assumed to be 7,000 Btu/hp-hr.

Annual fuel use converted to MMBtu/yr based on a diesel fuel heat content of 137,000 Btu/gal.

[2] Reference: AP-42, Table 3.4-3.

Table 2-14. Estimated Potential HAP Emissions - Diesel-Fired Engines Less Than 600 Horsepower
University of Alaska - Fairbanks Campus Power Plant

		Maximum Total Heat Input:	**9,987 MMBtu/yr**
		Source Category Emission Calculations	
CAS No.	**Chemical Name**	**Emission Factor [2]**	**Estimated Emissions**
75-07-0	Acetaldehyde	7.67E-04 lb/MMBtu	3.83E-03 tpy
107-02-8	Acrolein	9.25E-05 lb/MMBtu	4.62E-04 tpy
71-43-2	Benzene	9.33E-04 lb/MMBtu	4.66E-03 tpy
106-99-0	1,3-Butadiene	3.91E-05 lb/MMBtu	1.95E-04 tpy
5-00-0	Formaldehyde	1.18E-03 lb/MMBtu	5.89E-03 tpy
108-88-3	Toluene	4.09E-04 lb/MMBtu	2.04E-03 tpy
1330-20-7	Xylenes (isomers and mixture)	2.85E-04 lb/MMBtu	1.42E-03 tpy
N/A	Polycylic Organic Matter	1.68E-04 lb/MMBtu	8.37E-04 tpy
	Polycyclic aromatic compounds(PAH)	1.68E-04 lb/MMBtu	
	Acenaphthene	1.42E-06 lb/MMBtu	
	Acenaphthylene	5.06E-06 lb/MMBtu	
	Anthracene	1.87E-06 lb/MMBtu	
	Benzo(a)anthracene	1.68E-06 lb/MMBtu	
	Benzo(b)fluoranthene	9.91E-08 lb/MMBtu	
	Benzo(k)fluoranthene	1.55E-07 lb/MMBtu	
	Benzo(a)pyrene	1.88E-07 lb/MMBtu	
	Chrysene	3.53E-07 lb/MMBtu	
	Dibenz(a,h)anthracene	5.83E-07 lb/MMBtu	
	Fluoranthene	7.61E-06 lb/MMBtu	
	Fluorene	2.92E-05 lb/MMBtu	
	Ideno(1,2,3-cd)pyrene	3.75E-07 lb/MMBtu	
91-20-3	Naphthalene	8.48E-05 lb/MMBtu	
	Phenanthrene	2.94E-05 lb/MMBtu	
	Pyrene	4.78E-06 lb/MMBtu	
		TOTAL HAP Emissions	**0.019 tpy**

Notes/Comments:

[1] Total heat consumption based on full-time or permit-limited operation or EPA guidance of 500 hours per 12-month rolling period for emergency engines for the following:

(2) Arctic Health Research Bldg. Emergency Generator		8.6	gal/hr, each	
	Potential Fuel Use ID 6		117.3	MMBtu/yr @ 100 hrs/yr
	Potential Fuel Use ID 7		117.3	MMBtu/yr @ 100 hrs/yr
(1) Alaska Center for Energy and Power Generator		16.1	gal/hr	
	Potential Fuel Use ID 23		9,662.0	MMBtu/yr @ 4,380 hrs/yr
(1) Cummins/4B3.9-G2 Old University Park Emergency Generator		3.5	gal/hr	
	Potential Fuel Use ID 24		47.9	MMBtu/yr @ 100 hrs/yr
(1) Mitsubishi-Bosch Duckering Classroom Engine		3.1	gal/hr	
	Potential Fuel Use ID 30		42.2	MMBtu/yr @ 100 hrs/yr
Total Potential Fuel Use	TOTAL		9,986.8	MMBtu/yr

Engine heat rate is assumed to be 7,000 Btu/hp-hr.

Annual fuel use converted to MMBtu/yr based on a diesel fuel heat content of 137,000 Btu/gal.

[2] Reference: AP-42, Table 3.3-2.

Table 2-15. Estimated Potential HAP Emissions - Incinerator
University of Alaska - Fairbanks Campus Power Plant

	Maximum Total Waste Input:		**109 Tons of Waste/yr** [1]
		Source Category Emission Calculations	
CAS No.	**Chemical Name**	**Emission Factor** [2]	**Estimated Emissions**
1746016	Chlorinated dibenzo-p-dioxins (Total)	2.14E-05 lb/ton	1.16E-06 tpy
N/A	Antimony Compounds	1.28E-02 lb/ton	6.98E-04 tpy
N/A	Arsenic Compounds	2.42E-04 lb/ton	1.32E-05 tpy
N/A	Beryllium Compounds	6.25E-06 lb/ton	3.41E-07 tpy
N/A	Cadmium Compounds	5.48E-03 lb/ton	2.99E-04 tpy
7782505	Chlorine	1.05E-01 lb/ton	5.72E-03 tpy
N/A	Chromium Chompounds	7.75E-04 lb/ton	4.22E-05 tpy
132649	Dibenzofurans	7.16E-05 lb/ton	3.90E-06 tpy
7647010	Hydrochloric acid	33.5 lb/ton	1.83 tpy
7664393	Hydrogen fluoride (Hydrofluoric acid)	1.49E-01 lb/ton	0.01 tpy
N/A	Lead Compounds	7.28E-02 lb/ton	3.97E-03 tpy
N/A	Manganese Compounds	5.67E-04 lb/ton	3.09E-05 tpy
N/A	Mercury Compounds	1.07E-01 lb/ton	5.83E-03 tpy
N/A	Nickel Compounds	5.90E-04 lb/ton	3.22E-05 tpy
1336363	Polychlorinated biphenyls(Aroclors)	4.65E-05 lb/ton	2.53E-06 tpy
		Total HAP Emissions	**1.851 tpy**

Notes/Comments:

[1] Total waste combustion based on operation of the following:

(2) Therm-Tec/G-30P-1H BiRD Incinerator		83.3 lb/hr	
	Potential Waste Combustion ID 9A		109 Ton of Waste/yr (proposed ORL)
Total Potential Fuel Use	TOTAL		109 Ton of Waste/yr

[2] Reference: AP-42, Tables 2.3-2 through 2.3-6 and 2.3-9 through 2.3-13. Pathological waste incinerator emission factors are not available. Medical waste incineration emission factors are expected to be representative of emissions from a pathological waste incinerator.

Table 2-16. Summary of Estimated Greenhouse Gas (GHG) Emissions [1]
University of Alaska - Fairbanks Campus Power Plant

GHG Pollutant	GHG Emissions by Emission Unit Category (tons per year) [2]						Total
	Storage Tanks [3]	Significant Coal Units	Significant Diesel and Dual Units	Significant Waste Units	Insignificant Wood Units	Insignificant Propane Units	
Carbon Dioxide	0	158,326	169,216	0.2	1.6	1,724	**329,268**
Nitrous Oxide	0	3	1.4	8.7E-06	6.9E-05	0.02	**4.00**
Methane	0	18	6.8	6.6E-05	5.3E-04	0.1	**24.9**
Hydrofluorocarbons	0	0	0	0	0	0	**0**
Perfluorocarbons	0	0	0	0	0	0	**0**
Sulfur Hexafluoride	0	0	0	0	0	0	**0**
Total - GHG (CO_2e) [4]	**0**	**159,512**	**169,785**	**0**	**2**	**1,731**	**331,030**

Notes:

[1] GHG are the aggregate group of six greenhouse gases defined under 40 CFR 52.21(b)(49)(i) and 40 CFR 71.2.

[2] See individual emissions unit category emissions calculations for details on methodology and assumptions.

[3] GHG emissions from the storage tanks are negligible.

[4] GHG (CO_2e) emissions = CO_2 emissions + (21 * CH_4 emissions) + (310 * N_2O emissions).

Table 2-17. Potential Greenhouse Gases (GHG) Calculations - Carbon Dioxide (CO_2) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit ID	Emission Unit Description	Fuel Type	Factor Reference	CO_2 Emission Factor	Emission Unit Rating/Capacity	Allowable Annual Operation [1]	Potential CO_2 Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	40 CFR 98 Table C-1	97.02 kg/MMBtu	84.5 MMBtu/hr	8,760 hrs/yr	79,163 tpy
2	Coal-Fired Boiler	Coal	40 CFR 98 Table C-1	97.02 kg/MMBtu	84.5 MMBtu/hr	8,760 hrs/yr	79,163 tpy
3	Dual-Fired Boiler	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	180.9 MMBtu/hr	8,760 hrs/yr	129,193 tpy[5]
3	Dual-Fired Boiler	Natural Gas	40 CFR 98 Table C-1	53.02 kg/MMBtu	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	125 kW	100 hrs/yr[3]	10 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	125 kW	100 hrs/yr[3]	10 tpy
4	Dual-Fired Boiler	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	180.9 MMBtu/hr	876 hrs/yr	12,919 tpy[6]
4	Dual-Fired Boiler	Natural Gas	40 CFR 98 Table C-1	53.02 kg/MMBtu	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	40 CFR 98 Table C-1	90.70 kg/MMBtu	83 lb/hr	109 hrs/yr[7]	0 tpy
10	AFES Boiler	#1 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	1.08 MMBtu/hr	8,760 hrs/yr	769 tpy
11	AFES Boiler	#1 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	1.08 MMBtu/hr	8,760 hrs/yr	769 tpy
12	Harper Boiler #1	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.64 MMBtu/hr	8,760 hrs/yr	457 tpy
13	Harper Boiler #2	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.64 MMBtu/hr	8,760 hrs/yr	457 tpy
14	Copper Lane Boiler	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.136 MMBtu/hr	8,760 hrs/yr	97 tpy
15	Copper Lane Boiler	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.136 MMBtu/hr	8,760 hrs/yr	97 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.23 MMBtu/hr	8,760 hrs/yr	167 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	4.93 MMBtu/hr	8,760 hrs/yr	3,521 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	4.93 MMBtu/hr	8,760 hrs/yr	3,521 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	6.13 MMBtu/hr	19,650 hrs/yr[8]	9,826 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	8.5 MMBtu/hr	8,760 hrs/yr	6,070 tpy
23	Alaska Center for Energy and Power Generator	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	235 kW	4,380 hrs/yr[9]	829 tpy
24	Old University Park Emergency Generator	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	51 kW	100 hrs/yr[3]	4 tpy
25	AFES Greenhouse Furnace	#1 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.209 MMBtu/hr	8,760 hrs/yr	149 tpy
26	Copper Lane Furnace	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.08 MMBtu/hr	8,760 hrs/yr	57 tpy
27	Skarland Cabin Furnace	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.14 MMBtu/hr	8,760 hrs/yr	100 tpy
28	AFES Grain Dryer	#1 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	2.43 MMBtu/hr	100 hrs/yr[10]	20 tpy
29	Harper Hot Water Heater	#2 Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	0.236 MMBtu/hr	8,760 hrs/yr	169 tpy
30	Duckering Classroom Engine	Diesel	40 CFR 98 Table C-1	73.96 kg/MMBtu	45 kW	100 hrs/yr[11]	4 tpy
Significant Emission Units Total Potential to Emit Emissions - CO_2							**327,542.0 tpy**

Insignificant Emission Units											
	Coal Handling/Coal Crushing	Coal	N/A	N/A		N/A		8,760	hrs/yr	0	tpy
	Various Propane-Fired Kilns	Propane	40 CFR 98 Table C-1	61.46	kg/MMBtu	2.57	MMBtu/hr, total	8,760	hrs/yr	1,525	tpy
	Wood-Fired Kilns	Wood	40 CFR 98 Table C-1	93.80	kg/MMBtu	Unknown		1	cord/yr[4]	2	tpy
	Duckering Classroom Turbine	Propane	40 CFR 98 Table C-1	61.46	kg/MMBtu	0.33	MMBtu/hr	8,760	hrs/yr	196	tpy
	Graduation Flame	Propane	40 CFR 98 Table C-1	61.46	kg/MMBtu	0.005	MMBtu/hr	8,760	hrs/yr	3	tpy
	Various Paint Booths	N/A	N/A	N/A		N/A		8,760	hrs/yr	0.0	tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A		N/A		8,760	hrs/yr	0.0	tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A		212,120	gallons	8,760	hrs/yr	0	tpy
	Ash Bin Vent filter	N/A	N/A	N/A		N/A		8,760	hrs/yr	0	tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A		N/A		8,760	hrs/yr	0	tpy
	Ash Loadout to Truck	N/A	N/A	N/A		N/A		8,225	hrs/yr	0	tpy
				Insignificant Emission Units Total Potential to Emit Emissions - CO_2						**1,725.6**	**tpy**
						Total Potential to Emit Emissions - CO_2				**329,267.5**	**tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Heating Value	0.137	MMBtu/gal
Waste Heating Value	9.95	MMBtu/ton
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[5] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[6] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[7] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[8] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[9] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[10] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[11] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

Table 2-18. Potential Greenhouse Gases (GHG) Calculations - Nitrous Oxide (N_2O) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit ID	Emission Unit Description	Fuel Type	Factor Reference	N_2O Emission Factor	Emission Unit Rating/Capacity	Allowable Annual Operation [1]	Potential N_2O Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	40 CFR 98 Table C-2	1.6E-03 kg/MMBtu	84.5 MMBtu/hr	8,760 hrs/yr	1.31 tpy
2	Coal-Fired Boiler	Coal	40 CFR 98 Table C-2	1.6E-03 kg/MMBtu	84.5 MMBtu/hr	8,760 hrs/yr	1.31 tpy
3	Dual-Fired Boiler	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	180.9 MMBtu/hr	8,760 hrs/yr	1.05 tpy[5]
3	Dual-Fired Boiler	Natural Gas	40 CFR 98 Table C-2	1.0E-04 kg/MMBtu	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	125 kW	100 hrs/yr[3]	8.17E-05 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	125 kW	100 hrs/yr[3]	8.17E-05 tpy
4	Dual-Fired Boiler	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	180.9 MMBtu/hr	876 hrs/yr	1.05E-01 tpy[6]
4	Dual-Fired Boiler	Natural Gas	40 CFR 98 Table C-2	1.0E-04 kg/MMBtu	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	40 CFR 98 Table C-2	4.2E-03 kg/MMBtu	83 lb/hr	109 hrs/yr[7]	8.72E-06 tpy
10	AFES Boiler	#1 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	1.08 MMBtu/hr	8,760 hrs/yr	6.24E-03 tpy
11	AFES Boiler	#1 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	1.08 MMBtu/hr	8,760 hrs/yr	6.24E-03 tpy
12	Harper Boiler #1	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.64 MMBtu/hr	8,760 hrs/yr	3.71E-03 tpy
13	Harper Boiler #2	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.64 MMBtu/hr	8,760 hrs/yr	3.71E-03 tpy
14	Copper Lane Boiler	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.136 MMBtu/hr	8,760 hrs/yr	7.88E-04 tpy
15	Copper Lane Boiler	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.136 MMBtu/hr	8,760 hrs/yr	7.88E-04 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.23 MMBtu/hr	8,760 hrs/yr	1.35E-03 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	4.93 MMBtu/hr	8,760 hrs/yr	2.86E-02 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	4.93 MMBtu/hr	8,760 hrs/yr	2.86E-02 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	6.13 MMBtu/hr	19,650 hrs/yr[8]	7.97E-02 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	8.5 MMBtu/hr	8,760 hrs/yr	4.92E-02 tpy
23	Alaska Center for Energy and Power Generator	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	235 kW	4,380 hrs/yr[9]	6.73E-03 tpy
24	Old University Park Emergency Generator	Diesel	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	51 kW	100 hrs/yr[3]	3.33E-05 tpy
25	AFES Greenhouse Furnace	#1 Diesel	41 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.209 MMBtu/hr	8,760 hrs/yr	1.21E-03 tpy
26	Copper Lane Furnace	#2 Diesel	42 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.08 MMBtu/hr	8,760 hrs/yr	4.63E-04 tpy
27	Skarland Cabin Furnace	#2 Diesel	43 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.14 MMBtu/hr	8,760 hrs/yr	8.11E-04 tpy
28	AFES Grain Dryer	#1 Diesel	44 CFR 98 Table C-2	6.0E-04 kg/MMBtu	2.43 MMBtu/hr	100 hrs/yr[10]	1.60E-04 tpy
29	Harper Hot Water Heater	#2 Diesel	45 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.236 MMBtu/hr	8,760 hrs/yr	1.37E-03 tpy
30	Duckering Classroom Engine	Diesel	46 CFR 98 Table C-2	6.0E-04 kg/MMBtu	45 kW	100 hrs/yr[11]	2.94E-05 tpy
Significant Emission Units Total Potential to Emit Emissions - N_2O							**4.0 tpy**

	Insignificant Emission Units						
	Coal Handling/Coal Crushing	Coal	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Propane-Fired Kilns	Propane	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	2.57 MMBtu/hr, total	8,760 hrs/yr	1.5E-02 tpy
	Wood-Fired Kilns	Wood	40 CFR 98 Table C-2	4.2E-03 kg/MMBtu	Unknown	1 cord/yr[4]	6.9E-05 tpy
	Duckering Classroom Turbine	Propane	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.33 MMBtu/hr	8,760 hrs/yr	1.9E-03 tpy
	Graduation Flame	Propane	40 CFR 98 Table C-2	6.0E-04 kg/MMBtu	0.005 MMBtu/hr	8,760 hrs/yr	2.9E-05 tpy
	Various Paint Booths	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A	212,120 gallons	8,760 hrs/yr	0 tpy
	Ash Bin Vent filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Ash Loadout to Truck	N/A	N/A	N/A	N/A	8,225 hrs/yr	0.0 tpy
				Insignificant Emission Units Total Potential to Emit Emissions - N_2O			**1.7E-02 tpy**
					Total Potential to Emit Emissions - N_2O		**4.0 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Heating Value	0.137	MMBtu/gal
Waste Heating Value	9.95	MMBtu/ton
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[5] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[6] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[7] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[8] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[9] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[10] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[11] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

Table 2-19. Potential Greenhouse Gases (GHG) Calculations - Methane (CH_4) Emissions
University of Alaska - Fairbanks Campus Power Plant

Emission Unit ID	Emission Unit Description	Fuel Type	Factor Reference	CH_4 Emission Factor	Emission Unit Rating/Capacity	Allowable Annual Operation [1]	Potential CH_4 Emissions [2]
Significant Emission Units							
1	Coal-Fired Boiler	Coal	40 CFR 98 Table C-2	1.1E-02 kg/MMBtu	84.5 MMBtu/hr	8,760 hrs/yr	8.98 tpy
2	Coal-Fired Boiler	Coal	40 CFR 98 Table C-2	1.1E-02 kg/MMBtu	84.5 MMBtu/hr	8,760 hrs/yr	8.98 tpy
3	Dual-Fired Boiler	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	180.9 MMBtu/hr	8,760 hrs/yr	5.24 tpy[5]
3	Dual-Fired Boiler	Natural Gas	40 CFR 98 Table C-2	1.0E-03 kg/MMBtu	180.9 MMBtu/hr	8,760 hrs/yr	
6	Arctic Health Research Bldg. Emergency Generator	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	125 kW	100 hrs/yr[3]	4.08E-04 tpy
7	Arctic Health Research Bldg. Emergency Generator	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	125 kW	100 hrs/yr[3]	4.08E-04 tpy
4	Dual-Fired Boiler	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	180.9 MMBtu/hr	876 hrs/yr	5.24E-01 tpy[6]
4	Dual-Fired Boiler	Natural Gas	40 CFR 98 Table C-2	1.0E-03 kg/MMBtu	180.9 MMBtu/hr	876 hrs/yr	
8	Peaking/Backup Generator (DEG)	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	13,266 hp	8,760 hrs/yr	
9A	BiRD Incinerator	Medical/Infectious Waste	40 CFR 98 Table C-2	3.2E-02 kg/MMBtu	83 lb/hr	109 hrs/yr[7]	6.64E-05 tpy
10	AFES Boiler	#1 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	1.08 MMBtu/hr	8,760 hrs/yr	3.12E-02 tpy
11	AFES Boiler	#1 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	1.08 MMBtu/hr	8,760 hrs/yr	3.12E-02 tpy
12	Harper Boiler #1	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.64 MMBtu/hr	8,760 hrs/yr	1.85E-02 tpy
13	Harper Boiler #2	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.64 MMBtu/hr	8,760 hrs/yr	1.85E-02 tpy
14	Copper Lane Boiler	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.136 MMBtu/hr	8,760 hrs/yr	3.94E-03 tpy
15	Copper Lane Boiler	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.136 MMBtu/hr	8,760 hrs/yr	3.94E-03 tpy
16	Copper Lane (Honor's House) Boiler	#1 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.23 MMBtu/hr	8,760 hrs/yr	6.76E-03 tpy
17	West Ridge Research Building Boiler #1	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	4.93 MMBtu/hr	8,760 hrs/yr	1.43E-01 tpy
18	West Ridge Research Building Boiler #2	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	4.93 MMBtu/hr	8,760 hrs/yr	1.43E-01 tpy
19	BiRD RM 100U3 Boiler #1	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	6.13 MMBtu/hr	19,650 hrs/yr[8]	3.99E-01 tpy
20	BiRD RM 100U3 Boiler #2	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	6.13 MMBtu/hr		
21	BiRD RM 100U3 Boiler #3	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	6.13 MMBtu/hr		
22	BiRD RM 100U3 Boiler #4	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	8.5 MMBtu/hr	8,760 hrs/yr	2.46E-01 tpy
23	Alaska Center for Energy and Power Generator	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	235 kW	4,380 hrs/yr[9]	3.36E-02 tpy
24	Old University Park Emergency Generator	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	51 kW	100 hrs/yr[3]	1.67E-04 tpy
25	AFES Greenhouse Furnace	#1 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.209 MMBtu/hr	8,760 hrs/yr	5.69E-05 tpy
26	Copper Lane Furnace	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.08 MMBtu/hr	8,760 hrs/yr	2.17E-05 tpy
27	Skarland Cabin Furnace	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.14 MMBtu/hr	8,760 hrs/yr	3.80E-05 tpy
28	AFES Grain Dryer	#1 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	2.43 MMBtu/hr	100 hrs/yr[10]	7.53E-06 tpy
29	Harper Hot Water Heater	#2 Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.236 MMBtu/hr	8,760 hrs/yr	6.41E-05 tpy
30	Duckering Classroom Engine	Diesel	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	45 kW	100 hrs/yr[11]	1.47E-04 tpy
Significant Emission Units Total Potential to Emit Emissions - CH_4							**24.8 tpy**

Insignificant Emission Units							
	Coal Handling/Coal Crushing	Coal	N/A	N/A	N/A	8,760 hrs/yr	0 tpy
	Various Propane-Fired Kilns	Propane	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	2.57 MMBtu/hr, total	8,760 hrs/yr	7.4E-02 tpy
	Wood-Fired Kilns	Wood	40 CFR 98 Table C-2	3.20E-02 kg/MMBtu	Unknown	1 cord/yr[4]	5.3E-04 tpy
	Duckering Classroom Turbine	Propane	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.33 MMBtu/hr	8,760 hrs/yr	9.6E-03 tpy
	Graduation Flame	Propane	40 CFR 98 Table C-2	3.0E-03 kg/MMBtu	0.005 MMBtu/hr	8,760 hrs/yr	1.4E-04 tpy
	Various Paint Booths	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Various Laboratory Fume Hoods	N/A	N/A	N/A	N/A	8,760 hrs/yr	0.0 tpy
	Power Plant Field-Erected Tank	Diesel	N/A	N/A	212,120 gallons	8,760 hrs/yr	0.0 tpy
	Ash Bin Vent filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0 tpy
	Ash Vacuum Pump Filter	N/A	N/A	N/A	N/A	8,760 hrs/yr	0 tpy
	Ash Loadout to Truck	N/A	N/A	N/A	N/A	8,225 hrs/yr	0 tpy
				Insignificant Emission Units Total Potential to Emit Emissions - CH_4			**8.5E-02 tpy**
					Total Potential to Emit Emissions - CH_4		**24.9 tpy**

Notes:

[1] Maximum annual operation for all units based on full-time operation, or permit operating limits, where applicable.

[2] Conversion factors:

Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Heating Value	0.137	MMBtu/gal
Waste Heating Value	9.95	MMBtu/ton
Engine horsepower	1.341	kW
Assumed drive shaft efficiency for engines	95%	Per Alan Schuler at ADEC

[3] Emergency stationary internal combustion engines are limited to maintenance checks and readiness testing to no more than 100 hours per year, per 40 CFR 63.6640(f)(ii).

[4] Approximate heat value of wood combusted in kilns is 15 MMBtu/cord, per http://www.hrt.msu.edu/energy/pdf/heating%20value%20of%20common%20fuels.pdf

[5] The higher potential emissions for natural gas or distillate firing is shown as the potential emissions for EU3.

[6] The highest potential emissions for EU 4 and EU 8 is shown as the potential emissions.

[7] UAF is proposing an operating limit for EU9A to avoid HAP major classification. Details are provided in Section 4 of this application.

[8] UAF is proposing operating limits for EU19 through EU21 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[9] UAF is proposing an operating limit for EU23 to avoid minor permitting requirements for NO_X. Details are provided in Section 4 of this application.

[10] UAF is proposing an operating limit for EU28 to avoid PSD permitting requirements for SO_2. Details are provided in Section 4 of this application.

[11] UAF is proposing an operating limit for EU30 to avoid PSD permitting requirements for NO_X. Details are provided in Section 4 of this application.

Table 2-20. University of Alaska Fairbanks Maximum Heat Input Calculation for Existing Boilers

Parameter Description			Data Source or Calculation Method
Maximum fuel input per boiler	5.46	ton/hr	Measured during PM source test, November 2010
Maximum fuel input to system	10.92	ton/hr	Boilers are identical; maximum possible input assumed the same for both
Maximum fuel input to system	21,840	lb/hr	(Maximum fuel input, ton/hr) x (2,000 lb/ton)
Heat content of coal combusted, as received	7,737	Btu/lb	UCM Rail Sample analysis for 11/3/2010
Heat content of coal combusted, as received	15.47	MMBtu/ton	(Heat content, Btu/lb as received) / (2,000 lb/ton)
Heat input to system	169.0	MMBtu/hr	(Max fuel input, lb/hr) x (Heat content, Btu/lb as received) / 10^6 Btu/MMBtu
Heat input per boiler	84.5	MMBtu/hr	Two identical boilers in system

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	UAF Tank 1
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	24.25
Diameter (ft):	35.58
Liquid Height (ft) :	24.00
Avg. Liquid Height (ft):	18.60
Volume (gallons):	178,536.70
Turnovers:	4.50
Net Throughput(gal/yr):	803,415.14
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Red/Primer
Shell Condition	Good
Roof Color/Shade:	Red/Primer
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Fairbanks, Alaska (Avg Atmospheric Pressure = 14.41 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

UAF Tank 1 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	34.97	26.48	43.46	31.21	0.0031	0.0031	0.0036	130.0000			188.00	Option 1: VP40 = .0031

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

UAF Tank 1 - Vertical Fixed Roof Tank

Annual Emission Calcaulations

Standing Losses (lb):	10.6801
Vapor Space Volume (cu ft):	5,618.6439
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0687
Vented Vapor Saturation Factor:	0.9991
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	5,618.6439
Tank Diameter (ft):	35.5833
Vapor Space Outage (ft):	5.6500
Tank Shell Height (ft):	24.2500
Average Liquid Height (ft):	18.6000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	17.7917
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031
Daily Avg. Liquid Surface Temp. (deg. R):	494.6393
Daily Average Ambient Temp. (deg. F):	26.8708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	490.8808
Tank Paint Solar Absorptance (Shell):	0.8900
Tank Paint Solar Absorptance (Roof):	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	806.1566
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0687
Daily Vapor Temperature Range (deg. R):	33.9434
Daily Vapor Pressure Range (psia):	0.0005
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0031
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0036
Daily Avg. Liquid Surface Temp. (deg R):	494.6393
Daily Min. Liquid Surface Temp. (deg R):	486.1535
Daily Max. Liquid Surface Temp. (deg R):	503.1252
Daily Ambient Temp. Range (deg. R):	19.2417
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9991
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0031
Vapor Space Outage (ft):	5.6500

Working Losses (lb):	7.7090
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031
Annual Net Throughput (gal/yr.):	803,415.1366
Annual Turnovers:	4.5000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	178,536.6970
Maximum Liquid Height (ft):	24.0000
Tank Diameter (ft):	35.5833
Working Loss Product Factor:	1.0000
Total Losses (lb):	18.3891

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

UAF Tank 1 - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	7.71	10.68	18.39

Section 3

Air Pollution Control Requirements Information

Table 3-1
Description of Air Pollution Control Requirements
and Applicable Compliance Test Methods

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
Incinerator Emission Standards – Visible Emissions Standard	18 AAC 50.050(a)	Emission Unit 9A	Method 9, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a) or Smoke/No Smoke Plan.	1, 2 and 22
Industrial Process and Fuel Burning Equipment – Visible Emissions Standard	18 AAC 50.055(a)(1)	Emission Units 3, 4, 6 through 8, 10 through 30 and insignificant emissions units.	Method 9, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a) or Smoke/No Smoke Plan.	1, 2 and 22
Industrial Process and Fuel Burning Equipment – Visible Emissions Standard	18 AAC 50.055(a)(1)	Emission Unit 4	Use a COMS under 40 CFR 60, Appendix B. If the COMS is out of service for more than 24 hours or fails a performance audit use a Method 9, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a) or Smoke/No Smoke Plan.	1 and 2

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
Industrial Process and Fuel Burning Equipment – Coal Visible Emissions Standard	18 AAC 50.055(a)(9)	Emission Units 1 and 2	Use a COMS under 40 CFR 60, Appendix B. If the COMS is out of service for more than 24 hours or fails a performance audit use a Method 9, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a) or Smoke/No Smoke Plan.	27
Incinerator Emission Standards – Particulate Matter Emissions Standard	18 AAC 50.050(b)	Emission Unit 9A	No applicable reference or test method.	6
Industrial Process and Fuel Burning Equipment – Particulate Matter Emissions Standard	18 AAC 50.055(b)(1)	Emission Units 3, 4, and 6 through 8, 10 through 30 and insignificant emissions units.	Method 5, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a).	5 and 23
Industrial Process and Fuel Burning Equipment – Coal Particulate Matter Emissions Standard	18 AAC 50.055(b)(2)	Emission Units 1 and 2.	Method 5, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a).	28

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
Industrial Process and Fuel Burning Equipment – Diesel Fuel Sulfur Compound Emissions Standard	18 AAC 50.055(c)	Emission Units 3, 4, and 6 through 8, 10 through 30 and insignificant emission units.	Keep receipts that specify fuel grade and amount, or use a test method listed in 18 AAC 50.035 or another method approved in writing by the Department.	13 and 24
Industrial Process and Fuel Burning Equipment – Fuel Gas Sulfur Compound Emissions Standard	18 AAC 50.055(c)	Emission Units 3 and 4.	Obtain a semiannual statement from the fuel supplier of the fuel gas H2S concentration, or Method 11, 40 CFR 60 Appendix A, adopted by reference in 18 AAC 50.040(a).	13
Industrial Process and Fuel Burning Equipment – Fuel Sulfur Compound Emissions Standard	AQ0316MSS02	Emission Units 4 and 8	Obtain a sulfur content certificate from the fuel supplier or analyze a representative sample using ASTM D975-84, D3120-92, D4152-90, D2622-91 and ASTM 396-92.	14
Industrial Process and Fuel Burning Equipment – Coal Sulfur Compound Emissions Standard	18 AAC 50.055(c)	Emission Units 1 and 2.	Method ASTM D2492-90, adopted by reference in 18 AAC 50.035(c), or another method approved in writing by the Department.	29

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
Open Burning Limitations	18 AAC 50.065	Source-wide, for applicable pollutant-emitting activities.	No applicable reference or test method.	63
Air Pollution Prohibited	18 AAC 50.040(e), 18 AAC 50.110 and 18 AAC 50.346(a)	Source-wide, for applicable pollutant-emitting activities.	No applicable reference or test method.	56
Good Air Pollution Control Practices	18 AAC 50.030, 18 AAC 50.040(e), 18 AAC 50.346(b)(5)	Emission Units 1 through 4 and 6 through 30.	No applicable reference or test method.	52
Reasonable Precautions to Prevent Fugitive Dust	18 AAC 50.040(e), 18 AAC 50.045(d), 18 AAC 50.346(c)	Source-wide, for applicable pollutant-emitting activities.	No applicable reference or test method.	54
Standards of Performance for New Stationary Sources – General Provisions	40 CFR 60 Subpart A, §§60.7(a), (b), (c), and (d); 60.11(d) and (g); 60.12; 60.13(a), (d)(1), (e)(1) – (2), (h)	Emission Unit 4	No applicable reference or test method.	31 32 33 34 35 36 37 38
Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units – Sulfur Standards	40 CFR 60 Subpart Db, §60.42b(a)	Emission Unit 4	Use of equation outlined in 40 CFR 60 Subpart Db, §60.42b(a)	40
Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units – PM & Nitrogen Oxides Standards	40 CFR 60 Subpart Db, §60.48b(a)	Emission Unit 4	Use of a COMS under 40 CFR 60, Appendix B	41

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
National Emissions Standards for Hazardous Air Pollutants for Source Categories – General Provisions	40 CFR 63 Subpart A	Emission Units 1 through 4, 8, 10 through 23 and 30.	No applicable reference or test method.	60
National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – Emission and Operating Limitations	40 CFR 63 Subpart ZZZZ, §63.6603, 66.6630 and 66.6640	Emission Units 8, 23 and 30	Follow the applicable provisions of Table 6 under 40 CFR 63 Subpart ZZZZ of operating and maintenance plans.	
National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – Fuel Requirement	40 CFR 63 Subpart ZZZZ, §63.6604	Emission Units 8 and 23	Use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.	
National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – Emissions Limitations (CO Reductions)	40 CFR 63 Subpart ZZZZ, §63.6603, 66.6640, Table 2d, and Table 4	Emission Units 8 and 23	ASTM D6522-00 (2005) or Method 10, 40 CFR 63 Appendix A as adopted by reference in 18 AAC 50.040(a)	

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – Mercury Emission Limits	40 CFR 63 Subpart JJJJJJ, §63.11201	Emission Units 1 and 2	Follow the applicable provisions under Table 4 of 40 CFR 63 Subpart JJJJJJ	
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – CO Emission Limits	40 CFR 63 Subpart JJJJJJ, §63.11201	Emission Units 1 and 2	Follow the applicable provisions under Table 4 of 40 CFR 63 Subpart JJJJJJ	
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – Coal Sampling Requirements for Mercury Limits	40 CFR 63 Subpart JJJJJJ, §63.11213	Emission Units 1 and 2	Follow the applicable provisions under Table 5 of 40 CFR 63 Subpart JJJJJJ	

Description	Citation	Applicability at Source	Applicable Test Method Description or Reference	Conditions (in Draft TVP)
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – Work/Management Practice Standards	40 CFR 63 Subpart JJJJJJ, §63.11201	Emission Units 1 through 4 and 10 through 22	Follow the applicable provisions under Table 2 of 40 CFR 63 Subpart JJJJJJ	
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – Energy Assessment Requirement	40 CFR 63 Subpart JJJJJJ, §63.11201	Emission Units 1 through 4	Follow the applicable provisions under Table 2 of 40 CFR 63 Subpart JJJJJJ	
Ambient Air quality Protection – Annual Heat Input Limits	Draft AQ0316TVP02, Revision 1, Condition 17	Emission Unit 4	Record the daily fuel consumption.	
Hospital and Medical/Infectious Waste Exemption	Draft AQ0316TVP02, Revision 1, Condition 17 and 40 CFR 60.50c	Emission Unit 9A	Monitor and record the pathogenic waste and hospital and/or medical/infectious waste.	

Table 3-2
Description of Air Pollution Control Requirements and Proposed Monitoring for Determining Compliance

Description	Citation	Applicability at Source	Proposed Monitoring for Determining Compliance
Incinerator Emission Standards – Visible Emissions Standard	18 AAC 50.050(a)	Emission Unit 9A	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 1.2, 2 and 2.2
Industrial Process and Fuel Burning Equipment – Visible Emissions Standard	18 AAC 50.055(a)(1)	Emission Units 3, 4, 6 through 8, 10 through 30 and insignificant emissions units.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 2 and 2.2
Industrial Process and Fuel Burning Equipment – Visible Emissions Standard	18 AAC 50.055(a)(1)	Emission Unit 4	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 2.1 and 41.3
Industrial Process and Fuel Burning Equipment – Coal Visible Emissions Standard	18 AAC 50.055(a)(9)	Emission Units 1 and 2	Draft AQC Permit No. AQ0316TVP02 Revision 1, Condition 27.2
Incinerator Emission Standards – Particulate Matter Emissions Standard	18 AAC 50.050(b)	Emission Unit 9A	No applicable monitoring.
Industrial Process and Fuel Burning Equipment – Particulate Matter Emissions Standard	18 AAC 50.055(b)(1)	Emission Units 3, 4, and 6 through 8, 10 through 30 and insignificant emissions units.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 7 and 9
Industrial Process and Fuel Burning Equipment – Coal Particulate Matter Emissions Standard	18 AAC 50.055(b)(2)	Emission Unit 1 and 2.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Condition 28.1

Description	Citation	Applicability at Source	Proposed Monitoring for Determining Compliance
Industrial Process and Fuel Burning Equipment – Diesel Fuel Sulfur Compound Emissions Standard	18 AAC 50.055(c)	Emission Units 3, 4, and 6 through 8, 10 through 30 and insignificant emission units.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 13.1, 13.2, and 13.3
Industrial Process and Fuel Burning Equipment – Fuel Gas Sulfur Compound Emissions Standard	18 AAC 50.055(c)	Emission Units 3 and 4.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Condition 13.5
Industrial Process and Fuel Burning Equipment – Coal Sulfur Compound Emissions Standard	18 AAC 50.055(c)	Emission Units 1 and 2.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Condition 29.1
Open Burning Limitations	18 AAC 50.065	Source-wide, for applicable pollutant-emitting activities.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 63, 63.1, 63.2, 63.3, 63.4, 63.5, 63.6, 63.7, 63.8, 63.9, 63.10, and 63.11
Air Pollution Prohibited	18 AAC 50.040(e), 18 AAC 50.110 and 18 AAC 50.346(a)	Source-wide, for applicable pollutant-emitting activities.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 56, 56.1, 56.2, 56.3, 56.4, 56.5, and 56.6
Good Air Pollution Control Practices	18 AAC 50.030, 18 AAC 50.040(e), 18 AAC 50.346(b)(5)	Emission Units 1 through 4 and 6 through 30.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Condition 52

Description	Citation	Applicability at Source	Proposed Monitoring for Determining Compliance
Reasonable Precautions to Prevent Fugitive Dust	18 AAC 50.040(e), 18 AAC 50.045(d), 18 AAC 50.346(c)	Source-wide, for applicable pollutant-emitting activities.	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 54.1, and 54.2
Standards of Performance for New Stationary Sources – General Provisions	40 CFR 60 Subpart A, §§60.7(a), (b), (c), and (d); and 60.11(d) and (g); 60.12; 60.8, 60.13(a), (d)(1), (e)(1) – (2), (h)	Emission Units 4	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 31, 32, 33, 33.1, 33.2, 33.3, 33.4, 34, 34.1, 34.2, 35, 36, 37, 38, 38.1, 38.2, 38.3, 38.4, and 38.5
Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units – Sulfur Standards	40 CFR 60 Subpart Db, §60.45b(j)	Emission Unit 4	Draft AQC Permit No. AQ0316TVP02 Revision 1, Conditions 40.1 and 40.2
Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units – PM & Nitrogen Oxides Standards	40 CFR 60 Subpart Db, §60.48b(a) and §60.46b(d) and (g)	Emission Unit 4	AQC Permit No. AQ0316TVP02, Conditions 42, 42.1, 42.2, 43, 43.1, 43.2, and 43.3
National Emissions Standards for Hazardous Air Pollutants for Source Categories – General Provisions	40 CFR 63 Subpart A	Emission Units 1 through 4, 8, 10 through 23, and 30.	No applicable monitoring or compliance determination.

Description	Citation	Applicability at Source	Proposed Monitoring for Determining Compliance
National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – Emission Limitations (CO Reductions)	40 CFR 63 Subpart ZZZZ, §63.6603 and 66.6640, Table 2d and Table 4	Emission Units 8, 23 and 30	Monitor CO with performance tests followed by continuous parameter monitoring system and conducting maintenance practices.
National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines – Fuel Requirement	40 CFR 63 Subpart ZZZZ, §63.6604	Emission Units 8, 23 and 30	Monitor fuel quality by purchasing nonroad diesel fuel.
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – Mercury Emission Limits	40 CFR 63 Subpart JJJJJJ, §63.11201	Emission Units 1 and 2	Conduct fuel analyses according to 40 CFR Part 63.11211(c) and 63.11213.
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – CO Emission Limits (Biennial Tune-up)	40 CFR 63 Subpart JJJJJJ, §63.11201, Table 2	Emission Units 3, 4 and 10 through 22	Conduct a biennial tune-up.

Description	Citation	Applicability at Source	Proposed Monitoring for Determining Compliance
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – CO Emission Limits (one-time Energy Assessment)	40 CFR 63 Subpart JJJJJJ, §63.11201, Table 2	Emission Units 1 through 4	Conduct a one-time energy assessment.
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – CO Emission Limits (minimize the boilers' startup and shutdown periods)	40 CFR 63 Subpart JJJJJJ, §63.11201, Table 2	Emission Units 1 and 2	Follow the manufacturer's recommended procedures or a similar boiler's manufacturer's procedures.
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – Coal Sampling Requirements for Mercury Limits	40 CFR 63 Subpart JJJJJJ, §63.11213, §63.11220, and §63.11221	Emission Units 1 and 2	Conduct fuel analyses for mercury as described in the citation or perform stack tests.

Description	Citation	Applicability at Source	Proposed Monitoring for Determining Compliance
National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – CO Monitoring	40 CFR 63 Subpart JJJJJJ, §63.11220 and §63.11221, §63.11224	Emission Units 1 and 2	Conduct CO performance tests as directed by the citation and monitor with a continuous oxygen monitor.

Section 4

Compliance Related Information

Compliance Plan and Compliance Certification Information

The following tables provide the compliance plan and compliance certification information required under 40 CFR 71.5(c)(8) and 71.5(c)(9), including a description of the compliance status of the source with respect to all applicable requirements and the methods used for determining compliance, for the applicable requirements in Operating Permit AQ0316TVP02. Revision 1 of AQ0316TVP02 draft has been issued for public comment, but not finalized, and thus was not included in the table below. In order to accurately certify all the conditions, the entire TV permit requirements have been listed.

Regarding the statements required under 40 CFR 60.71.5(c)(8)(ii)(A) and (iii)(A), UAF will continue to comply with the listed requirements.

Regarding the statements required under 40 CFR 60.71.5(c)(8)(ii)(B) and (iii)(B), for applicable requirements that become effective during the permit term UAF will meet such requirements in a timely manner. Note also that a detailed compliance schedule is not expressly required by any applicable requirement.

A plan and schedule for noncompliance under 40 CFR 60.71.5(c)(8)(ii)(C), (iii)(C), and (iv) are not required because the source is in compliance with all applicable requirements and is expected to be at the time of permit issuance. In addition, the source is not subject to a judicial consent decree or administrative order.

See the cover letter for the responsible official's certification statement required by 40 CFR 71.5(c)(9)(i).

The following description of compliance status indicates whether the stationary source was in compliance at the time of this certification. In the description of compliance status below, an "in compliance" statement means that UAF certifies that it was in compliance at the time of this certification and that it believes it will continue to comply. An "out of compliance" means that the stationary source was either not in compliance at the time of the application or that it will not be able to achieve continuous compliance with the current permit.

Table 4-1
Current Conditions Under AQC Title V Operating Permit No. AQ0316TVP02

AQC TV Operating Permit No. AQ0316TVP02			
Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
Section 3. State Requirements			
1, 1a	**Industrial Process and Fuel-Burning Equipment Visible Emissions.** The Permittee shall comply with the following: a. Do not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 3-9A listed in Table A to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive months	In Compliance	Records Review
1.2	For EU IDs 3-8, monitor, record, and report in accordance with Conditions 2 through 4.	In Compliance	Records Review Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
2	**Visible Emissions Monitoring.** The Permittee shall monitor the exhaust of EU IDs 3, 4 (when not subject to Condition 2.1), 5A, 6, 7, 8, and 9A for visible emissions using either Method 9 Plan under Condition 2.2 or the Smoke/No-Smoke Plan under Condition 2.3. The Permittee may change the visible emissions plan for an emission unit at any time unless prohibited from doing so by Condition 2.4. The Permittee may continue visible emissions monitoring according to the prevailing schedule established at the time this renewed permit is issued.	In Compliance	Records Review
2.1	**Continuous Opacity Monitoring.** The Permittee shall monitor opacity for EU ID 4 by the use of a continuous opacity monitoring system (COMS) if this unit burns oil that contains more than 0.3 percent sulfur, or liquid or gaseous fuels with potential SO_2 emission rate of more than 0.32 lb/MMBtu heat input.	In Compliance	Records Review
2.1(a)	The following procedure applies for monitoring the visible emissions when using a COMS: (i) The COMS must meet the performance specifications in 40 C.F.R. 60, Appendix B, Performance Specification 1, adopted by reference in 18 AAC 50.040(a); (ii) Operate and maintain the COMS in accordance with the manufacturer's written requirements and recommendations; (iii) Except during COMS breakdowns, repairs, calibration checks, and zero and upscale	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	adjustments, complete one cycle of sampling and analyzing for each successive 10-second period of source operation; from this data, calculate and record the average opacity for each successive one-minute period; (iv) At least once daily, conduct a zero and upscale check in accordance with 40 CFR 60.13(d), adopted by reference in 18 AAC 50.040(a), and a written procedure; adjust whenever the zero or upscale drift exceeds four percent opacity in a 24-hour period.		
2.1(b)	Conduct performance audits as follows: (i) For a COMS that was new, relocated, replaced, or substantially refurbished on or after April 9, 2001, perform an audit that includes the following elements as described in the Department's *Performance Audits for COMS*, adopted by reference in 18 AAC 50.030, at least once in each 12 months: (A) Optical alignment; (B) Zero and upscale response assessment; (C) Zero compensation assessment; (D) Calibration error check; and (E) Zero alignment assessment; (ii) For a COMS that was new, relocated, replaced, or substantially refurbished before April 9, 2001, perform the same audits required under Condition 27.3(a), except that Conditions 2.1(b)(i)(A)	In Compliance	Records Review Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	through 2.1(b)(i)(E) must be performed at least quarterly; this frequency may be reduced if (A) The Permittee demonstrates, by measurable criteria to the results of quarterly audits are not necessary; and (B) The Department gives written approval for the reduction in frequency.		
2.1(c)	If the COMS is out of service for more than 24 hours, or the COMS failed the performance audit, then the Permittee shall use the visible emissions monitoring described in Condition 2.2 or 2.3 immediately. If the effected boiler is not operating, no monitoring is required.	In Compliance	Records Review Reasonable Inquiry
2.1(d)	The following VE recordkeeping and reporting requirements are applicable when a COMS is required: (i) Maintain records of all calculated one-minute average opacity values for COMS and records of the COMS performance audits required under Condition 2.1(b), according to the requirements of Condition 71. (ii) If any of the COMS is malfunctioning or non-operable for three or more consecutive days, the Permittee shall notify the Department by telephone, in writing, or via email to dec.aq.airreports@alaska.gov on the fourth day, indicating the cause of failure and anticipated time required to repair or replace the instrument. (iii) Report a violation of the emission standard found Condition a**Error! Reference source not found.**	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	by filing an Excess Emission Notification Form under Condition 75 if visible emissions, excluding condensed water vapor, emitted from EU ID 4 reduce visibility through the exhaust effluent by more than 20 percent for a total of more than three minutes in any one hour. (iv) Report a violation of the emission standard in Condition aa by filing an Excess Emissions Notification Form under Condition 75 if visible emissions, excluding condensed water vapor, emitted from EU ID 4 reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.		
2.2	**Method 9 Plan.** For all 18-minute observations in this plan, observe the exhaust, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations.	In Compliance	Records Review
2.2(a)	<u>First Method 9 Observation.</u> Observe exhaust for 18 minutes within 14 calendar days after changing from the Smoke/No-Smoke Plan of Condition 2.3, whichever is later	In Compliance	Records Review
2.2(b)	<u>Monthly Method 9 Observations.</u> Perform 18-minute observations at least once in each calendar month that a source operations.	In Compliance	Records Review
2.2(c)	<u>Semiannual Method 9 Observations.</u> After observing emissions for three consecutive operating months under Condition 2.2(b), unless a six-minute average is greater	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	than 15 percent and one or more observations are greater than 20 percent, observe emissions at least semiannually for 18 minutes. Semiannual observations must be taken between four and seven months after the previous set of observations.		
2.2(d)	Annual Method 9 Observations. After at least two semiannual 18-minute observations, unless a six-minute average is greater than 15 percent and one or more individual observations are greater than 20 percent, observe emissions at least annually. Annual observations must be taken between 10 and 13 months after the previous observations and must include at least three 18-minute sets of observations.	In Compliance	Records Review
2.2(e)	Increased Method 9 Frequency. If a six-minute average opacity is observed during the most recent set of observations to be greater than 15 percent and one or more observations are greater than 20 percent, then increase or maintain the 18-minute observation frequency for that source to at least monthly intervals, until the criteria in Condition 2.2(c) for semiannual monitoring are met.	In Compliance	Records Review
2.3	**Smoke/No Smoke Plan.** Observe the exhaust for the presence or absence of visible emissions, excluding condensed water vapor.	In Compliance	Records Review
2.3(a)	Initial Monitoring Frequency. Observe the exhaust during each calendar day that a source operates.	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
2.3(b)	Reduced Monitoring Frequency. After the source has been observed on 30 consecutive operating days, if the source operated without visible smoke in the exhaust for 30 days, then observe emissions at least once in every calendar month that a source operates	In Compliance	Records Review
2.3(c)	Smoke Observed. If smoke is observed, either begin the Method 9 Plan of Condition 2.1 or perform the corrective action required under Condition 2.4.	In Compliance	Records Review
2.4	**Corrective Action Based on Smoke/No Smoke Observations.** If visible emissions are present in the exhaust during an observation performed under the Smoke/No Smoke Plan of Condition 2.3, then the Permittee shall either follow the Method 9 plan of Condition 2.1 or a. Initiate actions to eliminate smoke from the source within 24 hours of the observation; b. Keep a written record of the starting date, and a description of the actions taken to reduce smoke; and c. After completing the actions required under Condition 2.4(a), (i) Take Smoke/No Smoke observations in accordance with Condition 2.3 (A) At least once per day for the next seven operating days and until the initial 30 day observation period is completed; and	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	(B) Continue as described in Condition 2.3(b) (ii) If the actions taken under Condition 2.4(a) do not eliminate the smoke, or if subsequent smoke is observed under the schedule of Condition 2.4(c)(i)(A), then observe the exhaust using the Method 9 Plan unless the Department gives written approval to resume observations under the Smoke/No Smoke Plan; after observing smoke and making observations under the Method 9 Plan, the Permittee may at any time take corrective action that eliminates smoke and restart the Smoke/No Smoke Plan under Condition 2.3(a).		
3, 3.1	**Visible Emissions Recordkeeping.** The Permittee shall keep records as follows: 3.1 If using the Method 9 Plan of Condition 2.1: a. The observer shall record (i) The name of the stationary source, emission unit and location, stationary source type, observer's name and affiliation, and the date on the Visible Emissions Field Data Sheet in Section 13 (ii) The time, estimated distance to the emissions location, approximate wind direction, estimated wind speed, description of the ski condition (presence	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	and color of clouds), plume background, and operating rate (load or fuel consumption rate) on the sheet at the time opacity observations are initiated and completed; (iii) The presence or absence of an attached or detached plume and the approximate distance from the emissions outlet to the point in the plume at which the observations are made; (iv) Opacity observations to the nearest five percent at 15-second intervals on the Visible Emissions Observation in Section 13, and (v) The minimum number of observations required by the permit; each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period; b. To determine the six-minute average opacity, divide the observations recorded on the record sheet into sets of 24 consecutive observations; sets need not be consecutive in time and in no case shall two sets overlap; for each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24; record the average opacity on the sheet;		

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	c. Calculate and record the highest 18-consecutive-minute averages observed.		
3.2	If using the Smoke/No Smoke Plan of Condition 2.3, record the following information in a written log for each observation and submit copies of the recorded information upon request of the Department: a. The date and time of the observation; b. From Table A, the ID of the source observed; c. Whether visible emissions are present or absent in the exhaust; d. A description of the background to the exhaust during the observation; e. If the source starts operation on the day of the observation, the startup time of the source; f. Name and title of the person making the observation; and g. Operating rate (load or fuel consumption rate)	In Compliance	Records Review
4, 4.1, 4,1(a)	**Visible Emissions Reporting.** The Permittee shall report visible emissions as follows: 4.1. include in each stationary source operating report under Condition 76: a. Which visible-emissions plan of Condition 2 was used for each source; if more than one plan was used, give the time periods covered by each plan;	In Compliance	Records Review
4.1(b)	for each source under the Method 9 Plan, (i) Copies of the observation results (i.e. opacity observations) for each source that used the	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	Method 9 Plan, except for the observations the Permittee has already supplied by the Department; and (ii) A summary to include: (A) Number of days observations were made; (B) Highest six-minute average observed; and (C) Dates when one or more observed six-minute averages were greater than 20 percent;		
4.1(c)	for each source under the Smoke/No Smoke Plan, the number of days that Smoke/No Smoke observations were made and which days, if any, that smoked was observed; and	In Compliance	Records Review
4.1(d)	a summary of any monitoring or record keeping required under Condition 2 and 3 that was note done;	In Compliance	Records Review
4.2	Report under Condition 75: a. The results of Method 9 observations that exceed an average 20 percent for any six-minute period; and b. If any monitoring under Condition 2 was not performed when required, report within three days of the date the monitoring was required.	In Compliance	Records Review
5	**Industrial Process and Fuel-Burning Equipment Particulate Matter.** In accordance with 18 AAC 50.055(b)(1), the Permittee shall not cause or allow particulate matter emitted from EU IDs 3-8 listed in Table A to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and average over three	In Compliance	Records Review Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	hours.		
5.1	For EU IDs 3, 4, & 5A, monitor, record, and report in accordance with Conditions 9, 11, and 12.	In Compliance	Records Review Reasonable Inquiry
5.2	For EU IDs 6, 7, & 8, monitor, record, and report in accordance with Conditions 7-8	In Compliance	Records Review Reasonable Inquiry
5.3	For EU IDs 3-8, the Permittee must annual certify compliance under Condition 77 with particulate matter standard.	In Compliance	Records Review Reasonable Inquiry
6	**Incinerator Particulate Matter Emissions.** Particulate matter emissions from EU ID 9A may not exceed the particulate matter standard, as listed in Table B	In Compliance	Records Review Reasonable Inquiry
7	**Particulate Matter Monitoring for Diesel Engines.** The Permittee shall conduct source tests on diesel engines 6, 7, and 8 to determine the concentration of particulate matter (PM) in the exhaust of a source in accordance with this condition.	In Compliance	Records Review Reasonable Inquiry
7.1	Within six months of exceeding the criteria of Condition 7.2(a) or 7.2(b), either	In Compliance	Records Review

AQC TV Operating Permit No. AQ0316TVP02			
Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	a. Conduct a PM source test according to requirements set out in Section 8; or b. Make repairs so that emissions no longer exceed the criteria of Condition 7.2; to show that emissions are below those criteria, observe emissions as described in Condition 2.1 under load conditions comparable to those when the criteria were exceeded.		Reasonable Inquiry
7.2	Conduct the test according to Condition 7.1 if a. 18 consecutive minutes of Method 9 observations result in 18-minute average opacity greater than 20 percent; or b. For a source with an exhaust stack diameter that is less than 18 inches, 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity that is greater than 15 percent and not more than 20 percent, unless the Department has waived this requirement in writing.	In Compliance	Records Review Reasonable Inquiry
7.3	During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour test run. Submit a copy of these observations with the source test report.	In Compliance	Records Review Reasonable Inquiry
7.4	The automatic PM source test requirement in Conditions 7.1 and 7.2 is waived for an emissions unit if a PM source test on that unit has shown compliance with the PM standard during this permit term.	In Compliance	Records Review Reasonable

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
			Inquiry
8, 8.1	**Particulate Matter Reporting for Diesel Engines.** The Permittee shall report EU IDs 6, 7, & 8 as follows: 8.1 Report under Condition 75: a. The results of any PM source test that exceeds the PM emission limit; or b. If one of the criteria of Condition 7.2 was exceeded and the Permittee did not comply with either Condition 7.1(a) or 7.1(b), this must be reported by the day follow the day compliance with Condition 7.1 was required;	In Compliance	Reasonable Inquiry
8.2	report observations in excess of the threshold of Condition 7.2(b) within 30 days of the end of the month in which the observations occur;	In Compliance	Reasonable Inquiry
8.3	in each stationary source operating report under Condition 76, include a. The dates, EU IDs 6, 7, & 8, and results when an observed 18-minute average was greater than an applicable threshold in Condition 7.2; b. A summary of the results of any PM testing under Condition 7; and c. Copies of any visible emissions observation results (opacity observations) greater than the thresholds of Condition 7.2, if they were not already submitted.	In Compliance	Records Review Reasonable Inquiry
9, 9.1	**Particulate Matter Monitoring.** The Permittee shall conduct source tests on EU IDs 3, 4, & 5A to determine	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	the concentration of PM in the exhaust as follows: 9.1 Conduct a PM source test according to the requirements set out in Section 8 no later than 90 calendar days after any time corrective maintenance fails to eliminate visible emissions greater than the 20 percent opacity threshold for two or more 18-minute observations in a consecutive six-month period.		Reasonable Inquiry
9.2	During each one-hour PM source test, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour source test run.	In Compliance	Records Review Reasonable Inquiry
9.3	The PM source test requirement in Condition 9 is waived for an emission unit if: a. A PM source test on that unit has shown compliance with the PM standard during this permit term, or b. If a follow-up visible emission observation using Method-9 during the 90 days shows that the excess visible emissions described in Condition 2.2(e) no longer occur.	In Compliance	Records Review Reasonable Inquiry
10	**Coal Water Slurry.** If firing or co-firing EU IDs 3, 4, or 8 with coal water slurry, conduct source tests on the unit(s) operating with a coal water slurry to determine the particulate matter (PM-10) emissions.	In Compliance	Reasonable Inquiry
10.1	Conduct all tests and report the results in accordance with the requirements described in Operating Permit No.	In Compliance	Reasonable Inquiry – No

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	316TVP02 for EU ID 8, note whether the unit was operating with or without NOx controls.		coal water slurry was used as a fuel
10.2	Conduct all tests at the maximum anticipated coal water slurry feed rate.	In Compliance	Reasonable Inquiry – No coal water slurry was used as a fuel
10.3	Commence tests within 90 days of starting operation with the coal water slurry.	In Compliance	Reasonable Inquiry – No coal water slurry was used as a fuel
10.4	Submit a revised particulate matter grain loading demonstration and Prevention of Significant Deterioration (PSD) PM-10 permit applicability determination with the source test report.	In Compliance	Reasonable Inquiry – No coal water slurry was used as a fuel
11	**Particulate Matter Recordkeeping.** The Permittee shall keep records of the results of any PM testing and visible emissions observations for EU IDs 3, 4, or 5A conducted under Conditions 9 and 9.2.	In Compliance	Reasonable Inquiry
12, 12.1	**Particulate Matter Reporting.** The Permittee shall report for EU IDs 3, 4, & 5A as follows: 12.1 In each stationary source operating report required by Condition 76, include a. The dates, EU IDs 3, 4, & 5A, and results when	In Compliance	Reasonable Inquiry

AQC TV Operating Permit No. AQ0316TVP02			
Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	an 18-minute opacity observation was greater than the applicable threshold criterion in 2.2(e). b. A summary of the results of any PM testing and visible emissions observations conducted under Conditions 9 and 9.2		
12.2	Report as excess emissions, in accordance with Condition 75, any time the results of a source test for PM exceeds the PM emissions limit stated in Condition 5.	In Compliance	Reasonable Inquiry
13	**Sulfur Compound Emissions.** In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from 1 – 8 to exceed 500 ppm averaged over three hours.	In Compliance	Records Review
13.1	The Permittee shall do one of the following for each shipment of fuel: a. If the fuel grade requires a sulfur content less than 0.5 percent by weight, keep receipts that specify fuel grade and amount; or b. If the fuel grade does not require a sulfur content less than 0.5 percent by weight, keep receipts that specify fuel grade and amount and (i) Test the fuel for sulfur content; or (ii) Obtain test results showing the sulfur content of the fuel from the supplier or refinery; the test results may include a statement signed by the supplier or refinery of what fuel they represent.	In Compliance	Records Review
13.2	Fuel testing under Condition 13.1 must follow an appropriate method listed in 18 AAC 50.035 or another	In Compliance	Records Review

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No(s).	**Summary/Description**		
	method approved in writing by the Department.		
13.3	If a load of fuel contains greater than 0.75 percent sulfur by weight, the Permittee shall calculate SO_2 emissions in ppm using either Section 14 or Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a).	In Compliance	Records Review
13.4	The Permittee shall report as follows: a. If SO_2 emissions calculate under Condition 13.3 exceed 500 ppm, the Permittee shall report under Condition 75. When reporting under this condition, include the calculation under Section 14 b. The Permittee shall include in the report required by Condition 76 (i) A list of the fuel grades received at the stationary source during the reporting period; (ii) For any grade with a maximum fuel sulfur greater than 0.5 percent sulfur, the fuel sulfur of each shipment; and (iii) For fuel with a sulfur content greater than 0.75 percent, the calculated SO_2 emissions in ppm.	In Compliance	Records Review
13.5	Monitoring – The Permittee shall **either** a. Obtain a semiannual statement from the fuel supplier of the fuel gas H_2S concentration in ppm; **or** b. Analyze a representative sample of the fuel semiannually to determine the sulfur content using	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	40 C.F.R. 60, Appendix A, Method 11.		
13.6	Recordkeeping – Keep records of the semiannual statement from the fuel supplier or the sulfur content analysis required under Conditions 13.5(a) or 13.5(b).	In Compliance	Records Review
13.7	Reporting – a. Report as excess emissions, in accordance with Condition 75, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of Condition 13. b. Include copies of the records required by Condition 13.6 with the stationary source operating report required by Condition 76.	In Compliance	Records Review
14	Measure and record the monthly fuel consumption of each fuel (natural gas, diesel, or coal water slurry) in EU ID 4 and (diesel or coal water slurry) in EU ID 8 using a totalizing fuel meter accurate within one percent or using delivery receipts and change in inventory. (Record natural gas, diesel and coal water slurry diesel separately).	In Compliance	Reasonable Inquiry
14.1	Obtain a sulfur content certificate from the fuel supplier; if a certificate is not available from the supplier, analyze a representative sample of the fuel to determine the sulfur content using an approved ASTM method such as ASTM D975-84, D3120-92, D4152-90, D2622-91, and ASTM 396-92.	In Compliance	Records Review
15	No later than the 15th day of each month, calculate the previous month's SO_2 emissions using Equation 1. If more than one type of liquid fuel is using during the	In Compliance	Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	month (e.g., diesel and coal-water slurry), use Equation 1 for each fuel type and add the results. Record the sub-total for each fuel type and the total for all fuels.		
15.1	Record and report in accordance with Condition 76 the 12 consecutive monthly total SO_2 emissions in units of tons per year for each of the past 6 months.	In Compliance	Records Review Reasonable Inquiry
15.2	Report in accordance with Condition 75 when the 12 consecutive monthly total SO_2 emissions equals or exceeds 40 tons.	In Compliance	Records Review
16	The Permittee shall limit the combined NOx emissions from EU IDs 4 and 8 to less than 40 tons per year.	In Compliance	Records Review
16.1	Install low NOx burners on EU IDs 3 and 4 prior to operating with natural gas fuel.	In Compliance	Records Review Reasonable Inquiry
16.2	Measure and record the monthly natural gas consumption of EU ID 4 in million standard cubic feet per month (MMscf/month) by using a totalizing fuel flow meter certified accurate to within ± one percent	In Compliance	Records Review Reasonable Inquiry
16.3	No later than the 15th day of each month, calculate the previous month's total NOx emissions as follows: a. For EU ID 8 liquid fuel operation without NOx controls, calculate and record the monthly total uncontrolled NOx emissions using Equation 2. If	In Compliance	Records Review Reasonable Inquiry

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	more than one type of liquid fuel is used during the month (e.g. diesel and coal-water slurry), use Equation 2 for each fuel type and add the results. For coal water slurry, use the emission factor form the source test conducted under Condition 19. Record the sub-total for each fuel type and the total for all fuels.		
16.4	No later than the 15th day of each month, add the previous monthly NOx emissions calculated under Condition 16.3 to obtain the previous month's NOx emissions monthly total for EU IDs 4 and 8, combined. Add this monthly total to the total for the previous 11 months for EU IDs 4 and 8, combined, to determine the 12 consecutive month total.	In Compliance	Records Review Reasonable Inquiry
16.5	Record and report as described in Condition 76 the 12 consecutive month rolling total fuel consumption and NOx emissions (tpy) for each 12 month period ending during the reporting period.	In Compliance	Records Review
16.6	If firing or co-firing EU ID 8 with coal water slurry, conduct source tests to determine NOx emissions as indicated in Condition 19.	In Compliance	Reasonable Inquiry – No coal water slurry was used as a fuel
16.7	Report as described in Condition 75 when the combined 12 consecutive month rolling total NOx emissions for EU IDs 4 and 8 equals or exceeds 40 tons.	In Compliance	Records Review
17	The Permittee shall limit the annual capacity factor to 10% by not exceeding the heat input of 158,468	In Compliance	Records Review

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No(s).	**Summary/Description**		
	MMBtu/yr in Boiler ID 4 in any 12 consecutive months.		
17.1	The Permittee shall record calendar date, daily hours of operation, and hourly steam load.	In Compliance	Records Review
17.2	Maintain and operate a system approved by the Department to monitor and record the daily fuel consumption. Record the fuel consumption for the past 12 months. Calculate the annual capacity factor at the end of each calendar month.	In Compliance	Reasonable Inquiry
17.3	Semi-annual reports shall be submitted to the EPA Administrator, shall be postmarked by the 30th day following the end of the reporting period, and shall contain: (1) the annual capacity factor over the previous 12 months, and (2) the hours of operation during the reporting period. Include copies of the six-month operating reports with the operating report required by Condition 76.	In Compliance	Records Review
17.4	Submit a report in accordance with Condition 53 if any heat input for any 12 consecutive months exceeds 158,468 MMBtu/yr.	In Compliance	Records Review
18	If firing or co-firing EU IDs 3, 4, or 8 with coal water slurry, the Permittee shall conduct source tests on the unit(s) operating with a coal water slurry to determine the particulate matter (PM-10) emissions.	In Compliance	Reasonable Inquiry
18.1	Conduct all tests and report the results in accordance with the requirements described in Section 8. For EU ID 8, note whether the unit was operating with or without NOx controls.	In Compliance	Reasonable Inquiry
18.2	Conduct all tests at the maximum anticipated coal water	In Compliance	Reasonable

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No(s).	**Summary/Description**		
	slurry feed rate.		Inquiry
18.3	Commence all tests within 90 days of starting operation with the coal water slurry	In Compliance	Reasonable Inquiry
18.4	Submit a revised particulate matter grain loading demonstration and Prevention of Significant Deterioration (PSD) PM-10 permit applicability determination with the source test report.	In Compliance	Reasonable Inquiry
19	If firing or co-firing EU ID 8 with a coal water slurry, the Permittee shall conduct source tests on the unit operating with a coal water slurry to determine the NOx emission factor in lb per gallon.	In Compliance	Reasonable Inquiry
19.1	Conduct all source tests and report the results in accordance with the requirements described in Section 8.	In Compliance	Reasonable Inquiry
19.2	Conduct a series of source tests at the maximum anticipated coal water slurry feed rate. a. Conduct the tests with and without NOx controls b. Commence the tests within 90 days of starting operation with the coal water slurry. c. Note in the source test report whether the resulting NOx emission rates are greater than or less than the corresponding NOx emission factors listed in Conditions 16.3(a) and 16.3(b). d. Use the resulting NOx emission rates in Conditions 16.3(a) and 16.3(b) firing coal water slurry.	In Compliance	Reasonable Inquiry
20	The Permittee shall operate each Unit 3, 4, or 8, with coal-water slurry at a rate **no** greater than that for which source testing has demonstrated compliance with	In Compliance	Reasonable Inquiry

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	emission standards established in the permit.		
21	For emission units at the stationary source that are insignificant as defined in 18 AAC 50.326(d)-(i) that are not listed in this permit, the following apply	In Compliance	Reasonable Inquiry
21.1	The Permittee shall submit the compliance certifications of Condition 77 based on reasonable inquiry;	In Compliance	Reasonable Inquiry
21.2	The Permittee shall comply with the requirements of Condition 53;	In Compliance	Reasonable Inquiry
21.3	The Permittee shall report in the operating required by Condition 76 if an emission unit is insignificant because of actual emissions less than the thresholds of 18 AAC 50.326(e) and actual emissions become greater than any of those thresholds.	In Compliance	Reasonable Inquiry
22	The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, fuel-burning equipment, or an incinerator to reduce visibility through the exhaust effluent by any of the following:	In Compliance	Reasonable Inquiry
22.1	more than 20 percent for a total of more than three minutes in any one hour;	In Compliance	Reasonable Inquiry
22.2	more than 20 percent averaged over any six consecutive minutes.	In Compliance	Reasonable Inquiry
23	The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel-burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	In Compliance	Reasonable Inquiry
24	The Permittee shall not cause or allow sulfur compound	In Compliance	Reasonable

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No(s).	**Summary/Description**		
	emissions, expressed as SO_2, from an industrial process or fuel-burning equipment, to exceed 500 ppm averaged over three hours.		Inquiry
25, 25.1	The Permittee 25.1 in order to maintain the Hospital and Medical/Infectious Waste exemption under 40 CFR 60.50c, the Permittee shall not incinerate in EU ID 9A a combination of hospital and/or medical/infectious waste that is more than 10 percent of the total amount, by weight, of the total amount incinerated as measured on a calendar quarter basis. Hospital and medical/infectious waste have meanings as given in 40 CFR 62.14490. Pathological waste, chemotherapeutic waste, and low-level radioactive waste are not considered hospital or medical/infectious waste.	In Compliance	Records Review
25.2	in order to maintain the Pathological Waste Incineration exemption under 40 CFR 2887(l) shall incinerate in EU ID 9A a combination of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste that is more than 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air). Pathological waste, low-level radioactive waste, and/or chemotherapeutic waste meanings as given in 40 CFR 60.2977.	In Compliance	Records Review
25.3	The Permittee shall monitor and record the combined weight of hospital and medical/infectious waste incinerated in EU ID 9A during each quarter.	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
25.4	The Permittee shall monitor and record the combined weight of pathological, low-level radioactive, and/or chemotherapeutic waste incinerated in EU ID 9A during each quarter.	In Compliance	Records Review
25.5	The Permittee shall monitor and record the total weight of all the waste incinerated in EU ID 9A during each quarter.	In Compliance	Records Review
25.6	The Permittee shall, within 30 days after each calendar quarter, calculate and record the percent by weight of hospital and medical/infectious waste, pathological, low-level radioactive, and/or chemotherapeutic waste, and any other waste that was incinerated in EU ID 9A during the calendar quarter.	In Compliance	Records Review
25.7	The Permittee shall report under Condition 75 whenever the resultant calculation for hospital and medical/infectious waste in Condition 25.6 is more than 10 percent.	In Compliance	Records Review
25.8	The Permittee shall report under Condition 75 whenever the resultant calculation for pathological, low-level radioactive, and/or chemotherapeutic waste in Condition 25.6 is less than 90 percent.	In Compliance	Records Review
25.9	The Permittee shall report in the facility operating report, required under Condition 76, the data recorded under Conditions 25.3 through 25.6.	In Compliance	Records Review
26	Permittee shall not process any material that meets the definition of Hazardous Waste under 40 CFR 261, 18 AAC 62, or requires Federal authorization for treatment under Toxic Substances Control Act. The Permittee may not process any household hazardous waste or	In Compliance	Records Review

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No(s).	**Summary/Description**		
	conditionally exempt small quantity generator of hazardous waste, even though these wastes are exempt or conditionally exempt from hazardous waste regulation.		
Section 4. Standard Operating Permit Conditions for Coal-Fired Boilers			
27	**Coal Fired Boiler Visible Emissions.** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 1 & 2 listed in Table A to reduce visibility through the exhaust effluent by more than 20 percent for more than three minutes in any one hour, except for an additional three minutes in any one hour if	In Compliance	Records Review
27(a)	the visible emissions are caused by startup, shutdown, soot blowing, grate cleaning, or other routine maintenance activities;	In Compliance	Records Review
27(b)	the Permittee shall monitor visible emissions by continuous opacity monitoring instrumentation that conforms to the requirements set out in Conditions 27.2(a) and 27.2(c);	In Compliance	Records Review
27(c)	the Permittee provides the Department with a demonstration that the particulate matter emissions from the boiler allowed by this opacity limit will not cause or contribute to a violation of the ambient air quality standards for PM-10 in 18 AAC 50.010, or to cause the maximum allowable increases for PM-10 in 18 AAC 50.020 to be exceeded; and	In Compliance	Records Review
27(d)	the federal administrator approves a stationary source-specific revision to the State implementation plan, required under 42 U.S.C. 7410, authorizing the	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	application of this opacity limit instead of the opacity limit otherwise applicable under this section.		
27.2	**Coal Fired Boiler Visible Emissions Monitoring: Procedures for Operation of a COMS.** The following procedure applies to monitoring visible emissions using a Continuous Opacity Monitoring System (COMS):	In Compliance	Records Review Reasonable Inquiry
27.2(a)	The COMS must meet the performance specifications in 40 C.F.R. 60, Appendix B, Performance Specification 1, adopted by reference in 18 AAC 50.040(a).	In Compliance	Records Review Reasonable Inquiry
27.2(b)	Operate and maintain the COMS in accordance with the manufacturer's written requirements and recommendations.	In Compliance	Records Review Reasonable Inquiry
27.2(c)	Except during COMS breakdowns, repairs, calibration checks, and zero and upscale adjustments, complete one cycle of sampling and analyzing for each successive 10-second period of source operation; from this data, calculate and record the average opacity for each successive one-minute period.	In Compliance	Records Review Reasonable Inquiry
27.2(d)	At least once daily, conduct a zero and upscale check in accordance with 40 C.F.R. 60.13(d), adopted by reference in 18 AAC 50.040(a), and a written procedure; adjust whenever the zero or upscale drift exceeds four percent opacity in a 24-hour period;	In Compliance	Records Review Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
27.3, 27.3(a)	Conduct performance audits as follows: a. For a COMS that was new, relocated, replaced, or substantially refurbished on or after April 2, 2001, perform an audit that includes the following elements as described in the Department's *Performance Audits for COMS*, adopted by reference in 18 AAC 50.030, at least once in each 12 months: (i) Optical alignment; (ii) Zero and upscale response assessment; (iii) Zero compensation assessment; (iv) Calibration error check; and (v) Zero alignment assessment.	In Compliance	Records Review Reasonable Inquiry
27.3(b)	For a COMS that was new, relocated, replaced, or substantially refurbished before April 9, 2001, perform the same audits required under Condition 27.3(a), except that Conditions 27.3(a)(i) through 27.3(a)(iv) must be performed at least quarterly; this frequency may be reduced if (i) The Permittee demonstrates, by applying measurable criteria to the results of quarterly audits, that quarterly audits are not necessary; and (ii) The Department gives written approval for the reduction in frequency.	In Compliance	Records Review Reasonable Inquiry
27.4	If any of the COMS on the coal-fired boilers, EU IDs 1 & 2, is out of service for more than 24 hours, or the COMS	In Compliance	Records Review

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	failed the performance audit, then the Permittee shall use the visible emissions monitoring described in Condition 2 immediately.		Reasonable Inquiry
27.5	**Coal Fired Boiler Visible Emissions Reporting and Recordkeeping:** EU IDs 1 & 2 listed in Table A are subject to the following VE recordkeeping and reporting requirements:	In Compliance	Records Review Reasonable Inquiry
27.5(a)	Maintain records of all calculated one-minute average opacity values for COMS and records of the COMS performance audits required under Condition 27.3, according to the requirements of Condition 71.	In Compliance	Records Review Reasonable Inquiry
27.5(b)	If any of the COMS is malfunctioning or non-operable for three more consecutive days, the Permittee shall notify the Department by telephone or in writing on the fourth day, indicating the cause of failure and anticipated time required to repair or replace the instrument.	In Compliance	Records Review Reasonable Inquiry
27.5(c)	Report a violation of the emission standard in Condition 27 by filing an Excess Emissions Notification Form under Condition 75 if the total number of one-minute values that exceed 20% opacity is greater than three during any given hour when the boiler is not undergoing startup, shutdown, soot blowing, grate cleaning, or other routine maintenance activities.	In Compliance	Records Review Reasonable Inquiry
27.5(d)	Report a violation of the emission standard in Condition 27 by filing an Excess Emission Notification Form under Condition 75 if the total number of one-minute values that	In Compliance	Records Review

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	exceed 20% opacity is greater than six during any given hour when the boiler is undergoing startup, shutdown, soot blowing, grate cleaning, or other routine maintenance activities		Reasonable Inquiry
28	**Coal Fired Boiler Particulate Matter (PM)**. The Permittee shall not cause or allow particulate matter (PM) emitted from EU IDs 1 & 2 to exceed 0.1 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	In Compliance	Records Review Reasonable Inquiry
28.1, 28.1(a)	Coal Fired Boiler PM Monitoring and Recordkeeping. The Permittee shall do the following: a. At least once every 12 months, for each boiler that has operated 90 days or more during that period, inspect the exhaust duct work and the internal components of the dust collector for the presence of leaks; prior to restarting the boiler, repair all leaks in the exhaust ductwork and all leaks that would allow dirty gas to pass into the clean gas side of the dust collector.	In Compliance	Reasonable Inquiry
28.1(b)	Conduct source tests for particulate matter as follows: a. Conduct the tests and report the results in accordance with Section 8; for tests required under Condition 31.1(b)(iii), submit the test plan to the Department according to Condition 70; b. Conduct additional tests on each boiler according to the following schedule where	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	each test means a three hour average consistent with 18 AAC 50.220(f) (A) If the most recent source test exceeded 90 percent of the emission standard, conduct a source test within 8760 operating hours of the previous test; (B) If the most recent source test exceeded 75 percent of the emission standard, conduct a source test within 17520 operating hours of the previous test; and (C) Within five years of the previous source test, conduct a test of each boiler operated during that time; c. For any boiler with an induced draft fan speed limit that the operator wishes to change, the operator may operate in excess of the steam limit to perform source tests on which a new limit would be based. The operator may use a new limit based on the source testing if (A) The Permittee submits a source test plan and the Department approves the plan in writing; (B) The Permittee conducts source testing according to the source test plan and consistent with Section 8; (C) The Permittee submits the results to the Department; (D) The test results show compliance at the		

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	requested new induced draft fan speed rate; and (E) The Department concurs with the new limit in writing, after finding that (A) The test results will be representative of normal operation; and (B) The new limit does not cause the stationary source to be subject to permitting under 18 AAC 50.300(h) d. During each test, measure and record visible emissions and induced draft fan speed rates. Submit the records with the source test report; determine visible emissions consistent with monitoring methods of Condition 2 for the duration of each one hour run;		
28.1(c)	Measure and record induced draft fan speed as follows: (i) Operate and maintain a device to measure and record induced draft fan speed in accordance with the manufacturer's written requirements and recommendations; (ii) Except during breakdowns, repairs, calibration checks, and zero and span adjustments of the device, complete at least one cycle of sampling and analyzing for each successive 15-minute period of boiler operation. From this	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	data, calculate and record the average induced draft fan speed rate for successive one-hour periods. Maintain this data at the stationary source and make it available to the Department upon request; (iii) Within one year after the effective date of this permit and at such times as the Department may require, determine the relative accuracy of each monitoring device required by Condition 28.1(c)(i); and (iv) Keep sufficient records to show compliance with the requirements of this Condition 28.1. In addition, keep records of the date and time identifying each period during which a device required by this permit is inoperative, except for zero and span checks, and records of the nature of device repairs and adjustments; upon request of the Department, submit copies of the records.		
28.2, 28.2(a)	Coal Fired Boiler PM Reporting. The Permittee shall a. Submit a report in accordance with Condition 75 whenever any of the following situations occur: (i) When induced draft fan speed exceeds a permit limit; (ii) When the results of a source test exceed the particulate matter emission limit; and (iii) If an induced draft fan speed monitoring	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	device malfunctions or becomes inoperable for four or more consecutive hours; in the report, indentify the boiler, the cause of failure, and the anticipated time required to repair the device;		
28.2(b)	Include in each operating report under Condition 76 (i) The results of each particulate matter source test; (ii) For any boiler with an induced draft fan speed limit, the limit and averaging period, the highest induced draft fan speed rate for the period covered by the report (averaged over the same averaging period as the limit), and identification of any periods exceeding the limit; and (iii) The results of any relative accuracy determination of steam monitoring equipment.	In Compliance	Records Review Reasonable Inquiry
29	**Sulfur Compound Emissions.** The Permittee shall not cause or allow sulfur compound emissions, expressed as sulfur dioxide, from EU IDs 1 & 2 to exceed 500 ppm averaged over a period of three hours.	In Compliance	Records Review
29.1, 29.1(a)	**Coal Fired Boiler Sulfur Compound Emissions Monitoring.** The following applies to sulfur compound emissions monitoring: a. Upon receipt of each shipment of fuel at the	In Compliance	Records Review

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No(s).	**Summary/Description**		
	stationary source, the Permittee shall (i) Obtain a signed statement from the supplier with the following information: (A) The sulfur by weight of coal; (B) The method of analysis; and (C) A statement that the analysis was representative of the coal shipped; (ii) If valid representative samples are not available from the supplier, analyze a representative sample of the fuel to determine the sulfur content using ASTM D2492-90 for coal, adopted by reference in 18 AAC 50.035(c), for another method approved in writing by the Department for coal or other fuels; and (iii) If the coal contains more than 0.4 percent sulfur by weight, calculate the three hour exhaust concentration expected to result from combusting each shipment of fuel using the following equation:		
29.1(b)	At least once each year, and whenever a shipment of coal contains more than 0.4 percent sulfur, obtain a representative sample of each fuel that is burned suing the applicable procedures in 40 C.F.R. 60, Appendix A-7, Method 19, Section 12.5.2.1, adopted by reference in 18 AAC 50.040(a); conduct an ultimate analysis of the representative sample using ASTM D3176-89 (1997),	In Compliance	Records Review

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	adopted by reference in 18 AAC 50.035(c), or another method approved in writing by the Department to determine the weight percents, dry basis, of carbon nitrogen, oxygen, and hydrogen. Alternatively, total fuel analysis provided by the fuel supplier may be used to meet the requirement;		
29.1(c)	Conduct source tests on at least one coal fired boiler at the stationary source to determine sulfur compound emissions while burning each shipment of fuel if the calculations of Condition 29.1(a)(iii) show that the exhaust SO_2 concentration would exceed 500 ppm. Results from previous source tests may be used.	In Compliance	Records Review
29.2	**Coal Fired Boiler Sulfur Compound Emissions Record Keeping.** The Permittee shall keep records of the sulfur contents of each shipment of fuel, each calculated SO_2 concentration averaged over three-hours, and any test results and calculations determined under Condition 29.1	In Compliance	Records Review
29.3, 29.3(a)	Coal Fired Boiler Sulfur Compound Emissions Reporting. The Permittee shall a. Submit a report in accordance with Condition 75 whenever (i) A three-hour exhaust concentration pursuant to Condition 29.1(a)(ii) is greater than 500 ppm; or (ii) A source test pursuant to Condition 29.1(c) has not shown compliance;	In Compliance	Records Review Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
29.3(b)	Include in each operating report under Condition 76 a summary that includes: (i) Sulfur contents of each shipment of fuel; (ii) Each calculated SO_2 concentration average over three hours; and (iii) Any test results and calculations required under Condition 29.1.	In Compliance	Records Review Reasonable Inquiry
Section 5. Performance Audits for COMS			
30	**Performance audits.** The following elements shall be included in the performance audits for Continuous Opacity Monitoring Systems (COMS), unless the Department gives written approval for unit-specific audit procedures.	In Compliance	Reasonable Inquiry
30.1	**Optical Alignment Assessment.** The status of the optical alignment of the monitor components shall be checked and recorded according to the procedures specified by the monitor manufacturer. Realign as necessary.	In Compliance	Reasonable Inquiry
30.2	**Zero and Upscale Response Assessment.** The zero and upscale response errors shall be determined and recorded according to the calibration drift procedures of 8.1(4)(i) and (ii) in 40 C.F.R. 60, Appendix B, Performance Specification 1 (PS-1), adopted by reference in 18 AAC 50.040(a). The error is defined as the difference (in percent opacity) between the corrected value and the observed value for the zero and high-level calibration checks.	In Compliance	Reasonable Inquiry
30.3	**Zero Compensation Assessment.** The value of the zero	In Compliance	Reasonable

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	compensation applied at the time of the audit shall be calculated as equivalent opacity, corrected to stack exit conditions as necessary, according to the procedures specified by the manufacturer. Record the compensation applied to the effluent recorded by the monitor systems.		Inquiry
30.4	**Calibration Error Check.** Conduct a three-point calibration error test suing three calibration attenuators that produce outlet path length corrected, single-pass opacity values shown in ASTM D 6216-98, section 7.5, adopted by reference in 18 AAC 50.035(c). If the applicable limit is less than 10 percent opacity, use attenuators as described in ASTM D 6216-98, section 7.5 for applicable standards of 10 to 19 percent opacity. Confirm the external audit device produces the proper zero value on the COMS data recorder. Separately, insert each calibration attenuator (low, mid, and high-level) into the external audit device. While inserting each attenuator, (1) ensure that the entire light beam passes through the attenuator; (2) minimize interference from reflected light; and (3) leave the attenuator in place for at least two times the shortest recording internal on the COMS data recorder. Make a total of five nonconsecutive readings for each attenuator. At the end of the test, correlate each attenuator insertion to the corresponding value form the data recorder. Subtract the single-pass calibration attenuator values corrected to the stack exit conditions from the COMS responses. Calculate the arithmetic mean difference, standard deviation, and confidence	In Compliance	Reasonable Inquiry

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No(s).	**Summary/Description**		
	coefficient of the five measurements value using equations 1-3, 1-4, and 1-5 of PS-1. Calculate the calibration error as the sum of the absolute value of the mean difference and the 95 percent confidence coefficient for each of the three test attenuators using equation 1-6 of PS-1. Report the calibration error test results for each of the three attenuators.		
30.5	**Zero Alignment Assessment.** Compare the COMS simulated zero to the actual clear path zero of the installation. The assessment may be conducted in conjunction with, but prior to, other performance audit elements.	In Compliance	Records Review Reasonable Inquiry
30.5(a)	**Primary Zero Alignment Method.** The primary zero alignment shall be performed under clear path conditions. This may be accomplished if the process is not operating and the monitor path length is free of particulate matter or the monitor may be removed from its installation and set up under clear path conditions. The absence of particulate matter shall be demonstrated prior to conducting the test at the installed site. No adjustment to the monitor is allowed other than the establishment of the proper monitor path length correct optical alignment of the monitor components. Record the monitor response to a clear path condition and to the monitor's simulated zero condition as percent opacity corrected to stack exit conditions as necessary. For monitors with automatic zero compensation, disconnect or disable the zero compensation mechanism or record the amount of	In Compliance	Records Review Reasonable Inquiry

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
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	correction applied to the monitor's simulated zero condition. The response difference in percent opacity to the clear path and simulated zero conditions shall be recorded as the zero alignment error. Adjust the monitor's simulated zero device to provide the same response as the clear path condition. Restore the COMS to its operating mode.		
30.5(b)	**Alternate Zero Alignment Method.** Monitors capable of allowing the installation of an external, removable zero-jig may use the equipment for an alternative zero alignment provided that the zero-jig setting is established for the monitor path length and recorded for the specific COMS by comparison of the COMS responses to the installed zero-jig and to the clear path condition. The zero-jig is shown to be capable of producing a consistent zero response when it is repeatedly (i.e., three consecutive installations and removals prior to conducting the final zero alignment check) installed on the COMS. The zero-jig setting shall be permanently set at the time of the initial COMS zeroing to the clear path zero value and protected when not in use to ensure that the setting equivalent to zero opacity does not change. The zero-jig setting shall be checked and recorded prior to initiating the zero alignment. Emission unit owners and operators that employ a zero-jig shall perform a primary zero alignment audit once every three years.	In Compliance	Records Review Reasonable Inquiry
Section 6. Federal Requirements			
31	**NSPS Subpart A Notification.** For any affected facility	In Compliance	Reasonable

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	regulated under NSPS requirements in 40 C.F.R. 60, the Permittee shall furnish the Department and EPA written or electronic notification of:		Inquiry
31.1	the date that construction or reconstruction of an affected facility commences postmarked no later than 30 days after such a date;	In Compliance	Reasonable Inquiry
31.2	the actual date of initial startup of an affected facility postmarked within 15 days after startup;	In Compliance	Reasonable Inquiry
31.3	any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies unless that change is specifically exempted under an applicable subpart or in 40 C.F.R. 60.14(e), postmarked as soon as practicable but no more than 60 days before the change commences;	In Compliance	Reasonable Inquiry
31.4	the date of a continuous monitoring system performance demonstration, postmarked not less than 30 days prior to such date;	In Compliance	Reasonable Inquiry
31.5	the anticipated date for conducting the opacity observations required by 40 C.F.R. 60.11(e)(1) including, if appropriate, a request for the Department to provide a visible emissions reader during a performance test, postmarked not less than 30 days prior to such date;	In Compliance	Reasonable Inquiry
31.6	that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required in lieu of Method 9 observation data as allowed by 40 C.F.R. 60.11(e)(50, postmarked not less than 30 days	In Compliance	Reasonable Inquiry

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	prior to the date of the performance test; and		
31.7	any proposed replacement of an existing facility, for which the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, postmarked as soon as practicable, but no less than 60 days before commencement of replacement, and including the following information: a. The name and address of owner or operator, b. The location of the existing facility, c. A brief description of the existing facility and the components that are to be replaced, d. A description of the existing and proposed air pollution control equipment, e. An estimate of the fixed capital cost of the replacements, and of constructing a comparable entirely new facility, f. The estimated life of the existing facility after the replacements, and g. A discussion of any economic or technical limitations the facility may have in complying with 40 C.F.R. 60, after the replacements.	In Compliance	Reasonable Inquiry
32	**NSPS Subpart A Startup, Shutdown, & Malfunction Requirements.** The Permittee shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of EU ID 4, any malfunctions of associated air-pollution control equipment, or any	In Compliance	Records Review

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	periods during which a continuous monitoring system or monitoring device for EU ID 4 is inoperative		
33	**NSPS Subpart A Excess Emissions and Monitoring System Performance Report.** Except as provided for in Condition 34, the Permittee shall submit to the Department and to EPA a written "excess emissions and monitoring systems performance report" (EEMSP) any time a limit in Conditions 42 or 43 has been exceeded, as described in this condition. The Permittee shall submit the EEMSP reports to EPA quarterly, postmarked no later than 30 days after the end of the last calendar quarter.	In Compliance	Reasonable Inquiry
33.1	The magnitude of excess emissions computed in accordance with Condition 39.6, any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.	In Compliance	Reasonable Inquiry
33.2	Identification of each period of excess emissions that occurred during startup, shutdown, and malfunction of EU ID 4, the nature and cause of any malfunction, and the corrective action taken or preventative measure adopted.	In Compliance	Reasonable Inquiry
33.3	The date and time identifying each period during which a Continuous Monitoring System (CMS) was inoperative except for zero and span checks and the nature of any repairs or adjustments.	In Compliance	Records Review
33.4	A statement indicating whether or not any excess emissions occurred or the CMS was inoperative, repaired, or adjusted, at any time during the reporting period.	In Compliance	Records Review

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34	**NSPS Subpart A Summary Report Form.** The Permittee shall submit to the Department and to EPA "summary report form" in the format shown in Figure 1 of 40 C.F.R. 60.7 for each pollutant monitored for EU ID 4 as follows:	In Compliance	Reasonable Inquiry
34.1	If the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than five percent of the total operating time for the reporting period, submit a summary report form **instead of** the EEMSP report described in Condition 33, otherwise	In Compliance	Reasonable Inquiry
34.2	Submit a summary report form **along with** the EEMSP described in Condition 33.	In Compliance	Reasonable Inquiry
35	**NSPS Subpart A Performance (Source) Tests.** The Permittee shall conduct initial source tests according to Section 8 and as indicated in this condition on any affected facility within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup, and as such other times as may be required by EPA, and shall provide the Department and EPA with a written report of the results of the source test. The Permittee shall:	In Compliance	Records Review Reasonable Inquiry
35.1	Conduct source tests and reduce data as set out in 40 C.F.R. 60.8(b), and provide the Department copies of any EPA waivers or approvals of alternative methods.	In Compliance	Records Review Reasonable

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			Inquiry
35.2	Conduct source tests under conditions specified by EPA to be based on representative performance of EU ID 4.	In Compliance	Records Review Reasonable Inquiry
35.3	Notify the Department and EPA at least 30 days in advance of the source test.	In Compliance	Records Review Reasonable Inquiry
35.4	Provide adequate sampling ports, safe sampling platform(s), safe access to sampling platform(s), and utilities for sampling and testing equipment.	In Compliance	Records Review Reasonable Inquiry
36	**NSPS Subpart A Good Air Pollution Control Practice.** At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate EU ID 4 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. The Department will determine whether acceptable operating and maintenance procedures are being used based on information available to the Department, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance records, and inspections of	In Compliance	Records Review Reasonable Inquiry

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	EU ID 4.		
37	**NSPS Subpart A Credible Evidence.** For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of the standards set forth in Conditions 42 or 43, nothing in 40 C.F.R. Part 60 shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether EU ID 4 would have been in compliance with applicable requirements of 40 C.F.R. Part 60 if the appropriate performance or compliance test or procedure has been performed.	In Compliance	Reasonable Inquiry
38	**NSPS Subpart A Concealment of Emissions.** The Permittee shall not build, erect, install, or us any article, machine, equipment or process, the use of which conceals an emission, which would otherwise constitute a violation of a standard set forth in Conditions 42 or 43. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant discharged to the atmosphere.	In Compliance	Reasonable Inquiry
39	**NSPS Subpart A Monitoring.** For a Continuous Monitoring System (CMS) required under Condition 31, the Permittee shall	In Compliance	Records Review Reasonable Inquiry
39.1	Install and operate the CMS prior to a performance test conducted under Condition 35, including completion of	In Compliance	Records Review

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	manufacturer's written requirements or recommendations for installation, operation, and calibration of device.		Reasonable Inquiry
39.2	Check the zero (or low level value between zero and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with 40 C.F.R. 60.13(d).	In Compliance	Records Review Reasonable Inquiry
39.3	Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under Condition 39.2, keep all CMS's in operation continuously and as follows:	In Compliance	Records Review Reasonable Inquiry
39.4	for a Continuous Opacity Monitor (COMs), complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive six-minute period; and	In Compliance	Records Review Reasonable Inquiry
39.5	complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.	In Compliance	Records Review
39.6	Reduce data in accordance with: a. Reduce all data to six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each six-minute period. b. Do not include data recorded during periods of CMS breakdowns, repairs, calibration checks, and zero and span adjustments in the data averages	In Compliance	Reasonable Inquiry

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	computed under this condition. c. Convert all excess emission into units of the standard used in Condition 40, after conversion the Permittee may round the data to the same number of significant digits as used in the condition. d. The Permittee may use an arithmetic or integrator average of all data, and record data in reduced or non-reduced form (e.g. ppm pollutant percent O_2 or ng/J of pollutant).		
40	**NSPS Subpart Db Notification Requirement.** The Permittee of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by 40 C.F.R. 60.7 (Condition 31). This notification shall include:	In Compliance	Records Review Reasonable Inquiry
40.1	The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility,	In Compliance	Records Review Reasonable Inquiry
40.2	If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i),	In Compliance	Records Review Reasonable Inquiry
40.3	The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired, and,	In Compliance	Records Review

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No(s).	**Summary/Description**		
			Reasonable Inquiry
40.4	Notification that an emerging technology will be used for controlling emissions of sulfur dioxide. The Administrator will examine the description of the emerging technology and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may be required the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42b(a) unless and until this determination is made by the Administrator.	In Compliance	Records Review Reasonable Inquiry
41	**NSPS Subpart Db Fuel Consumption.** For EU ID 4, the Permittee shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for distillate oil and for natural gas for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.	In Compliance	Records Review
42	**NSPS Subpart Db Sulfur Standards.** At all times, including periods of startup, shutdown, and malfunction, for EU ID 4, the Permittee shall not cause to be discharged into the atmosphere, any gases that contain sulfur dioxide in excess of 10% (0.10) of the potential sulfur dioxide emission rate (90% reduction) and that contain sulfur dioxide in excess of the emission limit determined according to Equation 5.	In Compliance	Records Review

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No(s).	**Summary/Description**		
42.1	Monitoring – The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the emission monitoring requirements of this section if the owner or operator obtains fuel receipts as described in § 60.49b(r).	In Compliance	Reasonable Inquiry
42.2, 42.2(a)	Recordkeeping and Reporting – The Permittee shall keep records and submit reports to EPA as follows: a. The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the compliance and performance testing requirements of this section of the owner or operator obtains fuel receipts as described in § 60.49b(r).	In Compliance	Records Review
42.2(b)	The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under § 60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in § 60.41b. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the reporting period.	In Compliance	Records Review
43	**NSPS Subpart Db PM & Nitrogen Oxides Standards:** At all times, except during periods of startup, shutdown, and malfunction, the Permittee shall not cause to be discharged into the atmosphere from EU ID 4 any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not	In Compliance	Reasonable Inquiry

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No(s).	**Summary/Description**		
	more than 27 percent opacity.		
43.1	If required by 40 C.F.R. 60.48b(a), the Permittee shall install, calibrate, maintain, and operate COMS for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. Units that combust only oil that contains no more than 0.3 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less **are not required to conduct PM emissions monitoring** if they maintain fuel supplier certifications of the sulfur content of the fuels burned.	In Compliance	Records Review Reasonable Inquiry
43.2	The Permittee shall limit the combined annual capacity factor to less than 10% by not exceeding the heat input of 158,468 MMBtu/yr in EU ID 4 described in table A in any 12 consecutive months.	In Compliance	Records Review Reasonable Inquiry
43.2(a)	The Permittee shall record calendar date, daily hours of operation, and hourly steam load.	In Compliance	Records Review Reasonable Inquiry
43.2(b)	The Permittee shall record fuel consumption for oil and natural gas on a daily basis.	In Compliance	Records Review Reasonable Inquiry
43.2(c)	The Permittee shall maintain and operate a system	In Compliance	Records

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	approved by the Department to monitor and record the daily fuel consumption. No later than the 30th day of each calendar month, record the fuel consumption for the previous 12 months.		Review Reasonable Inquiry
43.2(d)	Permittee shall calculate the annual heat input in MMBtu/hr at the end of each calendar month for EU ID 4 using Equation 6	In Compliance	Records Review Reasonable Inquiry
43.3	Monitoring – COMS shall be used for determining the opacity of stack emissions as described in Condition 39.	In Compliance	Records Review Reasonable Inquiry
43.4, 43.4(a)	Recordkeeping – The Permittee shall a. Maintain records of opacity;	In Compliance	Records Review Reasonable Inquiry
43.4(b)	Maintain all records required under this section for a period of 2 years following the date of such record.	In Compliance	Records Review Reasonable Inquiry
43.4(c)	Maintain record of the following information for each steam generating unit operating day, the Calendar date. The number of hours of operation, and a record of hourly steam load.	In Compliance	Records Review Reasonable

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No(s).	**Summary/Description**		
			Inquiry
43.4(d)	Maintain records of the occurrences and duration of any start-up, shutdown, or malfunction in the operation of Boiler EU ID 4, and any malfunction of associated air pollution control equipment.	In Compliance	Records Review Reasonable Inquiry
43.5, 43.5(a)	Reporting – The Permittee shall a. Submit to EPA the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the COMS using the applicable performance specifications in Appendix B.	In Compliance	Records Review Reasonable Inquiry
43.5(b)	Submit excess emission reports for any excess emissions from the affected facility which occur during the reporting period.	In Compliance	Records Review Reasonable Inquiry
43.5(c)	Semi-annual reports shall be submitted to the EPA Administrator, postmarked by the 30th day following the end of the reporting period, and shall contain: (1) the annual capacity factor over the previous 12 months, (2) the annual heat input over the previous 12 month, and (3) the hours of operation during the reporting period. Include copies of the six-month reports submitted to EPA with the facility operating report in described in Condition 76.	In Compliance	Records Review Reasonable Inquiry
43.5(d)	Submit a report as described in Condition 75 if the heat input for any 12 consecutive months exceeds 158,468	In Compliance	Records Review

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	MMBtu.		Reasonable Inquiry
Section 7. General Conditions			
44	Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.	In Compliance	Records Review
45	The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and re-issuance, or termination or an notification of planned changes or anticipated non-compliance does not stay any permit condition.	In Compliance	Records Review
46	The permit does not convey any property rights of any sort, nor any exclusive privilege	In Compliance	Records Review
47	**Assessable Emissions.** The Permittee shall pay to the Department an annual emission fee based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which feels will be assessed is the lesser of	In Compliance	Records Review
47.1	the stationary source's assessable potential to emit of 1,788.6 tpy; or	In Compliance	Records Review
47.2	the stationary source's projected annual rate of emissions	In Compliance	Records

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	that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12-month period approved in writing by the Department, when demonstrated by a. An enforceable test method described in 18 AAC 50.220; b. Material balance calculations; c. Emission factors from EPA's publication AP-42, Vol I, adopted by reference in 18 AAC 50.035; or d. Other methods and calculations approved by the Department.		Review
48, 48.1	**Assessable Emission Estimates.** Emission fees will be assessed as follows: 48.1 No later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 610 University Avenue, Fairbanks, AK, 99709-3643; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or	In Compliance	Records Review
48.2	if not estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in Condition 47.1	In Compliance	Records Review
49	**Good Air Pollution Control Practice.** Applies to all sources, **except** NSPS regulated sources, i.e. except EU	In Compliance	Records Review

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	ID 4 a. Perform regular maintenance considering the manufacturer's or the operator's maintenance procedures; b. Keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format; and c. Keep a copy of either the manufacturer's or the operator's maintenance procedures.		Reasonable Inquiry
50	**Dilution.** The Permittee shall not dilute emissions with air to comply with this permit. Monitoring shall consist of an annual certification that the Permittee does not dilute emissions to comply with this permit.	In Compliance	Reasonable Inquiry
51	**Reasonable Precautions to Prevent Fugitive Dust.** A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.	In Compliance	Reasonable Inquiry
51.1	The Permittee shall keep records of a. Complaints received by the Permittee and complaints received by the Department and conveyed to the Permittee; and b. Any additional precautions that are taken (i) To address complaints described in Condition 51.1 or to address the results of Department inspections that found potential problems; and	In Compliance	Reasonable Inquiry

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	(ii) To prevent future dust problems.		
51.2	The Permittee shall report according to Condition 53.	In Compliance	Reasonable Inquiry
52	**Stack Injection.** The Permittee shall not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack at a source constructed or modified after November 1, 1982, except as authorized by a construction permit, Title V permit, or air quality control permit issued before October 1, 2004.	In Compliance	Reasonable Inquiry
53	**Air Pollution Prohibited.** No person may permit any emission which is injurious to human health or welfare, animal or plant life, or which would unreasonable interfere with the enjoyment of life or property.	In Compliance	Reasonable Inquiry
53.1	If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to Condition 75.	In Compliance	Reasonable Inquiry
53.2	As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of Condition 53.	In Compliance	Reasonable Inquiry
53.3	The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if a. After an investigation because of a complaint or other reason, the Permittee believes that	In Compliance	Reasonable Inquiry

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	emissions from the stationary source have caused or are causing a violation of Condition 53; or b. The Department notifies the Permittee that it has found a violation of Condition 53.		
53.4	The Permittee shall keep records of a. The date, time, and nature of all emissions complaints received; b. The name of the person or persons that complained, if known; c. A summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of Condition 53; and d. Any corrective actions taken or planned for complaints attributable to emissions from the stationary source.	In Compliance	Reasonable Inquiry
53.5	With each stationary source operating report under Condition 76, the Permittee shall include a brief summary report which must include (i) The number of complaints received; (ii) The number of times the Permittee or the Department found corrective action necessary; (iii) The number of times action was taken on a complaint within 24 hours; and (iv) The status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.	In Compliance	Reasonable Inquiry
53.6	The Permittee shall notify the Department of a complaint	In Compliance	Reasonable

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	that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours or receiving the complaint.		Inquiry
54	**Technology-Based Emission Standard.** If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235(d), causes emissions in excess of a technology-based emission standard listed in Condition 42 (NSPS Subpart Db Sulfur Standards) & Condition 56 (refrigerants), the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard. Excess emissions reporting under Condition 75 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under Condition 75.	In Compliance	Reasonable Inquiry
55	**Asbestos NESHAP.** The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145, 61.150, and 61.152 of Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A	In Compliance	Records Review Reasonable Inquiry
55.1	In accordance with Condition 73, the Permittee shall submit to the Department, at the time of submission to EPA, a copy of any notification and associated correspondence submitted to EPA for purposes of complying with the reporting requirements under Condition 55.	In Compliance	Reasonable Inquiry
56	**Refrigerant Recycling and Disposal.** The Permittee	In Compliance	Reasonable

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	shall comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F.		Inquiry
57	The Permittee shall determine rule applicability and designation of affected sources under National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories (40 C.F.R. 63) in accordance with the procedures described in 40 C.F.R. 63.1(b). If a source becomes affected by an applicable subpart of 40 C.F.R. 63, the Permittee shall comply with such standard by the compliance date established by the Administrator in the applicable subpart.	In Compliance	Reasonable Inquiry
57.1	The Permittee must keep a record of the applicability determination on site for a period of 5 years after the determination or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the Permittee believes the source is unaffected. The analysis (or other information) must be sufficiently detailed to allow the Department to make a finding about the source's applicability status with regard to the relevant standard or other requirement.	In Compliance	Reasonable Inquiry
58	The Permittee shall comply with the following prohibitions set out in 40 C.F.R. 82.174 (Protection of Stratospheric Ozone Subpart G – Significant New Alternatives Policy Program).	In Compliance	Reasonable Inquiry

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58.1	Do not use a substitute which a person knows or has reason to know was manufactured, processed, or imported in violation of the regulations of 40 C.F.R. 82, Subpart G or knows or has reason to know was manufactured, processed, or imported in violation of any use restriction in the acceptability determination, after the effective date of any rulemaking imposing such restrictions.	In Compliance	Reasonable Inquiry
58.2	Do not use a substitute without adhering to any use restrictions set by the acceptability decision, after the effective date of any rulemaking imposing such restrictions.	In Compliance	Reasonable Inquiry
58.3	Do not use a substitute after the effective date of any rulemaking adding such substitute to the list of unacceptable substitutes.	In Compliance	Reasonable Inquiry
59	The Permittee shall comply with the following prohibitions set out 40 C.F.R. 82.270.	In Compliance	Reasonable Inquiry
59.1	No person testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training may knowingly vent or otherwise released into the environment any halons used in such equipment as follows:	In Compliance	Reasonable Inquiry
59.2	De minimis releases associated with good faith attempts to recycle or recover halon are not subject to this prohibition.	In Compliance	Reasonable Inquiry
59.3	Release of residual halon contained in fully discharged total flooding fire extinguishing systems would be considered a de minimis release associated with good	In Compliance	Reasonable Inquiry

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No(s).	**Summary/Description**		
	faith attempts to recycle or recover halon.		
59.4	Release of halons during testing of fire extinguishing systems is not subject to this prohibition if the following four conditions are met:	In Compliance	No halons in the fire extinguishing system.
59.4(a)	systems or equipment employing suitable alternative fire extinguishing agents are not available;	In Compliance	No halons in the fire extinguishing system.
59.4(b)	system or equipment testing requiring release of extinguishing agent is essential to demonstrate system or equipment functionality	In Compliance	No halons in the fire extinguishing system.
59.4(c)	failure of the system or equipment would pose great risk to human safety or the environment; and (i) A simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.	In Compliance	No halons in the fire extinguishing system.
59.4(d)	Releases of halons associated with research and development of halon alternatives, and releases of halons necessary during analytical determination of halon purity using established laboratory practices are exempt from this prohibition.	In Compliance	No halons in the fire extinguishing system.
59.4(e)	This prohibition does not apply to qualification and development testing during the design and development process of halon-containing systems or equipment which such tests are essential to demonstrate system or	In Compliance	No halons in the fire extinguishing system.

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	equipment functionality and when a suitable simulant agent cannot be used in place of halon for technical reasons.		
59.4(f)	This prohibition does not apply to the emergency release of halons for the legitimate purpose of fire extinguishing, explosion insertion, or other emergency application for which the equipment or systems were designed.	In Compliance	No halons in the fire extinguishing system.
59.5	Organizations that employ technicians who test, maintain, service, repair or dispose of halon-containing equipment shall take appropriate steps to ensure that technicians hired on or before April 6, 1998 will be trained regarding halon emissions reduction by September 1, 1998. Technicians hired after April 6, 1998 shall be trained regarding halon emissions reduction within 30 days or hiring, or by September 1, 1998, whichever is later.	In Compliance	Records Review Reasonable Inquiry
59.6	No person shall dispose of halon-containing equipment except by sending it for halon recovery to a manufacturer operating in accordance with NFPA 10 and NFPA 12A standards, a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards or a recycler operating in accordance with NFPA 10 and NFPA 12A standards. This provisions does not apply to ancillary system devices such as electrical detection control components which are not necessary to the safe and secure containment of the halon within the equipment, to fully discharge total flooding systems, or to equipment containing only de minimis quantities of halons.	In Compliance	Reasonable Inquiry

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59.7	No person shall dispose of halon except by sending it for recycling to a recycler operating in accordance with NFPA 10 and NFPA 12A standards, or by arranging for its destruction using one of the following controlled processes: a. Liquid injection incineration; b. Reactor cracking; c. Gaseous/fume oxidation; d. Rotary kiln incineration; e. Cement kiln; f. Radio frequency plasma destruction; or g. An EPA-approved destruction technology that achieves a destruction efficiency of 98 percent or greater.	In Compliance	Reasonable Inquiry
59.8	No owner of halon-containing equipment shall allow halon release to occur as a result of failure to maintain such equipment.	In Compliance	Reasonable Inquiry
60	**Open Burning.** The Permittee shall comply with the following requirements when conducting open burning at the stationary source.	In Compliance	Records Review Reasonable Inquiry
60.1	**General Requirements.** Except when conducting open burning under 60.7, 60.8, or 60.9, a person conducting open burning shall comply with the limitations of 60.2-60.6 and shall ensure that a. The material is kept dry as possible through the use of a cover or a dry storage;	In Compliance	Reasonable Inquiry

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	b. Before igniting the burn, non-combustibles are separated to the greatest extent practicable; c. Natural or artificially induced draft is present; d. To the greatest extent practicable, combustibles are separated from grass or peat layer; e. Combustibles are not allowed to smolder; and f. Sufficient written records are kept to demonstrate that the Permittee complies with the limitations in this condition. Upon request of the Department, submit copies of the records.		
60.2	**Black Smoke Prohibited.** Except for firefighter training conducted under Conditions 60.8 or 60.9, open burning of asphalts, rubber products, plastics, tars, oils, oily wastes, contaminated oil cleanup materials, or other materials in a way that gives off black smoke is prohibited without written Department approval. Department approval of open burning as an oil spill response countermeasure is subject to the Department's *In Situ Burning Guidelines for Alaska*, adopted by reference in 18 AAC 50.035. Open burning approved under this subsection is subject to the following limitations: a. Open burning of liquid hydrocarbons producing during oil or gas well flow tests may occur only when there are no practical means available to recycle, reuse, or dispose of the fluids in a more environmentally acceptable manner; b. The person who conducts open burning shall establish reasonable procedures to minimize	In Compliance	Reasonable Inquiry

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	adverse environmental effects and limits the amount of smoke generated; and c. The Department will, in its discretion, as a condition of approval issued under this subsection, require public notice as described in Condition 60.10.		
60.3	**Toxic and Acid Gas and Particulate Matter Prohibited.** Open burning or incineration of pesticides, halogenated organic compounds, cyanic compounds, or polyurethane products in a way that gives off toxic or acidic gases or particulate matter is prohibited.	In Compliance	Reasonable Inquiry
60.4	**Adverse Effects Prohibited.** Open burning of putrescible garbage, animal carcasses, or petroleum-based materials, including materials contaminated with petroleum or petroleum derivatives, is prohibited if it causes odor or black smoke that has an adverse effect on nearby persons or property.	In Compliance	Reasonable Inquiry
60.5	**Air Quality Advisory.** Open burning prohibited in an area if the Department declares an air quality advisory under 18 AAC 50.245, stating that burning is not permitted in that area for that day.	In Compliance	Reasonable Inquiry
60.6	**Wood Smoke Control Areas.** Open burning is prohibited between November 1 and March 31 in a wood smoke control area identified in 18 AAC 50.025(b).	In Compliance	Records Review
60.7	**Controlled Burning.** Controlled burning to manage forest land, vegetative cover, fisheries, or wildlife habitat, other than burning to combat a natural wildfire, requires written Department approval if the area to be burned	In Compliance	Reasonable Inquiry

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	exceeds 40 acres yearly. The Department will, in its discretion, require public notice as described in Condition 60.10 of this section.		
60.8	**Firefighter Training: Structures.** A fire service may open burn structures for firefighting training without ensuring maximum combustion efficiency under the following circumstances: a. Before igniting a structure, the fire service shall (i) Obtain Department approval for the location of the proposed firefighter training; approval will be based on whether the proposed open burning is likely to adversely affect public health in the neighborhood of the structure; (ii) Visually identify materials in the structure that might contain asbestos, test those materials for asbestos, and remove all materials that contain asbestos; (iii) Ensure that the structure does not contain (A) Putrescible garbage; (B) Electrical batteries; (C) Stored chemicals such as fertilizers, pesticides, paints, glues, sealers, tars, solvents, household cleaners, or photographic reagents; (D) Stored linoleum, plastics, rubber, tires, or insulated wire;	In Compliance	Reasonable Inquiry

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	(E) Hazardous waste; (F) Lead piping; (G) Plastic piping with an outside diameter of four inches or more; or (H) Urethane or another plastic foam insulation; (iv) Provide public notice consistent with Condition 60.10; and (v) Ensure that a fire-service representative is on-site before igniting the structure; b. The fire service shall ignite and conduct training on only one main structure and any number of smaller structures such as garages, sheds and other outbuildings; and c. The fire service shall respond to complaints in accordance with Condition 60.11.		
60.9	**Firefighter Training: Fuel Burning.** Unless a greater quantity is approved by the Department, a fire service my open burn up to 250 gallons of uncontaminated fuel daily and up to 200 gallons yearly for firefighter training without ensuring maximum combustion efficiency. To conduct this training without prior written Department approval, the fire service shall a. Provide public notice consistent with Condition 60.10 before burning more than 20 gallons of uncontaminated fuel, unless waived in writing by the Department; and	In Compliance	Reasonable Inquiry

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	b. Respond to complaints in accordance with Condition 60.11		
60.10	**Public Notice.** A person required to provide public notice of open burning shall issue the notice through local news media or by other appropriate means if the area of the open burning does not have local news media. The public notice must be issued as directed by the Department and must a. State the name of the person conducting the burn; b. Provide a list of material to be burned; c. Provide a telephone number to contact the person conducting the burn before and during the burn; d. For a surprise fire drill, state (i) The address or location of the training; and (ii) The beginning and ending dates of the period during which a surprise fire drill may be conducted (this period may not exceed 30 days); and e. For open burning other than a surprise drill, state the expected time, date, and location of the opening burning.	In Compliance	Reasonable Inquiry
60.11	**Complaints.** A person required to provide public notice of open burning shall a. Make a reasonable effort to respond to complaints received about the burn; b. Keep, for at least 30 days, a record of all complaints received about the burn, including to the extent feasible	In Compliance	Reasonable Inquiry

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	(i) The name, address, and telephone number of each person who complained; (ii) A short summary of each complaint; and (iii) Any action the person conducting the open burning took to respond to each complaint; and c. Upon request, provide the Department with a copy of the records kept under Condition 60.11(b).		
Section 8. General Source Testing and Monitoring Requirements			
61	**Requested Source Tests.** In addition to any source testing explicitly required by the permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.	In Compliance	Reasonable Inquiry
62	**Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing 62.1 at a point or points that characterize the actual discharge into the ambient air; and 62.2 at the maximum rated burning or operating capacity of the source or another rate determined by the Department to characterize the actual discharge into the ambient air.	In Compliance	Reasonable Inquiry
63	**Reference Test Methods.** The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:	In Compliance	Reasonable Inquiry
63.1	Source testing for compliance with requirements adopted	In Compliance	Reasonable

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	by referenced in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.		Inquiry
63.2	Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9 and may use the form in Section 13 to record data.	In Compliance	Reasonable Inquiry
63.3	Source testing for emissions for total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.	In Compliance	Reasonable Inquiry
63.4	Source testing for emissions of PM-10 must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M, Methods 201 or 201A and 202.	In Compliance	Reasonable Inquiry
63.5	Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63, Appendix A, Method 301.	In Compliance	Reasonable Inquiry
64	**Excess Air Requirements.** To determine compliance with this permit, standard exhaust gas volumes must include only the volume of gases formed for the theoretical combustion of the fuel, plus the excess air volume normal for the specific source type, corrected to standard conditions (dry gas at 68^{o}F and an absolute	In Compliance	Reasonable Inquiry

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	pressure of 760 millimeters of mercury).		
65	**Test Exemption.** The Permittee is not required to comply with Condition 67, 68, and 69 when the exhaust is observed for visible emissions by Method 9 Plan (Condition 2.1) or Smoke/No Smoke Plan (Condition 2.3).	In Compliance	Reasonable Inquiry
66	**Test Deadline Extension.** The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.	In Compliance	Reasonable Inquiry
67	**Test Plans.** Except as provided in Condition 65, before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance and must specify how the source will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under Condition 61 and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting a plan.	In Compliance	Reasonable Inquiry
68	**Test Notification.** Except as provided in Condition 65, at least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.	In Compliance	Reasonable Inquiry
69	**Test Reports.** Except as provided in Condition 65, within	In Compliance	Reasonable

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	60 days after completing a source test, the Permittee shall submit two copies of the results in the format set out in the *Source Test Report Online*, adopted by reference in 18 AAC 50.030. The Permittee shall additionally certify the results in a manner set out in Condition 72. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.		Inquiry
70	**Particulate Matter Calculations.** In source testing for compliance with the particulate matter standards in Conditions 5, 23, and 28, the three-hour average is determined using the average of the three one-hour test runs. The source testing must account for those emissions caused by soot blowing, grate cleaning, or other routine maintenance activities by ensuring that at least one test run includes the emissions caused by the routine maintenance activity and is conducted under conditions that lead to representative emissions from that activity. The emissions must be quantified using the following equation.	In Compliance	Reasonable Inquiry
Section 9. General Recordkeeping and Reporting Requirements.			
71	**Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:	In Compliance	Records Review Reasonable Inquiry
71.1	copies of all reports and certifications submitted pursuant to this section of the permit; and	In Compliance	Records Review

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			Reasonable Inquiry
71.2	records of all monitoring required by this permit, and information about the monitoring including: a. The date, place, and time of sampling or measurements; b. The date(s) analyses were performed; c. The company or entity that performed the analyses; d. The analytical techniques or methods used; e. The results of such analyses; and f. The operating conditions as existing at the time of sampling or measurement.	In Compliance	Records Review Reasonable Inquiry
72	**Certification.** The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete." Excess emission reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.	In Compliance	Records Review Reasonable Inquiry
72.1	The Department may accept an electronic signature on an electronic application or other electronic record	In Compliance	Records Review

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	required by the Department if a. A certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and b. The person providing the electronic signature has made an agreement, with the certifying authority described in Condition 72.1(a), that the person accepts or agrees to be bound by an electronic record executed or adopted with that signature		Reasonable Inquiry
73	**Submittals.** Unless otherwise directed by the Department or this permit, the Permittee shall send two copies of reports, compliance certifications, and other submittals required by this permit to ADEC, Air Permits Program, 610 University Avenue, Fairbanks, AK, 99709-3643, ATTN: Compliance Technicians. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with Condition 72.	In Compliance	Records Review Reasonable Inquiry
74	**Information Requests.** The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	furnish copies of those records directly to the federal administrator.		
75, 75.1	**Excess Emissions and Permit Deviation Reports.** 75.1 Except as provided in Condition 53, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows: a. In accordance with 18 AAC 50.240(c), as soon as possible after the even commenced or is discovered, report (i) Emissions that present a potential threat to human health or safety; and (ii) Excess emissions that the Permittee believes to be unavoidable; b. In accordance with 18 AAC 50.235(a), within two working days after the event commences or was discovered, report an unavoidable emergency, malfunction, or non-routine repair that causes emissions in excess of a technology based emission standard; c. Report all other excess emissions and permit deviations (i) Within 30 days of the end of the month in which the emissions or deviation occurs, except as provided in Conditions 75.1(c)(ii) and 75.1(c)(iii); (ii) If a continuous or recurring excess emissions is not corrected within 48 hours	In Compliance	Records Review Reasonable Inquiry

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No(s).	**Summary/Description**		
	of discovery, within 72 hours of discovery unless the Department provides written permission to report under Condition 75.1(c); and (iii) For failure to monitor, as required in other applicable conditions of this permit.		
75.2	The Permittee must report using either the Department's on-line form, which can be found at http://www.dec.state.ak.us/air/ap/docs/adby/4notform.pdf, or if the Permittee prefers, the form contained in Section 15 of this permit. The Permittee must provide all information called for by the form that is used.	In Compliance	Records Review Reasonable Inquiry
75.3	If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.	In Compliance	Records Review Reasonable Inquiry
76	**Operating Report.** During the life of this permit, the Permittee shall submit to the Department one original and one copy of an operating report by July 31 for the period of January 1 to June 30 of the current year and by July 31 for the period of July 1 to December 31 of the previous year.	In Compliance	Records Review Reasonable Inquiry
76.1	The operating report must include all information required to be in operating reports by other conditions of this permit.	In Compliance	Records Review Reasonable Inquiry

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76.2	If excess emissions for permit deviations that occurred during the reporting period are not reported under Condition 76.1, either a. The Permittee shall identify (i) The date of the deviation; (ii) The equipment involved; (iii) The permit condition affected; (iv) A description of the excess emissions or permit deviations; and (v) Any corrective action or preventative measures taken and the date of such actions; and b. When excess emissions or permit deviations have already been reported under Condition 75, the Permittee may cite the date of dates of those reports.	In Compliance	Records Review Reasonable Inquiry
76.3	The operating report must include a listing of emissions monitored under Conditions 2.2(e), and 2.3(c), which trigger additional testing or monitoring, whether or not the emissions monitored exceed an emission standard. The Permittee shall include in the report a. The date of the emissions; b. The equipment involved; c. The permit condition affected; and d. The monitoring results which triggered the additional monitoring.	In Compliance	Records Review Reasonable Inquiry
77	**Annual Compliance Certification.** Each year by March 31, the Permittee shall compile and submit to the	In Compliance	Records Review

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Permit Condition		**Compliance Status**	**Method Used to Determine Status**
No(s).	**Summary/Description**		
	Department one original and one copy of an annual compliance certification report.		Reasonable Inquiry
77.1	Certify the compliance status of the stationary source over the preceding calendar year consistent with the monitoring required by this permit, as follows: a. Identify each term or condition set forth in Section 3 through Section 11, that is the basis of the certification; b. Briefly describe each method used to determine the compliance status; c. State whether compliance is intermittent or continuous; and d. Identify each deviation and take into account in the compliance certification;	In Compliance	Records Review Reasonable Inquiry
77.2	In addition, submit a copy of the report directly to the EPA-Region 10, Office of Air Quality, M/S OAQ-107, 1200 Sixth Avenue, Seattle, WA 98101.	In Compliance	Records Review Reasonable Inquiry

Table 4-2
Proposed Permit Conditions to Incorporate the Applicable Requirements of 40 C.F.R. 63 Subparts A and ZZZZ for Existing Engines EU ID 6 through 8, 23, 24 and 30 at UAF
UAF will be in compliance by 5/3/2013 for CI engines

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	NESHAP Subpart ZZZZ Stationary Reciprocating Internal Combustion Engines. For EU IDs 8, 23 and 30, the Permittee shall comply with the applicable emission limitations and operating limitations no later than May 3, 2013.	Will meet such requirement on a timely basis	
	NESHAP Subpart ZZZZ Requirements. For EU IDs 8, 23 and 30, comply with the following requirements at all times:	Will meet such requirement on a timely basis	
	NESHAP Subpart ZZZZ Operating Limitations and Associated Monitoring Operate and maintain EU IDs 8, 23 and 30, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of EU IDs 8, 23 and 30.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	Operate and maintain EU IDs 8, 23 and 30, any associated control device (if any), and/or associated monitoring equipment according to either: the manufacturer's emission-related written instructions; or a maintenance plan developed by the Permittee that provides, to the extent practicable, for the maintenance and operation of the engine(s) in a manner consistent with good air pollution control practice for minimizing emissions.	Will meet such requirement on a timely basis	
	For EU IDs 8, 23 and 30, minimize the time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading, not to exceed 30 minutes.	Will meet such requirement on a timely basis	
	NESHAP Subpart ZZZZ Management Practices For EU ID 30, comply with the following : Change oil and filter every 1,000 hours of operation or annually, whichever comes first;[1] Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	For EU ID 30, there is the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil as described above. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, it is not necessary to change the oil. If any of the limits are exceeded, the engine oil shall be changed within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the oil must be changed within 2 days or before commencing operation, whichever is later. Keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.	Will meet such requirement on a timely basis	
	NESHAP Subpart ZZZZ Fuel Requirement For EU IDs 8 and 23 use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	NESHAP Subpart ZZZZ CO Emission Restrictions. For EU ID 8, either maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and maintain the temperature of the exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. or Comply with any operating limitations approved by the Administrator.	Will meet such requirement on a timely basis	
	NESHAP Subpart ZZZZ CO Emission Restrictions. For EU ID 8, either limit the concentration of CO in the exhaust to 23 ppmvd at 15 percent O_2; or reduce CO emissions by 70 percent or more. For EU ID 23, either limit the concentration of CO in the exhaust to 23 ppmvd at 15 percent O_2; or reduce CO emissions by 70 percent or more.	Will meet such requirement on a timely basis	
	NESHAP Subpart ZZZZ Recordkeeping Keep records of maintenance conducted on EU IDs 8, 23 and 30 to demonstrate that the engines and after-treatment control device (if any) are operated and maintained according to Subpart ZZZZ. These records must include, at a minimum: oil and filter change dates and corresponding hour on the hour meter; inspection and replacement dates for air cleaners, hoses, and belts; and records of other emission-related repairs and maintenance performed.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	Keep records in a form suitable and readily available for expeditious inspection and review, readily accessible in hard copy or electronic form, and for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site.	Will meet such requirement on a timely basis	
	Report to the Department under Condition AA [state EE/PD report] any deviation from the limitations.	Will meet such requirement on a timely basis	
	NESHAP Subpart A General Requirements. (All engines subject to 40 C.F.R. 63, Subpart ZZZZ) Compliance with 40 C.F.R. 63.1 and 63.6 is achieved by complying with the described standards and management practices.	Will meet such requirement on a timely basis	
	Recordkeeping. Keep records for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 C.F.R. 63.10(b)(1).	Will meet such requirement on a timely basis	
	Reporting. Report to EPA Region 10 and the Department whenever an applicable requirement in 40 C.F.R. 63, Subpart A (Table 8 of Subpart ZZZZ) was not met.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
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	Initial Performance Test. Conduct an initial performance test no later than 180 days after the compliance date set in 40 CFR 63 Subpart ZZZZ (i.e., by October 30, 2013). Comply with the performance test notification and reporting requirements and deadlines outlined in 40 C.F.R. 63.7(b), §63,7(c), §63.9(h)(2), and §63.10(d)(2).	Will meet such requirement on a timely basis	
	Subsequent Performance Tests. Conduct subsequent performance tests on EU ID 8 every 8,760 hours or 3 years, whichever comes first.	Will meet such requirement on a timely basis	

Table 4-3
Proposed Permit Conditions to Incorporate the Applicable Requirements of 40 C.F.R. 63 Subparts A and JJJJJJ for Existing Boilers EU ID 1 through 4 and 10 through 22 at UAF
UAF will be in compliance by March 12, 2014 for existing boilers

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	NESHAP Subpart JJJJJJ Industrial, Commercial, and Institutional Boilers Area Sources. For EU IDs 1 thru 4 and 10 through 22, the Permittee shall comply with the applicable emission limitations and operating limitations no later than March 12, 2014.	Will meet such requirement on a timely basis	
	NESHAP Subpart JJJJJJ Mercury Limit. For EU IDs 1 and 2, limit the mercury emissions to 0.0000048 lb per MMBtu of heat input.	Will meet such requirement on a timely basis	
	NESHAP Subpart JJJJJJ Work Practice Standards, Emission Reduction Measures, and Management Practices. For EU IDs 1 and 2 Minimize the units' startup and shutdown periods following the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available	Will meet such requirement on a timely basis	
	For EU IDs 3, 4, and 10 through 22 conduct a tune-up of the boiler biennially as specified in §63.11223.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	For EU IDs 1 through 4 conduct a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements satisfies the energy assessment requirement. The energy assessment must include: (1) A visual inspection of the boiler system, (2) An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints, (3) Inventory of major systems consuming energy from affected boiler(s), (4) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage, (5) A list of major energy conservation measures, (6) A list of the energy savings potential of the energy conservation measures identified, (7) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	NESHAP Subpart JJJJJJ Operating Limitations and Associated Monitoring For EU IDs 1 through 4 and 10 through 22, operate and maintain associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	NESHAP Subpart JJJJJJ Source Testing. For EU IDs 1 and 2, you can demonstrate compliance with any applicable mercury emission limit using fuel analysis if the emission rate calculated according to §63.11211(c) is less than the applicable emission limit. Otherwise, you must demonstrate compliance using stack testing If you demonstrate compliance with any applicable emission limit through performance stack testing and subsequent compliance with operating limits (including the use of continuous parameter monitoring system), with a CEMS, or with a COMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (3) of this section for the use of any CEMS, COMS, or continuous parameter monitoring system. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under §63.8(f).	Will meet such requirement on a timely basis	
	NESHAP Subpart JJJJJJ Fuel Limits. If UAF complies with the mercury limit using a fuel restriction, then only burning the fuel types and fuel mixtures used to demonstrate compliance with the applicable emission limit according to §63.11214 as applicable; and keeping monthly records of fuel use according to §63.11222.	Will meet such requirement on a timely basis	

Permit Condition		In	Method Used to Determine Status
Proposed Permit No(s).	Summary/Description	Compliance?	
	Initial Compliance Requirements. For EU IDs 1 and 2 demonstrate initial compliance with each emission limit specified in Table 1 to this subpart that applies to you by either conducting performance (stack) tests, as applicable, according to §63.11212 and Table 4 to this subpart or, for mercury, conducting fuel analyses, as applicable, according to §63.11213 and Table 5 to this subpart. Demonstrate initial compliance no later than 180 days after the compliance date that is specified in §63.11196 and according to the applicable provisions in §63.7(a)(2).	Will meet such requirement on a timely basis	
	For EU IDs 1 through 4 and 10 through 22, demonstrate initial compliance no later than the compliance date that is specified in §63.11196 and according to the applicable provisions in §63.7(a)(2).	Will meet such requirement on a timely basis	
	For EU IDs 1 through 4, submit a signed certification in the Notification of Compliance Status report that an energy assessment of the boiler and its energy use systems was completed and submit, upon request, the energy assessment report.	Will meet such requirement on a timely basis	

Compliance Plan

UAF has identified 21 significant emission units in this application that are not currently permitted. UAF has been in touch with ADEC to discuss many of these emission units on March 7, 2012 and on April 6, 2012. Recently identified EU IDs 10 through 30 are described in Table 2-2. Potential emissions for these emission units are provided in the tables of Section 2 and are based on unlimited potential operations with the exceptions of the operating limits that UAF is proposing. Within 180 days of receiving permitting direction from ADEC, UAF will comply with submittals of all applications deemed necessary.

EU IDs 10 through 22 are oil/diesel-fired boilers rated at less than 10 MMBtu per hour. These boilers are subject to 40 CFR 63 Subpart JJJJJJ, the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources. These boilers are existing boilers at an area source because the units were installed before June 4, 2010 at an area HAPs source. UAF submitted the required initial notification of applicability to EPA on September 15, 2011. UAF is required to conduct biennial tune-ups for these units according to §63.11223, by March 21, 2012 in compliance with § 63.11196(a)(1). However, EPA issued a no action assurance letter on March 13, 2012 regarding certain work practices or management practices which includes the biennial tune-ups. The no action assurance letter allows sources to complete the biennial tune-ups by March 21, 2013. UAF will complete all required biennial tune-ups by March 21, 2013. Each subsequent biennial tune-up will be conducted within 25 months of the previous tune-up. UAF will be in compliance as required by Subpart JJJJJJ by March 12, 2014.

Previously permitted emission units, EU IDs 1 through 4, are also subject to 40 CFR Part 63 Subpart JJJJJJ. UAF submitted the required Initial Notification of applicability to EPA on September 15, 2011. UAF must minimize startup and shutdowns of EU IDs 1 and 2 , which are coal-fired boilers greater than 10 MMBtu/hr. UAF will submit a signed statement in the Notification of Compliance Status report indicating that startup and shutdowns will be minimized as required by July 19, 2012.

UAF must complete a one-time energy assessment audit for boilers EU IDs 1 through 4 by March 14, 2014. EU IDs 1 and 2 are also required to show compliance with the Subpart JJJJJJ emission limits by March 14, 2014. UAF will meet these energy assessment audits and emission limits in a timely manner by their required compliance date. Similar to EU IDs 10 through 22, UAF must conduct a biennial tune-up for EU IDs 3 and 4 by March 21, 2013 and subsequent biennial tune-ups within 25 months of the previous tune-up. UAF will be in compliance as required by Subpart JJJJJJ by March 12, 2014.

EU ID 8 is a diesel-fired engine with a horsepower greater than 500. This engine is subject to 40 CFR Part 63 Subpart ZZZZ, the NESHAP for Stationary Reciprocating Internal Combustion Engines. This engine is an existing engine at an area source because the unit was constructed before June 12, 2006 at an area HAPs source. UAF will submit the required initial notification of applicability to EPA within 30 days of the submittal of this application. By May 3, 2013, UAF is required to limit the concentration of

CO in the EU ID 8 exhaust to 23 ppmvd at 15 percent O_2; or reduce CO emissions by 70 percent or more. UAF will demonstrate compliance with the emission limit or the CO reduction requirement by May 3, 2013.

EU ID 23 is a diesel-fired engine with a horsepower greater than 300 and less than 500. This engine is subject to 40 CFR 63 Subpart ZZZZ, the NESHAP for Stationary Reciprocating Internal Combustion Engines. This engine is an existing engine at an area source because the unit was constructed before June 12, 2006 at an area HAPs source. UAF will submit the required initial notification of applicability to EPA within 30 days of submittal of this application. By May 3, 2013, UAF is required to limit the concentration of CO in the EU ID 23 exhaust to 49 ppmvd at 15 percent O_2; or reduce CO emissions by 70 percent or more. UAF will demonstrate compliance with the emission limit or the CO reduction requirement by May 3, 2013.

EU ID 30 is a small diesel-fired engine with a horsepower rating of less than 300. This engine is subject to 40 CFR 63 Subpart ZZZZ, the NESHAP for Stationary Reciprocating Internal Combustion Engines. This engine is an existing engine at an area source because the unit was constructed before June 12, 2006 at an area HAPs source. UAF will submit the required initial notification of applicability to EPA within 30 days of this application submittal. By May 3, 2013, UAF will conduct the first engine maintenance practices.

To ensure that these previously unpermitted emission units remain below PSD permitting requirements and/or minor permitting requirements, UAF proposes to limit operations of various emission units with hourly restrictions and/or fuel sulfur content limits. Emission calculations in Section 2 reflect these proposed limits in the estimate of potential emissions.

EU ID 17 and 18 were identified in the Title V renewal application submitted in 2005 and UAF indicated these units would not be operated in excess of 500 hours per year. However, no operating limit was ever established for either emission unit. UAF would like to change that request in this application by eliminating the 500 hours per year restriction and instead proposes a fuel sulfur limit.

Table 4-4 lists all of the ORL proposed by UAF.

Table 4-4
UAF – Requested ORLs

EU ID	Hours Restriction	Fuel Restriction	Comments
12-18, 26, 27 and	None	ULSD	The proposed ORL fuel sulfur

29			restriction avoids PSD permitting otherwise triggered by SO_2.
19-21	19,650 total hrs per year combined	ULSD	The proposed ORL hour restriction avoids minor permitting otherwise triggered by NO_X and the proposed ORL fuel sulfur restriction avoids PSD permitting otherwise triggered by SO_2.
22	None	ULSD	The proposed ORL fuel sulfur restriction avoids PSD permitting otherwise triggered by SO_2.
23	4,380 hr/yr	ULSD	The proposed ORL hour restriction avoids PSD permitting otherwise triggered by NO_X and the proposed ORL fuel sulfur restriction avoids PSD permitting otherwise triggered by SO_2.
24	None	ULSD	The proposed fuel sulfur restriction ORL avoids PSD permitting otherwise triggered by SO_2. This unit is limited to non-emergency operations of 100 hr/yr per the emergency engine restriction of 40 CFR 63 Subpart ZZZZ §63.6640(f), but not requesting this as a permit limit.
28	100 hr/yr	NA	The proposed ORL hour restriction avoids PSD permitting otherwise triggered by SO_2.
30	100 hr/yr	ULSD	The proposed ORL hour restriction avoids PSD permitting otherwise triggered by NO_X and the proposed fuel sulfur restriction ORL avoids PSD permitting otherwise triggered by SO_2.

Note: ULSD is “ultra low sulfur diesel.” ULSD has a maximum sulfur content of 0.0015 percent by weight.

Section 5

Permit Revision Request

Table 5-1
Permit Revision Requests for AQC Operating Permit AQ0316TVP02, Dated December 4, 2007

Item No.	Citation	Requested Change	Basis
1.	All Sections	Please change all relevant references of "facility" to "stationary source" throughout permit.	The current ADEC rules under 18 Alaska Administrative Code (AAC) 50.326 for operating permits refer to the rules of 40 Code of Federal Regulations (CFR) Part 71. Please update this definition to reflect the appropriate definition under Part 71.
2.	All Sections	Please change all relevant references of "source" to "emission unit" throughout permit.	The current ADEC rules under 18 AAC 50.326 for operating permits refer to the rules of 40 Code of Federal Regulations (CFR) Part 71. Please update this definition to reflect the appropriate definition under Part 71.
3.	All Sections	Please update the State and Federal regulatory citations to match the latest version of 18 AAC 50 and the Federal regulations incorporated by reference under the most recent version of 18 AAC 50.040.	Updates information.
4.	Section 1	Please change the Responsible Official to: ~~Charles B. Ward~~ Pat Pitney, Vice Chancellor for Administrative Services and Scott Bell, P.E., Associated Vice Chancellor for Facilities Services	Updates information.

Item No.	Citation	Requested Change	Basis
5.	Section 1	Please change the Designated Agent to: ~~Charles B. Ward~~ ~~University of Alaska~~ ~~P.O. Box 757420~~ ~~Fairbanks, AK 99775~~ Frances M. Isgrigg, P.E. University of Alaska PO Box 751845 Fairbanks, AK 99775	Updates information.
6.	Section 1	Please change the Stationary Source and Building Contact email information to: ~~Charles B. Ward~~ ~~University of Alaska~~ ~~P.O. Box 757420~~ ~~Fairbanks, AK 99775~~ ~~(907) 474-7351~~ ~~fncbw@uaf.edu~~ Frances M. Isgrigg, P.E. University of Alaska PO Box 751845 Fairbanks, AK 99775	Updates information.

Item No.	Citation	Requested Change	Basis
7.	Section 1	Please change the Permit Contact to the following: ~~Charles B. Ward~~ Frances M. Isgrigg, P.E., Director, Environmental, Health, Safety and Risk Management fisgrigg@alaska.edu 907-474-5487	Updates information.
8.	Section 2, Table A	Please update Table A as shown in the attached Table A at the end of this section: -Remove EU ID 5A, which has previously been removed from UAF. -Revise the 'Rating/size' of EU IDs 1 and 2 to 84.5 MMBtu/hr each, based on the revised calculation in Section 2, Table 2-20 -Add EU IDs 10 through 31, recently identified emission units.	These changes represent corrections to the emission unit inventory that represent the current emission units onsite.
9.	Sections as designated	Please remove reference to EU ID #5A in the following conditions: 1.a, 1.2, heading to 2, 2, 5, 5.1, 5.3, 9, 11, 12, 2.1.a, 13, and heading to 13.1.	Emission Unit #5A is removed.
10.	Section 3, Condition 1.a	Please revise Condition 1.a as follows: Do not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 3~~-9A~~ through 30 listed in Table A to reduce visibility ….	EU IDs 10 through 30 are newly identified sources with a visible emission standard.
11.	Section 3, Condition 1 citation	In the citation reference, please include 18 AAC 50.050(a).	This incinerator citation is applicable to EU ID 9A.

Item No.	Citation	Requested Change	Basis
12.	Section 3, Condition 2	Please remove the repeated phrase "Visible Emissions Monitoring" at the beginning of the condition. **Visible Emissions Monitoring. ~~Visible Emissions Monitoring~~.** The Permittee shall….	Permit Continuity.
13.	Section 3, Condition 2	Please revise Condition 2 as follows: The Permittee shall monitor the exhaust of EU IDS 3, 4, (when not subject to condition 2.1), ~~5A,~~ 6, 7, 8, ~~and~~ 9A, and 10 through 30 for visible emissions using either the Method 9 Plan under condition 2.2 ~~or,~~ the Smoke/No-Smoke Plan under condition 2.3, or a COMS as described in condition 2.1. The Permittee may change the visible-emissions plan for an emission unit at any time unless prohibited from doing so by Condition 2.4. The Permittee may continue visible emission monitoring according to the prevailing schedule established at the time this renewed permit is issued.	EU ID 5A is no longer at UAF and it to be removed from this permit. EU ID 3 is currently monitoring visible emissions using a COMS. EU IDs 10 through 30 are newly identified sources with a visible emission standard.
14.	Condition 2.1	Please revise Condition 2.1 as follows: **Continuous Opacity Monitoring.** The Permittee shall monitor the opacity for EU ID 4, and any other emission unit the Permittee chooses, by the use of continuous opacity monitoring system (COMS) if this unit burns oil…..	This will allow UAF to monitor opacity of EU ID 3 with a COMS, at its own discretion.
15.	Condition 2.1(d)(iii)	Please remove Condition 2.1(d)(iii).	Permit Continuity. This condition references a separate condition that does not exist (Error! Reference source not found). This condition is no longer applicable per footnote 1 to this condition. This change was reflected in the draft significant revision issued on September 16, 2011 and UAF agrees with this change.

Item No.	Citation	Requested Change	Basis
16.	Condition 2.1(d)(iv)	Please revise Condition 2.1(d)(iv) as follows: Report a violation of the emission standard in condition ~~aa~~ 1.a by filing….	Permit Continuity. This condition should reference Condition 1.a. EU ID 4 is subject to the visible emissions requirement under 18 AAC 50.055(a)(1). This change was reflected in the draft significant revision issued on September 16, 2011 and UAF agrees with this change.
17.	Condition 2.2(d)	Please revise Condition 2.2(d) as follows: Annual Method 9 Observations. After at least two semiannual 18-minute observations, unless a six minute average is greater than 15 percent or one or more observations are greater than 20 percent, ~~observe emissions at least annually.~~ perform 18-minute observations: ~~Annual observations must be taken between 10 and 13 months after the previous observations and must include at least three 18-minute sets of observations.~~ (i) Within twelve months after the preceding observation; or (ii) For an emission unit with intermittent operations, during the next scheduled operation immediately following twelve months after the preceding observation.	Updates consistent with Standard Operating Permit Condition IX. Portions of original language were not Standard language.
18.	Condition 5	Please revise Condition 5 as follows: …The Permittee shall not cause or allow particulate matter emitted from EU IDs 3-8 and 10 through 30 listed in Table A to exceed…	EU IDs 10 through 30 are newly identified sources with a visible emission standard.

Item No.	Citation	Requested Change	Basis
19.	Condition 5.1	Please revise Condition 5.1 as follows: For EU IDs 3, 4, ~~& 5A~~10 through 22, and 25 through 29, monitor, record, and report in accordance with conditions 9, 11 and 12.	EU ID 5A has been removed. EU IDs 10 through 22 and 25 through 29 are also boilers and heaters with applicable PM standards.
20.	Condition 5.2	Please revise Condition 5.2 as follows: For EU IDs 6, 7~~ &~~, 8, 23, 24, and 30, monitor, record, and report in accordance with conditions 7-8.	EU IDs 23, 24 and 30 are also engines with applicable PM standards.
21.	Condition 6	Please revise Condition 6 as follows: **Incinerator Particulate Matter Emissions**. Particulate matter emissions from EU ID 9A may not exceed the particulate matter standard, as listed in Table B. For the incinerator rated capacity of less than 1,000 lbs per hour, particulate matter emissions are not limited.	Updates Information
22.	Condition 7 Heading	Please revise the heading to Condition 7 as follows: *Liquid-Fired ~~Sources~~Engines (EU IDs 6-8, 23, 24, and 30)*	Include all identified engines with a PM standard.
23.	Condition 7	Please revise Condition 7 as follows: Particulate Matter Monitoring for Diesel Engines. The Permittee shall conduct source tests on diesel engines 6, 7, ~~and~~ 8, 23, 24 and 30 to determine the…	EU IDs 23, 24 and 30 are also engines with applicable PM standards.
24.	Condition 8	Please revise Condition 8 as follows: **Particulate Matter Reporting for Diesel Engines.** The Permittee shall report for EU IDs 6, 7,~~ &~~ 8, 23, 24 and 30 as follows:…	EU IDs 23, 24 and 30 are also engines with applicable PM standards.

Item No.	Citation	Requested Change	Basis
25.	Condition 8.3.a	Please revise Condition 8.3.a as follows: the dates, EU IDs 6, 7, ~~& 8~~, 23, 24 and 30 and results when an observed 18-minute average was greater than an applicable threshold in conditions 7.2;	EU IDs 23, 24 and 30 are also engines with applicable PM standards.
26.	Condition 9	Please revise Condition 9 as follows: **Particulate Matter Monitoring.** The Permittee shall conduct source tests on EU IDs 3, 4, ~~& 5A~~, 10 through 22, and 25 through 29, to determine the concentration of PM in the exhaust as follows:	EU ID 5A has been removed. EU IDs 10 through 22 and 25 through 29 are also boilers and heaters with applicable PM standards.
27.	Condition 11	Please revise Condition 11 as follows: **Particulate Matter Recordkeeping.** The Permittee shall keep records of the results of any PM testing and visible emissions observations for EU IDs 3, 4, ~~& 5A~~, 10 through 22, and 25 through 29, conducted under conditions 9 and 9.2.	EU ID 5A has been removed. EU IDs 10 through 22 and 25 through 29 are also boilers and heaters with applicable PM standards.
28.	Condition 12	Please revise Condition 12 as follows: **Particulate Matter Reporting.** The Permittee shall report for EU IDs 3, 4, ~~& 5A~~, 10 through 22, and 25 through 29 as follows:	EU ID 5A has been removed. EU IDs 10 through 22 and 25 through 29 are also boilers and heaters with applicable PM standards.
29.	Condition 12.1.a	Please revise Condition 12.1.a as follows: The dates, EU IDs 3,4, ~~& 5A~~, 10 through 22, and 25 through 29 and results when an 18-minute opacity observation was greater than the applicable….	EU ID 5A has been removed. EU IDs 10 through 22 and 25 through 29 are also boilers and heaters with applicable PM standards.
30.	Condition 13	Please revise Condition 13 as follows: …The Permittee shall not cause or allow sulfur compound emissions expressed as SO_2, from EU IDs 1 – 8, and 10 through 30 to exceed 500 ppm averaged over three hours.	This change improves clarity of the condition and incorporates all engines, boilers, and heaters.

Item No.	Citation	Requested Change	Basis
31.	Condition 13.1 Header	Please revise the header to Condition 13.1 as follows: *For Diesel Fuel, EU IDs 3, 4, ~~5A,~~ 6, 7, & 8, 10 through 29*	This change includes all diesel and heating oil units that have a sulfur standard.
32.	Condition 17.4	Please revise Condition 17.4 as follows: Submit a report in accordance with condition ~~53~~ 75 if any heat input for any 12 consecutive months exceeds 158,468 mmBtu/yr.	Correct reference to the excess emissions and permit deviation condition.
33.	Condition 22	Please revise Condition 22 and Sub-Conditions 22.1 and 22.2 as follows: The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, fuel-burning equipment, or an incinerator to reduce visibility through the exhaust effluent by ~~any of the following:~~ more than 20 percent for a total of more than three minutes in any one hour. ~~22.1 more than 20 percent for a total of more than three minutes in any one hour;~~ ~~22.2 more than 20 percent averaged over any six consecutive minutes.~~	Consistency with Standard Operating Permit Condition V – Insignificant Emission Units
34.	Condition 25	Please revise Condition 25 as follows: The Permittee shall only burn hospital and/or medical/infectious waste and pathological waste. The Permittee	Clarify that only two types of waste are allowed to be incinerated: hospital and/or medical/infectious waste and pathological wastes.
35.	Condition 27	Please remove Condition 27, but not sub-conditions.	Consistency with Standard Operating Permit XIII- Coal Fired Boilers.
36.	Condition 27.2	Please revise the sub-condition numbering. Subcondition 27.1 was skipped in the permit.	Keep the numbering sequential.

Item No.	Citation	Requested Change	Basis
37.	Condition 27.2(c)	Please revise Condition 27.2(c) as follows: Except during COMS breakdowns, repairs, calibration checks, and zero and upscale adjustments, complete one cycle of sampling and analyzing for each successive 10-second period of ~~source~~ emission unit operation;	Consistency with Standard Operating Permit XIII- Coal Fired Boilers.
38.	Condition 28.1(b)(i)	Please revise Condition 28.1(b)(i) as follows: Conduct the tests and report the results in accordance with Section 8; ~~for tests required under condition 31.1b(iii)~~, submit the test plan ~~to the department according to condition 70~~ as required by Section 8 and at least 60 days before the deadline for the next test under condition 28.1(b)(ii).	Consistency with Standard Operating Permit XIII- Coal Fired Boilers. UAF has demonstrated compliance with the PM standard while source testing with the induced draft fan at full speed. An induced draft fan speed requirement is not necessary.
39.	Before Condition 28.1(b)(ii)	Please add this condition between Condition 28.1(b)(i) and 28.1(b)(ii) as follows; Conduct an initial test on each boiler within 8,760 operating hours or two calendar years, whichever is sooner, after the issue date of the initial operating permit;	Consistency with Standard Operating Permit XIII- Coal Fired Boilers.
40.	Condition 28.1(b)(ii)(B)	Please revise Condition 28.1(b)(ii)(B) as follows: If the most recent source test ~~exceeded 75 percent~~ was more than 75 percent and was 90 percent or less of the emission standard, conduct a source test within 17,520 operating hours of the previous test; ~~and~~ or	These changes clarify the range of test results for subsequent tests in 17,520 hours of operation and that that only one of the three retesting time frames applies.
41.	Condition 28.1(b)(iii)	Please remove Condition 28.1(b)(iii)	Consistency with Standard Operating Permit Condition XIII – Coal Fired Boilers. UAF has demonstrated compliance with the PM standard while source testing with the induced draft fan at full speed. An induced draft fan speed requirement is not necessary.

Item No.	Citation	Requested Change	Basis
42.	Condition 28.1(b)(iv)	Please remove Condition 28.1(b)(iv) as follows:	Consistency with Standard Operating Permit Condition XIII – Coal Fired Boilers. UAF has demonstrated compliance with the PM standard while source testing with the induced draft fan at full speed. An induced draft fan speed requirement is not necessary.
43.	Conditions 28.1(c)	Please remove Condition 28.1(c)	Consistency with Standard Operating Permit Condition XIII – Coal Fired Boilers. UAF has demonstrated compliance with the PM standard while source testing with the induced draft fan at full speed. An induced draft fan speed requirement is not necessary.
44.	Condition 28.2(a)	Please revise Condition 28.2(a) as follows: Submit a report in accordance with condition 75 whenever any of the following situations occur:	Consistency with Standard Operating permit Condition XIII- Coal Fired Boilers.
45.	Conditions 28.2(a)(i) and (iii)	Please remove Conditions 28.2(a)(i) and (iii) as follows: ~~(i) When induced draft fan speed exceeds a permit limit;~~ (ii) When the results of a source test exceed the particulate matter emission limit; and ~~(iii) If an induced draft fan speed monitoring device malfunctions or becomes inoperable for four or more consecutive hours; in the report, identify the boiler, the cause of failure, and the anticipated time required to repair the device;~~	Consistency with Standard Operating Permit Condition XIII – Coal Fired Boilers. UAF demonstrates compliance while source testing with the induced draft fan at full speed (100 percent) An induced draft fan speed limit is not necessary. Therefore compliance is already demonstrated at all fan speeds and these conditions can be removed since they do not affect compliance.

Item No.	Citation	Requested Change	Basis
46.	Condition 28.2(b)(ii)	Please remove Condition 28.2(b)(ii) as follows: ~~for any boiler with a induced draft fan speed limit, the limit and averaging period, the highest induced draft fan speed rate for the period covered by the report (averaged over the same averaging period as the limit), and identification of any periods exceeding the limit; and~~	Consistency with Standard Operating Permit Condition XIII – Coal Fired Boilers. UAF has demonstrated compliance with the PM standard while source testing with the induced draft fan at full speed. An induced draft fan speed requirement is not necessary.
47.	Condition 29.1(a)(iii)	Please revise Condition 29.1(a)(iii) as follows: …The volume percent of oxygen in the exhaust (vol% O_2, exhaust,) is obtained from oxygen meters <u>on a three hour average</u> or from the most recent ORSAT…	Consistency with Standard Operating Permit Condition XIII-Coal Fired Boilers.
48.	Section 5	Please remove Section 5 and all conditions (Condition 30 and sub-conditions 30.1 through 30.5)	The document *Performance Audits for COMS* is referenced in Standard Operating Permit Condition XIII – Coal Fired Boilers and is a separate document, *not* a Standard Operating Permit Condition and is thus not required in the operating permit.
49.	Section 6 Conditions 31.1 through 31.6	Please remove Conditions 31.1 through 31.6.	Please remove these conditions so that the condition language matches that found in the 45-day Draft TVP, Condition 31 for NSPS Subpart A notification requirements.

Item No.	Citation	Requested Change	Basis
50.	Condition 31 and 31.7	Please combine Condition 31 and 31.7 as follows: **NSPS Subpart A notification**. For any affected facility regulated under NSPS requirements in 40 C.F.R. 60, the Permittee shall furnish the Department and EPA written or electronic notification <u>of any proposed replacement of an existing facility, for which the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, postmarked as soon as practicable, but no less than 60 days before commencement of replacement, and including the following information</u>: <u>...</u>	For permit consistency, please revise these conditions so that the permit language matches that found in the 45-day Draft TVP, Condition 31 for NSPS Subpart A notification requirements.
51.	Condition 35	Please remove Condition 35 and associated sub-conditions 35.1 through 35.4.	Initial source test requirement for affected units have been satisfied. This change was reflected in the draft significant revision issued on September 16, 2011 and UAF agrees with this change.
52.	Condition 39.1	Please remove Condition 39.1	The CMS has been installed prior to a performance test and has been installed, operated and calibrated in accordance with manufacturer's specifications. This change was reflected in the draft significant revision issued on September 16, 2011 and UAF agrees with this change.
53.	Condition 39.6(a)	Please revise Condition 39.6.a as follows: Reduce all date to six-minute opacity averages<u>. Averages</u> shall be calculated…	For permit consistency, please revise these conditions so that the permit language matches that found in the 45-day Draft TVP, Condition 38.5.a.

Item No.	Citation	Requested Change	Basis
54.	Condition 39.6 (c)	Please revise Condition 39.6.c as follows: Convert all excess emission into units of the applicable standard ~~used in condition 40, after~~. After conversion, the Permittee may round data to the same number of significant digits as used in the condition.	For permit consistency, please revise these conditions so that the permit language matches that found in the 45-day Draft TVP, Condition 38.5.c.
55.	Condition 40	Please remove Condition 40 and sub-conditions 40.1 through 40.4.	For permit consistency, please remove these conditions. This change was reflected in the draft significant revision issued on September 16, 2011 and in the 45-day Draft TVP and UAF agrees with this change. UAF has complied with the NSPS Subpart Db initial notification requirements.
56.	Condition 43.4(c)	Please revise Condition 43.4(c) as follows: Generating unit operating day: ~~,~~ the calendar date, the ~~. The~~ number of hours…	Improves the clarity of the permit condition.
57.	Condition 47.1	Please revise the stationary source's potential-to-emit as follows: the stationary source's assessable potential to emit of ~~1,788.6~~1,905 tpy; or	Please update the assessable potential to emit as shown, which matches the emissions shown in Section 2 Table 2-1.

Item No.	Citation	Requested Change	Basis
58.	New Conditions	Please add language for Compliance Assurance Monitoring (CAM) requirements. See pages 20 and 21 for suggested language. This language is based on conditions 42 through 46 in the EPA 45-Day Draft February 14, 2012 AQ0316TVP02 permit and the comments UAF has submitted to ADEC explaining that EU 8 is not subject to CAM.	UAF is subject to the CAM requirements under 40 CFR 64 for EU IDs 1 and 2 and objects to the inclusion of CAM requirements for EU ID 8. UAF has submitted comments to ADEC twice with explanations as to why EU ID 8 is not subject to CAM requirements under Part 64, once during the public comment period for the draft TV permit which closed on October 17, 2011 and the second time in response to the EPA 45-Day Draft February 14, 2012 AQ0316TVP02 permit. A copy of the comments addressing CAM in the 45-Day Draft permit in Conditions 43 are attached at the end of this section.
59.	Conditions 81-82	Please remove Conditions 81 and 82.	There is no regulatory basis for including either of these conditions in a Title V permit.
60.	Conditions 91-92	Please remove Conditions 91-92 and all associated sub-conditions	UAF has completed the CAM obligations of these two conditions.
61.	Section 12 Table C	Please remove EU ID 5A from Table C	

Item No.	Citation	Requested Change	Basis
62.	Section 12 Table C	Please include the following entry: EU IDs: 6, 7 and 24 Non-applicable Requirements: 40 C.F.R. §63 Subpart ZZZZ Reason for non-applicability: EU IDs 6, 7 and 24 are existing institutional emergency engines at an area source of HAPs that are not required to comply with the requirements of Subpart ZZZZ nor Subpart A including initial notification requirements as per §63.6590(b)(3)(viii).	EU IDs 6, 7 and 24 are existing institutional emergency stationary RICE located at an area source of HAPs which are not required to comply with the requirements of Subpart ZZZZ nor Subpart A including initial notification requirements as per §63.6590(b)(3)(viii).
63.	New - Owner Requested Limits	Please limit the allowed waste of EU ID 9A as described below: - Limit EU ID 9A to 109 tons of waste per year	Limiting the amount of waste EU ID 9A can combust a year avoids classification as a HAP major source.
64.	New - Owner Requested Limits	Please limit the operation of the following EU IDs as described below: Limit the operation of the following emission units as follows: - Limit EU IDs 19 through 21 to 19,650 hours per calendar year, total. - Limit EU ID 23 to 4,380 hours per calendar year. - Limit EU ID 28 to 100 hours per calendar year. - Limit EU ID 30 to 100 hours per calendar year.	Limiting hours of operation is a minor permitting classification avoidance. The limit on EU ID 28 is for avoidance of PSD lookback applicability for SO_2. The limits on EU IDs 19 through 21, 23, and 30 are to avoid minor permitting applicability and avoid PSD lookback applicability for NO_X. A more detailed explanation about these requested ORLs can be found in the Compliance Plan portion of Section 4.
65.	New – Owner Requested Limits	Please limit the diesel fuel sulfur content of the newly identified diesel fired sources as described below: For EU IDs 12 through 24, 26, 27 and 29 through 30, limit the diesel fuel to ULSD.	This limit is to avoid PSD lookback applicability for SO_2.

Item No.	Citation	Requested Change	Basis
66.	New – NESHAP Subpart ZZZZ	Please identify the required NESHAP 40 CFR 63 Subpart ZZZZ permit language for EU IDs 8, 23 and 30. Please see the attached tables at the end of this section, Tables B-1 through B-4 for applicable Subpart ZZZZ citations to the various engines.	EU IDs 8, 23 and 30 are affected NESHAP Subpart ZZZZ RICE units at an area source of HAPS. EU IDs 6, 7, and 24 are existing emergency units and per 63.6590(3)(viii) are not required to meet the requirements of Subpart ZZZZ or Subpart A including initial notification requirements. EU ID 8 is an existing non-emergency unit greater than 500 hp, and EU 23 and 30 are existing non-emergency units of less than 500 hp.
67.	New – NESHAP Subpart JJJJJJ	Please identify the required NESHAP 40 CFR 63 Subpart JJJJJJ permit language for EU IDs 1 through 4, 10 through 22. Please identify the required NESHAP 40 CFR 63 Subpart JJJJJJ permit language for EU IDs 1 through 4 and 10 through 22. Please see the attached tables at the end of this section, Tables C-1 through C-4 for applicable Subpart JJJJJJ citations to the various boilers.	EU IDs 1 through 4, and 10 through 22 are affected NESHAP Subpart JJJJJJ boilers at an area source of HAPS. EU IDs 1 and 2 are coal fired boilers of greater than 10 MMBtu/hr, EU IDs 3 and 4 are diesel fired boilers of greater than 10 MMBtu/hr, and EU IDS 10 through 22 are oil-fired boilers of less than 10 MMBtu/hr.
68.	Table C – Permit Shields Granted	Please include the following additional entry: **EU ID**: Diesel Fuel Tank at the Power Plant (no EU ID assigned) **Non–Applicable Requirements**: 40 C.F.R 60 Subpart Kb **Reason for Non-Applicability**: The diesel fuel tank at the Power Plant was constructed prior to the applicability date, nor has it been modified since the applicability date.	The diesel fuel tank at the Power Plant is not an affected source under NSPS Subpart Kb because the tank was constructed before June 23, 1984 and has not been modified since.

Item No.	Citation	Requested Change	Basis
69.	Table C – Permit Shields Granted	Please include the following additional entry: **EU ID**: Coal Handling Plant (no EU ID assigned) **Non–Applicable Requirements**: 40 C.F.R 60 Subpart Y **Reason for Non-Applicability**: The coal handling plant was constructed prior to the applicability date, nor has it been modified since the applicability date.	The coal handling plant at the coal fired power plant is not an affected source under NSPS Subpart Y because the facility was constructed before October 27, 1974. No modifications have been made to any components that would trigger applicability under 40 CFR 60 Subpart Y.
70.	Table C	Please correct the entry for EU ID 9A as follows: This determination is based upon federally enforceable owner requested limit in conditions 25 and 26. ~~Error! Reference source not found.~~ Rated capacity is 83.3 lb/hr (1 ton per day) ~~6.4tons per day~~…	
71.	Statement of Basis, Stationary Source Identification	Please remove the last two sentences of this discussion: …~~UAF has two backup oil-fired boilers in the West Ridge Research Building. These boilers are considered an insignificant source due to the owner imposed operating limit of 500 hours each per calendar year.~~	UAF requests that neither EU IDs 17 nor 18, the referenced West Ridge Research Building boilers, have a 500 hour per calendar year limit, each. It is not necessary for any compliance needs.

Units Subject to 40 CFR 64, Compliance Assurance Monitoring (CAM)

1. CAM for Control of Particulate Matter. The Permittee shall comply with the following requirements for particulate emissions from EU IDs 1 and 2. For EU IDs 1 and 2, the Permittee shall:

1.1 continuously monitor baghouse pressure differential across each baghouse. A baghouse pressure differential between 4 and 9 inches of water indicates normal operating conditions. Record instantaneous readings of pressure differential data electronically;

1.2 continuously monitor the temperature of each baghouse. A baghouse temperature of 350 to 550 degrees F indicates normal operating conditions. Record instantaneous temperature data electronically.

[40 C.F..R 64.6(c)(1)]
[40 C.F.R. 71.6(a)(3)(i)(A), 7/2/07]

2. CAM Plan Excursions and Corrective Actions. For EU IDs 1 and 2, indicator values that remain outside the value of normal operating conditions for more than one minute shall trigger an alarm and an investigation. Pressure or temperature differentials below the lower value of normal operations that occur during startup of the emission unit are not subject to further investigation or reporting provided pressure and temperature return to normal operating range after startup. Startup shall be defined as in 18 AAC 50 .990(103).

[40 C.F.R. 64.6(c)(2)]

2.1 Upon detecting an excursion or exceedance, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

[40 C.F.R. 64.7(d)]

2.2 The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard as applicable.

[40 C.F.R. 64.7(d)]

[40 C.F.R. 71.6(a)(3)(i)(A), 7/2/07]

3. CAM Plan Recordkeeping and Reporting. For EU IDs 1 and 2, keep records of the time and cause of all excursions outside the range of normal operating conditions; and any corrective

action taken as a result of the event that caused the alarm. Include these records with the Facility Operating Report. Startup shall be defined as in 18 AAC 50.990(103).

[40 C.F.R. 64.9(a)(2)]
40 C.F.R. 71.6(a)(3)(i)(A), 7/2/07]

4. Emission Limit Compliance and Exceedance Reporting. Observed normal operating conditions, as referenced in condition 1, shall not excuse the Permittee from complying with emission limits stated elsewhere in this permit. For EU IDs 1 and 2, an exceedance of any emissions limit (such as the state grain loading standard or opacity standard) shall be reported as an excess emissions as required under condition 75 (Excess Emissions and Permit Deviation Reports), whether or not values outside of CAM plan normal operating conditions are observed.

[40 C.F.R. 71.6(a)(3)(i)(A), 7/2/07]

Table A - Emissions Unit Inventory

EU ID	Location	EU Description (Model)	Rating/size	Installation Date
1	Power House	Coal-Fired Boiler #1 (Erie City)	84.5 MMBtu/hr[1]	1962
2	Power House	Coal-Fired Boiler #2 (Erie City)	84.5 MMBtu/hr[1]	1962
3	Power House	Dual-Fired Boiler #3 (gas, liquid, or coal water slurry) (Zurn)	180.9 MMBtu/hr	1970
4	Power House	Dual-Fired Boiler #4 (gas, liquid, or coal water slurry) (Zurn)	180.9 MMBtu/hr[5]	1987
~~5A~~	~~AHRC~~	~~Oil-Fired Boiler (Scotch #S2-Ps-50-150)~~	~~2.1 MMBtu/hr~~	~~2003~~
6	AHRC	Arctic Health Research Bldg. Emergency Generator, Old Backup Diesel Generators #1 (Cummins)	125 kW	1968
7	AHRC	Arctic Health Research Bldg. Emergency Generator, Old Backup Diesel Generators #2 (Cummins)	125 kW	1968
8	Power House	Peaking/Backup Generator (DEG), New Backup Diesel Generator (liquid or coal water slurry) (Morse Colt-Pielstick PC2.6)	13,266 hp	1999
9A	BiRD	BiRD Incinerator (Diesel) (Therm-Tec G-20-P-5)	83 lb/hr[4]	2006
10	Bldg, #AF256	AFES Boiler (Burnham/V9OGA)	1.08 MMBtu/hr[2]	2000
11	Bldg, #AF256	AFES Boiler (Burnham/V9OGA)	1.08 MMBtu/hr[2]	2000
12	Bldg, #FS420	Harper Boiler #1 (Weil McLain/BL776-S-W)	0.64 MMBtu/hr[2]	1985
13	Bldg, #FS420	Harper Boiler #2 (Weil McLain/BL776-S-W)	0.64 MMBtu/hr[2]	1985
14	Bldg, #FS518	Copper Lane Boiler (Energy Kinetics System 2000)	0.136 MMBtu/hr[2]	1985
15	Bldg, #FS519	Copper Lane Boiler (Energy Kinetics System 2000)	0.136 MMBtu/hr[2]	1985
16	Bldg, #FS520	Copper Lane (Honor's House) Boiler (Weil McLain/P-WGO-5)	0.233 MMBtu/hr[2]	2005

17	Bldg, #FS909	West Ridge Research Building Boiler #1 (Weil McLain/BL1688w-GPr10)	4.93 MMBtu/hr[6]	2003
18	Bldg, #FS909	West Ridge Research Building Boiler #2 (Weil McLain/BL1688w-GPr10)	4.93 MMBtu/hr[6]	2003
19	BiRD	BiRD RM 100U3 Boiler #1 (Weil McLain/2094W)	6.13 MMBtu/hr[2]	2004
20	BiRD	BiRD RM 100U3 Boiler #2 (Weil McLain/2094W)	6.13 MMBtu/hr[2]	2004
21	BiRD	BiRD RM 100U3 Boiler #3 (Weil McLain/2094W)	6.13 MMBtu/hr[2]	2004
22	BiRD	BiRD RM 100U3 Boiler #4 (Bryan/EB200-S-150-FDGO)	8.5 MMBtu/hr	2005
23	Bldg, #FS814	Alaska Center for Energy and Power Generator (Detroit Diesel/6043-TK35)	235 kW	2003
24	Bldg, #FS423	Old University Park Emergency Generator (Cummins/4B3.9-G2)	51 kW	2001
25	Bldg, #AF117	AFES Greenhouse Furnace (Sunderman/L02OUF)	0.209 MMBtu/hr[2]	1991
26	Bldg, #FS517	Copper Lane Furnace (Matzger)	0.08 MMBtu/hr	2001
27	Bldg, #FS712	Skarland Cabin Furnace (Rheem/ROBC-084QPEB)	0.140 MMBtu/hr[2]	2001 (est)
28	Bldg, #AF108	AFES Grain Dryer (Unknown)	2.43 MMBtu/hr[2]	1988
29	Bldg, #FS420	Harper Hot Water Heater (Bock)	0.236 MMBtu/hr	1985 (est)
30	Bldg, #FS103	Duckering Classroom Engine (Mitsubishi-Bosch)	45 kW	1987
31	Power House	Power Plant Ash Handling System (N/A)	8,225 tpy ash	1962

Notes:
AHRC, Arctic Health Research Center
BiRD, Biological and Research Building
The incinerator EU ID 9A is primarily used as a crematory for pathological waste.

[1] The rating of the coal-fired boilers as shown in Permit No. AQ0316TVP02 is incorrect. UAF has calculated the correct maximum heat input capacity. These calculations are provided in Section 2 of this application.

[2] These external combustion units have nameplates which list the ratings in gross output or do not specify whether the rating is output or input. A 75% efficiency has been assumed for these units to conservatively calculate the heat input rating.

[3] EU 8 is also authorized to combust coal slurry fuel. The unit has not operated on this fuel and will not do so in the future. Emissions estimates for this unit are based on diesel fuel combustion.

[4] The rating of EU 9A is listed incorrectly in the existing Title V permit. The correct rating is provided here.

[5] EU 4 has a 10% capacity factor limit per Condition 17 of Permit No. AQ0316TVP02. That limit is applied in all calculations in this application.

[6] The previous Title V renewal application proposed a limit of 500 hours per year for EU 17 and 18. This limit was not incorporated into the permit and UAF does not wish to apply an hour limit to these units.

[7] Emission unit EU5A listed on Permit No. AQ0316TVP02 has been removed.

University of Alaska, Fairbanks Campus Power Plant
Comments Regarding EPA 45-Day Draft, Significant Revision 1 to Permit No. AQ0316TVP02

1) Condition 31 – Please remove the citation to 40 Code of Federal Regulations (CFR) 60.7(a). Requirements in 40 CFR 60.7(a) are not identified in this condition. This change was originally requested in the comments submitted by the University Alaska, Fairbanks (UAF) during the public comment period which closed on October 17, 2011.

2) Condition 42.1 – Please add the word "pressure" to the last sentence of this condition as follows.

   Record instantaneous readings of ***pressure*** differential data electronically.

   The word "pressure" appeared in this permit condition in earlier versions of Permit No. AQ0316TVP02. UAF requested changes to this condition in the comments submitted during the public comment period which closed on October 17, 2011. However, UAF did not request removal of this word. The restoration of the word "pressure" provides increased clarity to the requirement in this condition.

3) Condition 43 – Please remove Condition 43 in its entirety.

   UAF does not agree that EU ID 8 is subject to CAM requirements under Part 64. UAF originally requested removal of this condition in the comments submitted during the public comment period which closed on October 17, 2011. The Alaska Department of Environmental Conservation (ADEC) provided a draft Response to Comments document to UAF on April 18, 2012. The draft response to the UAF comment states that ADEC has determined that "EU ID 8 has potential pre-control device emissions of NO_X that are greater than 100 tons per year," and that "the owner requested emission limit of 40 tons per year is not relevant in terms of determining whether EU ID 8 has potential pre-control device NO_X emissions in excess of 100 tons per year." ADEC concludes that 40 CFR 64.2(a)(3) is applicable to EU ID 8 and that EU ID 8 meets the applicability requirements of 40 CFR 64.2(a).

   UAF agrees that EU ID 8 meets the applicability criteria under 40 CFR 64.2(a)(1) because the emission unit is subject to an owner requested limit of less than 40 tons of NO_X emissions per year, in combination with EU ID 4. This limit is a requirement in Condition 16 of Permit No. AQ0316TVP02.

   UAF disagrees that EU ID 8 meets the applicability criteria under 40 CFR 64.2 (a)(2). The selective catalytic reduction (SCR) control device was not installed on EU ID 8 to enable EU ID 8 to achieve compliance with the NO_X emission limit. The SCR was installed as part of a clean coal demonstration project. One of the clean coal project goals was to evaluate the longevity of the SCR device while the engine was being operated using coal slurry fuel. Essentially, the SCR

device was installed as an experiment to determine how well the control system would function during the use of wet-coal fuel. The SCR device was not installed to allow UAF to save fuel or increase operations of EU ID 8 while operating under the owner requested limit, nor was the device installed to enable EU ID 8 to achieve compliance with the owner requested NO_X limit. The use of the control device is not relevant to determining the UAF compliance status with the owner requested NO_X limit.

UAF disagrees that EU ID 8 has potential pre-control device emissions of NO_X that are greater than 100 tons per year and meets the applicability criteria under 40 CFR 64.2(a)(3). Paragraph 40 CFR 64.2(a)(3) states that "*potential pre-control device emissions* have the same meaning as *potential to emit*, as defined in 40 CFR 64.1…" Paragraph 40 CFR 64.1 defines *potential to emit* as having "the same meaning as provided under part 70 or 71 of this chapter…" Paragraph 40 CFR 70.2 defines *potential to emit* as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air 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 is enforceable by the Administrator."

In the Response to Comments for Permit No. AQ0316TVP02, Revision 1, ADEC addressed this same question with UAF regarding the definition of potential to emit. In responding to the UAF request to remove Condition 43 from the permit, ADEC noted that "the definition of potential to emit under 40 CFR 64.1 and 40 CFR 70.2 does allow 'physical or operational limitations on the capacity of a source to emit and air pollutant' to be taken into account when calculating PTE."

UAF believes that the owner requested limit of 40 tons of NO_X per year is in fact relevant in terms of determining whether EU ID 8 has potential pre-control device emissions of NO_X greater than 100 tons per year. The definition of potential to emit in 40 CFR 70.2 clearly indicates that an operational limitation shall be treated as part of the design of the unit if the limit is enforceable by the Administrator. The owner requested limit of 40 tons of NO_X emissions per year is a permit limit in Condition 16 of Permit No. AQ0316TVP02 (in combination with EU ID 4). Therefore, the limit is enforceable by the Administrator and shall be treated as part of the design of EU ID 8. Because EU ID 8 has an enforceable limit restricting the maximum capacity to emit NO_X, and this limit is less than 40 tons per year which is less than 100 tons per year, the potential pre-control device emissions of EU ID 8 are less than 40 tons of NO_X per year.

4) Condition 44 – Consistent with the request to remove Condition 43 from the permit, please remove references to EU ID 8 from Condition 44.

5) Condition 45 – Consistent with the request to remove Condition 43 from the permit, please remove references to EU ID 8 from Condition 45.

6) Condition 45 – Please revise the regulatory citation for this condition as follows to correct a typographical error.

[40 CFR 64.9***(a)***(2)]

7) Condition 46 – Consistent with the request to remove Condition 43 from the permit, please remove references to EU ID 8 from Condition 46.

Table B-1. UAF - NESHAPs Subpart ZZZZ Source Inventory

Emission Unit No.	Emission Unit	Installation Date	Make/Model	Rating	Limits	Classification	Existing or New Unit?	40 CFR 63, Subpart ZZZZ	ZZZZ Initial Notification?	Notes
8	Power Plant Backup/Peaking Generator (DEG)	1999	Fairbanks Morse Colt-Pielstick PC2.6	13,266 hp		Non-Emergency	Existing	Note 1	Not Required	
23	Alaska Center for Energy and Power Research Generator	2003	Detroit Diesel/6043-TK35	235 kW	2160 hr/yr	Non-Emergency	Existing	Note 2	Not Required	
30	Duckerling Classroom Engine	1987	Detroit	45 kW	100 hr/yr	Non-Emergency	Existing	Note 2	Not Required	

Subpart ZZZZ Applicability Notes:

1 This unit is subject to requirements under 40 CFR 63 Subpart ZZZZ. Please see attached applicability analysis for existing non-emergency CI RICE $\geq$ 500 hp.

2 This unit is subject to requirements under 40 CFR 63 Subpart ZZZZ. Please see attached applicability analysis for existing non-emergency CI RICE < 500 hp.

Table B-2. UAF - NESHAPs Subpart ZZZZ Applicable Citations for Emergency Engines

Applicable Requirements in Tables 1 - 8 to 40 CFR 63 Subpart ZZZZ:

None

Heading	Citation	Description of Requirement
Affected Source	63.6590(b)(3)(viii)	The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements: … Existing institutional emergency stationary RICE located at an area source of HAP emissions.

Table B-3. UAF - NESHAPs Subpart ZZZZ Applicable Citations for Non-Emergency Engines > 500 HP

Applicable Requirements in Tables 1 - 8 to 40 CFR 63 Subpart ZZZZ:

Table 2b, Items 1 or 2
Table 2d, Item 3
Table 3, Item 4
Table 4, Items 1 or 3 (Depending on compliance method)
Table 5, Items 1 through 6 (Some items will apply depending on compliance method)
Table 6, Items 3, 10 or 11 (Depending on compliance method)
Table 7, Item 1
Table 8

Heading	Citation	Description of Requirement
Subject to this Subpart	63.6585	You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.
Affected Source	63.6590(a)(1)(iii)	For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
Compliance Date	63.6595(a)(1)	If you have an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations and operating limitations no later than May 3, 2013
	63.6595(c)	If you own or operate an affected source, you must meet the applicable notification requirements in §63.6645 and in 40 CFR part 63, subpart A.
	63.6603	Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart.
Emission and Operating Limitations	63.6603(a)	If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart which apply to you.
Fuel Requirements	63.6604	If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel. Existing non-emergency CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or at area sources in areas of Alaska not accessible by the FAHS are exempt from the requirements of this section.
General Compliance Requirements	63.6605	(a) You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times. (b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
Testing and Initial Compliance Requirements	63.6612	If you own or operate an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section. (a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions in §63.7(a)(2). (b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section. (1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly. (2) The test must not be older than 2 years. (3) The test must be reviewed and accepted by the Administrator. (4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.
	63.6615	If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.
	63.6620	Performance tests and procedures - subparagraphs apply depending on selected compliance method. See attached excerpt following Table B-4.
	63.6625(a)	If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either oxygen or CO_2 at both the inlet and the outlet of the control device according to the requirements in paragraphs (a)(1) through (4) of this section. (1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B. (2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in §63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1. (3) As specified in §63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data. (4) The CEMS data must be reduced as specified in §63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO_2 concentration.

Testing and Initial Compliance Requirements (continued)	63.6625(b)	If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (5) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.
	63.6625(b)(1) - (6)	(1) through (6) apply if this is the selected compliance method. See attached excerpt following Table B-4.
	63.6625(g)	If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (g)(2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska not accessible by the FAHS do not have to meet the requirements of paragraph (g) of this section. (1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or (2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals.
	63.6625(h)	If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
	63.6630	(a) You must demonstrate initial compliance with each emission and operating limitation that applies to you according to Table 5 of this subpart. (b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you. (c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645.
Continuous Compliance Requirements	63.6635(a)	If you must comply with emission and operating limitations, you must monitor and collect data according to this section.
	63.6635(b) - (c)	(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. (c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.
	63.6640	(a) You must demonstrate continuous compliance with each emission limitation and operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart. (b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE. (e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.
	63.6645	(a) You must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following; (2) An existing stationary RICE located at an area source of HAP emissions. (g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1). (h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii). (1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration. (2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to §63.10(d)(2).
	63.6650	(b) through (e) apply, depending on compliance method. See attached excerpt following Table B-4.
	63.6650(a)	You must submit each report in Table 7 of this subpart that applies to you.

Notifications, Reports, and Records	63.6650(f)	Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.
	63.6655(a)	If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section. (1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv). (2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. (3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii). (4) Records of all required maintenance performed on the air pollution control and monitoring equipment. (5) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
	63.6655(b)	If applicable, for each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section. (1) Records described in §63.10(b)(2)(vi) through (xi). (2) Previous (i.e., superseded) versions of the performance evaluation plan as required in §63.8(d)(3). (3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in §63.8(f)(6)(i), if applicable.
	63.6655(d)	You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.
	63.6660	(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). (b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. (c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).
Other Requirements and Information	63.6665	Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.
	63.6670	(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency. (b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency. (c) The authorities that will not be delegated to State, local, or tribal agencies are: (1) Approval of alternatives to the non-opacity emission limitations and operating limitations in §63.6600 under §63.6(g). (2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90. (3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90. (4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90. (5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in §63.6610(b).
	63.6675	Definitions - all apply.

Table B-4. UAF - NESHAPs Subpart ZZZZ Applicable Citations for Non-Emergency Engines < 500 HP

Applicable Requirements in Tables 1 - 8 to 40 CFR 63 Subpart ZZZZ:

Table 2d, Item 1 (EU ID 30) or 2 (EU ID 23)
Table 4, Items 1 or 3 (Depending on compliance method) (EU ID 23)
Table 5, Items 12 and 13 (EU ID 23)
Table 6, Item 9 (EU ID 30)
Table 7, Item 1 (EU ID 23)
Table 8

Heading	Citation	Description of Requirement
Subject to this Subpart	63.6585	You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.
Affected Source	63.6590(a)(1)(iii)	For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
Compliance Date	63.6595(a)(1)	If you have an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations and operating limitations no later than May 3, 2013.
	63.6595(c)	If you own or operate an affected source, you must meet the applicable notification requirements in §63.6645 and in 40 CFR part 63, subpart A.
	63.6603	Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart.
Emission and Operating Limitations	63.6603(a)	If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart which apply to you.
Fuel Requirements	63.6604	If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel. Existing non-emergency CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or at area sources in areas of Alaska not accessible by the FAHS are exempt from the requirements of this section.
General Compliance Requirements	63.6605	(a) You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times. (b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
Testing and Initial Compliance Requirements	63.6612	If you own or operate an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section. (a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions in §63.7(a)(2). (b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section. (1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly. (2) The test must not be older than 2 years. (3) The test must be reviewed and accepted by the Administrator. (4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.
	63.6615	If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.
	63.6620	Performance tests and procedures - subparagraphs apply depending on selected compliance method. See attached excerpt following Table B-4.
	63.6625(e)(4)	If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:... (4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;

	63.6625(g)	If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (g)(2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska not accessible by the FAHS do not have to meet the requirements of paragraph (g) of this section. (1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or (2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals.
	63.6625(h)	If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
	63.6625(i)	If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
	63.6630	(a) You must demonstrate initial compliance with each emission and operating limitation that applies to you according to Table 5 of this subpart. (b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you. (c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645.
Continuous Compliance Requirements	63.6635(a)	If you must comply with emission and operating limitations, you must monitor and collect data according to this section.
	63.6635(b)-(c)	(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. (c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.
	63.6640	(a) You must demonstrate continuous compliance with each emission limitation and operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart. (b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.
		(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.
		(a) You must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following; (2) An existing stationary RICE located at an area source of HAP emissions.

Notifications, Reports, and Records	63.6645	(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1). (h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii). (1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration. (2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to §63.10(d)(2).
	63.6650	(b) through (e) apply, depending on compliance method. See attached excerpt following Table B-4.
	63.6650(a)	You must submit each report in Table 7 of this subpart that applies to you.
	63.6650(f)	Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.
	63.6655(a)	If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section. (1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv). (2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. (3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii). (4) Records of all required maintenance performed on the air pollution control and monitoring equipment. (5) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
	63.6655(d)	You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.
	63.6660	(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). (b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. (c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).
Other Requirements and Information	63.6665	Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.
	63.6670	(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency. (b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency. (c) The authorities that will not be delegated to State, local, or tribal agencies are: (1) Approval of alternatives to the non-opacity emission limitations and operating limitations in §63.6600 under §63.6(g). (2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90. (3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90. (4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90. (5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in §63.6610(b).
	63.6675	Definitions - all apply.

Table B-3 to B-4 Excerpts

Performance Tests and Other Procedures
§63.6620

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in §63.7(e)(3). Each test run must last at least 1 hour.

(e) (1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \qquad \text{(Eq. 1)}$$

Where:
C_i= concentration of CO or formaldehyde at the control device inlet,
C_o= concentration of CO or formaldehyde at the control device outlet, and
R = percent reduction of CO or formaldehyde emissions.

(2) You must normalize the carbon monoxide (CO) or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2concentration is measured in lieu of oxygen concentration measurement, a CO_2correction factor is needed. Calculate the CO_2correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific $F_o$value for the fuel burned during the test using values obtained from Method 19, section 5.2, and the following equation:

$$F_o = \frac{0.209\, F_d}{F_c} \qquad \text{(Eq. 2)}$$

Where:
F_o= Fuel factor based on the ratio of oxygen volume to the ultimate CO_2volume produced by the fuel at zero percent excess air.
0.209 = Fraction of air that is oxygen, percent/100.
F_d= Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu).
F_c= Ratio of the volume of CO_2produced to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu).

(ii) Calculate the CO_2correction factor for correcting measurement data to 15 percent oxygen, as follows:

$$X_{co_2} = \frac{5.9}{F_o} \qquad \text{(Eq. 3)}$$

Where:
X_{co2}= CO_2correction factor, percent.
5.9 = 20.9 percent O_2−15 percent O_2, the defined O_2correction value, percent.

(iii) Calculate the $NO_X$and SO_2gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{co_2}}{\%CO_2} \qquad \text{(Eq. 4)}$$

Where:
%CO_2= Measured CO_2concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010]

Monitoring, Installation, Collection, Operation, and Maintenance Requirements §63.6625(b)

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (5) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements

outlined in paragraphs (b)(1)(i) through (v) of this section and in §63.8(d). As specified in §63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in §63.8(c)(1) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in §63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also §63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

Report Submitting

§63.6650

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in §63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in §63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in §63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to

minimize emissions in accordance with §63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010]

Table C-1. UAF - NESHAPs Subpart JJJJJJ Source Inventory

Emission Unit No.	Emission Unit	Installation Date	Manufacturer	Fuel Type	Rating	Limits	Existing or New Unit?	40 CFR 63 Subpart JJJJJJ	JJJJJJ Initial Notification?
1	Coal Fired Power Plant Boiler	1962	Erie City	Coal	140.4 MMBtu/hr		Existing	Note 1	Complete*
2	Coal Fired Power Plant Boiler	1962	Erie City	Coal	140.4 MMBtu/hr		Existing	Note 1	Complete*
3	Dual Fired Power Plant Boiler	1970	Zurn	NG	180.9 MMBtu/hr		Existing	Note 2	Complete*
				Diesel	180.9 MMBtu/hr				
4	Dual Fired Power Plant Boiler	1987	Zurn	NG	180.9 MMBtu/hr		Existing	Note 2	Complete*
				Diesel	180.9 MMBtu/hr				
10	AFES Farm	2000	Burnham/V9OGA	Diesel	0.808 MMBtu/hr		Existing	Note 3	Complete*
11	AFES Farm	2000	Burnham/V9OGA	Diesel	0.808 MMBtu/hr		Existing	Note 3	Complete*
12	Harper #1	Est. 1985	Weil McLain/BL776-S-W	#2 Heating Oil	0.48 MMBtu/hr		Existing	Note 3	Complete*
13	Harper #2	Est. 1985	Weil McLain/BL776-S-W	#2 Heating Oil	0.48 MMBtu/hr		Existing	Note 3	Complete*
14	Copper Lane	Est. 1985	Energy Kinetics System 2000	#2 Heating Oil	0.102 MMBtu/hr		Existing	Note 3	Complete*
15	Copper Lane	Est. 1985	Energy Kinetics System 2000	#2 Heating Oil	0.102 MMBtu/hr		Existing	Note 3	Complete*
16	Copper Lane (Honors House)	Est. 2005	Weil McLain/P-WGO-5	#1 Heating Oil	0.175 MMBtu/hr		Existing	Note 3	Complete*
17	West Ridge Research Building #1	2003	Weil-McLain/BL1688w-GPr10	#1 Heating Oil	4.93 MMBtu/hr	500 hr/yr	Existing	Note 3	Complete*
18	West Ridge Research Building #2	2003	Weil-McLain/BL1688w-GPr10	#1 Heating Oil	4.93 MMBtu/hr	500 hr/yr	Existing	Note 3	Complete*
19	BiRD RM 100U3 #1	2004	Weil-McLain/2094W	Diesel	4.6 MMBtu/hr	Used Seasonally	Existing	Note 3	Complete*
20	BiRD RM 100U3 #2	2004	Weil-McLain/2094W	Diesel	4.6 MMBtu/hr	Used Seasonally	Existing	Note 3	Complete*
21	BiRD RM 100U3 #3	2004	Weil-McLain/2094W	Diesel	4.6 MMBtu/hr	Used Seasonally	Existing	Note 3	Complete*
22	BiRD RM 100U3 #4	2005	Bryan/900	Diesel	8.5 MMBtu/hr		Existing	Note 3	Complete*

Subpart JJJJJJ Applicablity Notes

1 These units are subject to the requirements of 40 CFR 63 Subpart JJJJJJ. Please see the attached applicability for coal-fired boilers > 10 MMBtu/hr.

2 These units are subject to the requirements of 40 CFR 63 Subpart JJJJJJ. Please see the attached applicability for oil-fired boilers > 10 MMBtu/hr.

3 These units are subject to the requirements of 40 CFR 63 Subpart JJJJJJ. Please see the attached applicability for oil-fired boilers $\leq$ 10 MMBtu/hr.

*UAF submitted the initial notification required under 63.11225(a)(2) on September 15, 2011.

Emission Unit 4 is configured to burn diesel and NG. Under 40 CFR 63 Subpart JJJJJJ, the unit meets the definition of an oil subcategory boiler. Emission Unit 3 is permitted for dual-fired operations, but is currently configured to burn diesel only.

Table C-2. UAF - NESHAPs Subpart JJJJJJ Applicable Citations for Existing Coal-Fired Boilers > 10 MMBtu/hr

Applicable Requirements in Tables 1 - 8 to 40 CFR 63 Subpart JJJJJJ

Table 1, Item 6
Table 2, Items 1 and 4
Table 3, Items 6 (if chosen compliance method), 7, and 8
Table 4, Items 2 and 3
Table 5, Item 1
Table 6, Items depend on compliance method
Table 7, Item 6, depending on compliance method, and 7
Table 8

Heading	Citation	Description of Requirement
Subject to this Subpart	63.11193	You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.
Affected Source	63.11194(a)	This subpart applies to each new, reconstructed, or existing affected source as defined in paragraphs (a)(1) and (2) of this section. (1) The affected source is the collection of all existing industrial, commercial, and institutional boilers within a subcategory (coal, biomass, oil), as listed in §63.11200 and defined in §63.11237, located at an area source.
	63.11194(b)	An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010.
Compliance Dates	63.11196(a)	If you own or operate an existing affected boiler, you must achieve compliance with the applicable provisions in this subpart as specified in paragraphs (a)(1) through (3) of this section. (1) If the existing affected boiler is subject to a work practice or management practice standard of a tune-up, you must achieve compliance with the work practice or management standard no later than March 21, 2012. (2) If the existing affected boiler is subject to emission limits, you must achieve compliance with the emission limits no later than March 21, 2014. (3) If the existing affected boiler is subject to the energy assessment requirement, you must achieve compliance with the energy assessment requirement no later than March 21, 2014.
Boiler Subcategories	63.11200	The subcategories of boilers are coal, biomass, and oil. Each subcategory is defined in §63.11237.
Emissions Standards	63.11201	(a) You must comply with each emission limit specified in Table 1 to this subpart that applies to your boiler. (b) You must comply with each work practice standard, emission reduction measure, and management practice specified in Table 2 to this subpart that applies to your boiler. An energy assessment completed on or after January 1, 2008 that meets the requirements in Table 2 to this subpart satisfies the energy assessment portion of this requirement. (c) You must comply with each operating limit specified in Table 3 to this subpart that applies to your boiler. (d) These standards apply at all times.
General Compliance Requirements	63.11205(a)	At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
	63.11205(b)	You can demonstrate compliance with any applicable mercury emission limit using fuel analysis if the emission rate calculated according to §63.11211(c) is less than the applicable emission limit. Otherwise, you must demonstrate compliance using stack testing.
	63.11205(c)	If you demonstrate compliance with any applicable emission limit through performance stack testing and subsequent compliance with operating limits (including the use of continuous parameter monitoring system), with a CEMS, or with a COMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (3) of this section for the use of any CEMS, COMS, or continuous parameter monitoring system. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under §63.8(f).
	63.11205(c)(1) - (3)	All subparagraphs apply if following provisions of 63.11205(c).
	63.11210(a)	You must demonstrate initial compliance with each emission limit specified in Table 1 to this subpart that applies to you by either conducting performance (stack) tests, as applicable, according to §63.11212 and Table 4 to this subpart or, for mercury, conducting fuel analyses, as applicable, according to §63.11213 and Table 5 to this subpart.
	63.11210(b)	For existing affected boilers that have applicable emission limits, you must demonstrate initial compliance no later than 180 days after the compliance date that is specified in §63.11196 and according to the applicable provisions in §63.7(a)(2).
	63.11210(c)	For existing affected boilers that have applicable work practice standards, management practices, or emission reduction measures, you must demonstrate initial compliance no later than the compliance date that is specified in §63.11196 and according to the applicable provisions in §63.7(a)(2).

Initial Compliance Requirements	63.11211(a)	For affected boilers that demonstrate compliance with any of the emission limits of this subpart through performance (stack) testing, your initial compliance requirements include conducting performance tests according to §63.11212 and Table 4 to this subpart, conducting a fuel analysis for each type of fuel burned in your boiler according to §63.11213 and Table 5 to this subpart, establishing operating limits according to §63.11222, Table 6 to this subpart and paragraph (b) of this section, as applicable, and conducting continuous monitoring system (CMS) performance evaluations according to §63.11224. For affected boilers that burn a single type of fuel, you are exempted from the compliance requirements of conducting a fuel analysis for each type of fuel burned in your boiler. For purposes of this subpart, boilers that use a supplemental fuel only for startup, unit shutdown, and transient flame stability purposes still qualify as affected boilers that burn a single type of fuel, and the supplemental fuel is not subject to the fuel analysis requirements under §63.11213 and Table 5 to this subpart.
	63.11211(c)	If you elect to demonstrate compliance with an applicable mercury emission limit through fuel analysis, you must conduct fuel analyses according to §63.11213 and Table 5 to this subpart and follow the procedures in paragraphs (c)(1) through (3) of this section.
	63.11211(c)(1) - (3)	All subparagraphs apply if following provisions of 63.11211(c).
	63.11214(c)	If you own or operate an existing affected boiler with a heat input capacity of 10 million Btu per hour or greater, you must submit a signed certification in the Notification of Compliance Status report that an energy assessment of the boiler and its energy use systems was completed and submit, upon request, the energy assessment report.
	63.11214(d)	If you own or operate a boiler subject to emission limits in Table 1 of this subpart, you must minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available. You must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.
Performance Testing Requirements	63.11212	(a) You must conduct all performance tests according to §63.7(c), (d), (f), and (h). You must also develop a site-specific test plan according to the requirements in §63.7(c). (b) You must conduct each stack test according to the requirements in Table 4 to this subpart. (c) You must conduct performance stack tests at the representative operating load conditions while burning the type of fuel or mixture of fuels that have the highest emissions potential for each regulated pollutant, and you must demonstrate initial compliance and establish your operating limits based on these performance stack tests. For subcategories with more than one emission limit, these requirements could result in the need to conduct more than one performance stack test. Following each performance stack test and until the next performance stack test, you must comply with the operating limit for operating load conditions specified in Table 3 to this subpart. (d) You must conduct a minimum of three separate test runs for each performance stack test required in this section, as specified in §63.7(e)(3) and in accordance with the provisions in Table 4 to this subpart. (e) To determine compliance with the emission limits, you must use the F–Factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 of appendix A–7 to part 60 of this chapter to convert the measured particulate matter concentrations and the measured mercury concentrations that result from the initial performance test to pounds per million Btu heat input emission rates.
	63.11213	(a) You must conduct fuel analyses according to the procedures in paragraphs (b) and (c) of this section and Table 5 to this subpart, as applicable. You are not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. You are required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury in Table 1 of this subpart. (b) At a minimum, you must obtain three composite fuel samples for each fuel type according to the procedures in Table 5 to this subpart. Each composite sample must consist of a minimum of three samples collected at approximately equal intervals during a test run period. (c) Determine the concentration of mercury in the fuel in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 5 to this subpart.
		(a) If your boiler has a heat input capacity of 10 million Btu per hour or greater, you must conduct all applicable performance (stack) tests according to §63.11212 on an triennial basis, unless you follow the requirements listed in paragraphs (b) through (d) of this section. Triennial performance tests must be completed no more than 37 months after the previous performance test, unless you follow the requirements listed in paragraphs (b) through (d) of this section. (b) You can conduct performance stack tests less often for particulate matter or mercury if your performance stack tests for the pollutant for at least 3 consecutive years show that your emissions are at or below 75 percent of the emission limit, and if there are no changes in the operation of the affected source or air pollution control equipment that could increase emissions. In this case, you do not have to conduct a performance stack test for that pollutant for the next 2 years. You must conduct a performance stack test during the third year and no more than 37 months after the previous performance stack test.

	63.11220	(c) If your boiler continues to meet the emission limit for particulate matter or mercury, you may choose to conduct performance stack tests for the pollutant every third year if your emissions are at or below 75 percent of the emission limit, and if there are no changes in the operation of the affected source or air pollution control equipment that could increase emissions, but each such performance stack test must be conducted no more than 37 months after the previous performance test. (d) If you have an applicable CO emission limit, you must conduct triennial performance tests for CO according to §63.11212. Each triennial performance test must be conducted between no more than 37 months after the previous performance test. (e) If you demonstrate compliance with the mercury emission limit based on fuel analysis, you must conduct a fuel analysis according to §63.11213 for each type of fuel burned monthly. If you plan to burn a new type of fuel or fuel mixture, you must conduct a fuel analysis before burning the new type of fuel or mixture in your boiler. You must recalculate the mercury emission rate using Equation 1 of §63.11211. The recalculated mercury emission rate must be less than the applicable emission limit.
Continuous Compliance Requirements	63.11221	(a) You must monitor and collect data according to this section. (b) You must operate the monitoring system and collect data at all required intervals at all times the affected source is operating except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods (see section 63.8(c)(7) of this part), and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to effect monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable. (c) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system. (d) Except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments, failure to collect required data is a deviation of the monitoring requirements.
	63.11222(a)	You must demonstrate continuous compliance with each emission limit and operating limit in Tables 1 and 3 to this subpart that applies to you according to the methods specified in Table 7 to this subpart and to paragraphs (a)(1) through (4) of this section. (1) Following the date on which the initial compliance demonstration is completed or is required to be completed under §§63.7 and 63.11196, whichever date comes first, you must continuously monitor the operating parameters. Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests. (2) If you have an applicable mercury or PM emission limit, you must keep records of the type and amount of all fuels burned in each boiler during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in lower emissions of mercury than the applicable emission limit (if you demonstrate compliance through fuel analysis), or result in lower fuel input of mercury than the maximum values calculated during the last performance stack test (if you demonstrate compliance through performance stack testing).
		determine the mercury concentration for any new fuel type in units of pounds per million Btu, using the procedures in Equation 1 of §63.11211 based on supplier data or your own fuel analysis, and meet the requirements in paragraphs (a)(3)(i) or (ii) of this section.
	63.11222(b)	You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 and 3 to this subpart that apply to you. These instances are deviations from the emission limits in this subpart. These deviations must be reported according to the requirements in §63.11225.
	63.11223(c)	If you own or operate an existing or new coal-fired boiler with a heat input capacity of 10 million Btu per hour or greater, you must minimize the boiler's time spent during startup and shutdown following the manufacturer's recommended procedures and you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures.

Monitoring, Installation, Operation, and Maintenance Requirements	63.11224(a)	If your boiler is subject to a carbon monoxide emission limit in Table 1 to this subpart, you must install, operate, and maintain a continuous oxygen monitor according to the procedures in paragraphs (a)(1) through (6) of this section by the compliance date specified in §63.11196. The oxygen level shall be monitored at the outlet of the boiler.
	63.11224(a)(1) - (6)	All subparagraphs apply.
	63.11224(b)	If you are using a control device to comply with the emission limits specified in Table 1 to this subpart, you must maintain each operating limit in Table 3 to this subpart that applies to your boiler as specified in Table 7 to this subpart. If you use a control device not covered in Table 3 to this subpart, or you wish to establish and monitor an alternative operating limit and alternative monitoring parameters, you must apply to the United States Environmental Protection Agency (EPA) Administrator for approval of alternative monitoring under §63.8(f).
	63.11224(c)	If you demonstrate compliance with any applicable emission limit through stack testing and subsequent compliance with operating limits, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (4) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under §63.8(f).
	63.11224(c)(1) - (4)	All subparagraphs apply.
	63.11224(d)	If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each continuous parameter monitoring system according to the procedures in paragraphs (d)(1) through (5) of this section.
	63.11224(d)(1) - (5)	All subparagraphs apply.
	63.11225(a)	You must submit the notifications specified in paragraphs (a)(1) through (a)(5) of this section to the delegated authority.
	63.11225(a)(1)	You must submit all of the notifications in §§63.7(b): 63.8(e) and (f); 63.9(b) through (e); and 63.9(g) and (h) that apply to you by the dates specified in those sections.
	63.11225(a)(2)	As specified in §63.9(b)(2), you must submit the Initial Notification no later than 120 calendar days after May 20, 2011 or within 120 days after the source becomes subject to the standard.
	63.11225(a)(3)	If you are required to conduct a performance stack test you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance stack test is scheduled to begin.
	63.11225(a)(4)	You must submit the Notification of Compliance Status in accordance with §63.9(h) no later than 120 days after the applicable compliance date specified in §63.11196 unless you must conduct a performance stack test. If you must conduct a performance stack test, you must submit the Notification of Compliance Status within 60 days of completing the performance stack test. In addition to the information required in §63.9(h)(2), your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official: (i) "This facility complies with the requirements in §63.11214 to conduct an initial tune-up of the boiler." (ii) "This facility has had an energy assessment performed according to §63.11214(c)."
	63.11225(a)(5)	If you are using data from a previously conducted emission test to serve as documentation of conformance with the emission standards and operating limits of this subpart consistent with §63.7(e)(2)(iv), you must submit the test data in lieu of the initial performance test results with the Notification of Compliance Status required under paragraph (a)(4) of this section.
	63.11225(b)	You must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (4) of this section. You must submit the report by March 15 if you had any instance described by paragraph (b)(3) of this section. For boilers that are subject only to a requirement to conduct a biennial tune-up according to §63.11223(a) and not subject to emission limits or operating limits, you may prepare only a biennial compliance report as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report. (1) Company name and address. (2) Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart. (3) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken. (4) The total fuel use by each affected boiler subject to an emission limit, for each calendar month within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by you or EPA through a petition process to be a non-waste under §241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of §241.3, and the total fuel usage amount with units of measure.

Notification, Reporting, and Recordkeeping Requirements	63.11225(c)	You must maintain the records specified in paragraphs (c)(1) through (5) of this section.
	63.11225(c)(1)	As required in §63.10(b)(2)(xiv), you must keep a copy of each notification and report that you submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted.
	63.11225(c)(2)	You must keep records to document conformance with the work practices, emission reduction measures, and management practices required by §63.11214 as specified in paragraphs (c)(2)(i) and (ii) of this section. (ii) Records documenting the fuel type(s) used monthly by each boiler, including, but not limited to, a description of the fuel, including whether the fuel has received a non-waste determination by you or EPA, and the total fuel usage amount with units of measure. If you combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to §241.3(b)(1), you must keep a record which documents how the secondary material meets each of the legitimacy criteria. If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4), you must keep records as to how the operations that produced the fuel satisfies the definition of processing in §241.2. If the fuel received a non-waste determination pursuant to the petition process submitted under §241.3(c), you must keep a record that documents how the fuel satisfies the requirements of the petition process.
	63.11225(c)(3)	For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation that were done to demonstrate compliance with the mercury emission limits. Supporting documentation should include results of any fuel analyses. You can use the results from one fuel analysis for multiple boilers provided they are all burning the same fuel type.
	63.11225(c)(4)	Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.
	63.11225(c)(5)	Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.
	63.11225(c)(6)	You must keep the records of all inspection and monitoring data required by §§63.11221 and 63.11222, and the information identified in paragraphs (c)(6)(i) through (vi) of this section for each required inspection or monitoring. (i) The date, place, and time of the monitoring event. (ii) Person conducting the monitoring. (iii) Technique or method used. (iv) Operating conditions during the activity. (v) Results, including the date, time, and duration of the period from the time the monitoring indicated a problem to the time that monitoring indicated proper operation. (vi) Maintenance or corrective action taken (if applicable).
	63.11225(d)	Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each recorded action. You must keep each record onsite for at least 2 years after the date of each recorded action according to §63.10(b)(1). You may keep the records off site for the remaining 3 years.
	63.11225(e)	As of January 1, 2012 and within 60 days after the date of completing each performance test, as defined in §63.2, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (i.e., reference method) data and performance test (i.e., compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/ert tool.html/) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.
	63.11226	In response to an action to enforce the standards set forth in paragraph §63.11201 you may assert an affirmative defense to a claim for civil penalties for exceedances of numerical emission limits that are caused by malfunction, as defined at §63.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.
		(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that: (1) The excess emissions: (i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner, and (ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and (iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and (iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

Affirmative Defense of Emission Exceedance during Malfunction	63.11226(a)	(2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and (3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and (4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and (5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and (6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and (7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and (8) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and (9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.
	63.11226(b)	Notification. The owner or operator of the facility experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in §63.11201 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.
General Provisions	63.11235	Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.
	63.11236	(a) This subpart can be implemented and enforced by EPA or a delegated authority such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your state, local, or tribal agency. (b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraphs (c) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency. (c) The authorities that cannot be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (5) of this section. (1) Approval of an alternative non-opacity emission standard and work practice standards in §63.11223(a). (2) Approval of alternative opacity emission standard under §63.6(h)(9). (3) Approval of major change to test methods under §63.7(e)(2)(ii) and (f). A “major change to test method” is defined in §63.90. (4) Approval of a major change to monitoring under §63.8(f). A “major change to monitoring” is defined in §63.90. (5) Approval of major change to recordkeeping and reporting under §63.10(f). A “major change to recordkeeping/reporting” is defined in §63.90.
	63.11237	Definitions - all apply.

Table C-3. UAF - NESHAPs Subpart JJJJJJ Applicable Citations for Existing Oil-Fired Boilers > 10 MMBtu/hr

Applicable Requirements in Tables 1 - 8 to 40 CFR 63 Subpart JJJJJJ
Table 2, Items 3 and 4
Table 8

Heading	Citation	Description of Requirement
Subject to this Subpart	63.11193	You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.
Affected Source	63.11194(a)	This subpart applies to each new, reconstructed, or existing affected source as defined in paragraphs (a)(1) and (2) of this section. (1) The affected source is the collection of all existing industrial, commercial, and institutional boilers within a subcategory (coal, biomass, oil), as listed in §63.11200 and defined in §63.11237, located at an area source.
	63.11194(b)	An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010.
Compliance Dates	63.11196(a)	If you own or operate an existing affected boiler, you must achieve compliance with the applicable provisions in this subpart as specified in paragraphs (a)(1) through (3) of this section. (1) If the existing affected boiler is subject to a work practice or management practice standard of a tune-up, you must achieve compliance with the work practice or management standard no later than March 21, 2012. (3) If the existing affected boiler is subject to the energy assessment requirement, you must achieve compliance with the energy assessment requirement no later than March 21, 2014.
Boiler Subcategories	63.11200	The subcategories of boilers are coal, biomass, and oil. Each subcategory is defined in §63.11237.
Emissions Standards	63.11201(b)	You must comply with each work practice standard, emission reduction measure, and management practice specified in Table 2 to this subpart that applies to your boiler. An energy assessment completed on or after January 1, 2008 that meets the requirements in Table 2 to this subpart satisfies the energy assessment portion of this requirement.
	63.11201(d)	These standards apply at all times.
General Compliance Requirements	63.11205(a)	At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
Initial Compliance Requirements	63.11210(c)	For existing affected boilers that have applicable work practice standards, management practices, or emission reduction measures, you must demonstrate initial compliance no later than the compliance date that is specified in §63.11196 and according to the applicable provisions in §63.7(a)(2).
	63.11214(b)	If you own or operate an existing or new biomass-fired boiler or an existing or new oil-fired boiler, you must conduct a performance tune-up according to §63.11223(b) and you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted a tune-up of the boiler.
	63.11214(c)	If you own or operate an existing affected boiler with a heat input capacity of 10 million Btu per hour or greater, you must submit a signed certification in the Notification of Compliance Status report that an energy assessment of the boiler and its energy use systems was completed and submit, upon request, the energy assessment report.
Continuous Compliance Requirements	63.11223(a)	For affected sources subject to the work practice standard or the management practices of a tune-up, you must conduct a biennial performance tune-up according to paragraphs (b) of this section and keep records as required in §63.11225(c) to demonstrate continuous compliance. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up.
		You must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7) of this section.
		(1) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 36 months). (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. (3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. (4) Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available.

	63.11223(b)	(5) Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). (6) Maintain onsite and submit, if requested by the Administrator, biennial report containing the information in paragraphs (b)(6)(i) through (iii) of this section. (i) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler. (ii) A description of any corrective actions taken as a part of the tune-up of the boiler. (iii) The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler. (7) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.
Notification, Reporting, and Recordkeeping Requirements	63.11225(a)	You must submit the notifications specified in paragraphs (a)(1) through (a)(5) of this section to the delegated authority.
	63.11225(a)(1)	You must submit all of the notifications in §§63.9(b) through (d) and 63.9(h) by the dates specified in those sections.
	63.11225(a)(2)	As specified in §63.9(b)(2), you must submit the Initial Notification no later than 120 calendar days after May 20, 2011 or within 120 days after the source becomes subject to the standard.
	63.11225(a)(4)	You must submit the Notification of Compliance Status in accordance with §63.9(h) no later than 120 days after the applicable compliance date specified in §63.11196. In addition to the information required in §63.9(h)(2), your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official: (i) "This facility complies with the requirements in §63.11214 to conduct an initial tune-up of the boiler." (ii) "This facility has had an energy assessment performed according to §63.11214(c)."
	63.11225(b)	You must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (4) of this section. You must submit the report by March 15 if you had any instance described by paragraph (b)(3) of this section. For boilers that are subject only to a requirement to conduct a biennial tune-up according to §63.11223(a) and not subject to emission limits or operating limits, you may prepare only a biennial compliance report as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report. (1) Company name and address. (2) Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart. (3) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.
	63.11225(c)	You must maintain the records specified in paragraphs (c)(1) through (5) of this section.
	63.11225(c)(1)	As required in §63.10(b)(2)(xiv), you must keep a copy of each notification and report that you submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted.
	63.11225(c)(2)	and management practices required by §63.11214 as specified in paragraphs (c)(2)(i) and (ii) of this section. (i) Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. *(ii) Records documenting the fuel type(s) used monthly by each boiler, including, but not limited to, a description of the fuel, including whether the fuel has received a non-waste determination by you or EPA, and the total fuel usage amount with units of measure. If you combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to §241.3(b)(1), you must keep a record which documents how the secondary material meets each of the legitimacy criteria. If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4), you must keep records as to how the operations that produced the fuel satisfies the definition of processing in §241.2. If the fuel received a non-waste determination pursuant to the petition process submitted under §241.3(c), you must keep a record that documents how the fuel satisfies the requirements of the petition*
	63.11225(c)(4)	Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.
	63.11225(c)(5)	Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.
	63.11225(d)	Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each recorded action. You must keep each record onsite for at least 2 years after the date of each recorded action according to §63.10(b)(1). You may keep the records off site for the remaining 3 years.

	63.11225(g)	If you intend to switch fuels, and this fuel switch may result in the applicability of a different subcategory or a switch out of subpart JJJJJJ due to a switch to 100 percent natural gas, you must provide 30 days prior notice of the date upon which you will switch fuels. The notification must identify: (1) The name of the owner or operator of the affected source, the location of the source, the boiler(s) that will switch fuels, and the date of the notice. (2) The currently applicable subcategory under this subpart. (3) The date on which you became subject to the currently applicable standards. (4) The date upon which you will commence the fuel switch.
General Provisions	63.11235	Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.
	63.11236	(a) This subpart can be implemented and enforced by EPA or a delegated authority such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your state, local, or tribal agency. (b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraphs (c) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency. (c) The authorities that cannot be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (5) of this section. (1) Approval of an alternative non-opacity emission standard and work practice standards in §63.11223(a). (2) Approval of alternative opacity emission standard under §63.6(h)(9). (3) Approval of major change to test methods under §63.7(e)(2)(ii) and (f). A “major change to test method” is defined in §63.90. (4) Approval of a major change to monitoring under §63.8(f). A “major change to monitoring” is defined in §63.90. (5) Approval of major change to recordkeeping and reporting under §63.10(f). A “major change to recordkeeping/reporting” is defined in §63.90.
	63.11237	Definitions - all apply.

Table C-4. UAF - NESHAPs Subpart JJJJJJ Applicable Citations for Existing Oil-Fired Boilers ≤ 10 MMBtu/hr

Applicable Requirements in Tables 1 - 8 to 40 CFR 63 Subpart JJJJJJ
Table 2, Item 3
Table 8

Heading	Citation	Description of Requirement
Subject to this Subpart	63.11193	You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.
Affected Source	63.11194(a)	This subpart applies to each new, reconstructed, or existing affected source as defined in paragraphs (a)(1) and (2) of this section. (1) The affected source is the collection of all existing industrial, commercial, and institutional boilers within a subcategory (coal, biomass, oil), as listed in §63.11200 and defined in §63.11237, located at an area source.
	63.11194(b)	An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010.
Compliance Dates	63.11196(a)	If you own or operate an existing affected boiler, you must achieve compliance with the applicable provisions in this subpart as specified in paragraphs (a)(1) through (3) of this section. (1) If the existing affected boiler is subject to a work practice or management practice standard of a tune-up, you must achieve compliance with the work practice or management standard no later than March 21, 2012.
Boiler Subcategories	63.11200	The subcategories of boilers are coal, biomass, and oil. Each subcategory is defined in §63.11237.
Emissions Standards	63.11201(b)	You must comply with each work practice standard, emission reduction measure, and management practice specified in Table 2 to this subpart that applies to your boiler. An energy assessment completed on or after January 1, 2008 that meets the requirements in Table 2 to this subpart satisfies the energy assessment portion of this requirement.
	63.11201(d)	These standards apply at all times.
General Compliance Requirements	63.11205(a)	equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved.
Initial Compliance Requirements	63.11210(c)	For existing affected boilers that have applicable work practice standards, management practices, or emission reduction measures, you must demonstrate initial compliance no later than the compliance date that is specified in §63.11196 and according to the applicable provisions in §63.7(a)(2).
	63.11214(b)	If you own or operate an existing or new biomass-fired boiler or an existing or new oil-fired boiler, you must conduct a performance tune-up according to §63.11223(b) and you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted a tune-up of the boiler.
Continuous Compliance Requirements	63.11223(a)	For affected sources subject to the work practice standard or the management practices of a tune-up, you must conduct a biennial performance tune-up according to paragraphs (b) of this section and keep records as required in §63.11225(c) to demonstrate continuous compliance. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up.
	63.11223(b)	You must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7) of this section.
		(1) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 36 months). (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. (3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. (4) Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available.
		(5) Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). (6) Maintain onsite and submit, if requested by the Administrator, biennial report containing the information in paragraphs (b)(6)(i) through (iii) of this section. (i) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler. (ii) A description of any corrective actions taken as a part of the tune-up of the boiler. (iii) The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler. (7) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.

	63.11225(a)	You must submit the notifications specified in paragraphs (a)(1) through (a)(5) of this section to the delegated authority.
Notification, Reporting, and Recordkeeping Requirements	63.11225(a)(1)	You must submit all of the notifications in §§63.9(b) through (d) and 63.9(h) by the dates specified in those sections.
	63.11225(a)(2)	As specified in §63.9(b)(2), you must submit the Initial Notification no later than 120 calendar days after May 20, 2011 or within 120 days after the source becomes subject to the standard.
	63.11225(a)(4)	You must submit the Notification of Compliance Status in accordance with §63.9(h) no later than 120 days after the applicable compliance date specified in §63.11196. In addition to the information required in §63.9(h)(2), your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official: (i) "This facility complies with the requirements in §63.11214 to conduct an initial tune-up of the boiler." (ii) "This facility has had an energy assessment performed according to §63.11214(c)."
	63.11225(b)	You must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (4) of this section. You must submit the report by March 15 if you had any instance described by paragraph (b)(3) of this section. For boilers that are subject only to a requirement to conduct a biennial tune-up according to §63.11223(a) and not subject to emission limits or operating limits, you may prepare only a biennial compliance report as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report. (1) Company name and address. (2) Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart. (3) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.
	63.11225(c)	You must maintain the records specified in paragraphs (c)(1) through (5) of this section.
	63.11225(c)(1)	As required in §63.10(b)(2)(xiv), you must keep a copy of each notification and report that you submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted.
	63.11225(c)(2)	You must keep records to document conformance with the work practices, emission reduction measures, and management practices required by §63.11214 as specified in paragraphs (c)(2)(i) and (ii) of this section. (i) Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. *(ii) Records documenting the fuel type(s) used monthly by each boiler, including, but not limited to, a description of the fuel, including whether the fuel has received a non-waste determination by you or EPA, and the total fuel usage amount with units of measure. If you combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to §241.3(b)(1), you must keep a record which documents how the secondary material meets each of the legitimacy criteria. If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4), you must keep records as to how the operations that produced the fuel satisfies the definition of processing in §241.2. If the fuel received a non-waste determination pursuant to the petition process submitted under §241.3(c), you must keep a record that documents how the fuel satisfies the requirements of the petition process.*
	63.11225(c)(4)	Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.
	63.11225(c)(5)	Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.
	63.11225(d)	Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each recorded action. You must keep each record onsite for at least 2 years after the date of each recorded action according to §63.10(b)(1). You may keep the records off site for the remaining 3 years.

General Provisions	63.11235	Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.
	63.11236	(a) This subpart can be implemented and enforced by EPA or a delegated authority such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your state, local, or tribal agency. (b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraphs (c) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency. (c) The authorities that cannot be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (5) of this section. (1) Approval of an alternative non-opacity emission standard and work practice standards in §63.11223(a). (2) Approval of alternative opacity emission standard under §63.6(h)(9). (3) Approval of major change to test methods under §63.7(e)(2)(ii) and (f). A “major change to test method” is defined in §63.90. (4) Approval of a major change to monitoring under §63.8(f). A “major change to monitoring” is defined in §63.90. (5) Approval of major change to recordkeeping and reporting under §63.10(f). A “major change to recordkeeping/reporting” is defined in §63.90.
	63.11237	Definitions - all apply.

Section 6

ORL Incinerator Application

Section 6.1

Owner Requested Limit (ORL) Application: Required Application Elements

This ORL application requests an operational limit for the incinerator at UAF, EU 9A. UAF has had an incinerator on campus since 1982, prior to the Clean Air Act amendments in 1990. UAF wishes to substantiate the prior use of the current incinerator installed at UAF, EU 9A. This incinerator is a small source of hydrochloric acid (HCl) emissions, but an ORL is needed to provide an enforceable limit on HCl emissions to allow UAF to continue to be classified as an area source of hazardous air pollutants (HAPs). A minor permit application under 18 AAC 50.508(5) is not necessary because the incinerator does not and has not previously triggered any minor air quality permitting thresholds.

Each required element of a complete ORL application is provided or discussed below, per 18 Alaska Administrative Code (AAC) 50.225(b).

Citation	Summary of Information Required	Comments
18 AAC 50.225(b)(1)	Stationary Source Identification Form	A completed stationary source identification form is provided in Section 6.2.
18 AAC 50.225(b)(2)	Stationary Source Emission Units	An inventory of all emission units at the stationary source is provided in Section 2 of this Title V permit renewal application.
18 AAC 50.225(b)(3)	Actual & Potential To Emit Calculations	Actual emission calculations for EU 9A are provided in Tables 6-4 and 6-5. Potential emissions for EU 9A with the proposed ORL are provided in Tables 6-6 and 6-7. Potential emissions for all emission units at the stationary source are provided in Section 2 of this Title V permit renewal application.
18 AAC 50.225(b)(4)	Proposed Limit Description	Proposed limit: Incinerator waste combustion in EU 9A is limited to 109 tons per rolling 12-month period. A description of the effect the limit will have on the stationary source's potential to emit and the allowable emissions for each air pollutant is provided in Tables 6-6 through 6-8, and in Section 2 of this Title permit renewal application. Unlimited potential emissions of EU 9A are provided in Tables 6-1 through 6-3. Potential emissions of EU 9A with the proposed ORL are provided in Tables 6-6 through 6-8. Potential HAPs emissions for the stationary source are provided in Table 6-3. Potential HAPs emissions at the stationary source with the

		proposed ORL for EU9A are provided in Table 6-8.
18 AAC 50.225(b)(5)	Limit Verification	The verifiable method to attain and maintain the limit is provided below, including monitoring and recordkeeping requirements. UAF is currently required to monitor and record the amount of waste combusted in EU 9A. UAF will continue to monitor and keep monthly records to document the weight of waste combusted. Following the end of each calendar month, UAF will total the monthly weights of combusted waste to determine the rolling 12-month total.
18 AAC 50.225(b)(6)	Requirements UAF is Seeking to Avoid	UAF proposes this ORL to avoid HAP major classification under 40 CFR 63.2 and pre-construction review requirements under 18 AAC 50.316. Without a limit, the combined HCl potential emissions from the incinerator and coal-fired boilers EU 1 and 2, would exceed the HAP major threshold of 10 tons per year as shown in Table 6-3. The proposed 109 ton per rolling 12-month period waste combustion ORL will limit the UAF potential emissions of HCl to less than 10 tons per year as shown in Table 6-8. Unlimited potential HAP emissions at UAF do not trigger the aggregate HAP major source threshold of 25 tons per year, as shown in Table 6-3.
18 AAC 50.225(b)(7)	Permit Classification Avoidance	This ORL is submitted as part of the Title V permit renewal application. Applying the proposed ORL avoids all remaining permit classifications under Alaska Statute (AS) 46.14 and 18 AAC 50.
18 AAC 50.225(b)(8)	Owner/Operator Compliance Statement	University of Alaska will be able to comply with this limit.
18 AAC 50.225(b)(9)	Signature of Responsible Official	The signature appears on the Stationary Source Identification Form provided in Section 6.2.

Section 6.2

Owner Requested Limit (ORL) Application: ID Form

OWNER REQUESTED LIMIT IDENTIFICATION FORM

Alaska Department of Environmental Conservation **Owner Requested Limit Application**	**ADEC USE ONLY** Receiving Date: ADEC Control #: ORL :

STATIONARY SOURCE IDENTIFICATION FORM

Section 1 Stationary Source Information

Stationary Source Name:University of Alaska Fairbanks Power Plant			
Project Name (if different):	Stationary Source Contact: Frances M. Isgrigg, P.E.		
Source Physical Address:802 Alumni Dr.	City:Fairbanks	State:AK	Zip:99775
	Telephone: 907-474-5487		
	E-Mail Address: fisgrigg@alaska.edu		
UTM Coordinates or Latitude/Longitude: Lat/Long	Northing:	Easting:	Zone:
	Latitude:64* 51'	Longitude:147* 51'	

Section 2 Legal Owner

Name:University of Alaska		
Mailing Address: PO Box 751845		
City:Fairbanks	State:AK	Zip:99775
Telephone #:907-474-5487		
E-Mail Address: fisgrigg@alaska.edu		

Section 3 Operator *(if different from owner)*

Name:.		
Mailing Address:		
City:	State:	Zip:
Telephone #:		
E-Mail Address:		

Section 4 Designated Agent *(for service of process)*

Name:Frances M. Isgrigg, P.E.		
Mailing Address:PO Box 751845		
City Fairbanks	State:AK	Zip:99775
Physical Address:1855 Marika Rd.		
City:Fairbanks	State:AK	Zip:99775
Telephone #:907-474-5487		
E-Mail Address:fisgrigg@alaska.edu		

Section 5 Billing Contact Person *(if different from owner)*

Name:Accounts Payable, Admistrative Service Center		
Mailing Address:PO Box 75920		
City:Fairbanks	State:AK	Zip:99775
Telephone #:		
E-Mail Address:		

Section 6 Application Contact

Name:Courtney Kimball			
Mailing Address:SLR International Corp. 543 Third Avenue, Suite 235	City:Fairbanks	State:AK	Zip:99701
	Telephone:907-452-2280		
	E-Mail Address:ckimball@slrconsulting.com		

Section 7 Certification

This certification applies to the Air Quality Control Owner Requested Limit Application for the University of Alaska
submitted to the department on: _____.
(Stationary Source Name)

Type of Application
☒ Initial Application
☐ Change to Initial Application

The application is **NOT** complete unless the certification of truth, accuracy, and completeness on this form bears the **signature of a responsible official** of the firm making the application. (18 AAC 50.205)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

"Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

Signature: Pat K Pitney	Date: 6/22/2012
Printed Name: Pat Pitney	Title: Vice Chancellor for Administrative Services

Section 13 Attachments

☒ Attachments Included. List attachments:
Section 6.1- Required Application Elements
Section 6.3- Emission Unit Inventory and Emission Calculations

Section 6.3
EU 9A Owner Requested Limit (ORL) Application Emission Calculations

Reference for all emissions calculations in this section: AP-42, Tables 2.3-2 through 2.3-6 and 2.3-9 through 2.3-13. Pathological waste incinerator emission factors are not available. Medical waste incineration emission factors are expected to be representative of emissions from a pathological waste incinerator.

Potential Waste Combustion Without ORL[1] 363.5 ton/yr

[1] Calculation= (Emission Unit Capacity, lb/hr) x (8760, hr/yr) / (2,000 lb/ton)

Table 6-1. Criteria Potential Emissions Without ORL- EU 9A

Emission	Emission Unit Rated Capacity	Emission Factor	Potential Emissions[2]
NO_x	83 lb/hr	3.56 lb/ton	0.65 ton/yr
CO	83 lb/hr	2.95 lb/ton	0.54 ton/yr
PM_{10}	83 lb/hr	4.70 lb/ton	0.85 ton/yr
$PM_{2.5}$[1]	83 lb/hr	4.70 lb/ton	0.85 ton/yr
VOC	83 lb/hr	0.299 lb/ton	0.05 ton/yr
SO_2	83 lb/hr	2.17 lb/ton	0.39 ton/yr
		Total PTE	**3.34 ton/yr**

[1] As a conservative assumption, PM_{10} emissions are assumed to represent $PM_{2.5}$ emissions.
[2] Potential Emissions, tpy = (Potential Waste Combustion Without ORL, ton/yr) x (Emission Factor, lb/ton) / (2,000 lb/ton)

Table 6-2. HAP Potential Emissions Without ORL- EU 9A

CAS No.	Chemical Name	Emission Factor	Potential Emissions[1]
1746016	Chlorinated dibenzo-p-dioxins (Total)	2.14E-05 lb/ton	3.88E-06 ton/yr
N/A	Antimony Compounds	1.28E-02 lb/ton	2.33E-03 ton/yr
N/A	Arsenic Compounds	2.42E-04 lb/ton	4.40E-05 ton/yr
N/A	Beryllium Compounds	6.25E-06 lb/ton	1.14E-06 ton/yr
N/A	Cadmium Compounds	5.48E-03 lb/ton	9.96E-04 ton/yr
7782505	Chlorine	1.05E-01 lb/ton	1.91E-02 ton/yr
N/A	Chromium Chompounds	7.75E-04 lb/ton	1.41E-04 ton/yr
132649	Dibenzofurans	7.16E-05 lb/ton	1.30E-05 ton/yr
7647010	Hydrochloric acid	33.5 lb/ton	6.09E+00 ton/yr
7664393	Hydrogen fluoride (Hydrofluoric acid)	1.49E-01 lb/ton	2.71E-02 ton/yr
N/A	Lead Compounds	7.28E-02 lb/ton	1.32E-02 ton/yr
N/A	Manganese Compounds	5.67E-04 lb/ton	1.03E-04 ton/yr
N/A	Mercury Compounds	1.07E-01 lb/ton	1.94E-02 ton/yr
N/A	Nickel Compounds	5.90E-04 lb/ton	1.07E-04 ton/yr
1336363	Polychlorinated biphenyls(Aroclors)	4.65E-05 lb/ton	8.45E-06 ton/yr
		Total HAP PTE	**6.17 ton/yr**

[1] Potential Emissions, tpy = (Emission Factor, lb/ton) x (Potential Waste Combustion Without ORL, ton/yr) / (2,000 lb/ton)

Table 6-3. Potential HAP Emissions- Stationary Source

HAP	All Other UAF Emission Units PTE[1]	Incinerator EU 9A PTE	UAF Total PTE	40 CFR 63 Major Source	
				Emission Threshold	Triggered?
Hydrochloric acid	6.68 tpy	6.09 tpy	**12.77 ton/yr**	10 ton/yr	**Yes**
All HAP	18.375 tpy	6.17 tpy	**24.55 ton/yr**	25 ton/yr	No

[1] From Section 2, Table 2-9 Summary of Potential HAPs Emissions, in this Title V renewal application.

2010 Actual Waste Combustion[1] 9.2 ton/yr

[1] Calendar year 2010 waste combustion tonnage is used because UAF records indicate that the most waste in recent years was combusted in 2010.

Table 6-4. Criteria Pollutant Actual Emissions - EU 9A

Emission	Emission Unit Rated Capacity	Emission Factor	Actual Emissions[2]
NO_x	83 lb/hr	3.56 lb/ton	0.02 ton/yr
CO	83 lb/hr	2.95 lb/ton	0.01 ton/yr
PM_{10}	83 lb/hr	4.70 lb/ton	0.02 ton/yr
$PM_{2.5}$[1]	83 lb/hr	4.70 lb/ton	0.02 ton/yr
VOC	83 lb/hr	0.299 lb/ton	0.00 ton/yr
SO_2	83 lb/hr	2.17 lb/ton	0.01 ton/yr
		Total	**0.08 ton/yr**

[1] As a conservative assumption, PM_{10} emissions are assumed to represent $PM_{2.5}$ emissions.
[2] Actual Emissions, ton/yr = (Actual Waste Combustion, ton/yr) x (Emission Factor, lb/ton) / (2,000 lb/ton)

Table 6-5. HAP Actual Emissions- EU 9A

CAS No.	Chemical Name	Emission Factor	Actual Emissions[1]
1746016	Chlorinated dibenzo-p-dioxins (Total)	2.14E-05 lb/ton	9.82E-08 ton/yr
N/A	Antimony Compounds	1.28E-02 lb/ton	5.89E-05 ton/yr
N/A	Arsenic Compounds	2.42E-04 lb/ton	1.11E-06 ton/yr
N/A	Beryllium Compounds	6.25E-06 lb/ton	2.88E-08 ton/yr
N/A	Cadmium Compounds	5.48E-03 lb/ton	2.52E-05 ton/yr
7782505	Chlorine	1.05E-01 lb/ton	4.83E-04 ton/yr
N/A	Chromium Chompounds	7.75E-04 lb/ton	3.57E-06 ton/yr
132649	Dibenzofurans	7.16E-05 lb/ton	3.29E-07 ton/yr
7647010	Hydrochloric acid	33.5 lb/ton	1.54E-01 ton/yr
7664393	Hydrogen fluoride (Hydrofluoric acid)	1.49E-01 lb/ton	6.85E-04 ton/yr
N/A	Lead Compounds	7.28E-02 lb/ton	3.35E-04 ton/yr
N/A	Manganese Compounds	5.67E-04 lb/ton	2.61E-06 ton/yr
N/A	Mercury Compounds	1.07E-01 lb/ton	4.92E-04 ton/yr
N/A	Nickel Compounds	5.90E-04 lb/ton	2.71E-06 ton/yr
1336363	Polychlorinated biphenyls(Aroclors)	4.65E-05 lb/ton	2.14E-07 ton/yr
		Total	**0.16 ton/yr**

[1] Actual Emissions, ton/yr = (Emission Factor, lb/ton) x (Actual Waste Combustion, ton/yr) / (2,000 lb/ton)

Proposed Waste Combustion ORL 109 ton/yr

Table 6-6. Criteria Pollutant Potential Emissions With ORL- EU 9A

Emission	Emission Unit Rated Capacity	Emission Factor	Potential Emissions[2]
NO_x	83 lb/hr	3.56 lb/ton	0.19 ton/yr
CO	83 lb/hr	2.95 lb/ton	0.16 ton/yr
PM_{10}	83 lb/hr	4.70 lb/ton	0.26 ton/yr
$PM_{2.5}$[1]	83 lb/hr	4.70 lb/ton	0.26 ton/yr
VOC	83 lb/hr	0.299 lb/ton	0.02 ton/yr
SO_2	83 lb/hr	2.17 lb/ton	0.12 ton/yr
		Total PTE	**1.00 ton/yr**

[1] As a conservative assumption, PM_{10} emissions are assumed to represent $PM_{2.5}$ emissions.
[2] Potential Emissions, ton/yr = (Potential Waste Combustion With ORL, ton/yr) x (Emission Factor, lb/ton) / (2,000 lb/ton)

Table 6-7. HAP Potential Emissions With ORL- EU 9A

CAS No.	Chemical Name	Emission Factor[2]	Potential Emissions[1]
1746016	Chlorinated dibenzo-p-dioxins (Total)	2.14E-05 lb/ton	1.16E-06 ton/yr
N/A	Antimony Compounds	1.28E-02 lb/ton	6.98E-04 ton/yr
N/A	Arsenic Compounds	2.42E-04 lb/ton	1.32E-05 ton/yr
N/A	Beryllium Compounds	6.25E-06 lb/ton	3.41E-07 ton/yr
N/A	Cadmium Compounds	5.48E-03 lb/ton	2.99E-04 ton/yr
7782505	Chlorine	1.05E-01 lb/ton	5.72E-03 ton/yr
N/A	Chromium Chompounds	7.75E-04 lb/ton	4.22E-05 ton/yr
132649	Dibenzofurans	7.16E-05 lb/ton	3.90E-06 ton/yr
7647010	Hydrochloric acid	33.5 lb/ton	1.83E+00 ton/yr
7664393	Hydrogen fluoride (Hydrofluoric acid)	1.49E-01 lb/ton	8.12E-03 ton/yr
N/A	Lead Compounds	7.28E-02 lb/ton	3.97E-03 ton/yr
N/A	Manganese Compounds	5.67E-04 lb/ton	3.09E-05 ton/yr
N/A	Mercury Compounds	1.07E-01 lb/ton	5.83E-03 ton/yr
N/A	Nickel Compounds	5.90E-04 lb/ton	3.22E-05 ton/yr
1336363	Polychlorinated biphenyls(Aroclors)	4.65E-05 lb/ton	2.53E-06 ton/yr
		Total HAP PTE	**1.85 ton/yr**

[1] Potential Emissions Calculations, ton/yr = (Emission Factor, lb/ton) x (Potential Waste Combustion With ORL, ton/yr) / (2,000 lb/yr)

Table 6-8. HAP Potential Emissions- Stationary Source

HAP	All Other UAF Emission Units PTE[1]	Incinerator EU 9A PTE	UAF Total PTE	40 GFR 63 Major Source	
				Emission Threshold	Triggered?
Hydrochloric acid	6.68 tpy	1.83 tpy	**8.5 ton/yr**	10 ton/yr	**No**
All HAP	18.38 tpy	1.85 tpy	**20.2 ton/yr**	25 ton/yr	No

Section 7

Current AQC Permits

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY OPERATING PERMIT

Permit No. AQ0316TVP02
Application No. A000316

Issue Date: December 4, 2007
Expiration Date: December 3, 2012

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues an operating permit to the Permittee, **University of Alaska**, for the operation of the **Fairbanks Campus Power Plant**.

This permit satisfies the obligation of the owner and operator to obtain an operating permit as set out in AS 46.14.130(b).

As set out in AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this operating permit.

Relevant facility-specific terms and conditions of Air Quality Control Permit-to-Operate No. AQ316TVP01, Revision 3 and Air Quality Control Minor Permit No. AQ0316MSS02 have been incorporated into this Operating Permit.

Upon effective date of this permit, Operating Permit No. AQ0316TVP01, Revision 3 expires.

This Operating Permit becomes effective January 3, 2008.

John F. Kuterbach, Manager
Air Permits Program

Table of Contents

List of Abbreviations Used in this Permit

AAC ..... Alaska Administrative Code
ADEC ..... Alaska Department of Environmental Conservation
AS ..... Alaska Statutes
ASTM ..... American Society for Testing and Materials
BACT ..... Best Available Control Technology
BHp ..... Boiler Horsepower
C.F.R. ..... Code of Federal Regulations
The Act ..... Clean Air Act
CO ..... Carbon Monoxide
dscf ..... Dry standard cubic foot
EPA ..... US Environmental Protection Agency
EU ..... Emission Unit
gr./dscf ..... grain per dry standard cubic foot (1 pound = 7000 grains)
GPH ..... gallons per hour
HAPs ..... Hazardous Air Pollutants [*HAPs* as defined in AS 46.14.990(14)]
ID ..... Emission Unit Identification Number
kPa ..... kiloPascals
LAER ..... Lowest Achievable Emission Rate
MACT ..... Maximum Achievable Control Technology as defined in 40 C.F.R. 63.
MR&R ..... Monitoring, Recordkeeping, and Reporting
NESHAPs ..... Federal National Emission Standards for Hazardous Air Pollutants [*NESHAPs* as contained in 40 C.F.R. 61 and 63]
NO_X ..... Nitrogen Oxides
NSPS ..... Federal New Source Performance Standards [*NSPS* as contained in 40 C.F.R. 60]
O & M ..... Operation and Maintenance
O_2 ..... Oxygen
PAL ..... Plantwide Applicability Limitation
PM-10 ..... Particulate Matter less than or equal to a nominal ten microns in diameter
ppm ..... Parts per million
ppmv, ppmvd ..... Parts per million by volume on a dry basis
psia ..... Pounds per Square Inch (absolute)
PSD ..... Prevention of Significant Deterioration
PTE ..... Potential to Emit
SIC ..... Standard Industrial Classification
SO_2 ..... Sulfur dioxide
TPH ..... Tons per hour
TPY ..... Tons per year
VE ..... Visible Emissions
VOC ..... volatile organic compound [*VOC* as defined in 40 C.F.R. 51.100(s)]
VOL ..... volatile organic liquid [*VOL* as defined in 40 C.F.R. 60.111b, Subpart Kb]
vol% ..... volume percent
wt% ..... weight percent

Section 1. Stationary Source Information

Identification, Names and Addresses

Permittee:	**University of Alaska** PO Box 75920 Fairbanks AK 99775
Stationary Source Name:	**Fairbanks Campus Power Plant**
Location:	64° 51' North; 147° 51' West
Physical Address:	802 Alumni Drive Fairbanks AK 99775
Owner:	University of Alaska PO Box 75920 Fairbanks AK 99775
Operator:	University of Alaska Utilities Operation PO Box 75920 Fairbanks AK 99775
Permittee's Responsible Official	Charles B. Ward P.E.
Designated Agent:	Charles B. Ward P.E University of Alaska PO Box 757420 Fairbanks AK 99775
Stationary Source and Building Contact:	Charles B. Ward P.E University of Alaska PO Box 757420 Fairbanks AK 99775 (907) 474-7351 fncbw@uaf.edu
Fee Contact:	Accounts Payable, Administrative Service Center University of Alaska PO Box 75920 Fairbanks AK 99775
Permit Contact:	Charles B. Ward, P.E., Director, Division of Utilities

Stationary Source Process Description

SIC Code of the Stationary Source: 8221 Colleges, University and Professional Schools

18 AAC 50.326(a), 10/1/04]
[40 C.F.R. 71.5(c)(1 & 2), 7/1/03]

Section 2. Emission Unit Inventory and Description

Emission units listed in Table A have specific monitoring, record keeping, or reporting conditions in this permit. Emission unit descriptions and ratings are given for identification purposes only.

Table A - Emission Units Inventory

EU ID	Location	EU Description (Model)	Rating/size	Installation Date
1	Power Plant	Coal-Fired Boiler #1 (Erie City)	140.4 MMBtu/hr	1962
2	Power Plant	Coal-Fired Boiler #2 (Erie City)	140.4 MMBtu/hr	1962
3	Power Plant	Dual fuel fired Boiler #3 (gas, liquid, or coal water slurry) (Zurn)	180.9 MMBtu/hr	1970
4	Power Plant	Dual fuel fired Boiler #4 (gas, liquid, or coal water slurry) (Zurn)	180.9 MMBtu/hr	1987
5A	AHRC	Oil-Fired Boiler (Scotch #S2-Ps-50-150)	2.09 MMBtu/hr	2003
6	AHRC	Old Backup Diesel Generator #1 (Cummins)	125kW	1968
7	AHRC	Old Backup Diesel Generator #2 (Cummins)	125 kW	1968
8	Power Plant	New Backup Diesel Generator (liquid or coal water slurry) (Morse Colt-Pielstick PC2.6)	9.6 MW 13,266 hp	1999
9A	BIRD	Incinerator (Diesel) (Therm-Tec G-20-P-.5)	533 lb/hr	April 2006

Table Notes:
AHRC Arctic Health Research Center
BIRD Biological and Research Building
The incinerator EU ID 9A is primarily used as a crematory for pathological waste

[18 AAC 50.326(a), 10/1/04]
[40 C.F.R. 71.5(c)(3), 7/1/03]

Section 3. State Requirements

Visible Emissions Standards

1. **Industrial Process and Fuel-Burning Equipment Visible Emissions.** The Permittee shall comply with the following:

   a. Do not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 3-9A listed in Table A to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

[18 AAC 50.326(j), 10/1/04; and 18 AAC 50.055(a)(1), 5/3/02]
[40 C.F.R. 71.6(a)(1), 7/1/03]

1.2 For EU IDs 3 – 8, monitor, record, and report in accordance with conditions 2 through 4.

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3), 7/1/03]

Visible Emissions Monitoring, Recordkeeping and Reporting

Liquid Fuel-fired Sources (EU IDs 3-9A)

2. **Visible Emissions Monitoring.** **Visible Emissions Monitoring.** The Permittee shall monitor the exhaust of EU IDs 3, 4 (when not subject to condition 2.1), 5A, 6, 7, 8, and 9A for visible emissions using either the Method 9 Plan under condition 2.2 or the Smoke/No-Smoke Plan under condition 2.3. The Permittee may change the visible-emissions plan for an emission unit at any time unless prohibited from doing so by Condition 2.4. The Permittee may continue visible emission monitoring according to the prevailing schedule established at the time this renewed permit is issued

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i), 7/1/03]

2.1 **Continuous Opacity Monitoring.** The Permittee shall monitor the opacity for EU ID 4 by the use of a continuous opacity monitoring system (COMS) if this unit burns oil that contains more than 0.3 percent sulfur, or liquid or gaseous fuels with potential SO_2 emission rate of more than 0.32 lb/MMBtu heat input.

   a. The following procedure applies for monitoring visible emissions when using a COMS:

[18 AAC 50.326(j) and 18 AAC 50.346(c) 10/1/04]
[Standard Operating Permit Condition XIII – Coal Fired Boilers, 4/1/02]
[40 C.F.R. 71.6(a)(3)(i), 7/1/03]

   (i) The COMS must meet the performance specifications in 40 C.F.R. 60, Appendix B, Performance Specification 1, adopted by reference in 18 AAC 50.040(a);

(ii) Operate and maintain the COMS in accordance with the manufacturer's written requirements and recommendations;

(iii) Except during COMS breakdowns, repairs, calibration checks, and zero and upscale adjustments, complete one cycle of sampling and analyzing for each successive 10-second period of source operation; from this data, calculate and record the average opacity for each successive one-minute period;

(iv) At least once daily, conduct a zero and upscale check in accordance with 40 C.F.R. 60.13(d), adopted by reference in 18 AAC 50.040(a), and a written procedure; adjust whenever the zero or upscale drift exceeds four percent opacity in a 24-hour period;

b. Conduct performance audits as follows:

(i) For a COMS that was new, relocated, replaced, or substantially refurbished on or after April 9, 2001, perform an audit that includes the following elements as described in the Department's *Performance Audits for COMS*, adopted by reference in 18 AAC 50.030, at least once in each 12 months:

(A) optical alignment;

(B) zero and upscale response assessment;

(C) zero compensation assessment;

(D) calibration error check; and

(E) zero alignment assessment;

(ii) For a COMS that was new, relocated, replaced, or substantially refurbished before April 9, 2001, perform the same audits required under condition 27.3a, except that conditions 2.1b(i)(A) through 2.1b(i)(E) must be performed at least quarterly; this frequency may be reduced if

(A) the Permittee demonstrates, by applying measurable criteria to the results of quarterly audits, that quarterly audits are not necessary; and

(B) the Department gives written approval for the reduction in frequency.

c. If the COMS is out of service for more than 24 hours, or the COMS failed the performance audit, then the Permittee shall use the visible emissions monitoring described in condition 2.2 or 2.3 immediately. If the effected boiler is not operating, no monitoring is required.

d. the following VE recordkeeping and reporting requirements are applicable when a COMS is required:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]

[40 C.F.R. 71.6(a)(3)(ii) & (iii), 7/1/03]

(i) Maintain records of all calculated one-minute average opacity values for COMS and records of the COMS performance audits required under condition 2.1b, according to the requirements of condition 71.

(ii) If any of the COMS is malfunctioning or non-operable for three or more consecutive days, the Permittee shall notify the Department by telephone, in writing, or via email to dec.aq.airreports@alaska.gov on the fourth day, indicating the cause of failure and anticipated time required to repair or replace the instrument.

(iii) Report a violation of the emission standard in condition a**Error! Reference source not found.** by filing an Excess Emission Notification Form under condition 75 if visible emissions, excluding condensed water vapor, emitted from EU ID 4 reduce visibility through the exhaust effluent by more than 20 percent for a total of more than three minutes in any one hour[1];

[18 AAC 50.040(e) and 50.326(j), 10/1/04; and 18 AAC 50.055(a)(1), 1/18/97]
[40 C.F.R. 52.70 and 71.6(a)(1), 7/1/03]

(iv) Report a violation of the emission standard in condition aa by filing an Excess Emission Notification Form under condition 75 if visible emissions, excluding condensed water vapor, emitted from EU ID 4 reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes[2].

[18 AAC 50.326(j), 10/1/04; and 18 AAC 50.055(a)(1), 5/3/02]
[40 C.F.R. 71.6(a)(1), 7/1/03]

2.2 **Method 9 Plan.** For all 18-minute observations in this plan, observe exhaust, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations.

a. First Method 9 Observation. Observe exhaust for 18 minutes within 14 calendar days after changing from the Smoke/No-Smoke Plan of condition 2.3, whichever is later.

b. Monthly Method 9 Observations. Perform 18-minute observations at least once in each calendar month that a source operates.

c. Semiannual Method 9 Observations. After observing emissions for three consecutive operating months under condition 2.2b, unless a six-minute average is greater than 15 percent and one or more observations are greater than 20 percent, observe emissions at least semiannually for 18 minutes.

[1] For purposes of this permit, the "more than three minutes in any one hour" criterion in this condition and conditions 22.1 and 22.2 will no longer be effective when the Air Quality Control (18 AAC 50) regulation package effective May 3, 2002 is adopted by the U.S. EPA.

[2] The six-minute average standard is enforceable only by the State until 18 AAC 50.055(a)(1), dated May 3, 2002, is approved by EPA into the SIP at which time this standard becomes federally enforceable.

Semiannual observations must be taken between four and seven months after the previous set of observations.

d. Annual Method 9 Observations. After at least two semiannual 18-minute observations, unless a six-minute average is greater than 15 percent and one or more individual observations are greater than 20 percent, observe emissions at least annually.

Annual observations must be taken between 10 and 13 months after the previous observations and must include at least three 18-minute sets of observations.

e. Increased Method 9 Frequency. If a six-minute average opacity is observed during the most recent set of observations to be greater than 15 percent and one or more observations are greater than 20 percent, then increase or maintain the 18-minute observation frequency for that source to at least monthly intervals, until the criteria in condition 2.2c for semiannual monitoring are met.

2.3 **Smoke/No Smoke Plan.** Observe the exhaust for the presence or absence of visible emissions, excluding condensed water vapor.

a. Initial Monitoring Frequency. Observe the exhaust during each calendar day that a source operates.

b. Reduced Monitoring Frequency. After the source has been observed on 30 consecutive operating days, if the source operated without visible smoke in the exhaust for those 30 days, then observe emissions at least once in every calendar month that a source operates.

c. Smoke Observed. If smoke is observed, either begin the Method 9 Plan of condition 2.1 or perform the corrective action required under condition 2.4.

2.4 **Corrective Actions Based on Smoke/No Smoke Observations.** If visible emissions are present in the exhaust during an observation performed under the Smoke/No Smoke Plan of condition 2.3, then the Permittee shall either follow the Method 9 plan of condition 2.1 or

a. initiate actions to eliminate smoke from the source within 24 hours of the observation;

b. keep a written record of the starting date, the completion date, and a description of the actions taken to reduce smoke; and

c. after completing the actions required under condition 2.4a,

(i) take Smoke/No Smoke observations in accordance with condition 2.3

(A) at least once per day for the next seven operating days and until the initial 30 day observation period is completed; and

(B) continue as described in condition 2.3b; or

(ii) if the actions taken under condition 2.4a do not eliminate the smoke, or if subsequent smoke is observed under the schedule of condition 2.4c(i)(A), then observe the exhaust using the Method 9 Plan unless the Department gives written approval to resume observations under the Smoke/No Smoke Plan; after observing smoke and making observations under the Method 9 Plan, the Permittee may at any time take corrective action that eliminates smoke and restart the Smoke/No Smoke Plan under condition 2.3a.

3. **Visible Emissions Recordkeeping.** The Permittee shall keep records as follows:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/1/03]

3.1 If using the Method 9 Plan of condition 2.1

a. the observer shall record

(i) the name of the stationary source, emission unit and location, stationary source type, observer's name and affiliation, and the date on the Visible Emissions Field Data Sheet in Section 13;

(ii) the time, estimated distance to the emissions location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), plume background, and operating rate (load or fuel consumption rate) on the sheet at the time opacity observations are initiated and completed;

(iii) the presence or absence of an attached or detached plume and the approximate distance from the emissions outlet to the point in the plume at which the observations are made;

(iv) opacity observations to the nearest five percent at 15-second intervals on the Visible Emissions Observation in Section 13, and

(v) the minimum number of observations required by the permit; each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period;

b. to determine the six-minute average opacity, divide the observations recorded on the record sheet into sets of 24 consecutive observations; sets need not be consecutive in time and in no case shall two sets overlap; for each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24; record the average opacity on the sheet;

c. calculate and record the highest 18-consecutive-minute averages observed.

3.2 If using the Smoke/No Smoke Plan of condition 2.3, record the following information in a written log for each observation and submit copies of the recorded information upon request of the Department:

a. the date and time of the observation;

b. from Table A, the ID of the source observed;

c. whether visible emissions are present or absent in the exhaust;

d. a description of the background to the exhaust during the observation;

e. if the source starts operation on the day of the observation, the startup time of the source;

f. name and title of the person making the observation; and

g. operating rate (load or fuel consumption rate).

4. **Visible Emissions Reporting.** The Permittee shall report visible emissions as follows:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii), 7/1/03]

4.1 include in each stationary source operating report under condition 76

a. which visible-emissions plan of condition 2 was used for each source; if more than one plan was used, give the time periods covered by each plan;

b. for each source under the Method 9 Plan,

(i) copies of the observation results (i.e. opacity observations) for each source that used the Method 9 Plan, except for the observations the Permittee has already supplied to the Department; and

(ii) a summary to include:

(A) number of days observations were made;

(B) highest six-minute average observed; and

(C) dates when one or more observed six-minute averages were greater than 20 percent;

c. for each source under the Smoke/No Smoke Plan, the number of days that Smoke/No Smoke observations were made and which days, if any, that smoke was observed; and

d. a summary of any monitoring or record keeping required under conditions 2 and 3 that was not done;

4.2 report under condition 75 :

a. the results of Method 9 observations that exceed an average 20 percent for any six-minute period; and

b. if any monitoring under condition 2 was not performed when required, report within three days of the date the monitoring was required.

Particulate Matter Emissions Standards

5. **Industrial Process and Fuel-Burning Equipment Particulate Matter.** In accordance with 18 AAC 50.055(b)(1), the Permittee shall not cause or allow particulate matter emitted from EU IDs 3-8 listed in Table A to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.326(j), 10/1/04; and 18 AAC 50.055(b)(1), 1/18/97]
[40 C.F.R. 71.6(a)(1), 7/1/03]

5.1 For EU IDs 3, 4, & 5A, monitor, record, and report in accordance with conditions 9, 11 and 12.

5.2 For EU IDs 6, 7, & 8, monitor, record, and report in accordance with conditions 7 - 8.

5.3 For EU IDs 3 - 8, the Permittee must annually certify compliance under condition 77 with the particulate matter standard.

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3), 7/1/03]

6. **Incinerator Particulate Matter Emissions.** Particulate matter emissions from EU ID 9A may not exceed the particulate matter standard, as listed in Table B:

[18 AAC 50.326(j), 10/1/04; and 18 AAC 50.050(b), 1/18/97]
[40 C.F.R. 71.6(a)(1), 7/1/03]

Table B - Particulate Matter Standards for Incinerators

Incinerator Rated Capacity	Particulate Matter Standard
Less than 1000 lbs./hr	No Limits

PM Monitoring, Recordkeeping and Reporting

Liquid-Fired Sources (EU IDs 6-8)

7. **Particulate Matter Monitoring for Diesel Engines.** The Permittee shall conduct source tests on diesel engines 6, 7, and 8 to determine the concentration of particulate matter (PM) in the exhaust of a source in accordance with this condition.

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i), 7/1/03]

7.1 Within six months of exceeding the criteria of conditions 7.2a or 7.2b, either

a. conduct a PM source test according to requirements set out in Section 8; or

b. make repairs so that emissions no longer exceed the criteria of condition 7.2; to show that emissions are below those criteria, observe emissions as described in condition 2.1 under load conditions comparable to those when the criteria were exceeded.

7.2 Conduct the test according to condition 7.1 if

a. 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity greater than 20 percent; or

b. for a source with an exhaust stack diameter that is less than 18 inches, 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity that is greater than 15 percent and not more than 20 percent, unless the Department has waived this requirement in writing.

7.3 During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour test run. Submit a copy of these observations with the source test report.

7.4 The automatic PM source test requirement in conditions 7.1 and 7.2 is waived for an emissions unit if a PM source test on that unit has shown compliance with the PM standard during this permit term.

8. **Particulate Matter Reporting for Diesel Engines.** The Permittee shall report for EU IDs 6, 7, & 8 as follows:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii), 7/1/03]

8.1 report under condition 75

a. the results of any PM source test that exceeds the PM emissions limit; or

b. if one of the criteria of condition 7.2 was exceeded and the Permittee did not comply with either condition 7.1a or 7.1b, this must be reported by the day following the day compliance with condition 7.1 was required;

8.2 report observations in excess of the threshold of condition 7.2b within 30 days of the end of the month in which the observations occur;

8.3 in each stationary source operating report under condition 76, include

a. the dates, EU IDs 6, 7, & 8, and results when an observed 18-minute average was greater than an applicable threshold in condition 7.2;

b. a summary of the results of any PM testing under condition 7; and

c. copies of any visible emissions observation results (opacity observations) greater than the thresholds of condition 7.2, if they were not already submitted.

For Liquid-Fired Boilers and Heaters

9. **Particulate Matter Monitoring.** The Permittee shall conduct source tests on EU IDs 3, 4, & 5A to determine the concentration of PM in the exhaust as follows:

[18 AAC 50.326(j)(4), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i) & (c)(6), 7/1/03]

9.1 Conduct a PM source test according to the requirements set out in Section 8 no later than 90 calendar days after any time corrective maintenance fails to eliminate visible emissions greater than the 20 percent opacity threshold for two or more 18-minute observations in a consecutive six-month period.

9.2 During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour test run.

9.3 The PM source test requirement in condition 9 is waived for an emission unit if:

a. a PM source test on that unit has shown compliance with the PM standard during this permit term, or

b. if a follow-up visible emission observation conducted using Method-9 during the 90 days shows that the excess visible emissions described in condition 2.2e no longer occur.

10. **Coal Water Slurry.** If firing or co-firing EU IDs 3, 4, or 8 with a coal water slurry, conduct source tests on the unit(s) operating with a coal water slurry to determine the particulate matter (PM-10) emissions.

[Minor Permit AQ0316MSS02]

10.1 Conduct all tests and report the results in accordance with the requirements described in Operating Permit No. 316TVP02 for EU ID 8, note whether the unit was operating with or without NO_X controls.

10.2 Conduct all tests at the maximum anticipated coal water slurry feed rate.

10.3 Commence the tests within 90 days of starting operation with the coal water slurry.

[18 AAC 50.326(j)(4), 12/03/05]

10.4 Submit a revised particulate matter grain loading demonstration and Prevention of Significant Deterioration (PSD) PM-10 permit applicability determination with the source test report.

11. **Particulate Matter Recordkeeping.** The Permittee shall keep records of the results of any PM testing and visible emissions observations for EU IDs 3, 4, or 5A conducted under conditions 9 and 9.2.

[18 AAC 50.326(j)(4), 10/1/04]
[40 C.F.R. 71.6(a)(3)(ii) & (c)(6), 7/1/03]

12. **Particulate Matter Reporting.** The Permittee shall report for EU IDs 3, 4, & 5A as follows:

[18 AAC 50.326(j)(4), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii) & (c)(6), 7/1/03]

12.1 In each stationary source operating report required by condition 76, include

a. the dates, EU IDs 3, 4, & 5A, and results when an 18-minute opacity observation was greater than the applicable threshold criterion in 2.2e.

b. a summary of the results of any PM testing and visible emissions observations conducted under conditions 9 and 9.2.

12.2 Report as excess emissions, in accordance with condition 75, any time the results of a source test for PM exceeds the PM emission limit stated in condition 5.

Sulfur Compound Emission Standards Requirements

13. **Sulfur Compound Emissions.** In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from 1 - 8 to exceed 500 ppm averaged over three hours.

[18 AAC & 50.326(j), 10/1/04; and 18 AAC 50.055(c), 1/18/97]
[40 C.F.R. 71.6(a)(1), 7/1/03]

For Diesel Fuel, EU IDs 3, 4, 5A, 6, 7, & 8

13.1 The Permittee shall do one of the following for each shipment of fuel:

a. If the fuel grade requires a sulfur content less than 0.5 percent by weight, keep receipts that specify fuel grade and amount; or

b. If the fuel grade does not require a sulfur content less than 0.5 percent by weight, keep receipts that specify fuel grade and amount and

(i) test the fuel for sulfur content; or

(ii) obtain test results showing the sulfur content of the fuel from the supplier or refinery; the test results must include a statement signed by the supplier or refinery of what fuel they represent.

13.2 Fuel testing under condition 13.1 must follow an appropriate method listed in 18 AAC 50.035 or another method approved in writing by the Department.

13.3 If a load of fuel contains greater than 0.75 percent sulfur by weight, the Permittee shall calculate SO_2 emissions in ppm using either Section 14 or Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a).

13.4 The Permittee shall report as follows:

a. If SO_2 emissions calculated under condition 13.3 exceed 500 ppm, the Permittee shall report under condition 75. When reporting under this condition, include the calculation under Section 14

b. The Permittee shall include in the report required by condition 76

(i) a list of the fuel grades received at the stationary source during the reporting period;

(ii) for any grade with a maximum fuel sulfur greater than 0.5 percent sulfur, the fuel sulfur of each shipment; and

(iii) for fuel with a sulfur content greater than 0.75 percent, the calculated SO_2 emissions in ppm.

[18 AAC 50.326(j) & 50.346(c), 12/3/05]
[40 C.F.R. 71.6(a)(3), 7/1/03]

For fuel gas, EU IDs 3 & 4

13.5 Monitoring – The Permittee shall **either**

a. obtain a semiannual statement from the fuel supplier of the fuel gas H_2S concentration in ppm; **or**

b. analyze a representative sample of the fuel semiannually to determine the sulfur content using 40 C.F.R. 60, Appendix A, Method 11.

13.6 Recordkeeping - Keep records of the semiannual statement from the fuel supplier or the sulfur content analysis required under conditions 13.5a or 13.5b.

13.7 Reporting –

a. Report as excess emissions, in accordance with condition 75, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 13.

b. Include copies of the records required by condition 13.6 with the stationary source operating report required by condition 76.

[18 AAC 50.040(j), 12/3/05 and 18 AAC 50.326(j)(4), 10/1/04]
[40 C.F.R. 71.6(a)(3) & (c)(6), 7/1/04]

14. Measure and record the monthly fuel consumption of each fuel (natural gas, diesel or coal water slurry) in EU ID 4 and (diesel or coal water slurry) in EU ID 8 using a totalizing fuel meter accurate to within one percent or using delivery receipts and change in inventory. (Record natural gas, diesel and coal water slurry diesel separately.)

[Minor Permit AQ0316MSS02]

14.1 Obtain a sulfur content certificate from the fuel supplier; if a certificate is not available from the supplier, analyze a representative sample of the fuel to determine the sulfur content using an approved ASTM method such as ASTM D975-84, D3120-92, D4152-90, D2622-91, and ASTM 396-92.

15. No later than the 15th day of each month, calculate the previous month's SO_2 emissions using Equation 1. If more than one type of liquid fuel is used during the month (e.g., diesel and coal-water slurry), use Equation 1 for each fuel type and add the results. Record the sub-total for each fuel type and the total for all fuels.

[Minor Permit AQ0316MSS02]
[18 AAC 50.300(h)(3)(B)(iii), 1/18/97]

Equation 1 $$SO_2 = [(FC_4 + FC_8)(\rho)(\%S/100)(2)](1/2000)$$

where: SO_2 = SO_2 emissions (ton/month)

FC_4 = Liquid fuel consumption for EU ID 4 (gal/month), recorded under the provisions described in condition 14
FC_8 = Liquid fuel consumption for EU ID 8 (gal/month), recorded under the provisions described in condition 14
ρ = Density of the liquid fuel (lb/gal)
$\%S$ = Most recent sulfur content of the liquid fuel (diesel or coal water slurry), percent by weight, recorded under the provisions described in condition 14
100 = Conversion factor from percent to a fraction
2 = Molecular weight ratio of SO_2 to S
2000 = Conversion factor from lbs to tons

[Minor Permit AQ0316MSS02]

15.1 Record and report in accordance with condition 76 the 12 consecutive monthly total SO_2 emissions in units of tons per year for each of the past 6 months.

[Minor Permit AQ0316MSS02]

15.2 Report in accordance with condition 75 when the 12 consecutive monthly total SO_2 emissions equals or exceeds 40 tons.

[Minor. Permit AQ0316MSS02]

Owner-Requested Limit for Nitrogen Oxides

16. The Permittee shall limit the combined NO_X emissions from EU IDs 4 and 8 to less than 40 tons per year. [Minor Permit AQ0316MSS02]

16.1 Install low NO_X burners on EU IDs 3 and 4 prior to operating with natural gas fuel.

16.2 Measure and record the monthly natural gas consumption of EU ID 4 in million standard cubic feet per month (mmscf/month) by using a totalizing fuel flow meter certified accurate to within ± one percent.

16.3 No later than the 15th day of each month, calculate the previous month's total NO_X emissions as follows:

a. For EU ID 8 liquid fuel operation without NO_X controls, calculate and record the monthly total uncontrolled NO_X emissions using Equation 2.[3] If more than one type of liquid fuel is used during the month (e.g., diesel and coal-water slurry), use Equation 2 for each fuel type and add the results. For coal water slurry, use the emission factor from the source test conducted under condition 19. Record the sub-total for each fuel type and the total for all fuels.

Equation 2 $\mathbf{NO_X = (UFC_8 \times 0.571) \times (1/2000)}$

where: NO_X = Uncontrolled NO_X emissions (tons/month)
UFC_8 = Uncontrolled diesel fuel consumption for EU ID 8 (gal/month), recorded under the provisions described in condition 14

[3] The permittee has installed a selective catalytic reduction (SCR) control system on Emission Unit 8. Therefore, the term "with NOx controls" refers to those periods when the SCR system is operational, and the term "without NOx controls" refers to those periods when the SCR system is not operational.

0.571 = Uncontrolled NO_X emission factor for EU ID 8 (lb/gal) while firing diesel, based on emission factors provided in the February 1, 2002 source test report. If a subsequent source test without NO_X controls is conducted and approved by the Department, the Permittee shall use the emission factor in lb/gal from the subsequent source test upon the approval date of the source test.

2000 = Conversion factor from lbs to tons

b. For EU ID 8 operation with NO_X controls, calculate and record the monthly total controlled NO_X emissions using Equation 3.

Equation 3 $NO_X = (CFC_8 \times 0.057) \times (1/2000)$

where:

NO_X = Controlled NO_X emissions (tons/month)

CFC = Controlled fuel consumption for EU ID 8 (gal/month), recorded under the provisions described in condition 14

0.057 = Controlled NO_X emission factor for EU ID 8 (lb/gal) while firing diesel, based on emission factors provided in the February 1, 2002 source test report, and assuming 90 percent reduction in NO_X emissions. If a subsequent source test is conducted with NO_X controls and approved by the Department, the Permittee shall use the emission factor in lb/gal from the subsequent source test upon the approval date of the source test.

2000 = Conversion factor from lbs to tons

c. For EU ID 4, calculate and record the monthly total NO_X emissions using Equation 4. For coal water slurry, use the emission factor from the source test conducted under condition 19.

Equation 4 $NO_X = [(LCF_4) \times 0.022) + (GFC_4) \times 140)] (1/2000)$

where:

NO_X = NO_X emissions (tons/month)

LFC_4 = Fuel oil consumption for EU ID 4 (gal/month), recorded under the provisions described in condition 14

0.022 = NO_X (fuel oil) combustion emission factor for EU ID 4 (lb/gal), based on emission factor listed in Permit No. 9631-AA001[4])

GFC_4 = Natural gas consumption for EU ID 4 (MMscf/month)

140 = NO_X (natural gas) combustion emission factor for EU ID 4 (lb/mmscf), based on AP-42 Table 1.4-1 for Low NO_X burner technology. If a source test is conducted and approved by the Department, the Permittee shall use the emission factor in lb/mmscf from the source test upon the approval date.

2000 = Conversion factor from lbs to tons

[4] Permit No. 9631-AA001 indicates this is from October 3-5, 1989 source test.

16.4 No later than the 15th day of each month, add the previous monthly NO_X emissions calculated under condition 16.3 to obtain the previous month's NO_X emissions monthly total for EU IDs 4 and 8, combined. Add this monthly total to the total for the previous 11 months for EU IDs 4 and 8, combined, to determine the 12 consecutive month total.

16.5 Record and report as described in condition 76 the 12 consecutive month rolling total fuel consumption and NO_X emissions (tpy) for each 12 month period ending during the reporting period.

16.6 If firing or co-firing EU ID 8 with a coal water slurry, conduct source tests to determine NO_X emissions as indicated in condition 19

16.7 Report as described in condition 75 when the combined 12 consecutive month rolling total NO_X emissions for EU IDs 4 and 8 equals or exceeds 40 tons.

[Minor Permit AQ0316MSS02]

Fuel Limit for Emission Unit ID 4

17. The Permittee shall limit the annual capacity factor to 10% by not exceeding the heat input of 158,468 mmBtu/yr in Boiler ID 4 in any 12 consecutive months.

[18 AAC 50.040(a)(2)(D)),12/30/00]
[Federal Citation: 40 CFR 60.44b(j)(2) & (k) , 7/1/99]
[Minor Permit AQ0316MSS02]

17.1 The Permittee shall record calendar date, daily hours of operation, and hourly steam load.

[18 AAC 50.040(a)(2)(D)),12/30/00]
[Federal Citation: 40 CFR 60.44b(j)(2) & (k) , 7/1/99]
[Minor Permit AQ0316MSS02]

17.2 Maintain and operate a system approved by the Department to monitor and record the daily fuel consumption. Record the fuel consumption for the past 12 months. Calculate the annual capacity factor at the end of each calendar month.

[Federal Citation: 40 CFR 60.44b(j)(2) & (k) , 7/1/99]
[Minor Permit AQ0316MSS02]

17.3 Semi-annual reports shall be submitted to the EPA Administrator, shall be postmarked by the 30th day following the end of the reporting period, and shall contain: (1) the annual capacity factor over the previous 12 months, and (2) the hours of operation during the reporting period. Include copies of the six-month reports with the operating report required by condition 76.

[Federal Citation: 40 CFR 60.44b(j)(2) & (k) , 7/1/99]
[Minor Permit AQ0316MSS02]

17.4 Submit a report in accordance with condition 53 if any heat input for any 12 consecutive months exceeds 158,468 mmBtu/yr.

[Minor Permit AQ0316MSS02]

Coal Slurry

18. If firing or co-firing EU IDs 3, 4 or 8 with a coal water slurry, the Permittee shall conduct source tests on the unit(s) operating with a coal water slurry to determine the particulate matter (PM-10) emissions.

[Minor Permit AQ0316MSS02]

18.1 Conduct all tests and report the results in accordance with the requirements described in Section 8. For EU ID 8, note whether the unit was operating with or without NO_X controls.

18.2 Conduct all tests at the maximum anticipated coal water slurry feed rate.

18.3 Commence the tests within 90 days of starting operation with the coal water slurry.

18.4 Submit a revised particulate matter grain loading demonstration and Prevention of Significant Deterioration (PSD) PM-10 permit applicability determination with the source test report.

19. If firing or co-firing EU ID 8 with a coal water slurry, the Permittee shall conduct source tests on the unit operating with a coal water slurry to determine the NO_X emission factor in lb per gallon.

[Minor Permit AQ0316MSS02]

19.1 Conduct all source tests and report the results in accordance with the requirements described in Section 8.

19.2 Conduct a series of source tests at the maximum anticipated coal water slurry feed rate.

a. Conduct the tests with and without NO_X controls.

b. Commence the tests within 90 days of starting operation with the coal water slurry.

c. Note in the source test report whether the resulting NO_X emission rates are greater than or less than the corresponding NO_X emission factors listed in conditions 16.3a and 16.3b.

d. Use the resulting NO_X emission rates in conditions 16.3a and 16.3b when firing coal water slurry.

20. The Permittee shall operate each Unit 3, 4, or 8 with coal-water slurry at a rate **no** greater than that for which source testing has demonstrated compliance with emission standards established in the permit.

[Minor Permit AQ0316MSS02]

Insignificant Emission Units

21. For emission units at the stationary source that are insignificant as defined in 18 AAC 50.326(d)-(i) that are not listed in this permit, the following apply:

[18 AAC 50.346(b)(4), 10/1/04]

21.1 The Permittee shall submit the compliance certifications of condition 77 based on reasonable inquiry;

21.2 The Permittee shall comply with the requirements of condition 53;

21.3 The Permittee shall report in the operating report required by condition 76 if an emission unit is insignificant because of actual emissions less than the thresholds of 18 AAC 50.326(e) and actual emissions become greater than any of those thresholds;

22. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, fuel-burning equipment, or an incinerator to reduce visibility through the exhaust effluent by any of the following:

22.1 more than 20 percent for a total of more than three minutes in any one hour[5];

[18 AAC 50.050(a)(2) & 50.055(a)(1), 1/18/97]
[40 C.F.R. 52.70, 7/1/03]

22.2 more than 20 percent averaged over any six consecutive minutes[6].

[18 AAC 50.050(a) & 50.055(a)(1), 5/03/02]

23. The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel-burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.055(b)(1), 1/18/97]

24. The Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from an industrial process or fuel-burning equipment, to exceed 500 ppm averaged over three hours.

[18 AAC 50.055(c), 1/18/97]

Incinerator Limit and Prohibition

25. The Permittee

25.1 in order to maintain the Hospital and Medical/Infectious Waste exemption under 40 CFR 60.50c, the Permittee shall not incinerate in EU ID 9A a combination of hospital and/or medical/infectious waste that is more than 10 percent of the total amount, by weight, of the total amount incinerated as measured on a calendar quarter basis. Hospital and medical/infectious waste have the meanings as given in 40 C.F.R. 62.14490. Pathological waste, chemotherapeutic waste, and low-level radioactive waste are not considered hospital or medical/infectious waste.

[40 C.F.R. 60.50c Subpart E, 7/1/03
[40 C.F.R. 60.30e, Subpart Ce, & 40 C.F.R. 262, 7/1/03]

25.2 in order to maintain the Pathological Waste Incineration exemption under 40 CFR 2887(l) shall incinerate in EU ID 9A a combination of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste that is more than 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air). Pathological waste, low-level radioactive waste, and/or chemotherapeutic waste meanings as given in 40 CFR 60.2977

[40 C.F.R. 60 Subpart EEEE, 7/1/06]

[5] See Footnote **Error! Bookmark not defined.**.
[6] See Footnote **Error! Bookmark not defined.**.

[40 C.F.R. 60.2887(l) and 40 C.F.R. 60.2997, 7/1/06]

25.3 The Permittee shall monitor and record the combined weight of hospital and medical/infectious waste incinerated in EU ID 9A during each quarter.

25.4 The Permittee shall monitor and record the combined weight of pathological, low-level radioactive, and/or chemotherapeutic waste incinerated in EU ID 9A during each quarter.

25.5 The Permittee shall monitor and record the total weight of all the waste incinerated in EU ID 9A during each quarter.

25.6 The Permittee shall, within 30 days after each calendar quarter, calculate and record the percent by weight of hospital and medical/infectious waste, pathological, low-level radioactive, and/or chemotherapeutic waste, and any other waste that was incinerated in EU ID 9A during the calendar quarter.

25.7 The Permittee shall report under condition 75 whenever the resultant calculation for hospital and medical/infectious waste in condition 25.6 is more than 10 percent.

25.8 The Permittee shall report under condition 75 whenever the resultant calculation for pathological, low-level radioactive, and/or chemotherapeutic waste in condition 25.6 is less than 90 percent.

25.9 The Permittee shall report in the facility operating report, required under condition 76, the data recorded under conditions 25.3 through 25.6.

[Standard Operating Permit Condition VII – Operating Reports 8/25/04]
[40 C.F.R. 60.30e Subpart Ec, & 40 C.F.R. 262, 7/1/03]
[40 C.F.R. 60,.50 Subpart E, 7/1/03]

26. Permittee shall not process any material that meets the definition of Hazardous Waste under 40 C.F.R. 261, 18 AAC 62, or requires Federal authorization for treatment under the Toxic Substances Control Act. The Permittee may not process any household hazardous waste or conditionally exempt small quantity generator of hazardous waste, even though these wastes are exempt or conditionally exempt from hazardous waste regulation.

[40 C.F.R. 60.30e Subpart Ec, & 40 C.F.R. 262, 17/1/03]
[40 C.F.R. 60.50c(c)]

Section 4. Standard Operating Permit Conditions for Coal-Fired Boilers

27. **Coal Fired Boiler Visible Emissions:** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 1 & 2 listed in Table A to reduce visibility through the exhaust effluent by more than 20 percent for more than three minutes in any one hour, except for an additional three minutes in any one hour if

    a. the visible emissions are caused by startup, shutdown, soot blowing, grate cleaning, or other routine maintenance activities;

    b. the Permittee shall monitor visible emissions by continuous opacity monitoring instrumentation that conforms to the requirements set out in conditions 27.2a and 27.2c;

    c. the Permittee provides the Department with a demonstration that the particulate matter emissions from the boiler allowed by this opacity limit will not cause or contribute to a violation of the ambient air quality standards for PM-10 in 18 AAC 50.010, or to cause the maximum allowable increases for PM-10 in 18 AAC 50.020 to be exceeded; and

    d. the federal administrator approves a stationary source-specific revision to the State implementation plan, required under 42 U.S.C. 7410, authorizing the application of this opacity limit instead of the opacity limit otherwise applicable under this section.

[18 AAC 50.055(a)(9), 12/3/05]

27.2 **Coal Fired Boiler Visible Emissions Monitoring: Procedures for Operation of a COMS.** The following procedure applies to monitoring visible emissions using a Continuous Opacity Monitoring System (COMS):

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i), 7/1/03]

    a. The COMS must meet the performance specifications in 40 C.F.R. 60, Appendix B, Performance Specification 1, adopted by reference in 18 AAC 50.040(a);

    b. Operate and maintain the COMS in accordance with the manufacturer's written requirements and recommendations;

    c. Except during COMS breakdowns, repairs, calibration checks, and zero and upscale adjustments, complete one cycle of sampling and analyzing for each successive 10-second period of source operation; from this data, calculate and record the average opacity for each successive one-minute period;

    d. At least once daily, conduct a zero and upscale check in accordance with 40 C.F.R. 60.13(d), adopted by reference in 18 AAC 50.040(a), and a written procedure; adjust whenever the zero or upscale drift exceeds four percent opacity in a 24-hour period;

27.3 Conduct performance audits as follows:

a. For a COMS that was new, relocated, replaced, or substantially refurbished on or after April 9, 2001, perform an audit that includes the following elements as described in the Department's *Performance Audits for COMS*, adopted by reference in 18 AAC 50.030, at least once in each 12 months:

(i) optical alignment;

(ii) zero and upscale response assessment;

(iii) zero compensation assessment;

(iv) calibration error check; and

(v) zero alignment assessment;

b. For a COMS that was new, relocated, replaced, or substantially refurbished before April 9, 2001, perform the same audits required under condition 27.3a, except that conditions 27.3a(i) through 27.3a(iv) must be performed at least quarterly; this frequency may be reduced if

(i) the Permittee demonstrates, by applying measurable criteria to the results of quarterly audits, that quarterly audits are not necessary; and

(ii) the Department gives written approval for the reduction in frequency.

27.4 If any of the COMS on the coal-fired boilers, EU IDs 1 & 2, is out of service for more than 24 hours, or the COMS failed the performance audit, then the Permittee shall use the visible emissions monitoring described in condition 2 immediately.

27.5 **Coal Fired Boiler Visible Emissions Reporting and Recordkeeping:** EU IDs 1 & 2 listed in Table A are subject to the following VE recordkeeping and reporting requirements:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(ii) & (iii), 7/1/03]

a. Maintain records of all calculated one-minute average opacity values for COMS and records of the COMS performance audits required under condition 27.3, according to the requirements of condition 71.

b. If any of the COMS is malfunctioning or non-operable for three or more consecutive days, the Permittee shall notify the Department by telephone or in writing on the fourth day, indicating the cause of failure and anticipated time required to repair or replaced the instrument.

c. Report a violation of the emission standard in condition 27 by filing an Excess Emission Notification Form under condition 75 if the total number of one-minute values that exceed 20% opacity is greater than three during any given hour when the boiler is not undergoing startup, shutdown, soot blowing, grate cleaning, or other routine maintenance activities.

d. Report a violation of the emission standard in condition 27 by filing an Excess Emission Notification Form under condition 75 if the total number of one-minute values that exceed 20% opacity is greater than six during any given hour when the boiler is undergoing startup, shutdown, soot blowing, grate cleaning, or other routine maintenance activities.

28. **Coal Fired Boiler Particulate Matter (PM).** The Permittee shall not cause or allow particulate matter (PM) emitted from EU IDs 1 & 2 to exceed 0.1 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.055(b)(2), 1/18/97]

28.1 Coal Fired Boiler PM Monitoring and Recordkeeping. The Permittee shall do the following:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i) & (ii), 7/1/03]

a. At least once every 12 months, for each boiler that has operated 90 days or more during that period, inspect the exhaust duct work and the internal components of the dust collector for the presence of leaks; prior to restarting the boiler, repair all leaks in the exhaust ductwork and all leaks that would allow dirty gas to pass into the clean gas side of the dust collector;

b. Conduct source tests for particulate matter as follows:

(i) Conduct the tests and report the results in accordance with Section 8; for tests required under condition 31.1b(iii), submit the test plan to the Department according to condition 70;

(ii) Conduct additional tests on each boiler according to the following schedule where each test means a three hour average consistent with 18 AAC 50.220(f):

(A) If the most recent source test exceeded 90 percent of the emission standard, conduct a source test within 8760 operating hours of the previous test;

(B) If the most recent source test exceeded 75 percent of the emission standard, conduct a source test within 17520 operating hours of the previous test; and

(C) Within five years of the previous source test, conduct a test of each boiler operated during that time;

(iii) For any boiler with a induced draft fan speed limit that the operator wishes to change, the operator may operate in excess of the steam limit to perform source tests on which a new limit would be based. The operator may use a new limit based on the source testing if

(A) the Permittee submits a source test plan and the Department approves the plan in writing;

(B) the Permittee conducts source testing according to the source test plan and consistent with Section 8;

(C) the Permittee submits the results to the Department;

(D) the test results show compliance at the requested new induced draft fan speed rate; and

(E) the Department concurs with the new limit in writing, after finding that

(1) the test results will be representative of normal operation; and

(2) the new limit does not cause the stationary source to be subject to permitting under 18 AAC 50.300(h);

(iv) During each test, measure and record visible emissions and induced draft fan speed rates. Submit the records with the source test report; determine visible emissions consistent with monitoring methods of condition 2 for the duration of each one hour run;

c. Measure and record induced draft fan speed as follows:

(i) Operate and maintain a device to measure and record induced draft fan speed in accordance with the manufacturer's written requirements and recommendations;

(ii) Except during breakdowns, repairs, calibration checks, and zero and span adjustments of the device, complete at least one cycle of sampling and analyzing for each successive 15-minute period of boiler operation. From this data, calculate and record the average induced draft fan speed rate for successive one-hour periods. Maintain this data at the stationary source and make it available to the Department upon request;

(iii) Within one year after the effective date of this permit and at such times as the Department may require, determine the relative accuracy of each monitoring device required by condition 28.1c(i); and

(iv) Keep sufficient written records to show compliance with the requirements of this condition 28.1. In addition, keep records of the date and time identifying each period during which a device required by this permit is inoperative, except for zero and span checks, and records of the nature of device repairs and adjustments; upon request of the Department, submit copies of the records.

18 AAC 50.346(c) & 50.350(h), 5/03/02]

28.2 Coal Fired Boiler PM Reporting. The Permittee shall

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii), 7/1/03]

a. Submit a report in accordance with 75 whenever any of the following situations occur:

(i) when induced draft fan speed exceeds a permit limit;

(ii) when the results of a source test exceed the particulate matter emission limit; and

(iii) if a induced draft fan speed monitoring device malfunctions or becomes inoperable for four or more consecutive hours; in the report, identify the boiler, the cause of failure, and the anticipated time required to repair the device;

b. Include in each operating report under condition 76

(i) the results of each particulate matter source test;

(ii) for any boiler with a induced draft fan speed limit, the limit and averaging period, the highest induced draft fan speed rate for the period covered by the report (averaged over the same averaging period as the limit), and identification of any periods exceeding the limit; and

(iii) the results of any relative accuracy determination of steam monitoring equipment.

29. **Sulfur Compound Emissions.** The Permittee shall not cause or allow sulfur compound emissions, expressed as sulfur dioxide, from EU IDs 1 & 2 to exceed 500 ppm averaged over a period of three hours.

[18 AAC 50.055(c), 1/18/97]

29.1 **Coal Fired Boiler Sulfur Compound Emissions Monitoring.** The following applies to sulfur compound emission monitoring:

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i), 7/1/03]

a. Upon receipt of each shipment of fuel at the stationary source, the Permittee shall

(i) Obtain a signed statement from the supplier with the following information:

(A) the percent sulfur by weight of the coal;

(B) the method of analysis; and

(C) a statement that the analysis was representative of the coal shipped;

(ii) If valid representative results are not available from the supplier, analyze a representative sample of the fuel to determine the sulfur content using ASTM D2492-90 for coal, adopted by reference in 18 AAC 50.035(c), or another method approved in writing by the Department for coal or other fuels; and

(iii) If the coal contains more than 0.4 percent sulfur by weight, calculate the three hour exhaust concentration expected to result from combusting each shipment of fuel using the following equation:

SO_2-concentration, *PPM* = 1.00 X 10^6 X mol-SO_2 / (mol-SO_2 + mol-CO_2 + mol-O_2 + mol-N_2)

Where:

mol-SO_2 = [wt%Sulfur$_{fuel}$, %] / 32.06

mol-CO_2 = [wt%Carbon$_{fuel}$, %] / 12.01

mol-O_2 = MF X (([wt%Nitrogen$_{fuel}$, %] / 28.01) + (4.76 X mol-SO_2) + (4.76 X mol-CO_2) + (1.88 X mol-H_2O) - (3.76 X ([wt%Oxygen$_{fuel}$, %] / 32.00))

MF = ([vol%$O_{2,\ exhaust}$, %] / (100% - 4.76 X [vol% $O_{2,\ exhaust}$, %]) (this should be taken on a three-hour basis)

mol-H_2O = [wt%Hydrogen$_{fuel}$, %] / 2.016

mol-N_2 = ([wt%Nitrogen$_{fuel}$, %] / 28.01) + (3.76 X mol-SO_2) + (3.76 X mol-CO_2) + (1.88 X mol-H_2O) + (3.76 X mol-O_2) - ([wt%Oxygen$_{fuel}$, %] / 8.51);

And Where:

The fuel weight percent (wt%) of carbon, nitrogen, oxygen, and hydrogen is obtained from the most recent analysis required by condition 29.1b;

The volume percent of oxygen in the exhaust (vol% $O_{2,\ exhaust,}$) is obtained from oxygen meters or from the most recent ORSAT analysis at the same boiler load used in the calculation; and

The fuel weight percent (wt%) of sulfur is obtained pursuant to condition 29.1a(i) or 29.1a(ii);

b. At least once each year, and whenever a shipment of coal contains more than 0.4 percent sulfur, obtain a representative sample of each fuel that is burned using the applicable procedures in 40 C.F.R. 60, Appendix A-7, Method 19, Section 12.5.2.1, adopted by reference in 18 AAC 50.040(a); conduct an ultimate analysis of the representative sample using ASTM D3176-89 (1997), adopted by reference in 18 AAC 50.035(c), or another method approved in writing by the Department to determine the weight percents, dry basis, of carbon, nitrogen, oxygen, and hydrogen. Alternatively, a total fuel analysis provided by the fuel supplier may be used to meet the requirement;

c. Conduct source tests on at least one coal fired boiler at the stationary source to determine sulfur compound emissions while burning each shipment of fuel if the calculations of condition 29.1a(iii) show that the exhaust SO_2 concentration would exceed 500 ppm. Results from previous source tests may be used.

29.2 **Coal Fired Boiler Sulfur Compound Emissions Record Keeping.** The Permittee shall keep records of the sulfur contents of each shipment of fuel, each calculated SO_2 concentration averaged over three-hours, and any test results and calculations determined under condition 29.1.

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/1/03]

29.3 Coal Fired Boiler Sulfur Compound Emissions Reporting. The Permittee shall

[18 AAC 50.326(j) & 50.346(c), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii), 7/1/03]

a. Submit a report in accordance with condition 75 whenever

(i) a three-hour exhaust concentration calculated pursuant to condition 29.1a(ii) is greater than 500 ppm; or

(ii) a source test pursuant to condition 29.1c has not shown compliance;

b. Include in each operating report under condition 76 a summary that includes

(i) sulfur contents of each shipment of fuel;

(ii) each calculated SO_2 concentration averaged over three hours; and

(iii) any test results and calculations required under condition 29.1.

Section 5. Performance Audits for COMS

30. **Performance audits.** The following elements shall be included in performance audits for Continuous Opacity Monitoring Systems (COMS), unless the Department gives written approval for unit-specific audit procedures.

[18 AAC 50.030(9) & 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(3)(i), 7/1/03]

30.1 **Optical Alignment Assessment.** The status of the optical alignment of the monitor components shall be checked and recorded according to the procedures specified by the monitor manufacturer. Realign as necessary.

30.2 **Zero and Upscale Response Assessment.** The zero and upscale response errors shall be determined and recorded according to the calibration drift procedures of 8.1(4)(i) and (ii) in 40 C.F.R. 60, Appendix B, Performance Specification 1 (PS-1), adopted by reference in 18 AAC 50.040(a). The error is defined as the difference (in percent opacity) between the correct value and the observed value for the zero and high-level calibration checks.

30.3 **Zero Compensation Assessment.** The value of the zero compensation applied at the time of the audit shall be calculated as equivalent opacity, corrected to stack exit conditions as necessary, according to the procedures specified by the manufacturer. Record the compensation applied to the effluent recorded by the monitor system.

30.4 **Calibration Error Check.** Conduct a three-point calibration error test using three calibration attenuators that produce outlet path length corrected, single-pass opacity values shown in ASTM D 6216-98, section 7.5, adopted by reference in 18 AAC 50.035(c). If the applicable limit is less than 10 percent opacity, use attenuators as described in ASTM D 6216-98, section 7.5 for applicable standards of 10 to 19 percent opacity. Confirm the external audit device produces the proper zero value on the COMS data recorder. Separately, insert each calibration attenuator (low, mid, and high-level) into the external audit device. While inserting each attenuator, (1) ensure that the entire light beam passes through the attenuator; (2) minimize interference from reflected light; and (3) leave the attenuator in place for at least two times the shortest recording interval on the COMS data recorder. Make a total of five nonconsecutive readings for each attenuator. At the end of the test, correlate each attenuator insertion to the corresponding value from the data recorder. Subtract the single-pass calibration attenuator values corrected to the stack exit conditions from the COMS responses. Calculate the arithmetic mean difference, standard deviation, and confidence coefficient of the five measurements value using equations 1-3, 1-4, and 1-5 of PS-1. Calculate the calibration error as the sum of the absolute value of the mean difference and the 95 percent confidence coefficient for each of the three test attenuators using equation 1- 6 of PS-1. Report the calibration error test results for each of the three attenuators.

30.5 **Zero Alignment Assessment.** Compare the COMS simulated zero to the actual clear path zero of the installation. The assessment may be conducted in conjunction with, but prior to, other performance audit elements.

a. **Primary Zero Alignment Method.** The primary zero alignment shall be performed under clear path conditions. This may be accomplished if the process is not operating and the monitor path length is free of particulate matter or the monitor may be removed from its installation and set up under clear path conditions. The absence of particulate matter shall be demonstrated prior to conducting the test at the installed site. No adjustment to the monitor is allowed other than the establishment of the proper monitor path length and correct optical alignment of the monitor components. Record the monitor response to a clear path condition and to the monitor's simulated zero condition as percent opacity corrected to stack exit conditions as necessary. For monitors with automatic zero compensation, disconnect or disable the zero compensation mechanism or record the amount of correction applied to the monitor's simulated zero condition. The response difference in percent opacity to the clear path and simulated zero conditions shall be recorded as the zero alignment error. Adjust the monitor's simulated zero device to provide the same response as the clear path condition. Restore the COMS to its operating mode.

b. **Alternate Zero Alignment Method.** Monitors capable of allowing the installation of an external, removable zero-jig may use the equipment for an alternative zero alignment provided that the zero-jig setting is established for the monitor path length and recorded for the specific COMS by comparison of the COMS responses to the installed zero-jig and to the clear path condition. The zero-jig is shown to be capable of producing a consistent zero response when it is repeatedly (i.e., three consecutive installations and removals prior to conducting the final zero alignment check) installed on the COMS. The zero-jig setting shall be permanently set at the time of the initial COMS zeroing to the clear path zero value and protected when not in use to ensure that the setting equivalent to zero opacity does not change. The zero-jig setting shall be checked and recorded prior to initiating the zero alignment. Emission unit owners and operators that employ a zero-jig shall perform a primary zero alignment audit once every three years.

Section 6. Federal Requirements

Unit Subject to Federal New Source Performance Standards (NSPS), Subpart A

31. **NSPS Subpart A Notification.** For any affected facility[7] regulated under NSPS requirements in 40 C.F.R. 60, the Permittee shall furnish the Department and EPA written or electronic notification of:

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.7(a) & 60.15(d), Subpart A, 7/1/03]

31.1 the date that construction or reconstruction of an affected facility commences postmarked no later than 30 days after such a date;

[40 C.F.R. 60.7(a)(1), Subpart A, 7/1/03]

31.2 the actual date of initial startup of an affected facility postmarked within 15 days after startup;

[40 C.F.R. 60.7(a)(3), Subpart A, 7/1/03]

31.3 any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies unless that change is specifically exempted under an applicable subpart or in 40 C.F.R. 60.14(e), postmarked as soon as practicable but no more than 60 days before the change commences;

[40 C.F.R. 60.7(a)(4), Subpart A, 7/1/03]

31.4 the date of a continuous monitoring system performance demonstration, postmarked not less than 30 days prior to such date;

[40 C.F.R. 60.7(a)(5), Subpart A, 7/1/03]

31.5 the anticipated date for conducting the opacity observations required by 40 C.F.R. 60.11(e)(1), including, if appropriate, a request for the Department to provide a visible emissions reader during a performance test, postmarked not less than 30 days prior to such date;

[40 C.F.R. 60.7(a)(6), Subpart A, 7/1/03]

31.6 that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required in lieu of Method 9 observation data as allowed by 40 C.F.R. 60.11(e)(5), postmarked not less than 30 days prior to the date of the performance test; and

[40 C.F.R. 60.7(a)(7), Subpart A, 7/1/03]

31.7 any proposed replacement of an existing facility, for which the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, postmarked as soon as practicable, but no less than 60 days before commencement of replacement, and including the following information:

[7] *Affected facility* means, with reference to a stationary source, any apparatus to which a standard applies, as defined in 40 C.F.R. 60.2, effective 7/1/03.

[40 C.F.R. 60.15(d), 7/1/03]

a. the name and address of owner or operator,

b. the location of the existing facility,

c. a brief description of the existing facility and the components that are to be replaced,

d. a description of the existing and proposed air pollution control equipment,

e. an estimate of the fixed capital cost of the replacements, and of constructing a comparable entirely new facility,

f. the estimated life of the existing facility after the replacements, and

g. a discussion of any economic or technical limitations the facility may have in complying with 40 C.F.R. 60, after the replacements.

32. **NSPS Subpart A Startup, Shutdown, & Malfunction Requirements.** The Permittee shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of EU ID 4, any malfunctions of associated air-pollution control equipment, or any periods during which a continuous monitoring system or monitoring device for EU ID 4 is inoperative.

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.7(b), Subpart A, 7/1/03]

33. **NSPS Subpart A Excess Emissions and Monitoring Systems Performance Report.** Except as provided for in condition 34, the Permittee shall submit to the Department and to EPA a written "excess emissions and monitoring systems performance report " (EEMSP)[8] any time a limit in conditions 42 or 43 has been exceeded, as described in this condition. The Permittee shall submit the EEMSP reports to EPA quarterly, postmarked no later than 30 days after the end of the last calendar quarter.

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.7(c), Subpart A, 7/1/03]

33.1 The magnitude of excess emissions computed in accordance with condition 39.6, any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.

[40 C.F.R. 60.7(c)(1), Subpart A, 7/1/03]

33.2 Identification of each period of excess emissions that occurred during startup, shutdown, and malfunction of EU ID 4, the nature and cause of any malfunction, and the corrective action taken or preventative measures adopted.

[40 C.F.R. 60.7(c)(2), Subpart A, 7/1/03]

[8] The federal EEMSP report is not the same as the State excess emission report required by condition 75.

33.3 The date and time identifying each period during which a Continuous Monitoring System (CMS) was inoperative except for zero and span checks and the nature of any repairs or adjustments.

[40 C.F.R. 60.7(c)(3), Subpart A, 7/1/03]

33.4 A statement indicating whether or not any excess emissions occurred or the CMS was inoperative, repaired, or adjusted, at any time during the reporting period.

[40 C.F.R. 60.7(c)(4), Subpart A, 7/1/03]

34. **NSPS Subpart A Summary Report Form.** The Permittee shall submit to the Department and to EPA one "summary report form[9]" in the format shown in Figure 1 of 40 C.F.R. 60.7 for each pollutant monitored for EU ID 4 as follows:

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.7(d), Subpart A, 7/1/03]

34.1 If the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than five percent of the total operating time for the reporting period, submit a summary report form **instead of** the EEMSP report described in condition 33, otherwise

[40 C.F.R. 60.7(d)(1), Subpart A, 7/1/03]

34.2 Submit a summary report form **along with** the EEMSP described in condition 33.

[40 C.F.R. 60.7(d)(2), Subpart A, 7/1/03]

35. **NSPS Subpart A Performance (Source) Tests.** The Permittee shall conduct initial source tests according to Section 8 and as indicated in this condition on any affected facility within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup, and at such other times as may be required by EPA, and shall provide the Department and EPA with a written report of the results of the source test. The Permittee shall:

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.8(a), Subpart A, 7/1/03]

35.1 Conduct source tests and reduce data as set out in 40 C.F.R. 60.8(b), and provide the Department copies of any EPA waivers or approvals of alternative methods.

[40 C.F.R. 60.8(b), Subpart A, 7/1/03]

35.2 Conduct source tests under conditions specified by EPA to be based on representative performance of EU IDs 4.

[40 C.F.R. 60.8(c), Subpart A, 7/1/03]

35.3 Notify the Department and EPA at least 30 days in advance of the source test.

[40 C.F.R. 60.8(d), Subpart A, 7/1/03]

35.4 Provide adequate sampling ports, safe sampling platform(s), safe access to sampling platform(s), and utilities for sampling and testing equipment.

[9] See Summary Report form in Attachment A of the Statement of Basis.

[40 C.F.R. 60.8(e), Subpart A, 7/1/03]

36. **NSPS Subpart A Good Air Pollution Control Practice.** At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate EU ID 4 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. The Department will determine whether acceptable operating and maintenance procedures are being used based on information available to the Department, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance records, and inspections of EU ID 4.

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.11(d), Subpart A, 7/1/03]

37. **NSPS Subpart A Credible Evidence.** For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of the standards set forth in conditions 42 or 43, nothing in 40 C.F.R. Part 60 shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether EU ID 4 would have been in compliance with applicable requirements of 40 C.F.R. Part 60 if the appropriate performance or compliance test or procedure had been performed.

[18 AAC 50.040(a)(1); 10/1/04]
[40 C.F.R. 60.11(g), Subpart A, 7/1/03]

38. **NSPS Subpart A Concealment of Emissions.** The Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission, which would otherwise constitute a violation of a standard set forth in conditions 42 or 43. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.12, Subpart A, 7/1/03]

39. **NSPS Subpart A Monitoring.** For a Continuous Monitoring System (CMS) required under condition 31, the Permittee shall:

[18 AAC 50.040(a)(1), 10/1/04]
[40 C.F.R. 60.13(a) Subpart A, 7/1/03]

39.1 Install and operate the CMS prior to a performance test conducted under condition 35, including completion of manufacturer's written requirements or recommendations for installation, operation, and calibration of device.

[40 C.F.R. 60.13(b), Subpart A, 7/1/03]

39.2 Check the zero (or low level value between zero and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with 40 C.F.R. 60.13(d).

[40 C.F.R. 60.13(d)(1), Subpart A, 7/1/03]

39.3 Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under condition 39.2, keep all CMS's in operation continuously and as follows:

[40 C.F.R. 60.13(e), Subpart A, 7/1/03]

39.4 for a Continuous Opacity Monitor (COMs), complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive six-minute period; otherwise

[40 C.F.R. 60.13(e)(1), Subpart A, 7/1/03]

39.5 complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

[40 C.F.R. 60.13(e)(2), Subpart A, 7/1/03]

39.6 Reduce data in accordance with:

[40 C.F.R. 60.13(h), Subpart A, 7/1/03]

a. Reduce all data to six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each six-minute period.

b. Do not include data recorded during periods of CMS breakdowns, repairs, calibration checks, and zero and span adjustments in the data averages computed under this condition.

c. Convert all excess emission into units of the standard used in condition 40, after conversion the Permittee may round data to the same number of significant digits as used in the condition.

d. The Permittee may use an arithmetic or integrator average of all data, and record data in reduced or non-reduced form (e.g. ppm pollutant percent O_2 or ng/J of pollutant).

Steam Generating Units Subject to NSPS Subpart Db, EU ID 4

40. **NSPS Subpart Db Notification Requirement.** The Permittee of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by 40 C.F.R. 60.7 (condition 31). This notification shall include:

[18 AAC 50.040(a)(2)(C), 12/3/05]
[40 C.F.R. 60.49b(a), Subpart Db, 7/1/03]

40.1 The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility,

40.2 If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i),

[40 C.F.R. 60.49b(a)(2), Subpart Db, 7/1/03]

40.3 The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired, and,

[40 C.F.R. 60.49b(a)(3), Subpart Db, 7/1/03]

40.4 Notification that an emerging technology will be used for controlling emissions of sulfur dioxide. The Administrator will examine the description of the emerging technology and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42b(a) unless and until this determination is made by the Administrator.

[40 C.F.R. 60.49b(a)(4), Subpart Db, 7/1/03]

41. **NSPS Subpart Db Fuel Consumption.** For EU ID 4, the Permittee shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for distillate oil and for natural gas for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

[18 AAC 50.040(a)(2)(C), 12/3/05]
[40 C.F.R. 60.49b(d) & (i), Subpart Db, 7/1/03]

42. **NSPS Subpart Db Sulfur Standards.** At all times, including periods of startup, shutdown, and malfunction, for EU ID 4, the Permittee shall not cause to be discharged into the atmosphere, any gases that contain sulfur dioxide in excess of 10% (0.10) of the potential sulfur dioxide emission rate (90% reduction) and that contain sulfur dioxide in excess of the emission limit determined according to Equation 5 .

Equation 5 $E_s = (K_b H_b) / (H_b)$

where: E_s = the sulfur dioxide emission limit, in ng/J or lb/million Btu heat input,
K_b = 340 ng/J (or 0.80 lb/million Btu),
H_b = the heat input from the combustion of oil, in J (million Btu).

[18 AAC 50.040(a)(2)(C), 12/3/05]
[40 C.F.R. 60.42b(a), Subpart Db, 7/1/03]

42.1 Monitoring – The owner or operator of an affected facility that combusts very low sulfur oil[10] is not subject to the emission monitoring requirements of this section if the owner or operator obtains fuel receipts as described in § 60.49b(r).

[40 C.F.R.60.45b(j), Subpart Db, 7/1/03]

[10] *Very low sulfur oil* means an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without sulfur dioxide emission control, has a sulfur dioxide emission rate equal to or less than 215 ng/J (0.5 lb/million Btu) heat input. [40 C.F.R. 60.41b 7/1/05]

42.2 Record keeping and Reporting – The Permittee shall keep records and submit reports to EPA as follows:

a. The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the compliance and performance testing requirements of this section if the owner or operator obtains fuel receipts as described in § 60.49b(r).

b. The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under § 60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in § 60.41b. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the reporting period.

[40 C.F.R. 60.45b(j) & 60.49(r) Subpart Db, 7/1/03]

43. **NSPS Subpart Db PM & Nitrogen Oxides Standards:** At all times, except during periods of startup, shutdown, and malfunction, the Permittee shall not cause to be discharged into the atmosphere from EU ID 4 any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

[18 AAC 50.040(a)(2)(C), 10/1/04]
[40 C.F.R. 60.43b(f), Subpart Db, 7/1/04]
[40 C.F.R. 60.48b(a) 7/1/04]

43.1 If required by 40 C.F.R. 60.48b(a), the Permittee shall install, calibrate, maintain, and operate COMS for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. Units that combust only oil that contains no more than 0.3 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less **are not required to conduct PM emissions monitoring** if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

[40 C.F.R. 60.48b(a) 7/1/04]

43.2 The Permittee shall limit the combined annual capacity factor to less than 10% by not exceeding the heat input of 158,468 mmBtu/yr in EU ID 4 described in Table A in any 12 consecutive months.

[Minor Permit AQ0316MSS02]
[18 AAC 50.040(a)(2)(C) 12/3/05]
[40 C.F.R. 60.44b(j)(2)&(3) & (k), 7/1/99]

a. The Permittee shall record calendar date, daily hours of operation, and hourly steam load.

b. The Permittee shall record fuel consumption for oil and natural gas on a daily basis.

c. The Permittee shall maintain and operate a system approved by the Department to monitor and record the daily fuel consumption. No later than the 30th day of each calendar month, record the fuel consumption for the previous 12 months.

d. Permittee shall calculate the annual heat input in mmBtu/yr at the end of each calendar month for EU ID 4 using Equation 6.

Equation 6 $H = (FC_L \times H_L) + (FC_G \times H_G)$

where: H = Annual heat input (mmBtu/yr)
FC_L = Annual fuel consumption of oil (gallons)
H_L = Higher heating value for oil (mmBtu /gal) Permittee may use a vendor certification documenting the higher heating value for each shipment of fuel delivered, or alternatively use a value of 0.139 mmBtu /gal.
FC_G = Annual fuel consumption of natural gas (mmscf)
H_G = Higher heating value for natural gas (mmBtu/mmscf). Permittee may use a vendor certification documenting the higher heating value for natural gas, or alternatively use a value of 1,020 mmBtu/mmscf.

43.3 Monitoring – COMS shall be used for determining the opacity of stack emissions as described in condition 39.

[40 C.F.R. 60.46b(f) & 40.46b(d)(7), Subpart Db, 7/1/03]
[40 C.F.R. 60 Appendix A-4 Method 9, 7/1/03]

43.4 Recordkeeping – The Permittee shall

a. maintain records of opacity

[40 C.F.R. 60.49b(f), Subpart Db, 7/1/03]

b. maintain all records required under this section for a period of 2 years following the date of such record.

[40 C.F.R. 60.49b(o), Subpart Db, 7/1/03]

c. maintain record of the following information for each steam generating unit operating day, the Calendar date. The number of hours of operation, and a record of hourly steam load.

[40 C.F.R. 60.49b(p), Subpart Db, 7/1/03]

d. maintain records of the occurrences and duration of any start-up, shutdown, or malfunction in the operation of Boiler EU ID 4, and any malfunction of associated air pollution control equipment.

[40 C.F.R. 60.7(b), Subpart Db, 7/1/03]

43.5 Reporting – The Permittee shall

a. submit to EPA the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the COMS using the applicable performance specifications in appendix B.

[18 AAC 50.040(a)(2)(C), 12/03/05]
[40 C.F.R. 60.49b(b) & (c), Subpart Db, 7/1/03]

b. submit excess emission reports for any excess emissions from the affected facility which occur during the reporting period.

[40 C.F.R. 60.49b(h)(1) & (2), Subpart Db, 7/1/03]

c. Semi-annual reports shall be submitted to the EPA Administrator, postmarked by the 30th day following the end of the reporting period, and shall contain: (1) the annual capacity factor over the previous 12 months, (2) the annual heat input over the previous 12 months, and (3) the hours of operation during the reporting period. Include copies of the six-month reports submitted to EPA with the facility operating report in described in condition 76.

[Minor Permit AQ0316MSS02]

d. Submit a report as described in condition 75 if the heat input for any 12 consecutive months exceeds 158,468 MMBtu.

[Minor Permit AQ0316MSS02]

Section 7. General Conditions

Standard Terms and Conditions

44. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

[18 AAC 50.326(j)(3), 10/1/04 & 50.345(a) & (e), 5/03/02]

45. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and re-issuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[18 AAC 50.326(j)(3), 10/1/04 & 50.345(a) & (f), 5/03/02]

46. The permit does not convey any property rights of any sort, nor any exclusive privilege.

[18 AAC 50.326(j)(3), 10/1/04 & 50.345(a) & (g), 5/03/02]

47. **Assessable Emissions.** The Permittee shall pay to the Department an annual emission fee based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of

[18 AAC 50.326(j)(1),& 50.346(b)(1), 10/1/04 and 50.410 – 50.420, 01/29/05]
[40 C.F.R. 71.5(c)(3)(ii), 7/1/03]

47.1 the stationary source's assessable potential to emit of 1,788.6 tpy; or

47.2 the stationary source's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12-month period approved in writing by the Department, when demonstrated by

a. an enforceable test method described in 18 AAC 50.220;

b. material balance calculations;

c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

d. other methods and calculations approved by the Department.

48. **Assessable Emission Estimates.** Emission fees will be assessed as follows:

48.1 No later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 610 University Avenue, Fairbanks, AK 99709-3643; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or

48.2 if no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in condition 47.1.

[18 AAC 50.326(j)(1),& 50.346(b)(1), 10/1/04 and 50.410 – 50.420, 01/29/05]
[40 C.F.R. 71.5(c)(3)(ii), 7/1/03]

49. **Good Air Pollution Control Practice.** Applies to all sources, **except** NSPS regulated sources, i.e., except EU ID 4

a. perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;

b. keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format; and

c. keep a copy of either the manufacturer's or the operator's maintenance procedures.

[18 AAC 50.030, 50.326(j)(3), & 50.346(b)(5), 10/1/04]

50. **Dilution.** The Permittee shall not dilute emissions with air to comply with this permit. Monitoring shall consist of an annual certification that the Permittee does not dilute emissions to comply with this permit.

[18 AAC 50.045(a), 1/18/97]

51. **Reasonable Precautions to Prevent Fugitive Dust.** A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.

[18 AAC 50.045(d), 12/3/05; and 18 AAC 50.040(e), 50. 326(j)(3), & & 50.346(c), 10/1/04]

51.1 The Permittee shall keep records of

a. complaints received by the Permittee and complaints received by the Department and conveyed to the Permittee; and

b. any additional precautions that are taken

(i) to address complaints described in condition 51.1 or to address the results of Department inspections that found potential problems; and

(ii) to prevent future dust problems.

51.2 The Permittee shall report according to condition 53.

52. **Stack Injection.** The Permittee shall not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack at a source constructed or modified after November 1, 1982, except as authorized by a construction permit, Title V permit, or air quality control permit issued before October 1, 2004.

[18 AAC 50.055(g), 10/1/04]

53. **Air Pollution Prohibited.** No person may permit 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.

[18 AAC 50.110, 5/26/72; and 18 AAC 50.040(e), 50.326(j)(3), & 50.346(a),10/1/04]
[40 C.F.R. 71.6(a)(3), 7/1/03]

53.1 If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to condition 75.

53.2 As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of condition 53.

53.3 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

a. after an investigation because of a complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of condition 53; or

b. the Department notifies the Permittee that it has found a violation of condition 53.

53.4 The Permittee shall keep records of

a. the date, time, and nature of all emissions complaints received;

b. the name of the person or persons that complained, if known;

c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of condition 53; and

d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.

53.5 With each stationary source operating report under condition 76, the Permittee shall include a brief summary report which must include

a. the number of complaints received;

b. the number of times the Permittee or the Department found corrective action necessary;

c. the number of times action was taken on a complaint within 24 hours; and

d. the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.

53.6 The Permittee shall notify the Department of a complaint that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.

54. **Technology-Based Emission Standard.** If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235(d), causes emissions in excess of a technology-based emission standard[11] listed in conditions 42 (NSPS Subpart Db Sulfur Standards) & condition 56 (refrigerants), the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard. Excess emissions reporting under condition 75 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 75.

[18 AAC 50.235(a), 1/18/97 and 50.326(j)(4), 10/1/04]
[40 C.F.R. 71.6(c)(6), 7/1/03]

55. **Asbestos NESHAP.** The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145, 61.150, and 61.152 of Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A.

[18 AAC 50.040(b)(1) & (2)(F), and 50.326(j), 10/1/04]
[40 C.F.R. 61, Subparts A & M, and Appendix A, 7/1/03]

55.1 In accordance with condition 73, the Permittee shall submit to the Department, at the time of submission to EPA, a copy of any notification and associated correspondence submitted to EPA for purposes of complying with the reporting requirements under condition 55.

[18 AAC 50.040(j), and 50.326(j), 10/1/04]

56. **Refrigerant Recycling and Disposal.** The Permittee shall comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F.

[18 AAC 50.040(d) & 50.326(j), 10/1/04]
[40 C.F.R. 82, Subpart F, 7/1/03]

[11] *Technology-based emission standard* means a best available control technology standard (BACT); a lowest achievable emission rate standard (LAER); a maximum achievable control technology standard established under 40 C.F.R. 63, Subpart B, adopted by reference in 18 AAC 50.040(c); a standard adopted by reference in 18 AAC 50.040(a) or (c); and any other similar standard for which the stringency of the standard is based on determinations of what is technologically feasible, considering relevant factors.

NESHAPs Applicability Determinations

57. The Permittee shall determine rule applicability and designation of affected sources under National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories (40 C.F.R. 63) in accordance with the procedures described in 40 C.F.R. 63.1(b). If a source becomes affected by an applicable subpart of 40 C.F.R. 63, Permittee shall comply with such standard by the compliance date established by the Administrator in the applicable subpart.

57.1 The Permittee must keep a record of the applicability determination on site for a period of 5 years after the determination or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the Permittee believes the source is unaffected. The analysis (or other information) must be sufficiently detailed to allow the Department to make a finding about the source's applicability status with regard to the relevant standard or other requirement.

[18 AAC 50.040(c)(1) & 50.326(j) 10/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/1/03]
[40 C.F.R. 63.1(b), 63.6(c)(1) & 63.10(b), 2/03/03]

Halon Prohibitions, 40 C.F.R. 82

58. The Permittee shall comply with the following prohibitions set out in 40 C.F.R. 82.174 (Protection of Stratospheric Ozone Subpart G – Significant New Alternatives Policy Program).

[18 AAC 50.040(d), 10/1/04]
[40 C.F.R. 82.174 (b) - (d), 7/1/03]

58.1 Do not use a substitute which a person knows or has reason to know was manufactured, processed, or imported in violation of the regulations of 40 C.F.R. 82, Subpart G or knows or has reason to know was manufactured, processed, or imported in violation of any use restriction in the acceptability determination, after the effective date of any rulemaking imposing such restrictions.

58.2 Do not use a substitute without adhering to any use restrictions set by the acceptability decision, after the effective date of any rulemaking imposing such restrictions.

58.3 Do not use a substitute after the effective date of any rulemaking adding such substitute to the list of unacceptable substitutes.

59. The Permittee shall comply with the following prohibitions set out in 40 C.F.R. 82.270.

[18 AAC 50.040(d), 10/1/04]
[40 C.F.R. 82.270 (b)-(f), 7/1/03]

59.1 No person testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training may knowingly vent or otherwise release into the environment any halons used in such equipment, as follows:

59.2 De minimis[12] releases associated with good faith attempts to recycle or recover halon are not subject to this prohibition.

59.3 Release of residual halon contained in fully discharged total flooding fire extinguishing systems would be considered a de minimis release associated with good faith attempts to recycle or recover halon.

59.4 Release of halons during testing of fire extinguishing systems is not subject to this prohibition if the following four conditions are met:

a. systems or equipment employing suitable alternative fire extinguishing agents are not available;

b. system or equipment testing requiring release of extinguishing agent is essential to demonstrate system or equipment functionality;

c. failure of the system or equipment would pose great risk to human safety or the environment; and

(i) a simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.

d. Releases of halons associated with research and development of halon alternatives, and releases of halons necessary during analytical determination of halon purity using established laboratory practices are exempt from this prohibition.

e. This prohibition does not apply to qualification and development testing during the design and development process of halon-containing systems or equipment when such tests are essential to demonstrate system or equipment functionality and when a suitable simulant agent cannot be used in place of the halon for technical reasons.

f. This prohibition does not apply to the emergency release of halons for the legitimate purpose of fire extinguishing, explosion inertion, or other emergency applications for which the equipment or systems were designed.

59.5 Organizations that employ technicians who test, maintain, service, repair or dispose of halon-containing equipment shall take appropriate steps to ensure that technicians hired on or before April 6, 1998 will be trained regarding halon emissions reduction by September 1, 1998. Technicians hired after April 6, 1998 shall be trained regarding halon emissions reduction within 30 days of hiring, or by September 1, 1998, whichever is later.

[12] Legal term meaning "of minimum importance."

59.6 No person shall dispose of halon-containing equipment except by sending it for halon recovery to a manufacturer operating in accordance with NFPA[13] 10 and NFPA 12A standards, a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards or a recycler operating in accordance with NFPA 10 and NFPA 12A standards. This provision does not apply to ancillary system devices such as electrical detection control components which are not necessary to the safe and secure containment of the halon within the equipment, to fully discharged total flooding systems, or to equipment containing only de minimis quantities of halons.

59.7 No person shall dispose of halon except by sending it for recycling to a recycler operating in accordance with NFPA 10 and NFPA 12A standards, or by arranging for its destruction using one of the following controlled processes:

a. Liquid injection incineration;

b. Reactor cracking;

c. Gaseous/fume oxidation;

d. Rotary kiln incineration;

e. Cement kiln;

f. Radio frequency plasma destruction; or

g. An EPA-approved destruction technology that achieves a destruction efficiency of 98 percent or greater.

59.8 No owner of halon-containing equipment shall allow halon release to occur as a result of failure to maintain such equipment.

Open Burning Requirements

60. **Open Burning.** The Permittee shall comply with the following requirements when conducting open burning at the stationary source.

[18 AAC 50.065, 1/18/97; and 18 AAC 50.326(j) 10/1/04]
[40 C.F.R. 71.6(a) (3), 7/1/03]

60.1 **General Requirements.** Except when conducting open burning under 60.7, 60.8, or 60.9, a person conducting open burning shall comply with the limitations of 60.2 - 60.6 and shall ensure that

a. the material is kept as dry as possible through the use of a cover or dry storage;

b. before igniting the burn, non-combustibles are separated to the greatest extent practicable;

c. natural or artificially induced draft is present;

d. to the greatest extent practicable, combustibles are separated from grass or peat layer;

[13] National Fire Protection Association

e. combustibles are not allowed to smolder; and

f. sufficient written records are kept to demonstrate that the Permittee complies with the limitations in this condition. Upon request of the Department, submit copies of the records.

60.2 **Black Smoke Prohibited**. Except for firefighter training conducted under conditions 60.8 or 60.9, open burning of asphalts, rubber products, plastics, tars, oils, oily wastes, contaminated oil cleanup materials, or other materials in a way that gives off black smoke is prohibited without written Department approval. Department approval of open burning as an oil spill response countermeasure is subject to the Department's *In Situ Burning Guidelines for Alaska*, adopted by reference in 18 AAC 50.035. Open burning approved under this subsection is subject to the following limitations:

a. Open burning of liquid hydrocarbons produced during oil or gas well flow tests may occur only when there are no practical means available to recycle, reuse, or dispose of the fluids in a more environmentally acceptable manner;

b. The person who conducts open burning shall establish reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated; and

c. The Department will, in its discretion, as a condition of approval issued under this subsection, require public notice as described in condition 60.10.

60.3 **Toxic and Acid Gases and Particulate Matter Prohibited**. Open burning or incineration of pesticides, halogenated organic compounds, cyanic compounds, or polyurethane products in a way that gives off toxic or acidic gases or particulate matter is prohibited.

60.4 **Adverse Effects Prohibited**. Open burning of putrescible garbage, animal carcasses, or petroleum-based materials, including materials contaminated with petroleum or petroleum derivatives, is prohibited if it causes odor or black smoke that has an adverse effect on nearby persons or property.

60.5 **Air Quality Advisory**. Open burning is prohibited in an area if the Department declares an air quality advisory under 18 AAC 50.245, stating that burning is not permitted in that area for that day.

60.6 **Wood Smoke Control Areas**. Open burning is prohibited between November 1 and March 31 in a wood smoke control area identified in 18 AAC 50.025(b).

60.7 **Controlled Burning**. Controlled burning to manage forest land, vegetative cover, fisheries, or wildlife habitat, other than burning to combat a natural wildfire, requires written Department approval if the area to be burned exceeds 40 acres yearly. The Department will, in its discretion, require public notice as described in condition 60.10 of this section.

60.8 **Firefighter Training: Structures**. A fire service may open burn structures for firefighter training without ensuring maximum combustion efficiency under the following circumstances:

a. Before igniting the structure, the fire service shall

(i) obtain Department approval for the location of the proposed firefighter training; approval will be based on whether the proposed open burning is likely to adversely affect public health in the neighborhood of the structure;

(ii) visually identify materials in the structure that might contain asbestos, test those materials for asbestos, and remove all materials that contain asbestos;

(iii) ensure that the structure does not contain

(A) putrescible garbage;

(B) electrical batteries;

(C) stored chemicals such as fertilizers, pesticides, paints, glues, sealers, tars, solvents, household cleaners, or photographic reagents;

(D) stored linoleum, plastics, rubber, tires, or insulated wire;

(E) hazardous waste;

(F) lead piping;

(G) plastic piping with an outside diameter of four inches or more; or

(H) urethane or another plastic foam insulation;

(iv) provide public notice consistent with condition 60.10; and

(v) ensure that a fire-service representative is on-site before igniting the structure;

b. the fire service shall ignite and conduct training on only one main structure and any number of associated smaller structures at a time; examples of associated smaller structures are garages, sheds, and other outbuildings; and

c. the fire service shall respond to complaints in accordance with condition 60.11.

60.9 **Firefighter Training: Fuel Burning**. Unless a greater quantity is approved by the Department, a fire service may open burn up to 250 gallons of uncontaminated fuel daily and up to 600 gallons yearly for firefighter training without ensuring maximum combustion efficiency. To conduct this training without prior written Department approval, the fire service shall

a. provide public notice consistent with condition 60.10 before burning more than 20 gallons of uncontaminated fuel, unless waived in writing by the Department; and

b. respond to complaints in accordance with condition 60.11.

60.10 **Public Notice**. A person required to provide public notice of open burning shall issue the notice through local news media or by other appropriate means if the area of the open burning does not have local news media. The public notice must be issued as directed by the Department and must

a. state the name of the person conducting the burn;

b. provide a list of material to be burned;

c. provide a telephone number to contact the person conducting the burn before and during the burn;

d. for a surprise fire drill, state

(i) the address or location of the training; and

(ii) the beginning and ending dates of the period during which a surprise fire drill may be conducted (this period may not exceed 30 days); and

e. for open burning other than a surprise fire drill, state the expected time, date, and location of the open burning.

60.11 **Complaints**. A person required to provide public notice of open burning shall

a. make a reasonable effort to respond to complaints received about the burn;

b. keep, for at least 30 days, a record of all complaints received about the burn, including to the extent feasible

(i) the name, address, and telephone number of each person who complained;

(ii) a short summary of each complaint; and

(iii) any action the person conducting the open burning took to respond to each complaint; and

c. upon request, provide the Department with a copy of the records kept under condition 60.11b.

Section 8. General Source Testing and Monitoring Requirements

61. **Requested Source Tests.** In addition to any source testing explicitly required by the permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.

[18 AAC 50.220(a), 1/18/97 & 18 AAC 50.345(a) & (k), 5/03/02]

62. **Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing

[18 AAC 50.220(b), 1/18/97]

62.1 at a point or points that characterize the actual discharge into the ambient air; and

62.2 at the maximum rated burning or operating capacity of the source or another rate determined by the Department to characterize the actual discharge into the ambient air.

63. **Reference Test Methods.** The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:

63.1 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.

[18 AAC 50.220(c)(1)(A), 1/18/97 & 18 AAC 50.040(a), 10/1/04]
[40 C.F.R. 60, 7/1/03]

63.2 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9 and may use the form in Section 13 to record data.

[18 AAC 50.030, 5/03/02, 18 AAC 50.220(c)(1)(D), 1/18/97]

63.3 Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.

[18 AAC 50.040(a)(3), 10/1/04 & 18 AAC 50.220(c)(1)(E), 1/18/97]
[40 C.F.R. 60, Appendix A, 7/1/03]

63.4 Source testing for emissions of PM-10 must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M, Methods 201 or 201A and 202.

[`18 AAC 50.035(b)(2), 10/1/04; and 50.220(c)(1)(F), 1/18/97]
[40 C.F.R. 51, Appendix M, 7/01/03]

63.5 Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63, Appendix A, Method 301.

[18 AAC 50.040(c)(24), 10/1/04 & 50.220(c)(2), 1/18/97]
[40 C.F.R. 63, Appendix A, Method 301, 2/03/03]

64. **Excess Air Requirements.** To determine compliance with this permit, standard exhaust gas volumes must include only the volume of gases formed from the theoretical combustion of the fuel, plus the excess air volume normal for the specific source type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).

[18 AAC 50.220(c)(3), 1/18/97 & 50.990(102), 10/1/04]

65. **Test Exemption.** The Permittee is not required to comply with conditions 67, 68 and 69 when the exhaust is observed for visible emissions by Method 9 Plan (condition 2.1) or Smoke/No Smoke Plan (condition 2.3).

[18 AAC 50.345(a), 5/03/02]

66. **Test Deadline Extension.** The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.

[18 AAC 50.345(a) & (l), 5/03/02]

67. **Test Plans.** Except as provided in condition 65, before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance and must specify how the source will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under condition 61 and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

[18 AAC 50.345(a) & (m), 5/03/02]

68. **Test Notification.** Except as provided in condition 65, at least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.

[18 AAC 50.345(a) & (n), 5/03/02]

69. **Test Reports.** Except as provided in condition 65, within 60 days after completing a source test, the Permittee shall submit two copies of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall additionally certify the results in the manner set out in condition 72. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

[18 AAC 50.345(a) & (o), 5/03/02]

70. **Particulate Matter Calculations.** In source testing for compliance with the particulate matter standards in conditions 5, 23, and 28, the three-hour average is determined using the average of three one-hour test runs. The source testing must account for those emissions caused by soot blowing, grate cleaning, or other routine maintenance activities by ensuring that at least one test run includes the emissions caused by the routine maintenance activity and is conducted under conditions that lead

to representative emissions from that activity. The emissions must be quantified using the following equation:

Equation 7

$$E = E_M \left[(A + B) \times \frac{S}{R \times A} \right] + E_{NM} \left[\frac{(R - S)}{R} - \frac{B \times S}{R \times A} \right]$$

Where:

E = the total PM emissions of the source in grains per dry standard cubic foot (gr./dscf).

E_M = the PM emissions in gr./dscf measured during the test that included the routine maintenance activity.

E_{NM} = the arithmetic average of PM emissions in gr./dscf measured during the test runs that did not include the maintenance activity.

A = the period of routine maintenance activity occurring during the test run that included routine maintenance activity, expressed to the nearest hundredth of an hour.

B = the total period of the test run, less A.

R = the maximum period of source operation per 24 hours, expressed to the nearest hundredth of an hour.

S = the maximum period of routine maintenance activity per 24 hours, expressed to the nearest hundredth of an hour.

[18 AAC 50.220(f), 1/18/97]

Section 9. General Recordkeeping and Reporting Requirements

Recordkeeping Requirements

71. **Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(3)(ii)(B), 7/1/03]

71.1 copies of all reports and certifications submitted pursuant to this section of the permit; and

71.2 records of all monitoring required by this permit, and information about the monitoring including:

a. the date, place, and time of sampling or measurements;

b. the date(s) analyses were performed;

c. the company or entity that performed the analyses;

d. the analytical techniques or methods used;

e. the results of such analyses; and,

f. the operating conditions as existing at the time of sampling or measurement.

Reporting Requirements

72. **Certification.** The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete." Excess emission reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.

72.1 The Department may accept an electronic signature on an electronic application or other electronic record required by the Department if

a. a certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and

b. the person providing the electronic signature has made an agreement, with the certifying authority described in 72.1a, that the person accepts or agrees to be bound by an electronic record executed or adopted with that signature,

[18 AAC 50.345(a) & (j), 5/3/02; 18 AAC 50.205 & 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/1/03]

73. **Submittals.** Unless otherwise directed by the Department or this permit, the Permittee shall send two copies of reports, compliance certifications, and other submittals required by this permit to ADEC, Air Permits Program, 610 University Avenue, Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with condition 72.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/1/03]

74. **Information Requests.** The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the federal administrator.

[18 AAC 50.345(a) & (i), 5/3/02; 18 AAC 50.200, and 50.326(a) & (j), 10/1/04]
[40 C.F.R. 71.5(a)(2) & 71.6(a)(3), 7/1/03]

75. **Excess Emissions and Permit Deviation Reports.**

[18 AAC 50.235(a)(2), 50.240(c), 50.326(j)(3), and 50.346(b)(2) & (3), 10/1/04

75.1 Except as provided in condition 53, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:

a. in accordance with 18 AAC 50.240(c), as soon as possible after the event commenced or is discovered, report

(i) emissions that present a potential threat to human health or safety; and

(ii) excess emissions that the Permittee believes to be unavoidable;

b. in accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or non-routine repair that causes emissions in excess of a technology based emission standard;

c. report all other excess emissions and permit deviations

(i) within 30 days of the end of the month in which the emissions or deviation occurs, except as provided in conditions 75.1c(ii) and 75.1c(iii);

(ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under condition 75.1c(i); and

(iii) for failure to monitor, as required in other applicable conditions of this permit.

75.2 The Permittee must report using either the Department's on-line form, which can be found at http://www.dec.state.ak.us/air/ap/docs/adby/4notform.pdf, or if the Permittee prefers, the form contained in Section 15 of this permit. The Permittee must provide all information called for by the form that is used.

75.3 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

76. **Operating Reports.** During the life of this permit, the Permittee shall submit to the Department one original and one copy of an operating report by July 31 for the period January 1 to June 30 of the current year and by January 31 for the period July 1 to December 31 of the previous year.

[18 AAC 50.346(b)(6) & 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/1/03]
[40 C.F.R. 63.7550(b)(4) 7/1/03]

76.1 The operating report must include all information required to be in operating reports by other conditions of this permit.

76.2 If excess emissions or permit deviations that occurred during the reporting period are not reported under condition 76.1, either

a. The Permittee shall identify

(i) the date of the deviation;

(ii) the equipment involved;

(iii) the permit condition affected;

(iv) a description of the excess emissions or permit deviation; and

(v) any corrective action or preventive measures taken and the date of such actions; or

b. When excess emissions or permit deviations have already been reported under condition 75 the Permittee may cite the date or dates of those reports.

76.3 The operating report must include a listing of emissions monitored under conditions 2.2e, and 2.3c, which trigger additional testing or monitoring, whether or not the emissions monitored exceed an emission standard. The Permittee shall include in the report

a. the date of the emissions;

b. the equipment involved;

c. the permit condition affected; and

d. the monitoring result which triggered the additional monitoring.

77. **Annual Compliance Certification.** Each year by March 31, the Permittee shall compile and submit to the Department one original and one copy of an annual compliance certification report.

77.1 Certify the compliance status of the stationary source over the preceding calendar year consistent with the monitoring required by this permit, as follows:

a. identify each term or condition set forth in Section 3 through Section 11, that is the basis of the certification;

b. briefly describe each method used to determine the compliance status;

c. state whether compliance is intermittent or continuous; and

d. identify each deviation and take it into account in the compliance certification;

77.2 In addition, submit a copy of the report directly to the EPA-Region 10, Office of Air Quality, M/S OAQ-107, 1200 Sixth Avenue, Seattle, WA 98101.

[18 AAC 50.205 & 50.326(j), 10/1/04 & 50.345(a) & (j), 5/03/02]
[40 C.F.R. 71.6(c)(5), 7/1/03]

Section 10. Permit Changes and Renewal

78. **Emissions Trading:** No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(8), 7/1/03]

79. **Off Permit Changes.** The Permittee may make changes that are not addressed or prohibited by this permit other than those subject to the requirements of 40 C.F.R. part 72 through 78 or those that are modifications under any provision of title I of the Act to be made without a permit revision, provided that the following requirements are met:

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(12), 7/1/03]

79.1 Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition;

79.2 Provide contemporaneous written notice to the Department (and EPA, in the case of a program delegated pursuant to 40 C.F.R. 71.10) of each such change, except for changes that qualify as insignificant under 18 AAC 50.326(d) – (i). Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change;

79.3 The change shall not qualify for the shield under 40 C.F.R. 71.6(f);

79.4 The Permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

80. **Operational Flexibility.** The Permittee may make changes within the permitted stationary source without requiring a permit revision if the changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions):

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(a)(13), 7/1/03]

80.1 The Permittee shall provide the Department with a notification no less than 7 days in advance of the proposed change.

80.2 For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

80.3 The permit shield described in 40 C.F.R. 71.6(f) shall not apply to any change made pursuant to condition 80.

80.4 Trading of emission increases and decreases as described in 71.6(13)(iii) has not been requested by the Permittee.

81. **Construction of New Major Stationary Source or Major Modification.** An owner or operator must obtain a construction permit before beginning actual construction of a new major stationary source, a major modification, a PAL major modification, or a new stationary source or modification subject to the construction permitting requirements of 42 U.S.C. 7412(i) (Clean Air Act sec. 112(i)).

[18 AAC 50.302, 10/1/04]

82. **Construction of Source Modification.** An owner or operator must obtain a minor permit before making a physical change to or change in the method of operation of this source as classified in 18 AAC 50.502(c)(3) requiring a minor permit.

[18 AAC 50.502, 10/1/04]

83. **Transfer of Ownership.** The Permittee shall apply for an administrative permit amendment to allow for a change in ownership or operational control of a source where the Department determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee has been submitted to the Department.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.7(d)(iv), 7/1/03]

84. **Permit Renewal**. To renew this permit, the Permittee shall submit an application under 18 AAC 50.326 no sooner than **June 27, 2011** and no later than **June 27, 2012. The renewal application shall be complete before the permit expiration date listed on the cover page of this permit.** Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 40 C.F.R. 71.7(b) and 71.5(a)(1)(iii).

[18 AAC 50.326(c)(2) & (j)(2), 10/1/04]
[40 C.F.R. 71.5(a)(1)(iii) and 71.7(b) & (c)(1)(ii), 7/1/03]

Section 11. Compliance Requirements

General Compliance Requirements

85. Compliance with permit terms and conditions is considered to be compliance with those requirements that are

85.1 included and specifically identified in the permit; or

85.2 determined in writing in the permit to be inapplicable.

[18 AAC 50.326(j)(3), 10/1/04 & 50.345(a) & (b), 5/03/02]

86. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14.120(c), 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

86.1 an enforcement action;

86.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

86.3 denial of an operating permit renewal application.

[18 AAC 50.326(j)(3), 10/1/04 & 50.345(a) & (c), 5/03/02]

87. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.326(j)(3), 10/1/04 & 50.345(a) & (d), 5/03/02]

88. The Permittee shall allow the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator to

88.1 enter upon the premises where a source subject to the permit is located or where records required by the permit are kept;

88.2 have access to and copy any records required by the permit;

88.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and

88.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.326(j)(3) and 50.345(a) & (h), 10/1/04]

Compliance Schedule

89. For applicable requirements with which the **Fairbanks Campus Power Plant** is in compliance, the Permittee will continue to comply with such requirements.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(c)(3) & 71.5(c)(8)(iii)(A) 7/1/04]

90. For applicable requirements that will become effective during the permit term, the Permittee shall meet such requirements on a timely basis.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(c)(3) & 71.5(c)(8)(iii)(B) 7/1/04]

91. The Permittee shall develop and implement Compliance Assurance Monitoring (CAM) for EU IDs 1 & 2 in compliance with 40 C.F.R. Part 64 no later than six months after the effective date of this permit (or by a later date if approved by the Department in writing), and by following the compliance schedule described below:

[40 C.F.R. 64 7/1/06]
[40 C.F.R. 71.6(c)(3) – (4), & 71.5(c)(8)(iii)(C), 7/1/04]
[18 AAC 50.326(j), 12/3/05]

91.1 UAF shall submit a CAM plan to the Department in accordance with 40 C.F.R. Part 64 for EU IDs 1 & 2 by no later than sixty days following the effective date of this permit.

91.2 The CAM plan shall include specific information regarding contracts and equipment purchases required to implement the plan.

91.3 No later than six months after the effective date of this permit (or by a later date if approved by the Department in writing), UAF shall have fully implemented the monitoring strategy in accordance with 40 C.F.R. 64 for EU IDs 1 & 2.

91.4 The Permittee shall submit a status report via a letter to the Department no later than six months after the effective date of this permit (or by a later date if approved by the Department in writing). The status report shall include: (1) the progress the Permittee has made in achieving compliance with the CAM requirements in 40 C.F.R. 64, (2) the reasons for any noncompliance, and (3) a discussion of any matters relevant to the status of its compliance under condition 91.

92. The Permittee shall comply with either one of the sub-conditions (92.1, 92.2, 92.3) as listed below:

92.1 Within six-months after the effective date of this permit (or a later date if approved by the Department in writing), the Permittee shall submit a CAM plan for the Selective Catalytic Reduction (SCR) unit in accordance with 40 C.F.R. 64, and by following the compliance schedule described in items a through d below:

[40 C.F.R. 64 7/1/06]
[40 C.F.R. 71.6(c)(3) – (4), & 71.5(c)(8)(iii)(C), 7/1/04]
[18 AAC 50.326(j), 12/3/05]

a. UAF shall submit a CAM plan to the Department in accordance with 40 C.F.R. Part 64 for EU ID 8 by no later than sixty days following the effective date of this permit.

b. The plan shall include specific information regarding contracts and equipment purchases required to implement the plan.

c. No later than six months after the effective date of this permit (or by a later date if approved by the Department in writing), UAF shall have fully implemented the monitoring strategy in accordance with 40 C.F.R. 64 for EU ID 8.

d. Until the compliance date, submit a written quarterly, certified progress report. The progress report shall include a summary of activities and progress achieved in the prior calendar quarter to achieve compliance by the compliance date(s) specified above.

92.2 Within six-months after the effective date of this permit (or a later date if approved by the Department in writing) submit an Owner Requested Limit application to limit the pre-control NO_X potential-to-emit of EU ID 8 to below major source thresholds (as defined under 40 CFR part 70 or 71) in order to avoid CAM applicability.

92.3 Within three-months after the effective date of this permit (or a later date if approved by the Department in writing) submit an approvable plan to decommission the SCR.

a. The plan must show the SCR will be decommissioned within three-months after the effective date of this permit (or a by later date if approved by the Department in writing).

b. The decommissioning of the SCR must be verifiable by the Department.

Section 12. Permit As Shield from Inapplicable Requirements

In accordance with AS 46.14.290, and based on information supplied in the stationary source application, this section of the permit contains the requirements determined by the Department not to be applicable to **the Fairbanks Campus Power Plant**.

93. Nothing in this permit shall alter or affect the following:

93.1 The provisions of section 303 of the Act (emergency orders), including the authority of the Administrator under that section; or

93.2 The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(f)(3)(i)) and (ii), 7/1/03]

94. Table C identifies the emission units that are not subject to the specified requirements at the time of permit issuance. If any of the requirements listed in Table C becomes applicable during the permit term, the Permittee shall comply with such requirements on a timely basis including, but not limited to, providing appropriate notification to EPA, obtaining a construction permit and/or an operating permit revision.

[18 AAC 50.326(j), 10/1/04]
[40 C.F.R. 71.6(f)(1)(ii), 7/1/03]

Table C - Permit Shields Granted.

EU ID	Non-Applicable Requirements	Reason for non-applicability
1 – 3	40 C.F.R. §60 Subparts D, Da, Db, & Dc.	Emission Units ID 1-3 were installed prior to the applicability date
5A	40 C.F.R. §60 Subpart Dc	Rated capacity is less than the applicability threshold of 10 MMBtu/hr
9A	40 C.F.R. §60 Subparts AAAA, CCCC, & Ec	This determination is based upon federally enforceable owner requested limit in conditions 25 and 26**Error! Reference source not found.**. Rated capacity is 6.4 tons per day, less than Subpart AAAA of at least 35 tpd of municipal solid waste. UAF is not a Commercial or Industrial facility as defined in Subpart CCCC. Owner Requested Limit 10% or less of medical waste in the fuel stream per Subpart Ec

Section 13. Visible Emissions Forms

Visible Emissions Field Data Sheet

Certified Observer: _____

Company & Stationary Source: _____

Location: _____

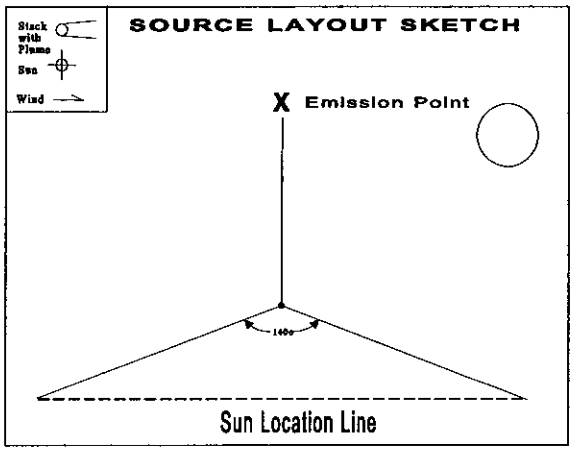
Test No.: _____ Date: _____

Emission Unit: _____

Production Rate/Operating Rate: _____

Unit Operating Hours: _____

Hrs. of observation: _____



Clock Time	Initial				Final
Observer location Distance to discharge					
Direction from discharge					
Height of observer point					
Background description					
Weather conditions Wind Direction					
Wind speed					
Ambient Temperature					
Relative humidity					
Sky conditions: (clear, overcast, % clouds, etc.)					
Plume description: Color					
Distance visible					
Water droplet plume? (Attached or detached?)					
Other information					

Visible Emissions Observation Record

Page _____ of _____

Company & Stationary Source _____ Certified Observer _____

Test Number Clock Time

Date:		Visibility reduction every 15 Seconds (Opacity)				Steam Plume (check if applicable)		Comments
Hr	Min	0	15	30	45	Attached	Detached	

Additional information:

_____ _____

Observer Signature and Date Certified By and Date

Data Reduction:

Duration of Observation Period (minutes): _____ Duration Required by Permit (minutes) _____

Number of Observations _____ Highest Six –Minute Average Opacity (%) _____

Number of Observations exceeding 20% _____

In compliance with three-minute aggregate opacity limit? (Yes or No) _____

In compliance with six-minute opacity limit? (Yes or No) _____

Average Opacity Summary

Set Number	Time Start—End	Opacity	
		Sum	Average

Section 14. Material Balance Calculation

If the sulfur content of a fuel shipment is greater than 0.75% by weight, calculate the three-hour exhaust concentration of SO_2 using the following equations:

A. = 31,200 x [**wt%S_{fuel}**] = 31,200 x _____ = _____

B. = 0.148 x [**wt%S_{fuel}**] = 0.148 x _____ = _____

C. = 0.396 x [**wt%C_{fuel}**] = 0.396 x _____ = _____

D. = 0.933 x [**wt%H_{fuel}**] = 0.933 x _____ = _____

E. = B + C + D = _____ + _____ + _____ = _____

F. = 21 – [**vol%$_{dry}$O2, $_{exhaust}$**] = 21 - _____ = _____

G. = [**vol%$_{dry}$O2, $_{exhaust}$**] ÷ F = _____ ÷ _____ = _____

H. = 1 + G = 1 + _____ = _____

I. = E x H = _____ x _____ = _____

SO_2 concentration = A ÷ I = _____ ÷ _____ = _____ ppm

The **wt%S_{fuel}**, **wt%C_{fuel}**, and **wt%H_{fuel}** are equal to the weight percents of sulfur, carbon, and hydrogen in the fuel. These percentages should total 100%.

The fuel weight percent (wt%) of sulfur is obtained pursuant to condition 13.1. The fuel weight percents of carbon and hydrogen are obtained from the fuel refiner.

The volume percent of oxygen in the exhaust (**vol%$_{dry}$$O_{2, exhaust}$**) is obtained from oxygen meters, manufacturer's data, or from the most recent ORSAT analysis at the same engine load used in the calculation.

Enter all of the data in percentages without dividing the percentages by 100. For example, if **wt%S_{fuel}** = 1.0%, then enter 1.0 into the equations not 0.01 and if **vol%$_{dry}$$O_{2, exhaust}$** = 3.00%, then enter 3.00, not 0.03.

[18 AAC 50.346(c), 10/1/04]

Section 15. ADEC Notification Form[14]

Stationary Source Name

Air Quality Permit Number

Company Name

When did you discover the Excess Emissions/Permit Deviation?

Date: _____ / _____ / _____ Time: _____ : _____

When did the event/deviation occur?

Begin Date: _____ / _____ / _____ Time: _____ : _____ (please use 24hr clock)

End Date: _____ / _____ / _____ Time: _____ : _____ (please use 24hr clock)

What was the duration of the event/deviation?: _____ : _____ (hrs:min) or _____ days

(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for Notification: (please check only 1 box and go to the corresponding section)

☐ Excess Emissions - Complete Section 1 and Certify.

☐ Deviation from Permit Condition - Complete Section 2 and Certify

☐ Deviations from COBC, CO, or Settlement Agreement - Complete Section 2 and Certify

Section 1. Excess Emissions

(a) Was the exceedance: ☐ Intermittent or ☐ Continuous

(b) Cause of Event (Check one that applies):

☐ Start Up /Shut ☐ Natural Cause (weather/earthquake/flood)

☐ Control Equipment Failure ☐ Scheduled Maintenance/Equipment Adjustment

☐ Bad fuel/coal/gas ☐ Upset Condition ☐ Other _____

(c) Description

Describe briefly, what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) Emissions Units Involved:

Identify the emission unit involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

Unit ID	Unit Name	Permit Condition Exceeded/Limit/Potential Exceedance

[14] Revised as of December 6, 2004

(e) Type of Incident (Please Check only one).

☐ Opacity _____ % ☐ Venting _____ (gas/scf) ☐ Control Equipment Down

☐ Fugitive Emissions ☐ Emission Limit Exceeded ☐ Record Keeping Failure

☐ Marine Vessel Opacity ☐ Failure to moitor/report ☐ Flaring

☐ Other: _____

(f) Unavoidable Emissions:

Do you intend to assert that these excess emissions were unavoidable? ☐ Yes ☐ No

Do you intend to assert the affirmative defense of 18 AAC 50.235? ☐ Yes ☐ No

Certify Report (go to end of form)

Section 2 Permit Deviations

(a) Permit Deviation Type (check one only box, corresponding with the section in the permit).

☐ Emission Unit Specific

☐ General Source Test/Monitoring Requirements

☐ Recordingkeeping/Reporting/Compliance Certification

☐ Standard Conditions Not Included in Permit

☐ Generally Applicable Requirements

☐ Reporting/Monitoring for Diesel Engines

☐ Insignificant Emission Unit

☐ Stationary Source Wide

☐ Other Section _____ (title of section and section number of your permit).

(b) Emission Unit Involved.

Identify the emission unit involved in the event, using the same identification number and name as in the permit. List the corresponding permit conditions and the deviation.

Unit ID	Unit Name	Permit Condition / Potential Deviation

(c) Description of Potential Deviation:
Describe briefly what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) Corrective Actions:
Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Title: _____ Date: _____

Signature: _____ Phone Number: _____

To Submit this Report:

Fax to: 907-451-2187;

Email to: dec.aq.airreports@alaska.gov - *if emailed, the report must be certified within the Operating Report required for the same reporting period per condition 76;*

Mail to: ADEC, Air Permits Program, 610 University Avenue, Fairbanks, AK 99709-3643;

Phone Notification: 907-451-5173 - p*hone notifications require a written follow-up report within the deadline listed in condition 75; OR*

Online Submission: *(Website is not yet available) - if submitted online, the report must be certified within the Operating Report required for the same reporting period per condition 76.*

Alaska Department of Environmental Conservation
Air Permits Program
University of Alaska
Fairbanks Campus Power Plant

STATEMENT OF BASIS
of the Terms and Conditions for

Permit No. AQ0316TVP02

Prepared by David Schleiger

December 4, 2007

INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. AQ0316TVP02.

STATIONARY SOURCE IDENTIFICATION

Section 1 of Operating Permit No. AQ0316TVP02 contains information on the stationary source as provided in the Title V permit application.

The stationary source is owned and operated by the University of Alaska, and the University of Alaska is the Permittee for the stationary source's operating permit. The SIC code for this stationary source is 8221 Colleges, University and Professional Schools.

The University of Alaska, Fairbanks Campus Power Plant building has two coal-fired boilers, installed in 1962, and two oil-fired boilers (converted to dual fuel-fired by minor permit AQ0316MSS02), installed in 1970 and 1987. The power plant building also has a 113,266 hp backup diesel generator installed in 1998. In addition to the power plant building, UAF has a small rated oil fired boiler used for the biological kill unit installed in 2006, two 125 kW backup diesel generators installed in 1968, and an incinerator installed before 1980 in the Arctic Health Research Center. The incinerator is due to be decommissioned and scrapped when the new crematory incinerator in the Biological Research & Diagnostics (BIRD) facility is operational. UAF has two backup oil-fired boilers in the West Ridge Research Building. These boilers are considered an insignificant source due to the owner imposed operating limit of 500 hours each per calendar year.

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 Fairbanks Campus Power Plant that are classified as having specific monitoring, recordkeeping, and reporting requirements are listed in Table A of Operating Permit No. AQ0316TVP02.

Table A of Operating Permit No. AQ0316TVP02 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 emission unit's rating/size provided in the table is not intended to create an enforceable limit. EU ID 5 from the previous permit was replaced by EU ID 5A. The replacement boiler was a like-in-kind replacement with a 1/3rd less capacity. EU ID 9 is planned to be replaced in December 2006 by a unit of equal size at an adjacent location. The table is provided for informational and identification purposes only.

EMISSIONS

A summary of the potential to emit (PTE)[15] and assessable PTE as indicated in the application, as submitted by the Permittee, from the **Fairbanks Campus Power Plant** are shown below in the Table D.

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

Pollutant	NO_X	CO	PM-10	SO_2	VOC	HAPs	Total
PTE	637	252	17	858	11	13.6	1,788.6
Assessable PTE	637	252	17	858	11	13.6	1,788.6

The assessable PTE listed under condition 47.1 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 D 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, as follows: Emission calculations were submitted by the applicant in tab D of the permit application.

The VOC total was calculated by the applicant using MSDS data.

The Permittee estimated HAPs emissions from the fuel burned in the facility and the medical waste combusted in the incinerator. It is based upon source testing of similar coal fired stoker boilers burning the same coal from Usibelli Coal Mine. The source test data is from tests conducted at Fort Wainwright and Clear Air Force Station. The Permittee estimates they have a HAPs emission rate of 6.6 tpy of hydrofluoric acid (HF), 4.1 tpy of hydrochloric acid (HCl), 1.5 tpy of hexanes, 0.6 tpy of lead (Pb), 0.7 tpy of formaldehyde (HCOH), and 0.1 tpy of cyanide. Total HAPs for information provided in the permit application. The Permittee has claimed a total emission of HAPs at 13.6 tpy.

BASIS FOR REQUIRING AN OPERATING PERMIT

In accordance with 18 AAC 50.326(a), an owner or operator of a Title V source[16] must obtain a Title V permit consistent with 40 C.F.R. Part 71, as adopted by reference in 18 AAC 50.040. This stationary source requires an operating permit because it is classified under:

(1) 18 AAC 50.326(a) and 40 C.F.R. 71.3(a)(1). Any major stationary source (or any group of stationary sources) belonging to a single major industrial grouping and that

[15] *Potential to Emit or PTE* means the maximum quantity of a release of an air pollutant, considering a facility's physical or operational design, based on continual operation of all sources within the facility for 24 hours a day, 365 days a year, reduced by the effect of pollution control equipment and approved State or federal limitations on the capacity of the facility's sources or the facility to emit an air pollutant, including limitations such as restrictions on hours or rates of operation and type or amount of material combusted, stored, or processed as defined in AS 46.14.990(21), effective 1/18/97.

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

a. as defined in section 302 of the Act, directly emits, or has the potential to emit, 100 tpy or more of any air pollutant,

(2) 18 AAC 50.326(a) and 40 C.F.R. 71.3(a)(2). Any source, including an area source, subject to a standard, limitation or other requirement under section 111 of the Act (Standards of performance for new stationary source, NSPS).

CURRENT AIR QUALITY PERMITS

Previous Air Quality Permit to Operate

The most recent permit issued for this stationary source is permit-to-operate number AQ0316TVP01, Revision 3. This permit-to-operate includes all construction authorizations issued through August 9, 2006. All stationary source-specific requirements established in this previous permit are included in the new operating permit as described in Table E.

Minor Permits

Air Quality Control Minor Permit No. AQ0316MSS02 has been incorporated into this permit.

Title V Operating Permit Application, Revisions and Renewal History

The owner or operator submitted an application on February 7, 2005

COMPLIANCE HISTORY

The stationary source has operated at its current location since 1964. 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.

On January 6, 2004 a Compliance Order by Consent was issued to the University of Alaska, Fairbanks Campus Power Plant for exceeding the twelve month rolling total of 40 tons of NO_X per year from July 2002 through June 2003. In July 2002 UAF suffered a failure to the oil lube pump in their primary steam turbine. This necessitated UAF to run the diesel generator, emission unit 8, for electrical power. Emission unit ID 8 uses aqueous ammonia in a selective catalytic reduction (SCR) system to reduce NO_X emissions by 90 percent. UAF utilized an 8,000 gallon tank of aqueous ammonia to supply the SCR. However, do to the remote location and no local suppliers of aqueous ammonia UAF was only able to order aqueous ammonia in 6,000 gallons increments. This led the 8,000 gallon aqueous ammonia tank to be less than full at the start of the period when UAF increased the usage of the diesel engine. On July 10, 2002 UAF exceeded the NO_X limit of 40 tpy. On August 14, 2002, UAF again exceeded the NO_X limit after having experience problems with the delivery of aqueous ammonia. A Compliance Order by Consent was issued to UAF requiring them to pay a $4,500 fine with another $4,500 fine suspended and to install a second aqueous ammonia tank. On August 9, 2004 UAF notified the Department that the second aqueous ammonia tank had been installed. On September 17, 2004 the Department issued a letter closing the Compliance Order by Consent.

STATIONARY SOURCE-SPECIFIC REQUIREMENTS CARRIED FORWARD

State of Alaska regulation in 18 AAC 50.326(j) with reference to 40 C.F.R. 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 are 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 E and Table F below list the requirements carried over from Permit-to-Operate No. AQ0316TVP01, Revision 3, and MinorPermit No. AQ0316MSS02 into Operating Permit No. AQ0316TVP02.

Table E - Comparison of Previous Permit-to-Operate No. AQ0316TVP01, Rev 3 to Operating Permit No. AQ0316TVP02 Conditions[17]

Permit No. AQ0316TVP01 Condition number	Description of Requirement	Permit No. AQ0316TVP02 Condition Number	How Condition was revised
Introductory paragraph , Sections 1 and 2	Authority for permit and source list	Introductory paragraph and Section 1	Same information, different format
Condition 1	Assessable Emissions	Condition 48	Stationary source assessable PTE changed from 1,724 tpy to 1,788.6tpy. 13.7 tpy of HAPS included in new permit.
Condition 2	Assessable Emissions Estimates	Condition 48	No significant change.
Section 4	Source Inventory and Description	Section 2	Same information, different format
Condition 3	Visible Emissions	Condition 22	No significant change.
Condition 3.1	Startup, Shutdown, soot blowing, or grate cleaning	Condition 27	Same information, different format
Condition 3.2 – 3.4	Operation of COMS	Condition 27.2– 27.4 & 30	New permit language added
Condition 4	Particulate Matter	Conditions 5 – 12 & 28	Same information, different format.
Condition 5	SO_2 emissions	Condition 13 & 29	Same information, different format.
Condition 6	Visible Emissions for Oil Fired Boilers	Conditions 2 & 3	General permit language for visible emissions
Condition 7	Particulate Matter for Oil Fired Boilers	Conditions 5, & 9 – 12	New format, new standard permit language, and addition of dual-fired requirements from AQ0316MSS02. Coal slurry fuel added back into permit.
Condition 8	SO_2 Emissions for Oil Fired Boilers	Conditions 13, 14 & 15	Condition now incorporates all oil fired sources
Condition 9	NSPS particulate matter standards ID 4	Condition 33.3 & 42-43	Same information, different format
Condition 10	Residual oil nitrogen content	N/A	Burning residual oil removed from permit

[17] This table does not include all standard and general conditions.

Permit No. AQ0316TVP01 Condition number	Description of Requirement	Permit No. AQ0316TVP02 Condition Number	How Condition was revised
Condition 11	10% limit NO_X	Conditions 17 & 43.2	Modified for dual fuel use. Limit changed to 158,468 MMBtu
Condition 12	Records of startup, shutdown, or malfunction for ID 4	Condition 32	Same information, different format
Condition 13	Good air pollution practices	Condition 36	Same information, different format
Condition 14	Credible Evidence	Condition 37	Same information, different format
Condition 15	Concealment of Emissions	Condition 38	Same information, different format
Condition 16	Visible Emissions source 6 – 8	Condition 23	Same information, different format
Condition 17	Particulate Matter sources 6 – 8	Condition 5	Condition written to include additional sources
Condition 18	Sulfur Emissions sources 6 – 8	Condition 13 & 24	Same information, different format
Condition 19	Exception to condition 20	N/A	Condition deleted from permit
Condition 20	Visible emissions for source ID 9	Condition 25	Standard operation condition VII language inserted
Condition 21	State PSD avoidance	Condition 14 - 16	Same information, different format, calculation formula provided.
Condition 22	NO_X limit	Condition 16	Same information, different format, language and formulas added for duel fuel use
Condition 23	Incinerator limit	Condition 25	Added the pathological exemption and monitoring, recordkeeping and reporting for the OSWI rule
Condition 24	Incinerator prohibition	Condition 26	No significant change
Condition 25 – 28	Insignificant sources	Condition 21	Emission units 10 and 11 removed from the permit.
Condition 29	Asbestos NESHAP	Condition 55	No significant change
Condition 30	Refrigerants	Condition 56	No significant change
Condition 31	Good Air Pollution Control Practices	Condition 49	Same information, different format
Condition 32	Dilution	Condition 50	Changed to an annual certification
Condition 33	Modification	Conditions 81 & 82	Changed to new permit language
Condition 34	Bulk Materials Handling, Construction and Industrial Activities	Condition 51	Re-titled to "Reasonable Precautions to Prevent Fugitive Dust" Complaint recording added
Condition 35	Stack Injection	Condition 52	Same information, different format
Condition 36	Open Burning	Condition 60	Same information, different format Word Smoke Control Areas added to general permit conditions. Controlled Burning, Fire Department Training, Controlled Burning, Firefighter Training: Structures; Fuel Burning, Public Notice, and Complaints added to requirements.

Permit No. AQ0316TVP01 Condition number	Description of Requirement	Permit No. AQ0316TVP02 Condition Number	How Condition was revised
Condition 36.1	Open Burning	Condition 60.2	Addition requirements added
Condition 37	Air Pollution Prohibited	Condition 53	Self reporting and record keeping requirements added
Condition 38	Technology Based Emission Standards	Condition 54	Same information, different format, Excess Emission reporting added
Condition 39	HAP Reconstruction	Condition 57	Same information, different format, Title changed
Condition 40	Permit Renewal	Condition 84	Additional language added
Condition 41	Requested Source Test	Condition 61	No change
Condition 42	Operating Conditions	Condition 62	No change
Condition 43	Reference Test Methods	Condition 63	Additional C.F.R. references sited for source testing
Conditions 44 – 48	Source test requirements	Conditions 64, 65, 66, 67, 68, & 69	Condition 65, Test Exemption & Condition 66, Test Deadline Extension added
Condition 49	Certification	Condition 72	Electronic signature method added
Condition 50	Submittals	Condition 73	Same information, electronic submittal of information added
Condition 51	Information Request	Condition 74	No change
Condition 52	Record Keeping	Condition 71	Same information, different format
Condition 53	Excess Emission & Permit Deviation Reports	Condition 75	New guidelines on when to submit reports
Condition 54	NSPS or NESHAPS		Condition removed from report
Condition 55	Operating Reports	Condition 76	Same information, different format
Condition 56	Annual Compliance Reports	Condition 77	Same information, different format
Condition 57	Credible Evidence		Condition removed from permit
Condition 58	Comply with Conditions of permit	Condition 86	No change
Condition 59	Not a defense	Condition 87	Same information, different format
Condition 60	Each permit term	Condition 44	No change
Condition 61	Compliance with permit terms and Conditions	Condition 85	No change
Condition 62	Modifying permit	Condition 45	No change
Condition 63	Property rights	Condition 46	No change
Condition 64	Access to facility by inspectors	Condition 88	No change
Condition 65	Permit shield	Condition 9394 Table C	Same information, different format
Condition 66	Permit shield	Condition 94 Table C	Shield changed to EU ID 5A
Condition 67	Permit shield	Condition 94 Table C	Shield applied to EU ID 9 & 9A
Condition 68, 69, & 70	Visible Emissions and Particulate Matter Monitoring Plan		Conditions removed from the permit. Visible emissions and particulate matter monitoring applied throughout permit

Permit No. AQ0316TVP01 Condition number	Description of Requirement	Permit No. AQ0316TVP02 Condition Number	How Condition was revised
Condition 71	Corrective Actions Based on Visible Emissions Observations		Condition removed from the permit. Corrective actions applied throughout permit
Condition 72	Particulate Matter Testing		Condition removed from the permit. Particulate matter testing specified for type of unit
Condition 73	Reporting requirements		No comparable condition in this permit
Condition 74	Stack measurements		Stack diameter measurement provided in earlier permit
Condition 75	Operating hours for source IDs 6-8		Condition removed from the permit
Condition 76	60-minute visible emission observations	Condition 4	References to 60-minute observations removed from the permit. Follow general guidelines for visible emission reporting
Condition 77	Excess emission reporting for 60-minute observations	Condition 4 Condition 75	References to 60-minute observations removed from the permit. Follow general guidelines for visible emission reporting and for excess emissions
Section 14	Visible Emission Evaluation Procedures	Condition 1 Section 13	Procedures for taking VE readings removed from the permit
Section 15	Continuous Opacity Monitoring Systems	Section 5 Condition 33 & 39	Section 5 covers Performance Audits for COMS, Conditions 30 & 36 have NSPS requirements
Section 16	Mass Balance Calculations	Section 14	Changed to Material Balance Calculations Sulfur content changed from 0.5 % to 0.75% sulfur by weight
Section 17	ADEC Notification Form	Section 15	Format of form changed, form revised 12/6/04

Table F - Comparison Construction Permit No. AQ0316MSS02 Conditions to Operating Permit No. AQ0316TVP02 Conditions[18]

Permit No. AQ0316MSS02 Condition number	Description of Requirement	Permit No. AQ0316TVP02 Condition Number	How Condition was revised
Condition 7	Emission Fees	Condition 47	Incorporated into permit. PTE changed from 1,724 to 1,788.6 tpy.
Condition 8	Assessable Emission Estimates	Condition 48	Incorporated into permit.
Condition 9	Limit Capacity to 10%	Condition 43.2	Incorporated into permit .
Condition 10	PSD avoidance Fuel Consumption	Condition 14	Incorporated into permit .
Condition 11	SO_2 Emissions Equation 2	Condition 15 Equation 1	Incorporated into permit
Condition 12	NO_X Emissions Equation 3	Condition 16 Equation 2, Equation 3, & Equation 4	Incorporated into permit
Condition 13	Coal Water Slurry	Condition 18	Reinstated into permit
Condition 14	Co-firing EU ID 8 w/coal-water slurry	Condition 19	Reinstated into permit
Condition 15	Operating EU ID 3, 4, or 8 with coal-water slurry	Condition 20	Reinstated into permit
Condition 16 - 17	Terms to make permit enforceable	Section 11	Standard permit terms
Condition 18	Permit terms	Condition 44	Standard permit terms
Condition 19	Permit terms	Condition 45	Standard permit terms
Condition 20	No property rights	Condition 46	Standard permit terms

CAM APPLICABILITY

The Department has determined that emission units IDs 1 & 2 are subject to the CAM rule as provided in 40 CFR 64. See SoB Condition 91 for a detailed explanation of the determination.

The Department has determined that emission units ID 8 is subject to the CAM rule as provided in 40 CFR 64. See SoB Condition 92 for a detailed explanation of the determination.

RISK MANAGEMENT PLAN (RMP) APPLICABILITY

Based on the information reviewed by the Department during the processing of the permit renewal application provided by the Permittee, the Permittee is not subject to the Risk Management Plan requirements of the CAA, section 122(r) "Prevention of Accidental Releases" and 40 C.F.R. 68 "Chemical Accident Prevention Provisions". The Permittee uses aqueous ammonia for the SCR and has onsite storage capability of 14,000

[18] This table does not include all standard and general conditions.

gallons. The ammonia is stored in two different tanks, an 8,000 gallon process tank and a 6,000 gallon spare tank used to refill the process tank. The 8,000 gallon process tank holds 17,000 lbs of ammonia. Per § 68.115(a) the amount of ammonia in process is less than the threshold amount of 20,000 lbs as listed in Table 1 of § 68.130.

The State and federal regulations for each condition cited in Operating Permit No. AQ0316TVP02.

Conditions 1, 2, 3, and 4 Visible Emissions Standard and MR&R

Applicability: This regulation applies to operation of all fuel-burning equipment in Alaska. EU IDs 3 - 9 are fuel-burning equipment.

Factual basis: Condition 1 requires the Permittee to comply with the federal and the State visible emission standards applicable to fuel-burning equipment and incinerators. The Permittee shall not cause or allow the equipment to violate these standards.

This condition has recently been adopted into regulation as a standard condition. MR&R requirements are listed in conditions 2 through 4, of the permit.

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

These conditions detail a stepwise process for monitoring compliance with the State's visible emissions and particulate matter standards for liquid, gas and solid fuel fired sources. Equipment types covered by these conditions are internal combustion engines, turbines, heaters, and boilers. Initial monitoring frequency schedules are established along with subsequent reductions or increases in frequency depending on the results of the self-monitoring program.

Monitoring frequencies for hydrocarbon fuels, both liquid and gaseous, are detailed in these conditions. The monitoring intervals for gaseous fuels are less frequent than for liquid fuels in recognition of the reduced propensity of gaseous fuels to produce particulate matter as a result of combustion. This reduced level of monitoring for individual facilities in conjunction with the very large number of gas fired sources in Alaska should provide the Department with sufficient data to evaluate the compliance history of these sources as a category.

Reasonable action thresholds are established in these conditions that require the Permittee to progressively address potential visible emission problems from sources either through maintenance programs and/or more rigorous tests that will quantify whether a specific emission standard has been exceeded.

Gas Fired:

Monitoring – The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, since EU IDs 3 & 4 are capable of being fired on gaseous fuel, liquid fuel, or a coal water slurry the monitoring requirements for liquid fired equipment is used.

Reporting – EU IDs 3 & 4 are capable of being fired on gaseous fuel, liquid fuel, or a coal water slurry. Normally the Department does not require reporting for gas-fired equipment except when fired on backup liquid fuel. However, since the Permittee is permitted to operate on three different types of fuel, the reporting requirement is based upon liquid fired equipment.

Liquid Fired:

Monitoring – The visible emissions may be observed by either Method-9 or the Smoke/No Smoke plans as detailed in conditions 2.1 and 2.3. 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.

Insignificant Sources:

For sources that are considered insignificant, no visible emissions monitoring is required because these sources are insignificant sources based on actual emissions. As long as the sources do not exceed these limits or thresholds, 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 77 with the opacity standard.

Conditions 5, 7, 8, 9, 10, 11, & 12 Particulate Matter (PM) Standard

Applicability: The PM standard applies to operation of all fuel burning equipment in Alaska. EU IDs 3 - 8 are fuel-burning equipment. The SIP standard for PM applies to all fuel-burning equipment because it is contained in the federally approved SIP dated October 1983.

Factual basis: Condition 5 requires the Permittee to comply with the State PM (also called grain loading) standard applicable to fuel-burning equipment. The Permittee shall not cause or allow fuel-burning equipment to violate this standard.

MR&R requirements are listed in conditions 7, 8, 9, 10, 11, & 12, of the permit.

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

These conditions detail a stepwise process for monitoring compliance with the State's particulate matter standards for liquid and gas fired sources. Equipment types covered by these conditions are internal combustion engines, turbines, heaters, and

boilers. Initial monitoring frequency schedules are established along with subsequent reductions or increases in frequency depending on the results of the self-monitoring program.

Monitoring frequencies for hydrocarbon fuels, both liquid and gaseous, are detailed in these conditions. The monitoring intervals for gaseous fuels are less frequent than for liquid fuels in recognition of the reduced propensity of gaseous fuels to produce particulate matter as a result of combustion. This reduced level of monitoring for individual facilities in conjunction with the very large number of gas fired sources in Alaska should provide the Department with sufficient data to evaluate the compliance history of these sources as a category.

Reporting – The Permittee must annually certify that only gaseous fuels are used in the equipment.

Gas Fired:

Monitoring – The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, since EU IDs 3 & 4 are capable of being fired on gaseous fuel, liquid fuel, or a coal water slurry the monitoring requirements for liquid fired equipment are used.

Reporting – EU IDs 3 & 4 are capable of being fired on gaseous fuel, liquid fuel, or a coal water slurry. Normally the Department does not require reporting for gas-fired equipment except when fired on backup liquid fuel. However, since the Permittee is permitted to operate on three different types of fuel, the reporting requirement is based upon liquid fired equipment.

Liquid Fired:

Monitoring – The Permittee is required to conduct PM source testing if threshold values for opacity are exceeded.

Recordkeeping – The Permittee is required to record the results of PM source tests.

Reporting – The Permittee is required to report: 1) incidents when emissions in excess of the opacity threshold values have been observed, 2) and results of PM source tests. The Permittee is required to include copies of the results of all visible emission observations with the stationary source operating report.

Insignificant Sources:

As long as they operate within these limits they are considered insignificant sources by emissions 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 77 with the particulate matter standard.

Condition 6, Incinerator Particulate Matter Emissions and MR&R

Applicability: The particulate matter emission standards as listed in Table B apply to the operation of an incinerator based on its rated capacity.

Factual Basis: The condition requires the Permittee to comply with the particulate matter emission standards applicable to incinerators based on rated capacity. The Permittee may not cause or allow the affected incinerator to violate this standard.

For incinerators with a rated capacity of less than 1000 pounds per hour, the Permittee is not required to monitor particulate matter because there is no standard set for such incinerators.

Condition 13, Sulfur Compound Emissions

Applicability: The sulfur emission standard applies to operation of all fuel-burning equipment in the State of Alaska. EU IDs 3 – 8 are liquid fuel-burning equipment. The SIP standard for sulfur dioxide applies because it is contained in the federally approved SIP dated October 1983.

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 liquid, hydrocarbon fuel (e.g. diesel or No. 2 fuel oil). Fuel containing no more than 0.75 percent sulfur by weight will always comply with the emission standard. For fuels with sulfur content higher than 0.75 percent, the condition requires the Permittee to use Section 14 to calculate the sulfur-dioxide concentration using the equations to show that the standard is not exceeded.

Fuel sulfur testing will verify compliance.

Fuel gas sulfur is measured as hydrogen sulfide (H_2S) concentration in ppm by volume (ppmv). Calculations[19] show that fuel gas containing no more than 4000 ppm H_2S will always comply with this emission standard. This is true for all fuel gases, even with no excess air.

Equations to calculate the exhaust gas SO_2 concentrations resulting from the combustion of fuel gas were not included in this permit. Fuel gas with an H_2S 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.

Recordkeeping – For Diesel fuel the Permittee is required to record the fuel sulfur content or fuel grade of each shipment and all material balance calculations, and for fuel gas, the H_2S concentration of the fuel gas.

Reporting – 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 the material balance calculations for fuel oil in the excess emissions report.

The Permittee is required to include copies of the records mentioned in the previous paragraph with the stationary source operating report.

[19] 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."

Conditions 14, 15, 16, & 17, SO2 Emissions, & Owner Requested Limit for Nitrogen Oxides.

Legal Basis: [18 AAC 50.300(h)(3)(B)(ii), 1/18/97]

[18 AAC 50.300(h)(3)(B)(iii), 1/18/97]

[18 AAC 50.326 (j) 12/3/05]

[Minor Permit AQ0316MSS02]

Factual Basis: These conditions apply to all sources installed since August 1980, and the owner has requested limits to avoid the need for a PSD review of its application.

The emissions history is listed in Table G. It shows that the PSD-significant increase limits in Table H were not exceeded by the installation of a new major source, boiler #4, that was installed in 1987.

Table G - Heat/Power Plant boiler Actual Emissions (ton/yr) by EU ID and date.

Source	Coal Fired Boilers, EU ID 1 & 2				Oil Fired/Gas Fired Boilers, EU ID 3 & 4				Number of boilers
Pollutant and year	PM-10	SO_2	NO_X	CO	PM-10	SO_2	NO_X	CO	
1986	295	190	326	119	2.1	31.4	5.9	1.5	1
1987	3	193	412	150	2.8	25.7	7.9	2.0	2

Permitting history and emission limits--

Previous to the Title V permits program, the operating permits written by the Fairbanks office were written for the power plant only. Any sources outside the power plant's fence were not considered since the permit action excluded any source outside the fence. These outside sources were not large enough by themselves to require an operating permit. So it is not reasonable to consider the emissions from these sources as being additional emissions working against the PSD avoidance bank account for this Title V permit. In other words, they were not considered new sources for this permit. All these sources are insignificant or were installed previous to August 1980. The installation dates are shown in Table A.

The coal-fired boilers were installed in 1962. Since they predate any PSD program, their emissions in terms of ton/yr will not be limited. Two 125 KW diesel-electric generators (DEG) were installed in 1968. Since they predate any PSD program, their emissions in terms of ton/yr will not be limited. Since boiler #3, EU ID 3, was installed before 1980, its emissions in terms of ton/yr were never and will not be limited.

It is not known exactly when in 1980 the AHRC boiler was installed. The AHRC boiler at 3.3 MMBtu/hr is too small to have potential emissions approaching the PSD trigger limit, so its utilization will not be limited. Its actual emissions of NO_X plus SO_2 have been less than 0.5 tpy, so in accordance with 18 AAC 50.335(r), the AHRC boiler, EU ID 5 (now EU ID 5A), is a significant source (the previous permit stated emission unit 5 was insignificant in the Legal and Factual Basis, but per the emission

factors presented by the Permittee in the application for renewal, the source has the PTE 4.92 tons of SO_2 per year). Its utilization is very limited since it is dedicated to supplying steam for a biological "kill tank."

Permit 8631-AA008 contained the original PSD avoidance scenario for boiler #4, EU ID 4. The avoidance limits were 55.9 ton/yr of SO_2 and 47.5 ton/yr of NO_X combined for boilers #3 & 4. The permit's cover letter also specifies fuel quality and quantity limits of 1,069,529 gallons of #4 fuel oil, and 7,607 gallons of #2 fuel oil. The fuel limit is the same if lower sulfur fuels are used. Previous to installation of boiler #4, the coal-fired boilers had NO_X and SO_2 emission levels of 326 and 190 ton/yr; see Table G above. So when the coal-fired boilers are cut back, a like amount of additional NO_X and SO_2 would be available for utilization in boiler #4 (up to a 325/190 ton/yr limit for NO_X /SO_2). Previous to 1996, UAF had applied for a more restrictive limit for boiler #4.

New limits--

The emission from boiler #4 is now more limited because previous to 1996, UAF applied for an owner-requested operating limit of 10% utilization to avoid an NSPS (40 C.F.R. 60.49b(d)) NO_X monitoring requirement. That 10% utilization is a fuel oil consumption limit of 795,000 gallons per year. The application contains stack test results for SO_2 and NO_X emissions, but the test was conducted using a higher density heavier fuel oil. That causes higher emissions than with the lighter fuels presently used.

Using the fuel oil consumption limit referenced above and the AP-42 emission factors for NO_X emissions, boiler 4 would produce 8.0 ton of NO_X per year. That 8 tpy is well below the 40 ton./yr limit which would trigger a PSD review.

When 0.5 weight percent sulfur fuel is consumed at the fuel oil consumption limit, the SO_2 emission computed from an AP-42 emission factor is 28.2 tons per year. That 28.2 tpy is well below the 40 ton per year limit, which would trigger a PSD review. See the Emissions and PSD Avoidance Table H.

Change to condition ---

> UAF requested a limit of 40 tpy of NO_X to avoid PSD review. When the permit was written, a limitation of 795,000 gallons per year or 8 tons of NO_X per year was assigned to EU ID 4. This left 32 tons of NO_X per year for EU ID 8. UAF objected to the arbitrary imposition of limits to the units and requested to be able to manage the 40 tons per year of NO_X between the two units. The permit has been changed to remove the specific limitations on the units. EU IDs 4 & 8 are now limited to a combined 40 tons of NO_X per year. The permit has also been changed to allow for EU ID 4 to be fired either with natural gas or liquid fuel. This necessitated changing the fuel limit EU ID 4 to 158,468 mmBtu per rolling 12-month period. This change allows for the dual fuel capability of the unit.

Table H, below is provided for historical reference only and does not imply a restriction on any piece of equipment.

Table H. Emission and PSD Avoidance.

Pollutants	PM-10	SO_2	NO_X	CO
PSD significant increase, ton/yr [18 AAC 50.300(h)(3)(B)(i), (ii), (iii), & (v)]	15	40	40	100
Amount used by #4 boiler, EU ID 4	0.8	28.2*	8.0	2.0
Amount available for use by diesel-generator (DEG), EU ID 8 while avoiding PSD	14	<11.8	<32	<98
DEG limit, MWH/yr	>20,000	4,370*	12,080	>50,000

* Based upon 0.5 weight percent sulfur fuel oil.

The 40 ton/yr limits for NO_X and SO_X in conditions 14, 15, and 16 are the PSD-significant increase limits in the 3rd and 4th columns of Table H.

Emission Unit 8 is a 13,266 hp diesel-electric generator (DEG). It was intended as an experimental unit to be test-fired using a coal water slurry, but is fired with regular diesel fuel. It is fitted with a baghouse and a selective catalytic reduction unit for reduction of PM and NO_X emissions by 90%. Aqueous ammonia will be the chemical agent for reducing NO_X back to nitrogen (N_2). The emission factors, computed by UAF from vendor supplied data, in terms of pounds of pollutant per KWH output for each type of combustion source are shown in Table I. There are maximum and minimum values because some of the produced steam is used for district heat rather than being sent to a steam turbine. The maximum values represent the highest proportion of steam use for heating rather than for electrical generation, (steam/KWH). The UAF supplied emission factors for the DEG are shown in the last row of Table I.

Table I. Emission Factors pound per kilowatt-hour (KWH) of electrical output.

Pollutant	NO_X		SO_2		CO	
lb steam/KWH	max	min	Max	Min	max	min
Coal boiler	0.0214	0.0131	0.0118	0.0073	0.0078	0.0048
Oil boiler	0.0031	.00019	0.0113*	0.0069*	0.0008	0.0005
DEG/w SCR	0.0053	0.0027	0.0054*	--	0.0037	0.0013

* Based upon 0.5 weight percent sulfur fuel oil.

Emission limit--

The emission factors for the DEG from Table I (last row) were applied to the amount of emissions available (4th row of Table H) to calculate the MWH limits based on each pollutant.

The SO_2 emission limitation in Table H is 11.8 ton per year, which for 0.5% sulfur fuel is equivalent to 4,370 MWH/yr. UAF cannot produce more than 4,370 MWH of electricity from Diesel generator ID 8 in any 12 consecutive months if EU ID 4 emits 28.2 tons of SO_2 in that 12 consecutive month period. If lower sulfur fuel is used, EU ID 8 can produce more than 4,370 MWH per year. Also, if EU ID 4 does not consume 795,000 gallons of 0.5 percent sulfur fuel annually, EU ID 8 can produce more than 4,370 MWH in any 12 consecutive months.

The limitation for NO_X from Table H is 32 ton per year. The maximum NO_X emission per KWH of electrical production from EU IDs 4 & 8 is computed as 0.0053(KWH #8) + 0.0031(KWH #4). Condition 15 limits the NO_X emission from EU IDs 4 & 8 to less than 40 tpy (80,000 lb.). Doing the same type of computation as for SO_2 will yield the MWH/yr allowed to just meet the NO_X limit. The computed limitation is 12,080 MWH/yr with the SCR (Table H). A fuel sulfur content of about 0.32 weight percent would just match the NO_X MWH/yr limit. So, if Permittee wishes to produce 12,080 MWH/yr from EU ID 8 he would have to use fuel containing no more than 0.32% sulfur. (The limitation for NO_X from Table H of 32 ton per year has been rescinded. The limitation is 40 tpy of NO_X for EU IDs 4 & 8.)

If the diesel were operated without the SCR, its emission factor would be ten times that in Table I, so its MWH/yr limit would be 1,208. Since the emission factors are listed to no more than two significant figures, the limits will be rounded down to two significant figures, i.e., 12,000 and 1,200 MWH/yr. The 1,200 and 12,000 MWH/yr limits are incorporated into condition 15. Permittee always has the option of obtaining more precise emission factors.

With the 12,080 MWH/yr limit, the increase in CO will be less than 25 tpy. Hence, the DEG is not a modification in the CO non-attainment area in accordance with 18 AAC 50.300(h)(5), (6), (7), or (8).

The emission factors were not available for PM-10, but the DEG will be equipped with a baghouse, so its emission factor should be well less than 0.001 lb./KWH. So, the DEG limit would be greater than 20,000 MWH/yr.

All the above emission limits are repeated in the last row of Table H.

Emissions Trading--

UAF could consider trading the DEG emissions for coal boiler emissions. Note that in Table I all emission factors for the DEG are lower than for coal. If emissions were traded against the coal-fired boiler, there would be no operating limit for the DEG when the boiler's load is reduced by the same kWh. However, this trading would fix the coal fired boiler's future allowable emissions to those actual emissions just before the DEG was installed. This would not allow for the slow creep of emissions from the coal-fired boilers as campus grows.

Debottlenecking--

Another PSD avoidance question is what to do about the slow creep of emissions due to adding new buildings to campus. The largest building that was added to the UAF campus since 1980 is the Natural Science building. It was added in the 1990s. Using the Highest electrical load recorded and the worst-case emissions factors (i.e., maximum district heat load per KWH), UAF computed the increase in emissions as 34 Tons NO_X and 19 tons SO_2. This by itself will not trigger PSD. Also, per EPA's September 18, 1989, memorandum on clarification of policy regarding the "Net Emissions Increase", current policy is to not to aggregate less than significant increases at a major source. So load increases have not triggered PSD. There was no modification to the power plant to allow it to handle this creeping load.

Monitoring--

The PSD avoidance schemes discussed above come very near to the 40 ton per year limit for SO_2 and for NO_X which would require a PSD permit. Many of the computations are based upon AP-42 emission factors, which are not accurate for any one specific source. So, fuel testing for sulfur will be required for the DEG if Permittee elects to exceed the MWH/yr limit in Table I that was based upon 0.5 weight percent sulfur fuels.

The #4 oil fired boiler's fuel consumption will have to be routinely monitored.

Source testing for NO_X is required when the emissions reach 90% (36 tpy) of the permit limit.

General Conformity--

Legal Basis: [18 AAC 50.725, 1/4/95]

Factual Basis: The General Conformity provisions of 18 AAC 50.725 do not apply because 40 C.F.R. §51.853(b) limits applicability to increases exceeding 100 tpy CO. As discussed above, the diesel's PSD avoidance limits prohibit it from reaching 25 tpy of CO. The Department of Energy has completed an Environmental Assessment (DOE/EA 1183) for the diesel-electric generator.

Conditions 18, 19, and 20, Source testing if EU IDs 4 and/or 8 are operated on a coal water slurry.

Legal Basis: [Construction Permit 9631-AA001]

Factual Basis: These conditions are reinstated in the Title V permit, they should not have been removed from the previous operating permit AQ0316TVP01, Revision 3.

Conditions 21 - 24, Insignificant Sources

Applicability: These general emission standards apply to all industrial processes fuel-burning equipment, and incinerators regardless of size.

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

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

Condition 21.1 requires certification that the sources did not exceed State emission standards during the previous year and did not emit any prohibited air pollution.

State air quality regulations adopted effective May 3, 2002 allow for an average six-minute opacity observation. The existing regulation, limiting opacity to no more than 20% for more than 3 minutes in any one hour, is included because EPA Region X has

not formally approved the changed opacity regulation as part of Alaska's State Implementation Plan (SIP).

Conditions 25– 26, Limits on Incinerator

Legal Basis: [40 C.F.R. 60.50 Subpart E, 7/1/03]
[40 C.F.R. 60.30e, Subpart Ce, & 40 C.F.R. 62, 7/1/03]
[40 C.F.R. 60.2880, Subpart EEEE & 40 C.F.R. 60.2980FFFF 12/16/05]

Factual Basis: 40 C.F.R. 62, Subpart HHH regulates incinerators that incinerate hospital, medical, and infectious waste. 40 C.F.R. 62.14400(b) provides an exemption to a facility that operate a co-fired combustor and limits the amount of hospital/medical/ infectious waste to 10 percent or less of the total volume of waste incinerated. UAF requested these limits and prohibitions in a letter dated January 16, 2002 and is allowed to avoid having to comply with 40 C.F.R. 62, Subpart HHH.

UAF notified the administrator in a letter dated February 26, 2007 of their intent to claim the exemption for Pathological waste incineration units. The Department agrees with UAF's assertion of the exemption. Monitoring, recordkeeping, and reporting requirements were added to the permit as a tool for UAF to show compliance with the exemption requirement.

Conditions 25.4 – 25.8 are monitoring, record keeping, and reporting for condition 25. Condition 26 does not include monitoring, record keeping, and reporting because this condition is a prohibition.

Conditions 27 - 29, (Section 4), Standard Operating Permit Conditions for Coal-Fired Boilers

Applicability: These conditions apply to the coal-fired boilers because they: 1) are fuel burning equipment burning coal that began operation before August 17, 1971; 2) have installed continuous opacity monitoring instrumentation; and 3) have demonstrated that the particulate matter emissions from the boilers will not cause or contribute to a violation of the ambient air quality standards for PM-10 in 18 AAC 50.010, or will not cause the maximum allowable increases for PM-10 in 18 AAC 50.020 to be exceeded.

Factual Basis: Conditions 27-29 contain emissions standards and monitoring, recordkeeping, and reporting requirements that apply to the exhaust gases of the boilers, EU IDs 1-3.

The boilers are fuel-burning equipment as that term is defined in 18 AAC 50.990. As such, the exhaust gases of the boilers are subject to opacity, particulate matter, and sulfur compound emission standards listed in 18 AAC 50.055.

In addition, Alaska's approved State Implementation Plan (SIP) contains opacity, particulate matter, and sulfur compound standards listed in 40 C.F.R. 52.75. These standards are incorporated by reference into Alaska law through 18 AAC 50.040(e).

The particulate-matter and sulfur-compound standards listed in 18 AAC 50.055 and 40 C.F.R. 52.75 are the same. See Volume 63, No. 223, pages 63,983-63,986, of the

Federal Register. The visible emission standards listed in 18 AAC 50.055 and 40 C.F.R. 52.75 are slightly different; therefore, both are included in the permit.

Condition 29, Sulfur Compound Emissions

Applicability: This Standard Operating Permit Condition is required for coal-fired boilers [18 AAC 50.346(c)]. EU IDs 1 through 2 are coal-fired boilers and are subject to these standard conditions.

Factual basis: Condition 27 requires the Permittee to comply with the federal and the State visible emission standards applicable to fuel-burning equipment. The Permittee has met the requirements to be able to reduce visibility through the exhaust effluent of EU IDs 1 through 3 by 20 percent for an additional three minutes in any one hour because they are coal burning boilers that began operation before August 17, 1971. Conditions 28 and 29 require the Permittee to comply with the federal and State limits on emissions of particulate matter and sulfur dioxide. The Permittee shall not cause or allow EU IDs 1 through 2 to violate these standards.

Condition 30 (Section 5), Performance Audits for COMS

Applicability: This condition applies per 50.030(9), 10/4/04.

Factual basis: This condition describes the elements to be included in performance audits for Continuous Opacity Monitoring Systems (COMS).

Conditions 31 – 39, NSPS Subpart A Requirements

Applicability: The Department has incorporated by reference the NSPS effective July 1, 2001, for specific industrial activities, as listed in 18 AAC 50.040[20].

Most (with the exception of some storage tanks) sources subject to an NSPS are subject to Subpart A. At this stationary source, EU ID 4 is subject to NSPS Subpart Db and therefore subject to Subpart A.

Condition 31.1 through 31.3 - The Permittee has already complied with the notification requirements in 40 C.F.R. 60.7 (a)(1) - (4) for EU ID 4. 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 31.4 through 31.6 - The requirements to notify the EPA and the Department of the date of a continuous monitoring system performance demonstration, no less than 30 days before demonstration commences (40 C.F.R. 60.7(a)(5) – (7)) are applicable to EU ID 4 **only if a CMS is** installed **as an NSPS requirement**.

Condition 31.7 - 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 4 in the event of a proposed replacement of these sources.

Condition 32 - 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.

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

Conditions 33 and 34 - NSPS excess emission reporting requirements and summary report form in 40 C.F.R. 60.7(c) & (d) are applicable to EU ID 4 because it is subject to 40 C.F.R. 60 Subpart Db. The Department has included in Attachment A of the statement of basis a copy of the federal EEMSP summary report form for use by the stationary source.

Recordkeeping requirements in 40 C.F.R. 60.7(f) are applicable to all NSPS sources. (Satisfied by condition 71)

Condition 35 - The Permittee has already complied with the initial performance test requirements in 40 C.F.R. 60.8 for EU ID 4. However, additional performance test requirements may by applicable to the boiler if the Permittee is required to conduct source tests under the periodic monitoring requirements in condition 42.1.

Condition 36 - Good air pollution control practices in 40 C.F.R. 60.11 are applicable to all NSPS sources subject to Subpart A (EU ID 4).

Condition 37 - states that any credible evidence may be used to demonstrate compliance or establishing violations of relevant NSPS standards for EU ID 4.

Condition 38 - Concealment of emissions prohibitions in 40 C.F. R. 60.12 are applicable to EU ID 4.

Condition 39 - Monitoring requirements in 40 C. F. R. 60.13 are applicable to EU ID 4 because a CMS is used to determine compliance with Subpart Db emission standards.

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.

Condition 40- 43, NSPS Subpart Db Requirements

Applicability: NSPS Subpart Db applies to steam generating units that commenced construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour).

EU ID 4, when burning distillate fuel gas or fuel oil, is subject to the standard for SO_2 in 40 C.F.R. 60.42b(d). EU ID 4 is subject to the PM standard in 40 C.F.R. 60.43b(f) & (g). In accordance with 40 C.F.R. 60.42b(j)(1), compliance with the emission limit or oil sulfur content limit for EU ID 4 may be demonstrated by certification from the fuel supplier. EU ID 4 when burning distillate fuel gas or fuel oil, is subject to the standard for NO_X in 40 C.F.R. 60.44b.

Factual Basis: The conditions 42 and 43 require the Permittee to comply with the Subpart Db sulfur and PM standards. The Permittee may not cause or allow EU ID 4 to violate these standards. The Permittee has two options for complying with SO_2 emissions: one is to comply with a sulfur emission limit and the other is to comply with a fuel sulfur limit.

Monitoring – The condition describes monitoring required in the event that the owner seeks to demonstrate compliance with the SO_2 standard based on fuel supplier certification under 40 C.F.R. 60.46b(j).

Condition 43.1 requires the Permitted to install, calibrate, maintain, and operate COMS for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. This condition allows UAF to forgo the COMS requirement provided they combust only fuel containing ≥ 0.3 percent sulfur by weight or liquid or gaseous fuels with a potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less, provided they maintain fuel supplier certifications of the sulfur content combusted.

Factual Basis: 40 CFR 60.48b(a) "The owner or operator of an affected facility subject to the opacity standard under § 60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system."

Factual Basis: 40 CFR 60.48b(a)(j) Units that burn only oil that contains no more than 0.3 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less are not required to conduct PM emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

Monitoring & Recordkeeping – The condition describes the monitoring and recordkeeping requirements for PM and NO_X.

Conditions 44 - 46, Standard Terms and Conditions

Applicability: Apply because these are standard conditions to be included in all permits.

Factual Basis: These are standard conditions required under 18 AAC 5.0345(a) and (e)-(g) for all operating permits.

Conditions 47 - 48, Emission Fees

Applicability: 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 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 emissions of each air pollutant authorized by the permit (AS 46.14.250(h)(1)(A)). Air pollutant means any regulated air pollutant and any hazardous air pollutant. Therefore, assessable emissions under AS 46.14.250(h)(1)(A) means the **potential** to emit any air pollutant identified in the permit, including those not specifically limited by the permit. For example, hydrogen chloride (HCl) emissions from an incinerator are assessable emissions because they are a hazardous air pollutant, even if there is currently no emission limit on HCl for that class of incinerator.

The conditions also describe how the Permittee may 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.

These standard conditions specify 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. The Permittee will normally pay for actual emissions - just with a one-year time lag.

Projected actual emissions may differ from the previous year's actual emissions if there is a change at the stationary source, such as changes in equipment or an emission rate from existing equipment.

If the Permittee does not choose to annually calculate assessable emissions, emissions fees will be based on "potential to emit" (PTE).

The PTE set forth in the condition is based on liquid fuel with a sulfur content of 0.5 percent by weight or fuel gas with a sulfur content of 60 ppm H_2S by volume. If the actual sulfur content of the fuel is greater than these assumptions, the assessable emissions calculations provided by the Permittee should reflect the actual sulfur content. The change in these values may result in SO_2 emissions that could trigger PSD.

Condition 49, Good Air Pollution Control Practice

Applicability: Applies to all sources, **except** NSPS regulated sources, i.e., except EU ID 4.

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

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 50, Dilution

Applicability: 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 51, Reasonable Precautions to Prevent Fugitive Dust

Applicability: 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 facility.

This condition applies to operating permits for facilities 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 underlying regulation, 18 AAC 50.045(d), requires the Permittee to take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air.

Not all facilities have the potential to generate fugitive dust during the life of the permit. The Department will determine whether precautions are reasonable based on a variety of factors, including the distance to the stationary source boundaries, nature and content of the dust, proximity to neighbors, and the nature of the activity. This condition applies to the types of sources or activities that are likely to generate fugitive dust as identified above. It allows the precautions that are identified under the permit to be appropriate and specific to the activities conducted by the Permittee.

Condition 52, Stack Injection

Applicability: 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: The condition 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). 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 53, Air Pollution Prohibited

Applicability: Air Pollution Prohibited requirements apply to the stationary source because the stationary source will have emissions.

Factual Basis: 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. 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.

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.

The Department will determine whether the necessary actions were taken. No corrective actions are necessary if the complaint is frivolous or there is not a violation of 18 AAC 50.110, however, this condition is intended to prevent the Permittee from prejudging that complaints are invalid.

Condition 54, Technology-Based Emission Standard

Applicability: 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 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. The conditions of this permit list applicable technology-based emission standards and require excess emission reporting for each standard in accordance with condition 75. Excess emission reporting under condition 75 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 75.

Condition 55, Asbestos NESHAP

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

Factual Basis: The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. 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 56, Refrigerant Recycling and Disposal

Applicability: Applies if the Permittee engages in the recycling or disposal of certain refrigerants.

Factual Basis: 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 apply if the Permittee uses certain refrigerants. Because these regulations include

adequate monitoring and reporting requirements, simply citing the regulatory requirements is sufficient.

Condition 57, NESHAPS Applicability Determinations

Applicability: The Permittee has the responsibility to determine if specific federal regulations apply to its facilities.

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.

Conditions 58 - 59, Halon Prohibitions

Applicability: These prohibitions apply to all facilities that use halon for fire extinguishing and explosion inertion. The **Fairbanks Campus Power Plant** uses halon and is therefore subject to the federal regulations contained in 40 C.F.R. 82.

Factual basis: These conditions incorporate applicable 40 C.F.R. 82 requirements. The Permittee may not cause or allow violations of these prohibitions.

Condition 60, Open Burning

Applicability: 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: The condition requires the Permittee to comply with the regulatory requirements when conducting open burning at the stationary source.

No specific monitoring is required for this condition. Condition 60.1f 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 53, which requires a record of complaints.

Condition 61, Requested Source Tests

Applicability: Applies because this is a standard condition to be included in all permits.

Factual Basis: The Permittee is required to conduct source tests as requested by the Department. Monitoring consists of conducting the requested source test.

Conditions 62 - 64, Operating Conditions, Reference Test Methods, Excess Air Requirements

Applicability: Apply because the Permittee is required to conduct source tests by this permit.

Factual Basis: The Permittee is required to conduct source test as set out in conditions 62 through 64. These conditions supplement the specific monitoring

requirements stated elsewhere in this permit. Compliance monitoring with conditions 62 through 64 consist of the test reports required by condition 69.

Condition 65, Test Exemption

Applicability: Applies when the source exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), 5/03/02, 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 66 - 69, Test Deadline Extension, Test Plans, Notifications and Reports

Applicability: 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 70, Particulate Matter (PM) Calculations

Applicability: Applies when the Permittee tests for compliance with the PM standard.

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 71, Recordkeeping Requirements

Applicability: 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 72, Certification

Applicability: This is a standard condition to be included in all permits. Applies because every permit requires the Permittee to submit reports.

Factual Basis: 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 73, Submittals

Applicability: Applies because the Permittee is required to send reports to the Department.

Factual Basis: This condition requires the Permittee to send submittals to the address specified in this condition. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the reporting requirements of this permit.

Condition 74, Information Requests

Applicability: Applies to all Permittees, and incorporates a standard condition.

Factual Basis: This condition incorporates a standard condition in regulation, which requires the Permittee to submit information requested by the Department. Monitoring consists of receipt of the requested information.

Condition 75, Excess Emission and Permit Deviation Reports

Applicability: Applies when the 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.

In accordance with 40 C.F.R. 71.6(a)(iii)(C), a deviation is not always a violation. For a situation lasting more than 24 hours which constitute a deviation, each 24 hour period is considered a separate deviation. "Deviation" as defined in 40 C.F.R. 71 means both "excess emission" and "permit deviation" as used in this permit, which includes:

1. a situation where emissions exceed an emission limitation or standard;
2. a situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met;
3. a situation in which observations or data collected demonstrate noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit (including indicators of compliance revealed through parameter monitoring);
4. a situation in which any testing, monitoring, recordkeeping or reporting required by this permit is not performed or not performed as required;
5. a situation in which an exceedance or an excursion, as defined in 40 C.F.R. Part 64, occurs; and,
6. failure to comply with a permit term that requires submittal of a report.

In accordance with 18 AAC 50.990(35) "excess emissions" means emissions of an air pollutant in excess of any applicable emission standard or limitation which is item 1 of the above definitions from 40 C.F.R. 71. These definitions shall be considered in determining an "excess emissions" or "permit deviation" when reporting an occurrence using the ADEC notification form.

The reports themselves and the other monitoring records required under this permit provide monitoring of whether the Permittee has complied with the condition. Please

note that there may be additional federally required excess emission reporting requirements.

Condition 76, Operating Reports

Applicability: 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.

Condition 77, Annual Compliance Certification

Applicability: Applies to all Permittees.

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

Conditions 78 - 83, Permit changes and revisions requirements

Applicability: Apply because these are standard conditions to be included in all operating permits.

Factual Basis: These are standard conditions required for all operating permits when revisions, operational changes or construction modifications occur in the stationary source.

Condition 84, Permit Renewal

Applicability: Applies if the Permittee intends to renew the permit.

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 **Fairbanks Campus Power Plant** 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 40 C.F.R. 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.

Conditions 85 - 90, General Compliance Requirements and Schedule

Applicability: Apply because these are standard conditions to be included in all permits.

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

Condition 91, Compliance Schedule for Coal Fired Boilers

Applicability: Applies because the Permittee will not be in compliance with the applicable requirements under 40 CFR 64 for EU ID 1 & 2 at the time of permit issuance. In accordance with the schedule of compliance requirements under 40 CFR 71.6(c)(3) Condition 91 establishes remedial measures, including enforceable sequence of actions with milestones, leading to the compliance with 40 C.F.R. 64 "Compliance Assurance Monitoring" for EUs 1 & 2.

Factual Basis: The Department found that EUs 1 & 2 meet all three applicability criteria listed under the General Applicability section in 40 CFR 64.2(a):

§64.2(a)(1): *"The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;"*

In condition 30, the Permittee is subject to a particulate matter emission limitation to comply with 18 AAC 50.055(b)(2) grain loading standard for steam generating plants.

§64.2(a)(2): *"The unit uses a control device to achieve compliance with any such emission limitation or standard;"*

The Permittee uses a baghouse to meet the grain loading emission limits for particulate matter from coal fired boilers EUs 1 & 2.

§64.2(a)(3): *"The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit", as defined in Sec. 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account."*

The Permittee submitted source test data information for a source test conducted on coal-fired boiler # 2, in October 1982 on particulate matter emissions. The source test was conducted prior to the installation of the baghouse. A multiple cyclone that controlled particulate matter emissions was in place during the October 1982 source test.

The Permittee indicated that based on the October 1982 source test, the PTE (pre-controlled) of each boiler is 99.4 tons per year. This value was

calculated using the average grain loading of 0.20 grain/dscf, an average flow rate of 817,082 dscf/hr from the valid test runs, and 8,520 hours for an operating year.

ADEC disagreed with the Permittee's conclusions regarding the pre-controlled PTE and found that the PTE of pre-controlled emissions of particulate matter from the boilers is over 100 tons per year due to the following reasons:

a) a multiple cyclone was installed on boiler #2 at the time of the source test. Although the cyclone serves a dual purpose (i.e. increase combustion efficiency by re-injecting collected fly ash into the combustion chamber, and controlling particulate matter emissions), for purposes of evaluating the potential pre-control device emissions criteria under §64.2(a)(3), particulate matter emissions controlled by the cyclone must be added to the 99.4 tons per year measured during the source test. This rationale was confirmed by US EPA staff during a private communication on May 18 & 22, 2007.

b) The October 1982 source test report indicated that the boiler steam production during the tests ranged from 46,000 to 48,000 lbs/hr. Boilers #1 & 2 are rated with a design capacity of 50,000 lbs/hr of steam. Using simple regression, an additional 2,000 lbs/hr to the 99.4 tons initially calculated by the Permittee would have resulted in approximately 103 tons per year of particulate matter.

The Department also evaluated alternative the pre-controlled particulate matter emission calculations performed by the Permittee based on a source test conducted on boilers, EU ID 1 & 2 on October 4 and 5, 1982. The source test report submitted to ADEC reported a PTE of 26 tpy for PM for each one of the boilers. This PTE was calculated from the average emission factor of 0.3990 lbs/hr from the three source test runs. The Permittee back-calculated pre-controlled particulate matter emissions using the manufacturer's control efficiency rating for the baghouse of 93.3% assuming full load operation during 365 days/year.

The Department found the control efficiency rating of 93.3% used by the Permittee too conservative to back-calculate the pre-controlled particulate matter emissions. AP-42 emission factors reflect that a baghouse can achieve an efficiency of 99.8 %. Additionally, the Institute of Clean Air Companies (ICAC) note that baghouses are often capable of 99.9% removal efficiencies. The ICAC also notes that "baghouse removal efficiency is relatively level across the particle size range."[21] In any case these calculations do not take into account particulate matter collected in the multiple cyclone.

40 C.F.R. 64 and 40 C.F.R. 71.6(c)(3) & (4) and 71.5(c)(8) describe the elements required to develop a compliance plan including remedial measures and milestones leading to compliance.

[21] http://www.icac.com\i4a\pages\index.cfm?pageid=3398

Condition 92, Compliance Schedule for Selective Catalytic Reduction (SCR) unit attached to emission unit ID 8

Applicability: Applies because the Permittee will not be in compliance with all applicable requirements under C.F.R. 64 "Compliance Assurance Monitoring" for the SCR at the time of permit issuance.

Factual Basis:

UAF applied for an owner-requested operating limit of 10% utilization to avoid NSPS NO_X monitoring with the oil-fire boiler EU 4. This utilization limit was well below the 40 tpy limit which would trigger PSD review.

When UAF added the diesel engine generator (EU 8), the 40 tpy NO_X limit was retained to again avoid PSD review.

Currently, the Permittee does not monitor the efficiency of the NO_X removal of the SCR.

The Department found that EU 8 meets all three applicability criteria listed under the General Applicability section in 40 CFR 64.2(a):

§64.2(a)(1): *"The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;"*

Under condition 16, the Permittee shall limit the combined NOx emissions from EU IDs 4 and 8 to less than 40 tons per year.

The Permittee uses Equation 2 and Equation 3 to determine NOx emissions from EU ID 8.

§64.2(a)(2): *"The unit uses a control device to achieve compliance with any such emission limitation or standard;"*

UAF has a control device (the SCR) to control NOX emissions. When operating with the SCR, UAF is using a control device to meet its emission limitation.

The Permittee has two operating scenarios for the DEG. The Permittee may operate the DEG with or without the SCR. When operating the unit with the SCR the Permittee achieves NOX reduction of by a factor of approximately 10. Meaning that without NOX reduction, the unit produces 53 lb per MWH, but with the SCR reducing the NOX emissions, the emission rate is 5.3 lb per MWH. The Permittee has a self requested limit of 40 tpy of NOX for emission units ID 4 & 8.

§64.2(a)(3): *"The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit",*

as defined in Sec. 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account."

Emission unit ID 8 has a pre-controlled emission greater than 100 tons per year.

§64.2(b): Exemptions. The exemption under §64.2(b)(1)(v) was closely studied at the request of the Permittee:

The Department found that 40 C.F.R. 64.2(b)(1)(v), which allows for an exemption from §64 if an emission cap meets the requirements of 40 C.F.R. 70.4 (b)(12) or 71.6(a)(13)(iii), does not apply.

The exemption under § 71.6(a)(13)(iii) or § 70.4 (b)(12) allows for the trading of emission increases and decreases in the permitted facility solely for the purpose of complying with emission caps that are independent of otherwise applicable requirements. The 40 tpy of NOx limit constitutes an applicable requirement established in a Title I permit to avoid PSD review. In other words, the Department found that the 40 tpy NOx limit does not correspond to trading of emissions increases and decreases solely for the purpose of complying with a federally-enforceable emissions cap.

Condition 92 requires the Permittee to implement measures achieve compliance under 40 CFR Part 64.

40 C.F.R. 64 and 40 C.F.R. 71.6(c)(3) & (4) and 71.5(c)(8) describe the elements required to develop a compliance plan, including remedial measures, and milestones leading to compliance.

Conditions 93 - 94, Permit Shield

Applicability: Apply because the Permittee has requested a shield for the applicable requirements listed under this condition.

Factual Basis: Table C of Operating Permit No. AQ0316TVP02 shows the permit shields 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 Department based the determinations on the permit application, past operating permit, construction permits and inspection reports.

Attachment A

Pollutant (Circle One—SO_2/ 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 period:[1] _____

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

Emission data summary[1]		**CMS (CEMS and PEMS) performance summary**[1]	
1. Duration of excess emissions in reporting period due to:		1. CMS (CEMS and PEMS) downtime in reporting period reporting period due to:	
a. Startup/shutdown	_____	a. Monitor equipment malfunctions	_____
b. Control equipment problems	_____	b. Non-Monitor equipment malfunctions	_____
c. Process problems	_____	c. Quality assurance calibration	_____
d. Other known causes	_____	d. Other known causes	_____
e. Unknown 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]

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

[2] For 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

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY CONTROL MINOR PERMIT

Permit No.: AQ0316MSS02 Date: **Final – August 23, 2006**

The Alaska Department of Environmental Conservation (department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit No. AQ0316MSS02 to the permittee listed below.

Permittee:	**University of Alaska** P.O. Box 75920 Fairbanks, AK 99775
Owner and Operator:	Same as permittee
Stationary Source	**University of Alaska, Fairbanks Campus Power Plant**
Project	**Boiler Retrofit**
Location:	Latitude: 64° 51' North: Longitude: 147°51' West
Physical Address:	802 Alumni Drive Fairbanks, AK 99775
Source Contact:	Charles B. Ward, P.E. (907) 474-7351
Billing Contact:	Accounts Payable, Administrative Service Center University of Alaska P.O. Box 75920 Fairbanks, AK 99775

This project is classified under 18 AAC 50.508(6), to revise or rescind terms and conditions of a Title I permit issued under 18 AAC 50. As required by AS 46.14.120(c), the permittee shall comply with the terms and conditions of this minor permit.

The permittee may retrofit and operate their boilers in accordance with this minor permit upon issuance, **with the exception of the rescission of Condition 22.1, 22.2, 22.3, and 22.4 of Operating Permit No. AQ0AQ0316TVP01, Revision 3 described in condition 5**. The permittee must continue to comply with conditions 22.1, 22.2, 22.3, and 22.4 of Operating Permit No. AQ0316TVP01, Revision 3, until the department issues a renewal operating permit that incorporates the terms and conditions of this minor permit.

John F. Kuterbach
Manager, Air Permits Program

Table of Contents

Section 1 Terms and Conditions

Rescission

1. Emission Units 3 and 4 descriptions as "Oil fired" in Table 1 and elsewhere in Operating Permit No AQ0316TVP01, Revision 3 (dated April 18, 2003) are rescinded and replaced with "Dual fuel fired".[1]
2. Conditions 1 and 2 of Operating Permit No AQ0316TVP01 Revision 3 are rescinded and replaced by Conditions 7 and 8 of this permit.
3. Condition 11 of Operating Permit No. AQ0316TVP01, Revision 3 is rescinded and replaced by Condition 9 of this permit.
4. Condition 21.1(b) of Operating Permit No. AQ0316TVP01, Revision 3 is rescinded and replaced by condition 10 of this permit.
5. Condition 21.1(c) of Operating Permit No. AQ0316TVP01, Revision 3 is rescinded and replaced by Condition 11 of this permit.
6. Except for Condition 22.5c of Operating Permit No. AQ0316TVP01, Revision 3, Condition 22 of Operating Permit No. AQ0316TVP01, Revision 3 is rescinded and replaced by Condition 12 of this permit.[2]

Emission Fees

7. **Assessable Emissions.** The permittee shall pay to the department an annual emission fee based on the stationary source's assessable emissions as determined by the department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of

   7.1 the stationary source's assessable potential to emit of 1,767 tpy;

   7.2 the stationary source's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the department, when demonstrated by

      a. an enforceable test method described in 18 AAC 50.220;

      b. material balance calculations;

      c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

[1] Dual fuel-fired in this case means liquid and gaseous fuel-fired. The liquid fuel may be diesel fuel or coal water slurry.

[2] Condition 22.5c of Operating Permit AQ0316TVP01, Revision 3 is a Title V permit condition, which can not be changed through a minor permit. Therefore, Condition 22.5c will remain in effect until rescinded or replaced by a Title V permit action.

d. other methods and calculations approved by the department.

8. **Assessable Emission Estimates.** Emission fees will be assessed as follows:

8.1 No later than March 31 of each year, the permittee may submit an estimate of the stationary source's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 610 University Avenue, Fairbanks, AK 99709; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the department can verify the estimates; or

8.2 If no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in Condition 7.1.

Revised Conditions

The following New Source Performance Standards apply only to Dual-Fuel Emission Unit 4

9. The permittee shall limit the combined annual capacity factor to less than 10 percent by not exceeding the heat input of 158,468 mmBtu/yr in Emission Unit 4 described in Table 1 of Operating Permit No. AQ0316TVP01, Revision 3, in any 12 consecutive months.

9.1 Permittee shall record calendar date, daily hours of operation, and hourly steam load.

9.2 Permittee shall record fuel consumption for oil and natural gas on a daily basis. Permittee shall maintain and operate a system approved by the department to monitor and record the fuel consumption. No later than the 30th day of each calendar month, calculate the total fuel consumption for the previous 12 months.

9.3 Permittee shall calculate the annual heat input in mmBtu/yr at the end of each calendar month for Emission Unit 4 using Equation 1.

Equation 1 $H = (FC_L \times H_L) + (FC_G \times H_G)$

where:
H = Annual heat input (mmBtu/yr)
FC_L = Annual fuel consumption of oil (gallons)
H_L = Higher heating value for oil (mmBtu/gal). Permittee may use a vendor certification documenting the higher heating value for each shipment of fuel delivered, or alternatively use a value of 0.139 mmBtu/gal.
FC_G = Annual fuel consumption of natural gas (mmscf)
H_G = Higher heating value for natural gas (mmBtu/mmscf). Permittee may use a vendor certification documenting the higher heating value for natural gas, or alternatively use a value of 1,020 mmBtu/mmscf.

9.4 Semi-annual reports shall be submitted to the EPA Administrator, postmarked by the 30th day following the end of the reporting period, and shall contain: (1) the annual capacity factor over the previous 12 months, (2) the annual heat input over the previous 12 months, and (3) the hours of operation during the reporting period. Include copies of the six-month reports submitted to EPA with the operating report described in Condition 55 of Operating Permit No. AQ0316TVP01, Revision 3.

9.5 Submit a report as described in Condition 53 of Operating Permit No. AQ0316TVP01, Revision 3 if the heat input for any 12 consecutive months exceeds 158,468 mmBtu.

State PSD Avoidance Requirements

10. Measure and record the monthly fuel consumption of each fuel (diesel or coal water slurry) in Emission Units 4 and 8 using a totalizing fuel meter accurate to within one percent or using delivery reciepts and change in inventory. (Record diesel and coal water slurry diesel separately.)

11. No later than the 15th day of each month, calculate the previous month's SO_2 emissions using Equation 2. If more than one type of liquid fuel is used during the month (e.g., diesel and coal-water slurry), use Equation 2 for each fuel type and add the results. Record the sub-total for each fuel type and the total for all fuels.

Equation 2 $$SO_2 = [(FC_4 + FC_8)(\rho)(\%S/100)(2)](1/2000)$$

where:

SO_2	=	SO_2 emissions (ton/month)
FC_4	=	Liquid fuel consumption for Emission Unit 4 (gal/month), recorded under the provisions described in condition 10
FC_8	=	Liquid fuel consumption for Emission Unit 8 (gal/month), recorded under the provisions described in condition 10
ρ	=	Density of the liquid fuel (lb/gal)
$\%S$	=	Most recent sulfur content of the liquid fuel (diesel or coal water slurry), percent by weight, recorded under the provisions described in Condition 21.1a of Operating Permit No. AQ0316TVP01 Revision 3
100	=	Conversion factor from percent to a fraction
2	=	Molecular weight ratio of SO_2 to S
2000	=	Conversion factor from lbs to tons

12. The permittee shall limit the combined NO_X emissions from Emission Units 4 and 8 to less than 40 tons per year.

12.1 Install low NO_X burners on Units 3 and 4 prior to operating with natural gas fuel.

12.2 Measure and record the monthly natural gas consumption of Emission Unit 4 in million standard cubic feet per month (mmscf/month) by using a totalizing fuel flow meter certified accurate to within ± one percent.

12.3 No later than the 15th day of each month, calculate the previous month's total NO_X emissions as follows:

a. For Emission Unit 8 liquid fuel operation without NO_X controls, calculate and record the monthly total uncontrolled NO_X emissions using Equation 3.[3] If more than one type of liquid fuel is used during the month (e.g., diesel and coal-water slurry), use Equation 3 for each fuel type and add the results. For coal water slurry, use the emission factor from the source test conducted under condition 14. Record the sub-total for each fuel type and the total for all fuels.

Equation 3 $NO_X = (UFC_8 \times 0.571) \times (1/2000)$

where:

NO_X = Uncontrolled NO_X emissions (tons/month)

UFC_8 = Uncontrolled diesel fuel consumption for Emission Unit 8 (gal/month), recorded under the provisions described in condition 10

0.571 = Uncontrolled NO_X emission factor for Emission Unit 8 (lb/gal) while firing diesel, based on emission factors provided in the February 1, 2002 source test report. If a subsequent source test without NO_X controls is conducted and approved by the department, the permittee shall use the emission factor in lb/gal from the subsequent source test upon the approval date of the source test.

2000 = Conversion factor from lbs to tons

b. For Emission Unit 8 diesel operation with NO_X controls, calculate and record the monthly total controlled NO_X emissions using Equation 4.

Equation 4 $NO_X = (CFC_8 \times 0.057) \times (1/2000)$

where:

NO_X = Controlled NO_X emissions (tons/month)

CFC_8 = Controlled fuel consumption for Emission Unit 8 (gal/month), recorded under the provisions described in condition 10

0.057 = Controlled NO_X emission factor for Emission Unit 8 (lb/gal) while firing diesel, based on emission factors provided in the February 1, 2002 source test report, and assuming 90 percent reduction in NO_X emissions. If a subsequent source test is conducted with NO_X controls and approved by the department, the permittee shall use the emission factor in lb/gal from the subsequent source test upon the approval date of the source test

2000 = Conversion factor from lbs to tons

[3] The permittee has installed a selective catalytic reduction (SCR) control system on Emission Unit 8. Therefore, the term "with NO_X controls" refers to those periods when the SCR system is operational, and the term "without NO_X controls" refers to those periods when the SCR system is not operational.

c. For Emission Unit 4, calculate and record the monthly total NO_X emissions using Equation 5. For coal water slurry, use the emission factor from the source test conducted under condition 14.

Equation 5 $$NO_X = [(LFC_4) \times 0.022) + (GFC_4) \times 140)](1/2000)$$

where:

NO_X	=	NO_X emissions (tons/month)
LFC_4	=	Fuel oil consumption for Emission Unit 4 (gal/month), recorded under the provisions described in condition 10
0.022	=	NO_X (fuel oil) combustion emission factor for Emission Unit 4 (lb/gal), based on emission factor listed in Permit No. 9631-AA001[4]
GFC_4	=	Natural gas consumption for Emission Unit 4 (mmscf/month)
140	=	NO_X (natural gas) combustion emission factor for Emission Unit 4 (lb/mmscf), based on AP-42 Table 1.4-1 for Low NO_X burner technology. If a source test is conducted and approved by the department, the permittee shall use the emission factor in lb/mmscf from the source test upon the approval date
2000	=	Conversion factor from lbs to tons

12.4 No later than the 15th day of each month, add the monthly NO_X emissions calculated under Condition 12.3 to obtain the monthly total for Emission Units 4 and 8, combined. Add this monthly total to the total for the previous 11 months for Emission Units 4 and 8, combined, to determine the 12 consecutive month total.

12.5 Record and report as described in Condition 55 of Operating Permit No. AQ0316TVP01 Revision 3 the 12 consecutive month rolling total fuel consumption and NO_X emissions (tpy) for each 12 month period ending during the reporting period.

12.6 If firing or co-firing Emission Unit 8 with a coal water slurry, conduct source tests to determine NO_X emissions as indicated in condition 14.

12.7 Report as described in Condition 53 of Operating Permit No. AQ0316TVP01 Revision 3 when the combined 12 consecutive month rolling total NO_X emissions for Emission Units 4 and 8 equals or exceeds 40 tons.

Reinstated Conditions

13. If firing or co-firing Emission Units 3, 4 or 8 with a coal water slurry, the permittee shall conduct source tests on the unit(s) operating with a coal water slurry to determine the particulate matter (PM-10) emissions.

13.1 Conduct all tests and report the results in accordance with the requirements described in Section 9 of Operating Permit No. AQ0316TVP01 Revision 3. For Emission Unit 8, note whether the unit was operating with or without NO_X controls.

13.2 Conduct all tests at the maximim anticipated coal water slurry feedrate.

[4] Permit No. 9631-AA001 indicates this is from October 3-5 1989 source test.

13.3 Commence the tests within 90 days of starting operation with the coal water slurry.

13.4 Submit a revised particulate matter grain loading demonstration and Prevention of Significant Deterioration (PSD) PM-10 permit applicability determination with the source test report.

14. If firing or co-firing Emission Unit 8 with a coal water slurry, the permittee shall conduct source tests on the unit operating with a coal water slurry to determine the NO_X emission factor in lb per gallon.

14.1 Conduct all source tests and report the results in accordance with the requirements described in Section 9 of Operating Permit No. AQ0316TVP01 Revision 3.

14.2 Conduct a series of source tests at the maximum anticipated coal water slurry feed rate.

a. Conduct the tests with and without NO_X controls.

b. Commence the tests within 90 days of starting operation with the coal water slurry.

c. Note in the source test report whether the resulting NO_X emission rates are greater than or less than the corresponding NO_X emission factors listed in Conditions 12.3a and 12.3b.

d. Use the resulting NO_X emission rates in Conditions 12.3a and 12.3b when firing coal water slurry.

15. The permittee shall operate each Unit 3, 4, or 8 with coal-water slurry at a rate **no** greater than that for which source testing has demonstrated compliance with emission standards established in the permit.

Section 2 Terms to Make Permit Enforceable

16. The permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 16.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

    16.1 an enforcement action; or

    16.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.

17. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

18. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

19. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the permittee for modification, revocation and reissuance, or terminate or a notification of planned changes or anticipated noncompliance does not stay any permit.

20. The permit does not convey any property rights of any sort, nor any exclusive privilege.

Section 3 Permit Documentation

October 8, 1996	Permit No. 9631-AA001 - contains fuel oil NO_X emission factor for Unit 4 (from October 3-5 1989 source test which is not available for reference).
February 1, 2002	Source Test Report prepared by Alaska Source Testing, LLC, for source tests performed on Unit 8.
April 5, 2006	UAF submitted Air Quality Control Minor Permit Application
July 26, 2006	Comments on preliminary minor permit, submitted by email from Moses Coss (department) to Bill Walker (department).
August 3, 2006	Comments on preliminary minor permit, submitted by email, from Thomas H. Gibbons (Steigers Corporation) to Bill Walker (department).
August 9, 2006	Comments on preliminary decision, submitted by fax, from Charles B. Ward (UAF) to Sally Ryan (department).

Section 8

Electronic Copy of the Application