



Air Quality Permitting Statement of Basis

November 22, 2006

Permit to Construct No. P-050052

**Saint Alphonsus Regional Medical Center
Boise, Idaho**

Facility ID No. 001-00027

Prepared by:

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FINAL

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
Btu	Btu's per gallon
CO	carbon monoxide
DEQ	Department of Environmental Quality
EF	emission factor
Btu	British thermal units
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
kW	kilowatts
lb/hr	pound per hour
MMBtu	million British thermal units
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	oxides of nitrogen
NSPS	New Source Performance Standards
O₃	ozone
Pb	lead
PM	particulate matter
PM₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
SARMC	Saint Alphonsus Medical Center
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO₂	sulfur dioxide
TII/PTC	Tier II operating permit and permit to construct
TAPs	toxic air pollutants
T/yr	tons per year
UTM	Universal Transverse Mercator

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct.

2. FACILITY DESCRIPTION

Saint Alphonsus Regional Medical Center (SARMC) is a general medical and surgical hospital located in 1055 N. Curtis Road in Boise, Idaho. The existing emissions sources at SARMC are three dual-fuel boilers, three natural gas-fired boilers, and 10 diesel-fired emergency generators. Boiler No. 5, generator No. 4, paint spray booth, and the ethylene oxide sterilizer existed in permit No. 001-00027, issued on January 17, 2003, were removed from the facility.

Boilers Nos. 1, 2, and 3 are manufactured by Cleaver-Brooks. The MOBV1, MOBV2, and MOBV3 boilers are manufactured by Lochinvar.

Boilers Nos. 1, 2, and 3 may operate using either natural gas fuel or ASTM Grade 2 fuel oil. Boilers Nos. 1 and 2 are identical and each is rated at the same heat input capacity of 43 MMBtu/hr, when fired with natural gas. Boiler No. 3 is rated at heat input capacity of 18.8 MMBtu/hr, when fired with natural gas. When boilers Nos. 1, 2, and 3 are fired with ASTM Grade 2 fuel oil the rated heat input capacities are 41, 41, and 16.8 MMBtu/hr, respectively. Modifications to Boilers Nos. 1, 2, and 3 subjected them to 40 CFR 60, Subpart Dc, New Source Performance Standard (NSPS).

The rated heat input capacities for MOBV1, MOBV2, and MOBV3 boilers are 1.8, 1.8, and 0.5 MMBtu/hr, respectively. Boilers MOBV1, MOBV2, and MOBV3 operate only on natural gas fuel.

There are eight existing diesel-fired emergency electrical power generators at SARMC. Generators Nos. 10 and 11 are diesel-fired emergency electrical power generators that will be added to the new Central Tower building at the facility.

The boilers' and generators' manufacturers, model numbers, rated output capacities, and serial numbers are shown in Table 1.1 of this permit.

The primary purpose of the boilers is to generate steam for space heating at the hospital. The primary purpose of the emergency generators is to provide electrical power to the hospital in the event of a power interruption.

3. FACILITY / AREA CLASSIFICATION

The SARMC is not a major facility as defined in IDAPA 58.01.01.205, nor is it a designated facility as defined in IDAPA 58.01.01.006.27. The primary Standard Industrial Classification (SIC) code for the facility is 8062, *General Medical and Surgical Hospitals*. The Aerometric Information Retrieval System (AIRS) facility classification is *synthetic minor* (SM)—potential uncontrolled oxides of nitrogen and sulfur dioxide emissions are greater than 100 tons per year (T/yr), but permitted emissions are less than 100 T/yr. The potential emissions rates for hazardous air pollutants (HAPs) are below 25 T/yr collectively and less than 10 T/yr for any single HAP. The facility is not subject to Prevention of Significant Deterioration (PSD) requirements, because its potential to emit is less than all applicable PSD major source thresholds.

The SARMC facility is located in the city of Boise, which is located in Ada County, designated as an attainment or unclassifiable area for sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), lead (Pb), ozone (O₃), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM₁₀). The area operates under limited maintenance plans for PM₁₀ and CO. Ada County is located in Air Quality Control Region (AQCR) 64 and Universal Transverse Mercator (UTM) Zone 11. There are no Class I areas within 10 kilometers of the facility.

The AIRS information for each regulated air pollutant emitted by SARMC is provided in Appendix A of this document. This information is entered into the U.S. Environmental Protection Agency (EPA) AIRS database.

4. APPLICATION SCOPE

On November 28, 2005, the Department of Environmental Quality (DEQ) received a 15-day Pre-PTC application from SARMC for the installation of two new diesel-fired fuel emergency generators each with a rated output capacity of 1,250 kilowatts (kW) and the modification of existing boilers Nos. 1, 2, and 3 to increase the steam production capacities of the boilers. The requested modification to the boilers when fired with natural gas is to increase the capacities of boilers Nos. 1, 2, and 3 from 31.5, 31.5, and 12.8 MMBtu/hr, respectively, to 43 MMBtu/hr to each of boilers Nos. 1 and 2; and to 18.8 MMBtu/hr for Boiler No. 3. The requested modification to the boilers when operating on ASTM Grade 2 fuel oil is to increase the capacities of boilers Nos. 1, 2, and 3 from 31.5, 31.5, and 12.8 MMBtu/hr, respectively to 41 MMBtu/hr to each of boilers Nos. 1 and 2; and to 16.8 MMBtu/hr for boiler No. 3. Modifications to boilers Nos. 1, 2, and 3 subjected them to 40 CFR 60, Subpart Dc, New Source Performance Standard (NSPS). SARMC also requested that existing Tier II Operating Permit and permit to construct (PTC) No. 001-00027, issued on January 17, 2003, be modified to reflect the removal of boiler No. 5, generator No. 4, ethylene oxide sterilizer, and a paint spray booth.

4.1 Application Chronology

November 28, 2005	A 15-day Pre-PTC application received.
November 28, 2005	\$1,000 PTC application fee received.
December 28, 2005	DEQ determined SARMC's permit application complete.
February 9, 2006	DEQ requested from CH2M HILL additional dispersion modeling information.
March 15, 2006	DEQ received a revised modeling results that replaced the original modeling received on November 28, 2005.
August 16, 2006	DEQ sent CH2M HILL, SARMC's consultant a copy of draft permit No. P-050052 for review.
August 22, 2006	DEQ sent an electronic copy of the draft permit to the Boise Regional Office for review.
October 6, 2006	SARMC sent to DEQ additional modeling information.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 Equipment Listing

Equipment regulated in this permit is listed in table 1.1 of PTC No. P-050052.

5.2 Emissions Estimates

Emissions estimates were provided by CH2M HILL, SARMC's consultant, and are included in the permit application materials that were submitted to DEQ on November 28, 2005. Appendix B of this statement of basis contains the emissions estimates for the criteria air pollutants (PM₁₀, CO, NO_x, SO₂, and VOC) provided by the facility and are summarized in Table 5.1. Lead, a criteria air pollutant, emissions estimates from the boilers and the generators are not included in Table 5.1; however, emissions were estimated to be 0.00037 lb/hr and 0.001 T/yr – see Appendix B. Toxic air pollutant (TAP) and hazardous air pollutant (HAP) emissions estimates that were provided by the facility are shown in Appendix B of this document. Emissions estimates for the criteria air pollutants, TAPs, and HAPs, from the boilers were obtained from emissions factors described in the U.S. EPA's *Compilation of Air Pollution Emission Factors*, AP-42, Fifth Edition, Section 1.3, Fuel Oil Combustion (September 1998) and Section 1.4, Natural Gas Combustion (July 1998). The boilers will be fired primarily on natural gas with diesel fuel as a backup. Emissions estimates resulting from the natural gas and diesel fuel combustion assumed 8,400 hours (8,760- 360) per year on natural gas and 360 hours per year (hr/yr) on diesel fuel. The hours of operations on diesel fuel existed in the current permit, issued on January 17, 2003. The generators' (Nos. 1, 2, 3, 5, 6, 7, 8, and 9) emissions estimates for the criteria air pollutants, TAPs, and HAPs were based on emissions factors described in the U.S. EPA's AP-42, Fifth Edition, Section 3.3, Gasoline and Diesel Industrial Engines (October 1996) and Section 3.4, Large Stationary Diesel and All Stationary Dual-Fuel Engines (October 1996). Emissions estimates of PM₁₀, NO_x, and CO from generators Nos. 10 and 11 were obtained from emission factors that were provided by the manufacturer (Caterpillar). The other remaining emissions estimates of criteria air pollutants (i.e., SO₂ and VOC) from generators Nos. 10 and 11 were obtained from emissions factors found in AP-42. All emergency generators emissions are calculated based on 500 hours of operation in any 12-month consecutive time period. The short term emissions estimates (in pounds per hour) for the criteria air pollutants from the generators were based on operations of six hours per day for each generator. For the boilers and the generators emission estimates it was assumed that all PM are equal to PM₁₀, which is a conservative assumption.

The increase in PM₁₀, CO, NO_x, and SO₂ emissions estimates presented in Appendix B of this document provided the basis of the analysis of these pollutants compliance with the National Ambient Air Quality Standards (NAAQS) and the TAPs increment analysis – see the modeling results in Appendix C of this document.

All methodologies and assumptions used in the emissions estimates are presented and documented in Appendix D of the permit application. The emissions calculations submitted in the application were checked by DEQ for the bases of the emissions factors and references and found to be consistent with current DEQ methodology. Therefore, DEQ used the applicant emissions estimates as a basis for the permitting analyses for this permit.

Table 5.1 EMISSIONS RATES FROM THE BOILERS AND GENERATORS

Source Description	PM ₁₀ ^a		CO ^b		NO _x ^c		SO ₂ ^d		VOC ^e	
	lb/hr	T/yr	Lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Boiler No. 1 stack (natural gas combustion)	0.31	1.31	3.44	14.45	2.05	8.60	0.02	0.10	0.23	0.95
Boiler No. 2 stack (natural gas combustion)	0.31	1.31	3.44	14.45	2.05	8.60	0.02	0.10	0.23	0.95
Boiler No. 3 stack (natural gas combustion)	0.14	0.57	1.50	6.32	0.90	3.76	0.01	0.05	0.10	0.41
Boiler No. 1 stack (fuel oil combustion)	0.99	0.18	1.50	0.27	5.99	1.08	21.25	3.82	0.17	0.03
Boiler No. 2 stack (fuel oil combustion)	0.99	0.18	1.50	0.27	5.99	1.08	21.25	3.82	0.17	0.03
Boiler No. 3 stack (fuel oil combustion)	0.40	0.07	0.61	0.11	2.45	0.44	8.71	0.44	0.07	0.01
Aggregate boilers – MOBVI, MOBV2, and MOBV3 stacks (natural gas combustion only)	0.024	0.14	12.32	37.30	0.39	1.71	0.002	0.011	0.023	0.09
Aggregate emergency generators Nos. 1, 2, 3, 5, 6, 7, 8, 9, 10, and 11 stacks	4.86	1.21	26.44	6.62	142.7	35.67	27.43	6.87	6.51	1.63
Total	8.024	4.97	50.75	79.79	162.5	60.94	78.69	15.21	7.71	4.1

^aParticulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

^bCarbon monoxide

^cOxides of nitrogen

^dSulfur dioxide

^eVolatile organic compound

^{*}Boilers Nos. 1, 2, 3, generator 1, and generator 2 share a common stack

It should be noted that, as shown in Table 5.1, the emissions of any criteria air pollutants that resulted from the modification of the boilers, the addition of two emergency generators, and the rest of the permitted sources at the facility did not trigger the major source threshold of 100 T/yr. Thus, emissions from SARMC are below the permitting requirements that are mandated under the Title V permitting program.

Potential emissions of any single HAP were estimated to be less than 10 T/yr. Potential emissions for two HAPs or more were estimated to be below the major source threshold of 25 T/yr for a combination of two HAPs or more – refer to Appendix B.

Detailed emissions estimates are included in Appendix B of this statement of basis. It should be noted that the increase in the criteria air pollutants emissions from the boilers and the generators were increased by 41.5 T/yr as a result of this PTC modification. The increase in the criteria air pollutants emissions were used to determine the processing fee assessed in accordance with IDAPA 58.01.01.226.

5.3 Modeling

The permittee supplied the National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants and TAPs ambient impact demonstration in support of the PTC application. The DEQ’s modeling memorandum concerning the review of the ambient impact demonstration is included in Appendix C of this statement of basis. The results show that SARMC has demonstrated compliance with the NAAQS and with IDAPA 58.01.01.585 and 586 to the satisfaction of DEQ.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201 Permit to Construct Required

A modification to the facility's permit was requested by SARMC in accordance with IDAPA 58.01.01.201. The modification triggered the PTC requirements, because it involves the installation of two new package generators and for the increase in steam production for existing boilers Nos. 1, 2, and 3, which resulted in increase of criteria air pollutants and TAPs emissions. The project does not qualify for PTC exemption in any of Sections 220 through 223 of the Rules; therefore, a PTC is required. DEQ is modifying the permit conditions associated with boilers Nos. 1, 2, and 3 and adding generators Nos. 10 and 11 to the permit.

It should be noted that DEQ is replacing the current combo Tier II Operating Permit and Permit to Construct (TII/PTC) No. 001-00027, issued on January 17, 2003, with this modified PTC. The current combo TII/PTC replaced the original operating permit, issued on January 22, 1996. The permitting analyses for the potential to emit (PTE) of any regulated air pollutant that existed in either the original operating permit or in the current combo TII/PTC did not show the facility was a major source with regard to Title V permitting requirements. However, DEQ issued the original operating permit and the combo TII/PTC to the facility, because they constructed some emissions units without obtaining a PTC prior to construction.

In this permitting action, SARMC requested to modify three boilers and to add two emergency generators-these are considered a PTC action. Also, SARMC requested to remove some emissions units (boiler No. 5, generator No. 4, ethylene oxide sterilizer, and paint spray booth) from the existing combo TII/PTC. In addition, for this modified PTC, the emissions from all the emissions units (existing and new) at the facility were modeled and the results of the modeling demonstrated compliance with NAAQS and with IDAPA 58.01.01.585 and 586. Refer to Appendix B of this memo for the modeling analyses. Therefore, DEQ concluded that this modified PTC can be issued to replace the current combo TII/PTC.

IDAPA 58.01.01.203 Permit Requirements for New and Modified Stationary Sources

IDAPA 58.01.01.577 Ambient Air Quality Standards for Specific Air Pollutants

Ambient air quality modeling has predicted the modification of the sources and the installation of the two new package generators at the facility will not cause or significantly contribute to a violation of any ambient air quality standard; therefore, the requirements of IDAPA 58.01.01.203.02 and IDAPA 58.01.01.577 are satisfied.

Also, the TAPs emissions from the facility were demonstrated to meet the requirements specified in IDAPA 58.01.01.585-586 and as required in IDAPA 58.01.01.210.

IDAPA 58.01.01.212.01 Obligation to Comply

Receipt of this revised PTC does not relieve SARMC from the responsibility to comply with all applicable local, state, and federal statutes rules and regulations.

IDAPA 58.01.01.213 Pre-Permit Construction

IDAPA 58.01.01.213.01 Pre-Permit Construction Eligibility

Modifications to the sources at the facility are non-major modifications with regard to PSD regulations.

IDAPA 58.01.01.213.01.a

The permittee submitted a PTC application meeting the requirements of IDAPA 58.01.01.202.01.a, 202.02, and 202.03.

IDAPA 58.01.01.213.01.b

The permittee and CH2M HILL consulted with DEQ representatives prior to submitting a pre-construction approval application.

IDAPA 58.01.01.213.01.c

The permittee submitted the documentation specified in IDAPA 58.01.01.213.01.c, including a copy of the public notice and an ambient impact demonstration conducted in accordance with DEQ-approved protocol.

IDAPA 58.01.01.224-225..... Permit to Construct Application and Processing Fees

SARMC paid the \$ 1,000 application fee in accordance with IDAPA 58.01.01.224. This project is also subject to the processing fee provisions of IDAPA 58.01.01.225, and SARMC was assessed a processing fee of \$5,000.00 for an increase in PM₁₀, CO, NO_x, VOC, and SO₂ emissions of 41.5 tons per year. The processing fees were paid on March 9, 2006.

40 CFR 60 New Source Performance Standards

After modifications, boilers Nos. 1, 2, and 3 will be subject to New Source Performance Standard (NSPS), Subpart Dc.

On April 10, 2006, SARMC sent a letter to EPA Region 10, in which they requested to reduce the fuel usage recordkeeping requirements from daily to monthly, and to allow one gas meter and one fuel oil meter to measure the amount of fuel used in boilers Nos. 1, 2, and 3. At the time of this memo EPA has not approved SARMC's request. Once it is approved by EPA Region 10, boilers 1, 2, and 3 can share a single natural gas usage meter, a single fuel oil meter, and the fuel usage will be monitored and recorded on a monthly basis instead of daily. If more than one boiler is fired on natural gas or fuel oil during the monthly period, the permittee may prorate natural gas or fuel oil by dividing the heat input capacity of each boiler by the aggregated design heat input capacities of the boilers operated during that monthly period. Refer to Appendix B for SARMC's letter to EPA.

40 CFR 61 and 63 National Emission Standards for Hazardous Air Pollutants and Maximum Achievable Control Technology

The facility is not currently subject to any National Emission Standard for Hazardous Air Pollutants or Maximum Achievable Control Technology requirements at this time.

40 CFR 52 Prevention of Significant Deterioration

This permit does not include any Prevention of Significant Deterioration (PSD) issues.

5.5 Permit Conditions Review

This section lists only those permit conditions that have changed or have been deleted as a result of this permit modification. All other permit conditions remain unchanged. Permit conditions related to the modified permit are identified as Modified Permit Conditions. Permit conditions related to the existing permit are identified as Existing Permit Conditions.

Existing tables 1.1 and 1.2 (Regulated and Unregulated Emissions Sources) in the current permit, which was issued on January 17, 2003, list all emissions sources at SARMC. The tables included emissions sources (i.e., Boiler No. 5, Generator No. 4, Ethylene Oxide Sterilizer, and Spray Paint Booth) that no longer exist at SARMC. Therefore, these sources are deleted from the tables in the modified PTC. DEQ also determined that table 1.2 (Unregulated Emissions Sources) was unnecessarily included in the existing permit and was deleted in the modified permit.

5.5.1 Modified Permit Conditions 2.3 sets emissions limits for PM₁₀ and SO₂ in lb/hr and T/yr when boilers Nos. 1, 2, and 3 are fired with ASTM Grade 2 fuel oil. The PM₁₀ and SO₂ limit were included in the PTC to demonstrate compliance with NAAQS. Additionally, the SO₂ is the pollutant emitted in the greatest quantity, and its limit establish the facility's potential to emit when the boilers combust ASTM Grade 2 fuel oil. Compliance with the PM₁₀ and SO₂ emissions limits will be demonstrated by monitoring the hours of operations on ASTM Grade 2 fuel oil that are combusted in boilers 1, 2, and 3 as specified in permit conditions 2.9 and 2.13. Emissions limits of CO and NO_x existed in permit No. 001-00027, issued January 17, 2003, were deleted in the modified permit. The PTE for CO and NO_x emissions when boilers Nos. 1, 2, and 3 each operate on ASTM Grade 2 fuel oil at maximum capacity do not trigger major source threshold. Also the CO and NO_x emissions modeling results showed compliance with NAAQS. Therefore, emissions limits for CO and NO_x were deemed unnecessary and were deleted from the modified permit.

No pollutant emissions limits were established due to burning natural gas fuel. The potential to emit of any criteria air pollutant resulted from combustion of natural gas combustion are below the major source threshold of 100 T/yr- see emissions estimates in Appendix B.

5.5.2 Modified Permit Condition 2.6 sets emissions limits for PM from each of boiler No. 1 and boiler No. 2 to 0.030 pounds per million Btu of heat input in accordance with 40 CFR 60.43c (e)(1). Compliance with this permit condition will be determined in accordance with 40 CFR 60.45c.

5.5.3 Modified Permit Condition 2.7 sets emissions limits for SO₂ of 0.50 lb/MMBtu heat input for each of boilers No. 1, 2, and 3 in accordance with 40 CFR60.42.(c)(d), while combusting ASTM Grade 2 fuel oil; or, alternatively, a limit of 0.5 weight percent sulfur in the fuel oil combusted. The permittee may comply with either form of sulfur standard. Monitoring and recordkeeping requirements to demonstrate compliance with the limitation on sulfur content in fuel limit is more easily established by the permittee and is done so by obtaining the written certification from the fuel oil supplier.

5.5.4 Permit condition 2.9 limits the operation of boilers Nos. 1, 2, and 3 on ASTM Grade 2 fuel oil to a maximum 360 hours per year. This limit existed in permit No. 001-00027, issued on January 17, 2003. The permittee did not request to change this permit condition. All emissions estimates and the NAAQS analysis of criteria air pollutants when boilers Nos.1, 2, and 3 combust ASTM Grade 2 fuel oil were based on operation of 360 hours per year per boiler. Compliance with this permit condition is determined by monitoring and recording the hours of operations on ASTM Grade 2 fuel oil as mandated by Permit Condition 2.13.

5.5.5 Modified Permit Condition 2.10 sets a limit of number of boilers that can operate on ASTM Grade 2 fuel oil and on natural gas. No more than two of the boilers Nos. 1, 2, and 3 shall operate at any time while combusting ASTM Grade 2 fuel oil, while the third boiler can operate concurrently combusting natural gas. This limit was necessary in order to comply with NAAQS for SO₂ and the TAPs increments. Boilers 1 and 2 will have the greatest heat input capacity of the three boilers and are the worst-case boilers with regard to emissions and impacts for SO₂ and TAPs . Any two boilers out of the boilers 1, 2, and 3 group may operate on ASTM Grade 2 fuel oil at any time. The third boiler may operate concurrently while combusting natural gas with other two boilers combusting ASTM Grade 2 fuel oil. Compliance with this permit condition is determined through Permit Condition 2.13.

5.5.6 Modified Permit Condition 2.15 sets an NSPS requirements (fuel oil sulfur content monitoring, recordkeeping, and reporting requirements) for boilers Nos. 1, 2, and 3 in accordance with 40 CFR 60.42c(h). Boilers Nos. 1, 2, and 3 are subject to NSPS – Subpart Dc and Permit Condition 2.15 in this modified PTC reflects the NSPS requirements for monitoring and recordkeeping as specified in this subpart.

- 5.5.7 Modified Permit Condition 2.16 sets an NSPS requirements (notification, monitoring, reporting and recordkeeping requirements) for boilers Nos. 1, 2, and 3) in accordance with 40 CFR 60.48c(a) and 40 CFR 60.7.
- 5.5.8 Modified Permit Condition 2.17 requires the permittee to control fugitive emissions in accordance with IDAPA 58.01.01.650-651.
- 5.5.9 Modified Permit Condition 2.18 sets a visible emissions monitoring. To demonstrate compliance with the visible emissions limit of Permit Condition 2.4, the permittee is required to conduct monthly visible emissions inspection as specified in Permit Condition 2.18.
- 5.5.10 Existing Permit Condition 4.3 (Tier II /PTC No. 001-00027, issued January 17, 2003) limits the NO_x emissions from the existing generators to 166 lb/hr and 10.4 T/yr.
- 5.5.11 DEQ did not include any criteria air pollutant emissions limits in the modified PTC for the emergency generators. The potential to emit (PTE) of any criteria air pollutant emissions from the generators that are based on operations at a full capacity for each generator and operating at 500 hr/yr for each generator is less than the emissions of major source threshold of 100 T/yr. Additionally, emissions from the generators demonstrated compliance with NAAQS- refer to Appendices B and C of this statement of basis for the generators' emissions estimates and for the modeling analysis.
- 5.5.12 Permit Condition 3.3 - Visible Emissions Limit. This permit condition establishes the visible emissions for each of the generator stacks in accordance with IDAPA 58.01.01.625. Compliance with this permit condition is set as required in Permit Condition 3.8.
- 5.5.13 Permit Condition 3.4 limits the sulfur content in the ASTM Grade 2 fuel oil that is combusted in the generators to 0.5% sulfur by weight.
- 5.5.14 Modified Permit Condition 3.7 requires that the permittee monitor and record the fuel sulfur content in the ASTM Grade 2 fuel oil on an as-received-basis to demonstrate compliance with Permit Condition 3.4.
- 5.5.15 Existing Permit Condition 4.4 (Tier II /PTC No. 001-00027, issued January 17, 2003) limits the operation of each emergency diesel generator to 125 hours per any consecutive 12-month period.
- 5.5.16 Modified Permit Condition 3.5 limits the hours of operation of each emergency generator to six hours in any 24-hour period and to 500 hours per any consecutive 12-month period. Emissions based on these limits demonstrated compliance NAAQS – refer to the modeling results in Appendix C of this memo. These hours of operations limit will not apply during times of electric power outages to the hospital. Compliance with this permit condition is determined through Permit Condition 3.9.

6. PERMIT FEES

Saint Alphonsus Regional Medical Center paid the PTC application fee of \$1,000.00 on November 28, 2005. In accordance with IDAPA 58.01.01.225 and .226 a PTC processing fee of \$5,000.00 is required, because the increase of emissions is 10 to less than 100 tons per year. The processing fees were paid on March 9, 2006.

Table 6.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	17.62	0	17.62
SO ₂	7.48	0	7.48
CO	13.11	0	13.11
PM ₁₀	1.38	0	1.38
VOC	1.87	0	1.87
TAPS/HAPS	--	--	--
Total:	41.46	0	41.46
Fee Due	\$5,000.00		

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

DEQ's Boise Regional Office was provided the draft permit for review on August 22, 2006. No comments were received.

7.2 Facility Review of Draft Permit

The draft permit was made available via email to SARMC's consultant (CH2M HILL) on August 16, 2006, August 30, 2006, and November 22, 2006. Comments were processed

7.3 Public Comment

An opportunity for public comment period on the PTC application was provided in accordance with IDAPA 58.01.01.209.01.c. from January 11, 2006, through February 9, 2006. During this time, there were no comments on the application and no requests for public comment period on DEQ's proposed action.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommends that SARMC be issued final PTC No. P-050052 for the Boise hospital. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

HE/bf Permit No. P-050052

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Appendix A

Saint Alphonsus Regional Medical Center, Boise

P-050052

AIRS Information

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Facility Name: Saint Alphonus Regional Medical Center
Facility Location: Boise, Idaho
AIRS Number: 001-00027

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION
								A-Attainment U-Unclassified N- Nonattainment
SO ₂	SM						SM	U
NO _x	SM						SM	U
CO	B							U
PM ₁₀	B							U
PT (Particulate)	B							
VOC	B							U
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					
			Dc					

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

Appendix B

Saint Alphonsus Regional Medical Center, Boise

P-050052

Emissions Estimates and Correspondence

Saint Alphonsus Medical Center, Boise, Idaho
Existing Boiler Configuration PTE Calculations

Assumptions

Unit	Cleaver Brooks (D-52)	Cleaver Brooks (D-52)	Cleaver Brooks (D-26)	Bryan Steam (RV-300)	Lochinvar (CHN 1800)	Lochinvar (CHN 1800)	Lochinvar (CFN501PM)
Unit ID	BOIL1	BOIL2	BOIL3	BOIL5	MOBV1	MOBV2	MOBV3
Boiler Heat Input Rating (MM Btu/hr)	31.5	31.5	12.8	5	1.8	1.8	0.5
Natural Gas Heat Value (Btu/scf)*	1050	1050	1050	1050	1050	1050	1050
Theoretical Max Natural Gas Usage (scf/hr)	30,000	30,000	12,190	4,762	1,714	1,714	478
Potential Hours on Natural Gas* (hr/yr)	8,400	8,400	8,400	8,400	8,760	8,760	8,760
#2 Fuel Oil Heat Value (Btu/gal)*	137,000	137,000	137,000	137,000	NA	NA	NA
Theoretical Fuel Oil Usage (gal/yr)	230	230	93	36	NA	NA	NA
Potential Hours on Fuel Oil* (hr/yr)	360	360	360	360	NA	NA	NA
% Sulfur In Fuel	0.5	0.5	0.5	0.5	NA	NA	NA

Emission Factors for Criteria Pollutants*

Pollutant	Natural Gas	Fuel Oil
	EF (lb/10 ⁶ scf)	EF (lb/10 ⁶ gal)
PM	7.6	3.3
SO ₂	0.8	71
NO _x	100	20
CO	84	6
VOC	6.5	0.558
Lead	0.0005	9

Calculations

Boiler ID	PM		SO ₂		NO _x		CO		VOC		Lead	
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
BOIL1 - Natural Gas	0.23	0.99	0.02	0.08	3.00	12.50	2.62	10.68	0.17	0.69	1.50E-05	6.30E-06
BOIL1 - Fuel Oil	0.76	0.14	16.32	2.94	4.60	0.83	1.15	0.21	0.13	0.02	2.84E-04	6.10E-05
BOIL2 - Natural Gas	0.23	0.04	0.02	0.08	3.00	12.60	2.62	10.68	0.17	0.69	1.50E-05	6.30E-05
BOIL2 - Fuel Oil	0.76	0.14	16.32	2.94	4.60	0.83	1.15	0.21	0.13	0.02	2.84E-04	6.10E-06
BOIL3 - Natural Gas	0.08	0.39	0.01	0.03	1.22	5.12	1.02	4.30	0.07	0.28	6.10E-06	2.66E-05
BOIL3 - Fuel Oil	0.31	0.06	6.63	1.19	1.87	0.34	0.47	0.08	0.05	0.01	1.15E-04	2.07E-05
BOIL5 - Natural Gas	0.04	0.15	0.00	0.01	0.48	2.00	0.40	1.68	0.03	0.11	2.38E-06	1.00E-05
BOIL5 - Fuel Oil	0.12	0.02	2.89	0.47	0.73	0.13	0.19	0.03	0.02	0.00	4.50E-05	8.10E-06
MOBV1	0.01	0.06	0.00	0.00	0.17	0.79	0.14	0.63	0.01	0.04	6.57E-07	3.76E-06
MOBV2	0.01	0.06	0.00	0.00	0.17	0.79	0.14	0.63	0.01	0.04	6.57E-07	3.76E-06
MOBV3	0.00	0.02	0.00	0.00	0.05	0.21	0.04	0.16	0.00	0.01	2.38E-07	1.04E-06
Total	2.56	2.02	41.62	7.74	19.66	36.16	8.74	29.12	0.77	1.83	7.88E-04	3.01E-04

Notes:
 * Fuel heat values from EPA AP-42, Appendix A (EPA Web site October 2006)
 * Potential hours of operation from Tier II Permit (No 001-00027, January 2003)
 * Criteria Pollutants EPA AP-42, Section 1.4, Tables 1.4-1 and 1.4-2 & Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-3 (EPA Web site October 2005)

St. Alphonsus Medical Center, Boise Idaho
New Boiler PTE Calculations

Assumptions

Unit	BOIL 1	BOIL2	BOIL3
Natural Gas Heat Input Rating (MM Btu/hr)	43.0	43.0	18.8
Natural Gas Heat Value (Btu/scf)	1050	1050	1050
Theoretical Max Natural Gas Usage (scf/hr)	40,952	40,952	17,905
Potential Hours on Natural Gas* (hr/yr)	8,400	8,400	8,400
Fuel Oil Heat Input Rating (MM Btu/hr)	41.0	41.0	18.8
#2 Fuel Oil Heat Value (Btu/gal)	137,000	137,000	137,000
Theoretical Fuel Oil Usage (gal/hr)	299	299	133
Potential Hours on Fuel Oil* (hr/yr)	360	300	300
% Sulfur in Fuel	0.5	0.5	0.5

Emission Factors for Criteria Pollutants*

Pollutant	Natural Gas EF (lb/scf)	Fuel Oil EF (lb/gal)
PM	7.3	3.3
SO ₂	0.8	7.1
NO _x	80	20
CO	84	8
VOC	3.5	0.558
Lead	0.0005	0

Criteria Pollutants Calculations

Boiler ID	PM		SO ₂		NO _x		CO		VOC		Lead	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
BOIL 1 - Natural Gas	0.31	1.31	0.02	0.10	2.05	8.50	3.44	14.45	0.23	0.88	2.02E-05	8.80E-05
BOIL 1 - Fuel Oil	0.99	0.18	21.85	8.82	8.99	1.06	1.50	0.27	0.17	0.03	3.69E-04	6.84E-05
BOIL 2 - Natural Gas	0.31	1.31	0.02	0.10	2.05	8.50	3.44	14.45	0.23	0.88	2.02E-05	8.80E-05
BOIL 2 - Fuel Oil	0.99	0.18	21.25	3.82	5.98	1.08	1.50	0.27	0.17	0.03	3.69E-04	6.84E-05
BOIL 3 - Natural Gas	0.14	0.87	0.01	0.05	0.90	3.78	1.50	6.32	0.10	0.41	8.88E-06	3.79E-05
BOIL 3 - Fuel Oil	0.40	0.07	8.71	1.87	2.45	0.44	0.61	0.11	0.07	0.01	1.61E-04	2.72E-05
Sum - Natural Gas	0.76	3.19	0.06	0.28	4.99	20.96	8.38	38.21	0.56	2.31	4.99E-05	2.10E-04
Sum - Fuel Oil	2.38	0.43	31.23	9.22	14.42	2.53	3.61	0.65	0.40	0.07	8.99E-04	1.90E-04
Total Emissions	3.14	3.61	31.28	9.47	19.41	23.66	11.99	39.84	0.99	2.38	9.39E-04	3.70E-04

Idaho Toxic Air Pollutants Organics*

Pollutant	CAS No.	Natural Gas EF (lb/10 ⁶ scf)	Fuel Oil EF (lb/10 ⁶ gal)	Natural Gas Emission Rate			Fuel Oil Emission Rate			Total (lb/yr)	Level 1 IDAPA 94.01.01.569500 (lb/yr)	Comparison
				BOIL 1	BOIL 2	BOIL 3	BOIL 1	BOIL 2	BOIL 3			
				(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)			
3-Methylchlorobenzene	64-40-5	1.80E-06	4.01E-06	7.37E-08	7.37E-08	3.22E-08	1.80E-06	1.80E-06	1.80E-06	2.50E-06	Below	
Benzene	71-43-2	2.10E-03	2.14E-04	8.80E-05	8.80E-05	3.78E-05	6.40E-05	6.40E-05	2.88E-05	3.64E-04	Below	
Benzofluorene	59-32-8	1.80E-06	4.36E-05	4.91E-06	4.91E-06	2.18E-06	1.80E-06	1.80E-06	7.80E-06	1.20E-07	Below	
Benzothiazole	100-41-4	1.80E-06	3.30E-02	3.07E-03	3.07E-03	1.34E-03	6.88E-03	6.88E-03	4.08E-03	3.19E-02	Exceeds	
Butane	110-54-3	1.80E+00	1.13E-03	7.37E-02	7.37E-02	3.22E-02	1.80E-01	1.80E-01	1.80E-01	1.80E+01	Below	
Naphthalene	91-20-3	6.10E-04	1.13E-03	2.50E-05	2.50E-05	1.09E-05	3.38E-04	3.38E-04	1.38E-04	6.74E-04	Below	
Paraffins	109-66-0	2.50E+00	1.09E-01	1.09E-01	1.09E-01	4.88E-02	1.80E-03	1.80E-03	7.00E-04	2.60E-01	Below	
Toluene	108-88-3	3.40E-03	4.20E-03	1.38E-04	1.38E-04	6.09E-05	1.80E-03	1.80E-03	7.00E-04	4.81E-03	Below	
o-Xylene	1330-20-7	1.80E-06	1.09E-04	7.37E-08	7.37E-08	3.22E-08	1.80E-06	1.80E-06	1.38E-05	7.88E-05	Below	
tert-Butylbenzene	1.80E-06	4.01E-06	7.37E-08	7.37E-08	3.22E-08	1.80E-06	1.80E-06	4.82E-07	4.82E-07	3.07E-06	Below	
Benzofluorene	1.80E-06	4.01E-06	4.91E-08	4.91E-08	2.15E-08	1.80E-06	1.80E-06	1.80E-06	1.80E-06	1.80E-06	Below	
Benzofluorethene	1.80E-06	1.48E-06	7.37E-08	7.37E-08	3.22E-08	4.43E-07	4.43E-07	1.81E-07	1.81E-07	1.22E-06	Below	
Benzofluorethylene	1.80E-06	1.48E-06	7.37E-08	7.37E-08	3.22E-08	4.43E-07	4.43E-07	1.81E-07	1.81E-07	1.22E-06	Below	
Chrysene	1.80E-06	2.38E-06	7.37E-08	7.37E-08	3.22E-08	7.12E-07	7.12E-07	2.82E-07	2.82E-07	1.90E-06	Below	
Dibenz(a,h)anthracene	1.80E-06	1.87E-06	4.91E-08	4.91E-08	2.15E-08	6.00E-07	6.00E-07	2.06E-07	2.06E-07	1.32E-06	Below	
Indeno(1,2,3-cd)pyrene	1.80E-06	2.14E-06	7.37E-08	7.37E-08	3.22E-08	6.40E-07	6.40E-07	2.89E-07	2.89E-07	1.72E-06	Below	
Total IDAPA PAHs			4.67E-07	4.67E-07	2.04E-07	3.50E-06	3.50E-06	1.43E-06	1.43E-06	8.88E-06	0.10E-06	Below

Metals*

Pollutant	CAS No.	Natural Gas EF (lb/10 ⁶ scf)	Fuel Oil EF (lb/10 ⁶ gal)	Natural Gas Emission Rate			Fuel Oil Emission Rate			Total (lb/yr)	Level 1 IDAPA 94.01.01.569500 (lb/yr)	Comparison
				BOIL 1	BOIL 2	BOIL 3	BOIL 1	BOIL 2	BOIL 3			
				(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)			
Arsenic	7440-38-2	2.00E-04	4.00E+00	8.19E-06	8.19E-06	3.58E-06	1.72E-04	1.72E-04	7.62E-04	4.38E-04	1.50E-04	Exceeds
Barium	7440-38-3	4.00E-03	8.00E+00	1.60E-04	1.60E-04	7.05E-05	1.72E-04	1.72E-04	7.62E-04	4.38E-04	3.30E-02	Below
Beryllium	7440-41-7	1.80E-05	8.00E+00	4.91E-07	4.91E-07	2.15E-07	1.29E-04	1.29E-04	6.84E-05	3.18E-04	2.80E-05	Exceeds
Cadmium	7440-43-0	1.10E-05	3.00E+00	4.90E-06	4.90E-06	2.15E-06	1.29E-04	1.29E-04	6.84E-05	4.24E-04	3.70E-06	Below
Chromium	7440-47-3	1.40E-05	3.00E+00	6.73E-06	6.73E-06	2.91E-06	1.29E-04	1.29E-04	6.84E-05	4.34E-04	3.30E-02	Below
Cobalt	7440-48-4	8.40E-05	3.00E+00	3.44E-06	3.44E-06	1.50E-06	1.29E-04	1.29E-04	6.84E-05	6.38E-06	3.30E-03	Below
Copper	7440-50-8	8.50E-04	6.00E+00	3.48E-05	3.48E-05	1.82E-05	2.88E-04	2.88E-04	1.19E-04	7.14E-04	1.30E-02	Below
Mercury	7439-96-8	3.80E-04	8.00E+00	1.66E-05	1.66E-05	6.80E-06	2.88E-04	2.88E-04	1.19E-04	6.87E-04	6.70E-02	Below
Manganese	7439-97-8	2.80E-04	3.00E+00	1.08E-05	1.08E-05	4.88E-06	1.29E-04	1.29E-04	6.84E-05	3.40E-04	1.00E-03	Below
Molybdenum	7439-98-7	1.10E-03	4.00E+00	4.60E-06	4.60E-06	1.97E-06	1.29E-04	1.29E-04	6.84E-05	1.16E-04	3.33E-01	Below
Nickel	7440-02-0	8.10E-03	3.00E+00	8.50E-05	8.50E-05	3.78E-05	1.81E-04	1.81E-04	8.84E-05	6.94E-04	2.75E-05	Exceeds
Selenium	7782-49-2	2.40E-05	1.50E+01	8.85E-07	8.85E-07	4.30E-07	6.43E-04	6.43E-04	2.82E-04	1.57E-03	1.50E-02	Below
Vanadium	1314-02-1	2.30E-03	3.42E+00	9.42E-05	9.42E-05	4.12E-05	6.43E-04	6.43E-04	2.82E-04	2.30E-04	3.00E-03	Below
Zinc	7440-68-8	2.90E-02	4.00E+00	1.18E-03	1.18E-03	8.19E-04	1.72E-04	1.72E-04	7.62E-05	3.31E-03	3.33E-01	Below

Notes:
 * Fuel Heat values from EPA AP-42, Appendix A (EPA Web site October 2002)
 * Potential hours of operation from Tier II Permit (No 001-0007), January 2002
 * Criteria Pollutants EPA AP-42, Section 1.4, Tables 1.4-1 and 1.4-2 & Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-3 (EPA Web site October 2002)
 * Organic Toxic Air Pollutants EPA AP-42, Section 1.4, Table 1.4-3 & Section 1.3, Table 1.3-3 (EPA Web site October 2002)
 * Metals from EPA AP-42, Section 1.4, Table 1.4-4 & Section 1.3, Table 1.3-16 (EPA Web site October 2002)

Saint Alphonsus Medical Center, Boise, Idaho
New Boiler Configuration PTE Calculations

Assumptions

Unit	Oliver Boilers (D-52)	Oliver Boilers (D-52)	Oliver Boilers (D-26)	Bryan Steam (RV-500)	Lochinvar (CHN 1800)	Lochinvar (CHN 1800)	Lochinvar (CFN501PM)
Unit ID	BOIL1	BOIL2	BOIL3	BOIL5	MOBV1	MOBV2	MOBV3
Natural Gas Heat Input Rating (MM Btu/hr)	1.8	1.8	1.8	Removed	1.8	1.8	0.5
Natural Gas Heat Value (Btu/scf) ^a	1050	1050	1050		1050	1050	1050
Theoretical Max Natural Gas Usage (scf/yr)	10,950	10,950	10,950		1,714	1,714	476
Potential Hours on Natural Gas (hr/yr)	8,400	8,400	8,400		8,760	8,760	8,760
Fuel Oil Heat Input Rating (MM Btu/hr)	1	1	1				
#2 Fuel Oil Heat Value (Btu/gal) ^a	137,000	137,000	137,000		NA	NA	NA
Theoretical Fuel Oil Usage (gal/yr)	7,296	7,296	7,296		NA	NA	NA
Potential Hours on Fuel Oil (hr/yr)	8,400	8,400	8,400		NA	NA	NA
% Sulfur in Fuel	0.6	0.6	0.6		NA	NA	NA

Emission Factors for Criteria Pollutants^b

Pollutant	Natural Gas EF	Natural Gas EF	Fuel Oil EF
	Low NOx (lb/10 ⁶ Btu)	(lb/10 ⁶ Btu)	(lb/10 ⁶ Btu)
PM	7.8	7.6	3.3
SO ₂	0.6	0.6	71
NOx	60	100	20
CO	84	84	5
VOC	5.5	5.5	0.556
Lead	0.0006	0.0005	9

Note: Low NOx burners are BOIL1, BOIL2, BOIL3 only.

Calculations

Boiler ID	PM		SO ₂		NOx		CO		VOC		Lead	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
BOIL1 - Natural Gas	0.31	1.31	0.02	0.10	2.05	8.80	3.44	14.45	0.23	0.95	2.05E-05	8.80E-05
BOIL1 - Fuel Oil	0.99	0.18	21.25	3.82	5.99	1.08	1.50	0.27	0.17	0.03	3.87E-04	6.97E-05
BOIL2 - Natural Gas	0.31	0.06	0.02	0.10	2.05	8.80	3.44	14.45	0.23	0.95	2.05E-05	8.80E-05
BOIL2 - Fuel Oil	0.99	0.18	21.25	3.82	5.99	1.08	1.50	0.27	0.17	0.03	3.87E-04	6.97E-05
BOIL3 - Natural Gas	0.14	0.57	0.01	0.05	0.90	3.76	1.50	6.32	0.10	0.41	8.95E-06	3.76E-05
BOIL3 - Fuel Oil	0.40	0.07	6.71	1.67	2.45	0.44	0.61	0.11	0.07	0.01	1.69E-04	3.05E-05
BOIL5 - Natural Gas	Removed											
BOIL5 - Fuel Oil	Removed											
MOBV1	0.01	0.06	0.0010	0.005	0.17	0.75	0.14	0.63	0.01	0.04	8.97E-07	3.76E-06
MOBV2	0.01	0.06	0.0010	0.005	0.17	0.75	0.14	0.63	0.01	0.04	8.97E-07	3.76E-06
MOBV3	0.004	0.02	0.0003	0.001	0.05	0.21	0.04	0.18	0.003	0.01	2.38E-07	1.04E-06
Total	3.17	2.49	51.27	9.48	19.80	25.27	12.32	37.30	0.87	2.47	9.95E-04	3.88E-04

Notes:
^a Fuel heat values from EPA AP-42, Appendix A (EPA Web site October 2006)
^b Potential hours of operation from Tier II Permit (No 001-00027, January 2003)
^c Criteria Pollutants EPA AP-42, Section 1.4, Tables 1.4-1 and 1.4-2 & Section 1.5, Tables 1.5-1, 1.5-2 and 1.5-3 (EPA Web site October 2006)

**Saint Alphonsus Medical Center, Boise, Idaho
New Generators PTE Calculations**

Assumptions:

Unit ID's GEN10, GEN11
 Rated Capacity 1,250.0 kW
 1,676 hp
 89.2 gal/hr max throughput rate
 500 hrs max operation per year
 453.8 grams/lb
 799.2 exhaust temp °F

Fuel:
 Diesel^a 137,000 Btu/gal
 (# 2 Fuel Oil) 0.5 wt% sulfur (max limit)

Calculations

Criteria Pollutants

Pollutant	Manuf. EF ^b g/bhp-hr	AP-42 EF ^c lb/hrp-hr	GEN 10 PTE		GEN 11 PTE		Total	
			lb/hr	Yr	lb/hr	Yr	lb/hr	Yr
NOx	7.04		26.02	6.50	26.02	6.50	52.03	13.01
CO	0.89		2.55	0.64	2.55	0.64	5.10	1.27
PM-10	0.081		0.30	0.07	0.30	0.07	0.60	0.15
SO ₂ ^a		4.05E-03	6.78	1.70	6.78	1.70	13.56	3.39
VOC		7.05E-04	1.18	0.30	1.18	0.30	2.36	0.59

IDAHO Toxic Air Pollutants^d

Pollutant	CAS Number	EF lb/MMBtu	GEN 10	GEN 11	Total	IDAPA 58.01.01.665/568 EL (lb/hr)	Comparison
			lb/hr	lb/hr	lb/hr		
Benzene	71-43-2	7.76E-04	9.48E-03	9.48E-03	1.90E-02	8.00E-04	Exceeds
Toluene	108-89-3	2.81E-04	3.43E-03	3.43E-03	6.87E-03	2.50E+01	Below
Xylenes	1330-20-7	1.93E-04	2.38E-03	2.38E-03	4.72E-03	2.90E+01	Below
Formaldehyde	50-00-0	7.89E-05	9.84E-04	9.84E-04	1.93E-03	5.10E-04	Exceeds
Acetaldehyde	75-07-0	2.52E-05	3.08E-04	3.08E-04	6.16E-04	3.00E-03	Below
Acrolein	107-02-8	7.88E-06	9.63E-05	9.63E-05	1.93E-04	1.70E-02	Below
Naphthalene	91-20-3	1.30E-04	1.59E-03	1.59E-03	3.18E-03	3.33E+00	Below
Benzo(a)anthracene	IDAPA PAH	6.22E-07	7.60E-06	7.60E-06	1.52E-05		
Chrysene	IDAPA PAH	1.53E-06	1.87E-05	1.87E-05	3.74E-05		
Benzo(b)fluoranthene	IDAPA PAH	1.11E-06	1.38E-05	1.38E-05	2.71E-05		
Benzo(k)fluoranthene	IDAPA PAH	2.18E-07	2.68E-06	2.68E-06	5.33E-06		
Benzo(a)pyrene	IDAPA PAH	2.57E-07	3.14E-06	3.14E-06	6.28E-06		
Indeno(1,2,3-cd)pyrene	IDAPA PAH	4.14E-07	5.06E-06	5.06E-06	1.01E-05		
Dibenz(a,h)anthracene	IDAPA PAH	3.46E-07	4.23E-06	4.23E-06	8.46E-06		
IDAPA PAH Total			5.50E-05	5.50E-05	1.10E-04	9.10E-06	Exceeds

Notes

- ^a Heat Value from the EPA AP-42, Appendix A, Typical Parameters of Various Fuels, (From EPA Web site, October 2005)
- ^b Sulfur content from Idaho Administrative Procedures Act (IDAPA) Chapter 58.01.01.728.
- ^c Manufacture emission factors provided by Caterpillar (September 2005)
- ^d Criteria pollutant emission factors from EPA AP-42, Table 3.4-1 (October 2005), Total TOC assumed to be equal to VOC.
- ^e Hazardous air pollutant emission factors from EPA AP-42, Table 3.4-3 and 3.4-4 (October 2005)

Saint Alphonsus Medical Center, Boise, Idaho
Existing Generator Configuration PTE Calculations

Assumptions

Unit	Caterpillar D398	Caterpillar D349-SRCR	Kohler 300 R0Z0	Detroit Diesel 573R317034BP	Kohler 80R0ZJ61	Kohler 600R0ZD71	Kohler 200 R0ZD	Kohler 600R0ZD-4	Kohler 30 R0ZJ6
Unit ID	GEN1	GEN2	GEN3	GEN4	GEN5	GEN6	GEN7	GEN8	GEN9
Generator Rating (kW)	675	750	300	750	80	600	200	600	30
Generator Rating (hp-hr)	905	1006	402	1006	107	805	268	805	40
Permitted Operation (hr/yr)	125	125	125	125	125	125	125	125	125
% Sulfure In Fuel	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Emission Factors for Criteria Pollutants^b

Pollutant	Less than 600hp (lb/hp-hr)	Greater than 600hp (lb/hp-hr)
PM	2.20E-03	7.00E-04
SO ₂	2.05E-03	4.05E-03
NO _x	3.10E-02	2.40E-02
CO	6.68E-03	5.50E-03
VOC	2.47E-03	7.50E-04

Calculations

Boiler ID	PM		SO ₂		NO _x		CO		VOC	
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
GEN1	0.63	0.04	1.63	0.10	2.57	0.16	1.48	0.09	0.03	0.00
GEN2	0.70	0.04	4.07	0.25	24.14	1.61	5.53	0.35	0.75	0.06
GEN3	0.89	0.06	0.82	0.05	12.47	0.78	2.69	0.17	0.99	0.08
GEN4	0.70	0.04	4.07	0.25	24.14	1.51	5.53	0.35	0.75	0.05
GEN5	0.24	0.015	0.22	0.014	3.33	0.21	0.72	0.045	0.28	0.017
GEN6	0.56	0.04	3.25	0.20	19.31	1.21	4.43	0.28	0.60	0.04
GEN7	0.59	0.04	0.55	0.03	8.31	0.52	1.79	0.11	0.66	0.04
GEN8	0.56	0.04	3.25	0.20	19.31	1.21	4.43	0.28	0.60	0.04
GEN9	0.09	0.008	0.08	0.005	1.25	0.08	0.27	0.017	0.10	0.008
Total	4.97	0.31	17.95	1.12	114.83	7.18	26.85	1.68	4.77	0.30

Notes:

^a Potential hours of operation from Tier II Permit (No 001-00027, January 2003)

^b Criteria Pollutants EPA AP-42, Section 3.3, Tables 3.3-1 & Section 3.4, Tables 3.4-1 (EPA Web site October 2005)

Saint Alphonus Medical Center, Boise, Idaho
New Generator Configuration PTE Calculations

Assumptions

Unit	Caterpillar D398	Caterpillar D349-SRCR	Kohler 300 R020	Detroit Diesel 573RS17034BP	Kohler 80R0ZJ81	Kohler 600R0ZD71	Kohler 200 R02D	Kohler 600R0ZD-4	Kohler 30 R02ZJ8	Caterpillar 1250 kW	Caterpillar 1250 kW
Unit ID	GEN1	GEN2	GEN3	GEN4	GEN5	GEN6	GEN7	GEN8	GEN9	GEN10	GEN11
Generator Rating (kW)	675	750	300	750	80	600	200	600	30	1250	1250
Generator Rating (hp-hr)	905	1008	402	1006	107	805	268	805	40	1676	1676
Permitted Operation (hr/yr)	500	500	500	500	500	500	500	500	500	500	500
% Sulfur in Fuel	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Emission Factors for Criteria Pollutants^a

Pollutant	Less than 600hp (lb/hp-hr)	Greater than 600hp (lb/hp-hr)	For Cat 1250 kw (g/lbhp-hr)
PM	2.20E-03	7.00E-04	0.081
SO ₂	2.05E-03	4.05E-03	
NO _x	3.10E-02	2.40E-02	7.04
CO	6.68E-03	5.50E-03	0.89
VOC	2.47E-03	7.50E-04	

Calculations

Boiler ID	PM		SO ₂		NO _x		CO		VOC	
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
GEN1	0.63	0.16	1.63	0.41	2.57	0.64	1.48	0.37	0.03	0.01
GEN2	0.70	0.18	4.07	1.02	24.14	6.03	5.53	1.38	0.75	0.19
GEN3	0.89	0.22	0.82	0.21	12.47	3.12	2.69	0.67	0.99	0.25
GEN4	Removed									
GEN5	0.24	0.06	0.22	0.05	3.33	0.83	0.72	0.18	0.26	0.07
GEN6	0.56	0.14	3.25	0.81	19.31	4.83	4.43	1.11	0.60	0.15
GEN7	0.59	0.15	0.55	0.14	8.31	2.08	1.79	0.45	0.66	0.17
GEN8	0.56	0.14	3.25	0.81	19.31	4.83	4.43	1.11	0.60	0.15
GEN9	0.09	0.02	0.08	0.02	1.25	0.31	0.27	0.07	0.10	0.02
GEN10	0.30	0.07	6.78	1.70	26.01	6.50	2.55	0.64	1.26	0.31
GEN11	0.30	0.07	6.78	1.70	26.01	6.50	2.55	0.64	1.26	0.31
Total	4.86	1.22	27.44	6.86	142.72	35.89	26.42	6.61	8.53	1.83

Notes:

^a Potential hours of operation from Title II Permit (No 001-00027, January 2003)

^b Criteria Pollutants EPA AP-42, Section 3.3, Tables 3.3-1 & Section 3.4, Tables 3.4-1 (EPA Web site October 2005)

Saint Alphonus Medical Center, Boise, Idaho

New Source Summary of PTE

Criteria Pollutants

Source	Emission Rate (ton/year)						
	PM	PM-10	NO _x	SO ₂	CO	VOC	Lead
Point Sources							
Boilers	3.6	3.6	23.6	9.5	35.9	2.4	3.70E-04
Generators	0.1		13.0	3.4	1.3	0.6	
UST						6.0E-05	
Total	3.8	3.6	36.6	12.9	37.1	3.0	0.0
Modeling Threshold	na	1.0	1.0	1.0	na	na	0.6
Modeling Required		Yes	Yes	Yes			No

Source	Emission Rate (lb/hr)						
	PM	PM-10	NO _x	SO ₂	CO	VOC	Lead
Point Sources							
Boilers	3.1	3.1	19.4	51.3	12.0	0.9	0.001
Generators	0.6		52.0	13.6	5.1	2.4	
UST						6.8E-09	
Total	3.7	3.1	71.4	64.8	17.1	3.3	0.0
Modeling Threshold	na	0.2	na	0.2	14.0	na	na
Modeling Required		Yes		Yes	Yes		

Saint Alphonsus Medical Center, Boise, Idaho
New Source Summary of PTE

Idaho Toxic Air Pollutants
Organics

Pollutant	CAS No.	Boiler	Generator	UST Total	All Sources	Level 1 IDAPA	Comparison
		Total	Total			58.01.01.585/586	
		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	
3-Methylchloranthrene	56-49-5	1.80E-07			1.80E-07	2.50E-06	Below
1,2,4-Trimethylbenzene	95-63-6			1.37E-07		2.47E+00	Below
Acetaldehyde	75-07-0		6.16E-04		6.16E-04	3.00E-03	Below
Acrolein	107-02-8		1.93E-04		1.93E-04	1.70E-02	Below
Benzene	71-43-2	3.64E-04	1.90E-02		1.93E-02	8.00E-04	Exceeds
Benzo(a)pyrene	50-32-8	1.20E-07			1.20E-07	2.00E-06	Below
Ethylbenzene	100-41-4	4.59E-05		1.37E-09	4.59E-05	2.90E+01	Below
Formaldehyde	50-00-0	3.13E-02	1.93E-03		3.32E-02	5.10E-04	Exceeds
Hexane	110-54-3	1.80E-01			1.80E-01	1.20E+01	Below
Naphthalene	91-20-3	8.78E-04	3.18E-03		4.05E-03	3.33E+00	Below
Pentane	109-66-0	2.60E-01			2.60E-01	1.18E+02	Below
Toluene	108-88-3	4.81E-03	6.87E-03	4.11E-09	1.17E-02	2.50E+01	Below
o-Xylene	1330-20-7	7.86E-05	4.72E-03	3.97E-08	4.80E-03	2.90E+01	Below
Benzo(a)anthracene		3.07E-06	1.52E-05		1.83E-05		
Benzo(a)pyrene		1.20E-07	6.28E-06		6.40E-06		
Benzo(b)fluoroanthene		1.25E-06	2.71E-05		2.84E-05		
Benzo(k)fluoroanthene		1.80E-07	5.33E-06		5.51E-06		
Chrysene		1.90E-06	3.74E-05		3.93E-05		
Dibenzo(a,h)anthracene		1.32E-06	8.46E-06		9.78E-06		
Indeno(1,2,3-cd)pyrene		1.72E-06	1.01E-05		1.18E-05		
Total IDAPA PAH		9.56E-06	1.10E-04		1.19E-04	9.10E-05	Exceeds

Metals

Pollutant	CAS No.	Boiler	Generator	UST Total	Total	Level 1 IDAPA	Comparison
		Total	Total			58.01.01.585/586	
		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	
Arsenic	7440-38-2	4.39E-04			4.39E-04	1.50E-06	Exceeds
Barium	7440-39-3	4.39E-04			4.39E-04	3.30E-02	Below
Beryllium	7440-41-7	3.16E-04			3.16E-04	2.80E-05	Exceeds
Cadmium	7440-43-9	4.24E-04			4.24E-04	3.70E-06	Exceeds
Chromium	7440-47-3	4.54E-04			4.54E-04	3.30E-02	Below
Cobalt	7440-48-4	8.38E-06			8.38E-06	3.30E-03	Below
Copper	7440-50-8	7.14E-04			7.14E-04	1.30E-02	Below
Manganese	7439-96-5	6.67E-04			6.67E-04	6.70E-02	Below
Mercury	7439-97-6	3.40E-04			3.40E-04	1.00E-03	Below
Molybdenum	7439-98-7	1.10E-04			1.10E-04	3.33E-01	Below
Nickel	7440-02-0	5.24E-04			5.24E-04	2.75E-05	Exceeds
Selenium	7782-49-2	1.57E-03			1.57E-03	1.30E-02	Below
Vanadium	1314-62-1	2.30E-04			2.30E-04	3.00E-03	Below
Zinc	7440-66-6	3.31E-03			3.31E-03	3.33E-01	Below

Saint Alphonsus Medical Center, Boise, Idaho
Summary of Change in PTE for Permitted Sources

Criteria Pollutant Emission Change

Source	Emissions									
	PM		SO ₂		NOx		CO		VOC	
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Old Boiler Configuration	2.56	2.02	41.92	7.74	19.88	36.15	9.74	29.12	0.77	1.93
Old Generator Configuration	4.97	0.31	17.95	1.12	114.83	7.18	26.85	1.68	4.77	0.30
Sum	7.53	2.33	59.87	8.86	134.71	43.33	36.59	30.79	5.54	2.23
New Boiler Configuration	3.17	2.49	51.27	9.48	19.80	25.27	12.32	37.30	0.97	2.47
New Generator Configuration	4.86	1.22	27.44	6.86	142.72	35.68	26.42	6.61	6.53	1.63
Sum	8.03	3.71	78.71	16.34	162.52	60.95	38.74	43.90	7.50	4.10
Delta	0.50	1.38	18.83	7.48	27.81	17.62	2.14	13.11	1.96	1.87



DE/AFS/SF
c: Harbi E.
June Hues
BRD
Eileen L.
Bill Rogert

April 10, 2006

RECEIVED

APR 13 2006

United States Environmental Protection Agency, Region 10
Mr. Jeff Kenknight
1200 6th Avenue
Seattle, Washington 98101

Department of Environmental Quality,
State Air Program

RE: Alternate Recordkeeping and Reporting Requests for Subpart Dc Natural Gas Fired Boilers with Distillate Fuel Oil Backup, SARMC Boise Idaho.

Dear Mr. Kenknight:

In December, 2005, St. Alphonsus Regional Medical Center (SARMC) notified the Environmental Protection Agency (EPA, or the "Agency") of the modification of three existing boilers at the facility. These modifications to Boilers 1, 2 and 3 were detailed in the letter of December 15, 2005 (Fugate, D., SARMC to USEPA, Region 10) and notified your agency that these Boilers would be subject to New Source Performance Standards (NSPS) 40 CFR, Subpart Dc, Small Industrial-Commercial-Institutional Steam Generating Units. Boilers 1, 2 and 3 have the ability to burn both natural gas and low sulfur (less than 0.5% sulfur, limited by permit) distillate fuel. These boilers almost exclusively operate on natural gas and burn either gas or oil at a time. One gas meter is present for all three boilers and one distillate fuel meter is present to measure the amount of distillate oil that may be burned in the units. We are now requesting that EPA allow SARMC to allow for fuel monitoring to be changed from daily monitoring to monthly, and to reduce the reporting frequency from once every 6 months to annually.

We maintain one natural gas meter to supply the three gas-fired boilers. All three boilers are subject to NSPS Subpart Dc, and are located at our facility in Boise, Idaho. Boilers 1 and 2 will have a rated input heating capacity of 43 MMBtu/hr and Boiler 3 will have a rated capacity of 18.8 MMBtu/hr.

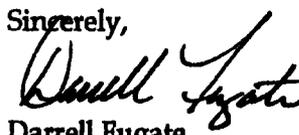
It is our understanding that pursuant to 40 CFR sections 60.48c(g) and (f), owners or operators of each affected facility are required to record and maintain records of the amounts of each fuel combusted during each day. Reporting of fuel usage is required on a semi-annual basis. Furthermore we understand that on previous occasions, the EPA has approved changes in fuel usage record-keeping and reporting for Subpart Dc boilers that are fired only with natural gas and/or distillate fuel oil. Therefore, we are requesting to record natural gas monthly instead of daily, and reporting to be performed annually.

In previous determinations (i.e. EPA Region 10 Response to Custom Fuel Monitoring and Reporting Frequency, Providence Alaska Medical Center, 08/01/2002, and others), EPA has

determined that "each affected facility" with multiple Subpart Dc boilers must maintain separate fuel usage records for each boiler. Therefore, we will record and report natural gas or distillate fuel usage for each individual boiler on a monthly basis. However, we propose that when more than one boiler is firing natural gas or distillate oil, a single meter may be used that measures the total fuel usage for the boilers. We will divide each boiler design heat input capacity by the total of the design heat input capacities of each boiler, and use this quantity to prorate the natural fuel usage of each boiler on a monthly basis.

Please confirm that this is an acceptable monitoring and reporting procedure. If you have any questions you may contact Mr. William Morgan at SARMC at 208 367-2726. Thank you for your help in this matter.

Sincerely,



Darrell Fugate
Director, Facility Services

cc. Harbi Elshafei, Idaho Department of Environmental Quality
Allan Cawrse, CH2M Hill