Statement of Basis

Permit to Construct No. P-2007.0048
Project ID 62291

St. Luke's Regional Medical Center
Boise, Idaho

Facility ID 001-00029

Final

December 16, 2019
Zach Pierce ZP
Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

Btu	British thermal units
CFR	Code of Federal Regulations
CI	compression ignition
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
ULSD	ultra-low sulfur diesel
VOC	volatile organic compounds
yd^3	cubic yards
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

Saint Luke's is a general medical and surgical hospital, including a Children's Hospital. The Children's Pavilion is a stand-alone building. The facility will include boilers, engines and cooling towers. Saint Luke's is currently proposing to expand these services.

The expanded facility will consist of 8 engines, 9 boilers and 5 cooling towers as emissions units. These emissions units are listed in Table 1.

Permitting History

The following information is directly from Permit to Construct P-2007.0048 issued July 11, 2019. Permit status is noted as active and in effect (A) or superseded (S).

July 11, 2019	P-2007.0048, PTC Modification, Permit status (A, but will become S upon issuance of this permit)
June 8, 2007	P-2007.0048, Renewal (A, but will become S upon request of cancellation of this permit)
July 6, 2005	T2-040014 (S)
March 26, 2004	P-030063 (S)
April 22, 2002	T2 No. 001-00029 (S)
August 15, 1996	T2 No. 001-00029 (S)
June 20, 1994	Permit to Construct No. 001-00029 (S)
July 28, 1993	Permit to Construct No. 001-00029 (S)

Application Scope

PTC is for a minor modification at an existing minor facility.

Saint Luke's will be installing 6 new Cummins Engines instead of Caterpillar Engines that are in the permit issued July 11, 2019. DEQ informed Saint Luke's that an entire new permit application must be submitted to readdress the previous modification with the engine change including emissions inventories, modeling and regulatory review.

Therefore, the applicant has proposed to:

- Cancel the existing permit to construct after a commissioning period for the new equipment. Then remove 4 existing Cleaver-Brooks Boilers and 5 existing emergency generator engines.
- Add 5 new Cleaver-Brooks dual-fuel boilers
- Add 6 new Cummins emergency generators
- Add 5 new cooling towers

Application Chronology

August 22, 2019	DEQ received an application.
August 22, 2019	DEQ received an application fee.
August 30 – September 16, 2019	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
September 18, 2019	DEQ determined that the application was complete.

September 25, 2019	DEQ made available the draft permit and statement of basis for peer and regional office review.
November 8, 2019	DEQ made available the draft permit and statement of basis for applicant review.
December 11, 2019	DEQ received the permit processing fee.
December 16, 2019	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source	Control Equipment
New Boilers (five): Manufacturer: Cleaver-Brooks Model: CBEX Heat input rating: 27.92 MMBtu/hr Fuel: Primary Natural Gas, Secondary #2 Fuel Oil	None
Boilers (three): Manufacturer: Raypak Model: 2005A Heat input rating: 1.99 MMBtu/hr Fuel: Natural Gas	None
Boiler: Manufacturer: Raypak Model: 500A Heat input rating: 0.5MMBtu/hr Fuel: Natural Gas	None
New Emergency Generator Engines (6): Manufacturer: Cummins Model: 2000DQKAE Model Year: 2018 Rating: 2,922 bhp Fuel: #2 Fuel Oil	None
Emergency Generator Engine 5A: Manufacturer: Caterpillar Model: 3304 Serial Number: 83Z02429 Model Year: unknown but prior to 2006 Rating: 95 hp Fuel: #2 Fuel Oil	None
Emergency Generator Engine 6A: Manufacturer: Caterpillar Model: 3304 Serial Number: 4B10118 Model Year: unknown but prior to 2006 Rating: 140.8 hp Fuel: #2 Fuel Oil	None
New Cooling Towers (5): Manufacturer: Baltimore Aircoil Model: S3E-1424-14S-Endura Number of Cells: 1 per tower Maximum Water Flow Rate: 2,680 gpm	None

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or 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 or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the equipment listed in Table 1 (see Appendix A).

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or 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 **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits. Uncontrolled emissions from the boilers and engines while combusting fuel oil in emergency situations was presumed to occur 500 hours per year.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC	
	lb/hr[a]	lb/hr[a]	T/yr[b]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
Gen 1	0.19	0.05	0.19	0.05	9.96	2.49	36.11	9.03	2.06	0.52	0.52	0.13
Gen 2	0.19	0.05	0.19	0.05	9.96	2.49	36.11	9.03	2.06	0.52	0.52	0.13
Gen 3	0.19	0.05	0.19	0.05	9.96	2.49	36.11	9.03	2.06	0.52	0.52	0.13
Gen 4	0.19	0.05	0.19	0.05	9.96	2.49	36.11	9.03	2.06	0.52	0.52	0.13
Gen 5	0.19	0.05	0.19	0.05	9.96	2.49	36.11	9.03	2.06	0.52	0.52	0.13
Gen 6	0.19	0.05	0.19	0.05	9.96	2.49	36.11	9.03	2.06	0.52	0.52	0.13
Gen 5A	0.09	0.024	0.09	0.024	0.122	0.031	2.86	0.71	2.33	0.58	0.27	0.068
Gen 6A	0.31	0.077	0.31	0.077	0.181	0.045	4.36	1.09	0.96	0.24	0.35	0.088
Boiler #1 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #1 (ULSD)	0.63	1.02	0.63	**1.02**	0.04	0.08	3.09	4.81	0.21	2.21	0.04	0.42
Worst Case	**0.63**	**1.02**	**0.63**	**1.02**	**0.04**	**0.08**	**3.09**	4.81	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #2 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #2 (ULSD)	0.63	1.02	0.63	**1.02**	0.04	0.08	3.09	4.81	0.21	2.21	0.04	0.42
Worst Case	**0.63**	**1.02**	**0.63**	**1.02**	**0.04**	**0.08**	**3.09**	**4.81**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #3 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.100	0.44
Boiler #3 (ULSD)	0.63	1.02	0.63	**1.02**	0.04	0.08	3.09	4.81	0.21	2.21	0.04	0.42
Worst Case	**0.63**	**1.02**	**0.63**	**1.02**	**0.04**	**0.08**	**3.09**	**4.81**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #4 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #4 (ULSD)	0.63	1.02	0.63	**1.02**	0.04	0.08	3.09	4.81	0.21	2.21	0.04	0.42
Worst Case	**0.63**	**1.02**	**0.63**	**1.02**	**0.04**	**0.08**	**3.09**	**4.81**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #5 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #5 (ULSD)	0.63	1.02	0.63	**1.02**	0.04	0.08	3.09	4.81	0.21	2.21	0.04	0.42
Worst Case	**0.63**	**1.02**	**0.63**	**1.02**	**0.04**	**0.08**	**3.09**	**4.81**	**0.52**	**2.28**	**0.10**	**0.44**
Cooling Tower 1	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 2	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 3	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 4	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 5	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals	**6.98**	**15.33**	**4.74**	**5.53**	**60.26**	**15.43**	**239.31**	**80.03**	**18.28**	**15.34**	**4.22**	**3.14**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

The following table presents the pre-project potential to emit for all criteria pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$[a]		SO_2		NO_X		CO		VOC	
	lb/hr[b]	T/yr[c]	lb/hr[b]	T/yr[c]	lb/hr[b]	T/yr[c]	lb/hr[b]	T/yr[c]	lb/hr[b]	T/yr[c]	lb/hr[b]	T/yr[c]
4 Natural Gas Boilers	0.22	0.97	0.22	0.97	0.02	0.08	2.87	12.78	2.41	10.74	0.16	0.70
Boiler No. 1 Fuel Oil	0.42	0.00	0.42	0.00	14.86	0.00	4.19	0.00	1.05	0.00	0.12	0.00
Boiler No. 2 Fuel Oil	0.42	0.00	0.42	0.00	14.86	0.00	4.19	0.00	1.05	0.00	0.12	0.00
Boiler No. 3 Fuel Oil	0.42	0.00	0.42	0.00	14.86	0.00	4.19	0.00	1.05	0.00	0.12	0.00
Boiler No. 4 Fuel Oil	0.42	0.00	0.42	0.00	14.86	0.00	4.19	0.00	1.05	0.00	0.12	0.00
Boilers Combusting – No. 2 Fuel Oil	0.00	0.27	0.00	0.27	0.00	9.64	0.00	2.72	0.00	0.68	0.00	0.08
Generator # 1	0.50	0.05	0.50	0.05	4.88	0.51	26.89	2.80	1.84	0.19	0.09	0.01
Generator # 2	0.54	0.06	0.54	0.06	6.25	0.65	36.90	3.84	4.18	0.44	1.22	0.13
Generator # 3	0.58	0.06	0.58	0.06	9.73	1.01	86.94	9.04	9.44	0.95	1.44	0.15
Generator # 4	1.45	0.15	1.45	0.15	0.53	0.06	7.62	0.79	5.16	0.54	0.06	0.01
Generator # 5	0.06	0.01	0.06	0.01	0.10	0.01	2.42	0.25	1.29	0.13	0.19	0.02
Generator # 6	0.06	0.01	0.06	0.01	0.14	0.02	2.42	0.25	1.29	0.13	0.19	0.02
Generator # 7	0.31	0.03	0.31	0.03	9.16	1.00	45.07	4.69	0.65	0.07	0.71	0.07
Pre-Project Totals	**5.40**	**1.61**	**5.40**	**1.61**	**90.25**	**12.98**	**227.89**	**37.16**	**30.46**	**13.87**	**4.54**	**1.19**

a) PM2.5 emissions were not calculated for the existing PTC issued on June 8, 2007. PM2.5 emissions are assumed to equal PM10 emissions
b) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
c) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit. For the Boiler emissions, there are two scenarios: assuming natural gas usage for a year (8,760 hrs/yr) and assuming Ultra Low Sulfur Diesel usage for a maximum of 48 hours in a year while using natural gas for the remaining 8,712 hours. The total facility potential to emit only accounts for the worst case scenario of the two options.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC	
	lb/hr[a]	lb/hr[a]	T/yr[b]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
Gen 1	0.19	0.010	0.19	0.010	0.029	0.001	36.11	1.81	2.06	0.10	0.52	0.026
Gen 2	0.19	0.010	0.19	0.010	0.029	0.001	36.11	1.81	2.06	0.10	0.52	0.026
Gen 3	0.19	0.010	0.19	0.010	0.029	0.001	36.11	1.81	2.06	0.10	0.52	0.026
Gen 4	0.19	0.010	0.19	0.010	0.029	0.001	36.11	1.81	2.06	0.10	0.52	0.026
Gen 5	0.19	0.010	0.19	0.010	0.029	0.001	36.11	1.81	2.06	0.10	0.52	0.026
Gen 6	0.19	0.010	0.19	0.010	0.029	0.001	36.11	1.81	2.06	0.10	0.52	0.026
Gen 5A	0.09	0.005	0.09	0.005	0.000	0.000	2.86	0.14	2.33	0.12	0.27	0.014
Gen 6A	0.31	0.015	0.31	0.015	0.001	0.000	4.36	0.22	0.96	0.05	0.35	0.018
Boiler #1 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #1 (ULSD)	0.63	0.93	0.63	0.93	0.04	0.07	3.09	4.34	0.21	2.27	0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.04**	**0.07**	**3.09**	**4.34**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #2 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #2 (ULSD)	0.63	0.93	0.63	0.93	0.04	0.07	3.09	4.34	0.21	2.27	0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.04**	**0.07**	**3.09**	**4.34**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #3 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.100	0.44
Boiler #3 (ULSD)	0.63	0.93	0.63	0.93	0.04	0.07	3.09	4.34	0.21	2.27	0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.04**	**0.07**	**3.09**	**4.34**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #4 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44
Boiler #4 (ULSD)	0.63	0.93	0.63	0.93	0.04	0.07	3.09	4.34	0.21	2.27	0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.04**	**0.07**	**3.09**	**4.34**	**0.52**	**2.28**	**0.10**	**0.44**
Boiler #5 (NG)	0.21	0.92	0.21	0.92	0.02	0.07	0.98	4.29	0.52	2.28	0.10	0.44

Source	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC	
	lb/hr[a]	lb/hr[a]	T/yr[b]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
Boiler #5 (ULSD)	0.63	0.93	0.63	0.93	0.04	0.07	3.09	4.34	0.21	2.27	0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.04**	**0.07**	**3.09**	**4.34**	**0.52**	**2.28**	**0.10**	**0.44**
Cooling Tower 1	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 2	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 3	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 4	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower 5	0.37	1.64	0.001	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals	**6.98**	**14.56**	**4.74**	**4.75**	**0.38**	**0.38**	**239.31**	**32.85**	**18.28**	**12.22**	**4.22**	**2.39**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC	
	lb/hr	T/yr	lb/hr	lb/hr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	5.40	1.61	5.40	1.61	90.25	12.98	227.89	37.16	30.46	13.87	4.54	1.19
Post Project Potential to Emit	6.98	14.56	4.74	4.75	0.38	0.38	239.31	32.85	18.28	12.22	4.22	2.39
Changes in Potential to Emit	**1.58**	**12.95**	**-0.66**	**3.14**	**-89.87**	**-12.60**	**11.42**	**-4.31**	**-12.18**	**-1.65**	**-0.32**	**1.20**

TAP Emissions

The new boilers and engines at the facility are subject to demonstrating preconstruction compliance with the TAP regulations. Each of these source categories is covered or addressed by a NESHAP; 40 CFR 63 Subpart JJJJJJ for the boilers and 40 CFR 63 Subpart ZZZZ for the engines. Therefore, in accordance with IDAPA 58.01.01.210.20 all TAPs that are also HAPs are excluded from the analysis because they were addressed in the development of the federal standards.

The remaining TAPs for which there were emission factors are listed in Table 6 and are compared to their respective screening emissions level. All are below the screening value and preconstruction compliance has been demonstrated.

Table 6 POST PROJECT POTENTIAL TO EMIT FOR TOXIC AIR POLLUTANTS

TAPs	Boilers 1-5	Gen. Engines 1-6[a]		Facility Wide Total	EL	Exceeds EL ?
	(lb/hr)	(lb/hr)	(ton/yr)	(lb/hr)	(lb/hr)	
3-Methylchloranthrene	2.46E-07			2.46E-07	2.50E-06	No
Dichlorobenzene	1.64E-04			1.64E-04	20	No
Pentane	3.56E-01			3.56E-01	118	No
Barium	6.02E-04			6.02E-04	0.033	No
Copper	8.05E-04			8.05E-04	0.013	No
Molybdenum	1.51E-04			1.51E-04	0.333	No
Vanadium	3.15E-04			3.15E-04	0.003	No
Zinc	3.97E-03			3.97E-03	0.667	No

a) No known emissions factors for the listed TAPs

Post Project HAP Emissions

As presented in the calculations provided by the applicant and reviewed by DEQ the aggregate of HAP emissions is less than 1.2 tons per year. It follows that the maximum individual HAP cannot exceed 1.2 tons per and that the facility is not a HAP major source because the maximum individual TAP does not equal or exceed 10 tons per year and the aggregated HAPs do equal or exceed 25 tons per year.

Ambient Air Quality Impact Analyses

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Ada County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total HAPs) has permitted emissions > 25 T/yr.

SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.

SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.

UNK = Class is unknown.

For All Other Pollutants:

A = Use when permitted emissions of a pollutant are > 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.

UNK = Class is unknown.

Table 7 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	<100	<100	**100**	B
PM_{10}	15.33	14.56	**100**	B
$PM_{2.5}$	5.53	4.75	**100**	B
SO_2	60.26	0.38	**100**	B
NO_X	80.03	32.85	**100**	B
CO	15.34	12.22	**100**	B
VOC	3.14	2.39	**100**	B
HAP (single)	< 10	<1.2	**10**	B
Total HAPs	<25	<1.2	**25**	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 ..... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the modified emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 ..... Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 ..... Visible Emissions

The sources of visible emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity.

Standards for New Sources (IDAPA 58.01.01.676)

IDAPA 58.01.01.676 ..... Standards for New Sources

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels and 0.050 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting liquid fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM_{10}, SO_2, NO_X, CO, and VOC or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

Because the facility has new boilers and six new compression ignition IC engines the following NSPS apply:

- 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

- 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Appendix C includes a detailed regulatory applicability analysis for Subpart Dc and Appendix D includes a detailed regulatory applicability analysis for Subpart IIII. DEQ is delegated these Subparts.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT/GACT Applicability (40 CFR 63)

The facility has proposed to operate as a minor source of hazardous air pollutant (HAP) emissions, and is subject to the requirements of 40 CFR 63, Subpart ZZZZ–National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. DEQ is not delegated this Subpart.

Appendix E includes a detailed regulatory applicability analysis for Subpart ZZZZ.

The boilers are exempted from 40 CFR 63 Subpart JJJJJJ, per 40 CFR 63.11195(e), because they are "gas-fired boiler[s]" as that term is defined (40 CFR 63.11237).

Permit Conditions Review

This section describes the permit conditions for this initial permit.

Initial Permit Conditions 1.1 through 1.2 describes the purpose of this permitting action. The facility will modify the existing facility by adding 5 new boilers, 6 emergency generator engines and 5 cooling towers.

Initial Permit Conditions 2.3 and 2.4

Prior to operating the new equipment in order to provide a primary or necessary function for the facility the new equipment will go through a commissioning period to assure the equipment operates as intended before it is relied upon to provide that primary or necessary function. Prior to operating the new equipment to provide a primary or necessary function for the facility St. Luke's shall cancel the existing permit to construct issued to the facility. The existing permit includes equipment that was not included in the ambient impact assessment for the normal, planned operation of the new equipment. Therefore, the existing permit shall be cancelled in order to allow ongoing operation of the new equipment.

Initial Permit Condition 2.5

This permit condition incorporates DEQ's standard permit condition for incorporating requirements from the code of federal regulations. Should there be a conflict between the permit and the federal regulations, the federal regulations shall govern including any amendments to the regulation.

Initial Permit Condition 3.3

This permit condition includes a NO_x emission rate limit for the new Cleaver-Brooks Boilers. Each boiler is limited to 0.98 pounds per hour which is the rate used in the model to demonstrate compliance with the ambient standards for NO_x. Carbon monoxide, particulate matter, VOC and SO_2 emissions from the boilers are well below major source thresholds and ambient impacts are sufficiently below the applicable standards or emissions are sufficiently below thresholds so that emission rate limits are not needed for these pollutants. The estimated emission rates for these pollutants are included in the Emission Inventories section of this Statement of Basis; they are not expected to vary such that they could pose any concern with any applicable air quality rule or regulation.

Initial Permit Condition 3.4 and 3.5

These permit conditions include the particulate matter grain loading standards for fuel burning equipment (i.e. boilers) and the opacity limitation from the Rules for the Control of Air Pollutant ion in Idaho and are self-explanatory.

Initial Permit Condition 3.6

The hours of operation limitation on the boilers (i.e. 8 am to 5 pm, 3 hours each per day) is solely to match hours of operation that were recommended in the modeling memorandum. Similarly, the limit on the number of boilers that may be operated per day on distillate fuel oil during annual testing (i.e. 3) matches the modeling memo recommendations. These limitations also keep hours of operation below the 48 hours so that the boilers are considered "gas-fired" in accordance with 40 CFR 63 Subpart JJJJJJ. In order to be considered gas-fired boilers: "Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year." Operations are not limited during emergency situations.

Limitations on hours of operation while combusting natural gas is not necessary as modeling presumed constant operation on this fuel.

Initial Permit Condition 3.7

Sulfur content is limited to 15 parts per million by weight. This is consistent with the emission inventory provided with the application.

Initial Permit Condition 3.8

Hours of operation of each of the boilers while combusting fuel oil during non-emergency situations must be monitored and recorded each month and for previous consecutive 12-month period.

Initial Permit Condition 3.9

The permittee shall maintain documentation of supplier verification of #2 fuel oil sulfur content on an as received basis for every shipment of fuel that is combusted in the boilers.

Initial Permit Condition 3.10

One of the Cleaver-Brooks boilers must be tested to determine the NO_x pound per hour emission rate of the boiler to assure compliance with the emission rate limit.

This NO_x emission rate estimate is the "Expected Emission" rate for the boilers from Cleaver-Brooks. The rate is not a guaranteed emission rate. Because NO_x emission rates may vary from the boilers and because NO_2 ambient impacts from the facility when combined with background concentrations are within 10% of the standard an emission test is required.

Initial Permit Conditions 3.11 through 3.20

The sole purpose of these permit conditions is to incorporate the applicable requirements of 40 CFR 60 Subpart Dc. Should there be a conflict between the permit and the subpart, the subpart shall govern including any amendments to the subpart.

A detailed regulatory analysis of this subpart is provided in Appendix C.

Initial Permit Conditions 4.1 and 4.2

These conditions provide a description of the engines. There are no control devices on the engines. The applicable federal regulation is listed for each engine.

Initial Permit Condition 4.3

This permit condition includes the 15 ppm sulfur content limit on diesel fuel. The limit is necessary to be consistent with the emission inventory provided in the application which show sulfur dioxide emissions are below modeling thresholds.

Initial Permit Conditions 4.4 & 4.5

The hours of operation of the engines are limit to be consistent with the emission inventory provided in the application.

Initial Permit Condition 4.6

The permittee is required to monitor the hours of operation of the engines in non-emergency situations.

Initial Permit Condition 4.7

The permittee shall maintain documentation of supplier verification of #2 fuel oil sulfur content on an as received basis for fuel that is combusted in the engines.

Initial Permit Conditions 4.8 through 4.14

The sole purpose of these permit conditions is to incorporate the applicable requirements of 40 CFR 60 Subpart IIII. Should there be a conflict between the permit and the subpart, the subpart shall govern including any amendments to the subpart.

Initial Permit Conditions 4.15 through 4.22

The sole purpose of these permit conditions is to incorporate the applicable requirements of 40 CFR 60 Subpart ZZZZ. Should there be a conflict between the permit and the subpart, the subpart shall govern including any amendments to the subpart.

Initial Permit Condition 5.1

The duty to comply general compliance provision requires that the permittee comply with all of the permit terms and conditions pursuant to Idaho Code §39-101.

Initial Permit Condition 5.2

The maintenance and operation general compliance provision requires that the permittee maintain and operate all treatment and control facilities at the facility in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 5.3

The obligation to comply general compliance provision specifies that no permit condition is intended to relieve or exempt the permittee from compliance with applicable state and federal requirements, in accordance with IDAPA 58.01.01.212.01.

Initial Permit Condition 5.4

The inspection and entry provision requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Initial Permit Condition 5.5

The permit expiration construction and operation provision specifies that the permit expires if construction has not begun within two years of permit issuance or if construction has been suspended for a year in accordance with IDAPA 58.01.01.211.02.

Initial Permit Condition 5.6

The notification of construction and operation provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.01 and 211.03.

Initial Permit Condition 5.7

The performance testing notification of intent provision requires that the permittee notify DEQ at least 15 days prior to any performance test to provide DEQ the option to have an observer present, in accordance with IDAPA 58.01.01.157.03.

Initial Permit Condition 5.8

The performance test protocol provision requires that any performance testing be conducted in accordance with the procedures of IDAPA 58.01.01.157, and encourages the permittee to submit a protocol to DEQ for approval prior to testing.

Initial Permit Condition 5.9

The performance test report provision requires that the permittee report any performance test results to DEQ within 60 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Initial Permit Condition 5.10

The monitoring and recordkeeping provision requires that the permittee maintain sufficient records to ensure compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 5.11

The excess emissions provision requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130-136.

Initial Permit Condition 5.12

The certification provision requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

Initial Permit Condition 5.13

The false statement provision requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Initial Permit Condition 5.14

The tampering provision requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Initial Permit Condition 5.15

The transferability provision specifies that this permit to construct is transferable, in accordance with the procedures of IDAPA 58.01.01.209.06.

Initial Permit Condition 5.16

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c. During this time, there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

St Lukes Regional Medical Center
Pre-Criteria Emissions Inventory

Criteria Pollutants	PM10		PM2.5[a]		CO		NOx		SOx		VOC	
Emissions Unit Name	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
4 Natural Gas Boilers	0.22	0.97	0.22	0.97	2.41	10.74	2.87	12.78	0.02	0.08	0.16	0.70
Boiler No. 1 -No. 2 Fuel Oil	0.42		0.42		1.05		4.19		14.86		0.12	
Boiler No. 2 -No. 2 Fuel Oil	0.42		0.42		1.05		4.19		14.86		0.12	
Boiler No. 3 -No. 2 Fuel Oil	0.42		0.42		1.05		4.19		14.86		0.12	
Boiler No. 4 -No. 2 Fuel Oil	0.42		0.42		1.05		4.19		14.86		0.12	
Boiler Combusting -No. 2 Fuel Oil		0.27		0.27		0.68		2.72		9.64		0.08
Generator #1	0.50	0.05	0.50	0.05	1.84	0.19	26.89	2.80	4.88	0.51	0.09	0.01
Generator #2	0.54	0.06	0.54	0.06	4.18	0.44	36.90	3.84	6.25	0.65	1.22	0.13
Generator #3	0.58	0.06	0.58	0.06	9.44	0.95	86.94	9.04	9.73	1.01	1.44	0.15
Generator #4	1.45	0.15	1.45	0.15	5.16	0.54	7.62	0.79	0.53	0.06	0.06	0.01
Generator #5	0.06	0.01	0.06	0.01	1.29	0.13	2.42	0.25	0.10	0.01	0.19	0.02
Generator #6	0.06	0.01	0.06	0.01	1.29	0.13	2.42	0.25	0.14	0.02	0.19	0.02
Generator #7	0.31	0.03	0.31	0.03	0.65	0.07	45.07	4.69	9.16	1.00	0.71	0.07
Totals	**5.40**	**1.61**	**5.40**	**1.61**	**30.46**	**13.87**	**227.89**	**37.16**	**90.25**	**12.98**	**4.54**	**1.19**

Notes:

[a] $PM_{2.5}$ emissions were not calculated for the existing PTC issued on June 8, 2007. $PM_{2.5}$ emissions are assumed to equal PM_{10} emissions.

St Lukes Downtown CIP
Post Criteria Pollutant Summary

Criteria Pollutants	PM10		PM2.5		CO		NOx		SOx		Lead		VOC	
Emissions Unit Name	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Gen 1	0.19	0.010	0.19	0.010	2.06	0.10	36.11	1.81	0.030	0.001			0.52	0.026
Gen 2	0.19	0.010	0.19	0.010	2.06	0.10	36.11	1.81	0.030	0.001	-	-	0.52	0.026
Gen 3	0.19	0.010	0.19	0.010	2.06	0.10	36.11	1.81	0.030	0.001	-	-	0.52	0.026
Gen 4	0.19	0.010	0.19	0.010	2.06	0.10	36.11	1.81	0.030	0.001	-	-	0.52	0.026
Gen 5	0.19	0.010	0.19	0.010	2.06	0.10	36.11	1.81	0.030	0.001	-	-	0.52	0.026
Gen 6	0.19	0.010	0.19	0.010	2.06	0.10	36.11	1.81	0.030	0.001	-	-	0.52	0.026
Gen 5A	0.09	0.005	0.09	0.005	2.33	0.12	2.86	0.14	0.000	0.000			0.27	0.014
Gen 6A	0.31	0.015	0.31	0.015	0.96	0.05	4.36	0.22	0.001	0.000			0.35	0.018
Boiler #1 (NG)	0.21	0.92	0.21	0.92	0.52	2.29	0.98	4.28	0.02	0.07	1.37E-05	5.99E-05	0.10	0.44
Boiler #1 (ULSD)	0.63	0.93	0.63	0.93	0.21	2.28	3.09	4.33	0.04	0.07			0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.52**	**2.29**	**3.09**	**4.33**	**0.04**	**0.07**	**1.37E-05**	**5.99E-05**	**0.10**	**0.44**
Boiler #2 (NG)	0.21	0.92	0.21	0.92	0.52	2.29	0.98	4.28	0.02	0.07	1.37E-05	5.99E-05	0.10	0.44
Boiler #2 (ULSD)	0.63	0.93	0.63	0.93	0.21	2.28	3.09	4.33	0.04	0.07	-	-	0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.52**	**2.29**	**3.09**	**4.33**	**0.04**	**0.07**	**1.37E-05**	**5.99E-05**	**0.10**	**0.44**
Boiler #3 (NG)	0.21	0.92	0.21	0.92	0.52	2.29	0.98	4.28	0.02	0.07	1.37E-05	5.99E-05	0.101	0.44
Boiler #3 (ULSD)	0.63	0.93	0.63	0.93	0.21	2.28	3.09	4.33	0.04	0.07			0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.52**	**2.29**	**3.09**	**4.33**	**0.04**	**0.07**	**1.37E-05**	**5.99E-05**	**0.10**	**0.44**
Boiler #4 (NG)	0.21	0.92	0.21	0.92	0.52	2.29	0.98	4.28	0.02	0.07	1.37E-05	5.99E-05	0.10	0.44
Boiler #4 (ULSD)	0.63	0.93	0.63	0.93	0.21	2.28	3.09	4.33	0.04	0.07			0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.52**	**2.29**	**3.09**	**4.33**	**0.04**	**0.07**	**1.37E-05**	**5.99E-05**	**0.10**	**0.44**
Boiler #5 (NG)	0.21	0.92	0.21	0.92	0.52	2.29	0.98	4.28	0.02	0.07	1.37E-05	5.99E-05	0.10	0.44
Boiler #5 (ULSD)	0.63	0.93	0.63	0.93	0.21	2.28	3.09	4.33	0.04	0.07			0.04	0.44
Worst Case	**0.63**	**0.93**	**0.63**	**0.93**	**0.52**	**2.29**	**3.09**	**4.33**	**0.04**	**0.07**	**1.37E-05**	**5.99E-05**	**0.10**	**0.44**
Cooling Tower 1	0.37	1.64	0.001	0.006										
Cooling Tower 2	0.37	1.64	0.001	0.006										
Cooling Tower 3	0.37	1.64	0.001	0.006										
Cooling Tower 4	0.37	1.64	0.001	0.006										
Cooling Tower 5	0.37	1.64	0.001	0.006										
Totals	**6.98**	**14.56**	**4.74**	**4.75**	**18.28**	**12.22**	**239.31**	**32.85**	**0.38**	**0.38**	**6.84E-05**	**3.00E-04**	**4.22**	**2.39**

Notes:
For Boilers #1 through #3 used worse-case emission factors between NG and ULSD.

Monthly Pb Emissions
5.00E-02 lb/mo

St Lukes Regional Medical Center
Delta Criteria Emissions Inventory

Criteria Pollutants	PM10		PM2.5		CO		NOx		SOx		Lead		VOC	
Emissions Unit Name	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Pre Criteria Summary	5.40	1.61	5.40	1.61	30.46	13.87	227.89	37.16	90.25	12.98			4.54	1.19
Post Criteria Summary	6.98	14.56	4.741	4.752	18.28	12.22	239.31	32.85	0.38	0.38	6.84E-05	3.00E-04	4.22	2.39
Delta Criteria Summary	1.58	12.95	(0.66)	3.14	(12.18)	(1.65)	11.42	(4.31)	(89.87)	(12.60)	6.84E-05	3.00E-04	(0.32)	1.20

St Lukes Downtown CIP
Idaho Toxic Air Pollutants Summary

Current Baseline

TAPs/HAPs	HAPs	Boilers 1-5		Gen 1-6		Facility Wide Total		EL	Exceeds EL
		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	
2-Methylnaphthalene	No	3.28E-06	1.44E-05			3.28E-06	1.44E-05		
3-Methylchloranthrene	No	2.46E-07	1.08E-06			2.46E-07	1.08E-06	2.50E-06	Below
7,12-Dimethylbenz(a)anthracene	No	2.19E-06	9.59E-06			2.19E-06	9.59E-06		
Acenaphthene	No	2.02E-05	1.56E-06	6.33E-06	2.77E-05	2.65E-05	2.93E-05		
Acenaphthylene	No	2.46E-07	1.08E-06	1.25E-05	5.47E-05	1.27E-05	5.57E-05		
Acetaldehyde[a]	**Yes**			3.41E-05	1.49E-04	3.41E-05	**1.49E-04**		
Acrolein[a]	**Yes**			1.07E-05	4.67E-05	1.07E-05	**4.67E-05**		
Anthracene	No	1.17E-06	1.46E-06	1.66E-06	7.28E-06	2.83E-06	8.74E-06		
Benzo(a)anthracene	No	3.83E-06	1.17E-06	8.41E-07	3.68E-06	4.67E-06	4.85E-06		
Benzene[a]	**Yes**	2.87E-04	1.26E-03	1.05E-03	4.60E-03	1.34E-03	**5.85E-03**		
Benzo(a)pyrene	No	1.64E-07	7.19E-07	3.47E-07	1.52E-06	5.12E-07	2.24E-06		
Benzo(b)fluoranthene	No	1.41E-06	1.11E-06	1.50E-06	6.57E-06	2.91E-06	7.68E-06		
Benzo(g,h,i)perylene	No	2.16E-06	7.67E-07	7.52E-07	3.29E-06	2.91E-06	4.06E-06		
Benzo(k)fluoranthene	No	1.41E-06	1.11E-06	2.95E-07	1.29E-06	1.71E-06	2.40E-06		
Chrysene	No	2.27E-06	1.13E-06	2.07E-06	9.06E-06	4.34E-06	1.02E-05		
Dibenz(a,h)anthracene	No	1.59E-06	7.54E-07	4.68E-07	2.05E-06	2.06E-06	2.80E-06		
Dichlorobenzene	No	1.64E-04	7.19E-04			1.64E-04	7.19E-04	20	Below
Ethylbenzene[a]	**Yes**	6.07E-05	1.46E-06			6.07E-05	**1.46E-06**		
Fluoranthene	No	4.62E-06	1.90E-06	5.45E-06	2.39E-05	1.01E-05	2.58E-05		
Fluorene	No	4.27E-06	1.77E-06	1.73E-05	7.58E-05	2.16E-05	7.76E-05		
Formaldehyde[a]	**Yes**	3.15E-02	4.55E-02	1.07E-04	4.67E-04	3.16E-02	**4.59E-02**		
Hexane[a]	**Yes**	2.46E-01	1.08E+00			2.46E-01	**1.08E+00**		
Indeno(1,2,3-cd)pyrene	No	2.04E-06	1.12E-06	5.60E-07	2.45E-06	2.60E-06	3.57E-06		
Naphthalene[a]	**Yes**	1.08E-03	3.90E-04	1.76E-04	7.70E-04	1.25E-03	**1.16E-03**		
Pentane	No	3.56E-01	1.56E+00			3.56E-01	1.56E+00	118	Below
Phenanthrene	No	1.00E-05	1.04E-05	5.52E-05	2.42E-04	6.52E-05	2.52E-04		
Propylene	No			3.77E-03	1.65E-02	3.77E-03	1.65E-02		
Pyrene	No	4.06E-06	3.08E-06	5.02E-06	2.20E-05	9.07E-06	2.50E-05		
Toluene[a]	**Yes**	5.92E-03	2.17E-03	3.80E-04	1.66E-03	6.30E-03	**3.83E-03**		
Xylene[a]	**Yes**	1.04E-04	2.50E-06	2.61E-04	1.14E-03	3.65E-04	**1.15E-03**		
POM[a]	**Yes**	1.26E-05	6.76E-06	6.08E-06	2.66E-05	1.86E-05	**3.34E-05**		
TAPs/HAPs Metals									
Arsenic[a]	**Yes**	5.37E-04	1.32E-04			5.37E-04	**1.32E-04**		
Barium	No	6.02E-04	2.64E-03			6.02E-04	2.64E-03	0.033	Below
Beryllium[a]	**Yes**	4.03E-04	1.68E-05			4.03E-04	**1.68E-05**		
Cadmium[a]	**Yes**	4.03E-04	6.65E-04			4.03E-04	**6.65E-04**		
Chromium[a]	**Yes**	4.03E-04	8.44E-04			4.03E-04	**8.44E-04**		
Cobalt[a]	**Yes**	1.15E-05	5.04E-05			1.15E-05	**5.04E-05**		
Copper	No	8.05E-04	5.26E-04			8.05E-04	5.26E-04	0.013	Below
Manganese[a]	**Yes**	8.05E-04	2.46E-04			8.05E-04	**2.46E-04**		
Mercury (HAP not a TAP)	Yes	4.03E-04	1.65E-04			4.03E-04	**1.65E-04**		
Molybdenum	No	1.51E-04	6.59E-04			1.51E-04	6.59E-04	0.333	Below
Nickel[a]	**Yes**	4.03E-04	1.26E-03			4.03E-04	**1.26E-03**		
Selenium[a]	**Yes**	2.01E-03	6.26E-05			2.01E-03	**6.26E-05**		
Vanadium	No	3.15E-04	1.38E-03			3.15E-04	1.38E-03	0.003	Below
Zinc	No	3.97E-03	1.74E-02			3.97E-03	1.74E-02	0.667	Below

Notes:

[a] TAP that are HAP emissions are excluded for modeling purposes, per email from Darrin Pampaian, dated July 18, 2017: "It is presumed that EPA evaluated the 187 HAPs when developing the emission standards for new, modified or existing stationary sources regulated by 40 CFR Part 63; therefore, no further review is required under IDAPA 58.01.01.210 for these pollutants for sources subject to 40 CFR Part 63, including sources specifically exempted within the subpart."

TAP that are HAP emissions from existing emergency generator 5 and 6 can be excluded from the modeling analysis because they will be addressed through 40 CFR Part 63, Subpart ZZZZ-NESHAP for Reciprocating Internal Combustion Engines. Additionally, new emergency generators 1-4 are required to meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII in accordance with 40 CFR 63.6590(c).

TAP that are HAP emissions from the boilers can be excluded from the modeling analysis because they are specifically exempted under 40 CFR 63, Subpart JJJJJJ-NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources.

St Lukes Downtown CIP
Total Hazardous Air Pollutants

Facilty-Wide

TAPs/HAPs	HAPs	Boilers 1-5 (ton/yr)	Gen 1-6 (ton/yr)	Gen 5A (ton/yr)	Gen 6A (ton/yr)	Children's Pavilion Boilers B1-B3 (ton/yr)	Children's Pavilion HW Boiler (ton/yr)	Facility Wide Total (ton/yr)
2-Methylnaphthalene	No	1.44E-05						1.44E-05
3-Methylchloranthrene	No	1.08E-06						1.08E-06
7,12-Dimethylbenz(a)anthracene	No	9.59E-06						9.59E-06
1,3-Butadiene[a]	Yes			4.73E-07	7.01E-07			1.17E-06
Acenaphthene	No	1.56E-06	2.77E-05	1.72E-08	2.55E-08			2.93E-05
Acenaphthylene	No	1.08E-06	5.47E-05	6.12E-08	9.07E-08			5.59E-05
Acetaldehyde[a]	Yes		1.49E-04	9.28E-06	1.38E-05			1.72E-04
Acrolein[a]	Yes		4.67E-05	1.12E-06	1.66E-06			4.94E-05
Anthracene	No	1.46E-06	7.28E-06	2.26E-08	3.35E-08			8.80E-06
Benzo(a)anthracene	No	1.17E-06	3.68E-06	2.03E-08	3.01E-08			4.90E-06
Benzene[a]	Yes	1.26E-03	4.60E-03	1.13E-05	1.67E-05	5.41E-05	4.51E-06	5.94E-03
Benzo(a)pyrene	No	7.19E-07	1.52E-06	2.27E-09	3.37E-09			2.25E-06
Benzo(b)fluoranthene	No	1.11E-06	6.57E-06	1.20E-09	1.78E-09			7.68E-06
Benzo(g,h,i)perylene	No	7.67E-07	3.29E-06	5.92E-09	8.77E-09			4.07E-06
Benzo(k)fluoranthene	No	1.11E-06	1.29E-06	1.88E-09	2.78E-09			2.40E-06
Chrysene	No	1.13E-06	9.06E-06	4.27E-09	6.33E-09			1.02E-05
Dibenz(a,h)anthracene	No	7.54E-07	2.05E-06	7.05E-09	1.05E-08			2.82E-06
Dichlorobenzene	No	7.19E-04						7.19E-04
Ethylbenzene[a]	Yes	1.46E-06						1.46E-06
Fluoranthene	No	1.90E-06	2.39E-05	9.21E-08	1.36E-07			2.60E-05
Fluorene	No	1.77E-06	7.58E-05	3.53E-07	5.24E-07			7.85E-05
Formaldehyde[a]	Yes	4.55E-02	4.67E-04	1.43E-05	2.12E-05	1.93E-03	1.61E-04	4.81E-02
Hexane[a]	Yes	1.08E+00				4.64E-02	3.86E-03	1.13E+00
Indeno(1,2,3-cd)pyrene	No	1.12E-06	2.45E-06	4.54E-09	6.72E-09			3.59E-06
Naphthalene[a]	Yes	3.90E-04	7.70E-04	1.03E-06	1.52E-06	1.57E-05	1.31E-06	1.18E-03
Pentane	No	1.56E+00						1.56E+00
Phenanthrene	No	1.04E-05	2.42E-04	3.56E-07	5.27E-07			2.53E-04
Propylene	No		1.65E-02					1.65E-02
Pyrene	No	3.08E-06	2.20E-05	5.78E-08	8.57E-08			2.52E-05
Toluene[a]	Yes	2.17E-03	1.66E-03	4.95E-06	7.33E-06	8.76E-05	7.30E-06	3.94E-03
Xylene[a]	Yes	2.50E-06	1.14E-03	3.45E-06	5.11E-06			1.15E-03
POM[a]	Yes	6.76E-06	2.66E-05	4.15E-08	6.16E-08	2.94E-07	2.45E-08	3.38E-05
TAPs/HAPs Metals								
Arsenic[a]	Yes	1.32E-04				5.15E-06	4.29E-07	1.38E-04
Barium	No	2.64E-03						2.64E-03
Beryllium[a]	Yes	1.68E-05				3.09E-07	2.58E-08	1.72E-05
Cadmium[a]	Yes	6.65E-04				2.83E-05	2.36E-06	6.96E-04
Chromium[a]	Yes	8.44E-04				3.61E-05	3.01E-06	8.83E-04
Cobalt[a]	Yes	5.04E-05				2.16E-06	1.80E-07	5.27E-05
Copper	No	5.26E-04						5.26E-04
Manganese[a]	Yes	2.46E-04				9.79E-06	8.16E-07	2.56E-04
Mercury (HAP not a TAP)	Yes	1.65E-04						1.65E-04
Molybdenum	No	6.59E-04						6.59E-04
Nickel[a]	Yes	1.26E-03				5.41E-05	4.51E-06	1.32E-03
Selenium[a]	Yes	6.26E-05				6.18E-07	5.15E-08	6.33E-05
Vanadium	No	1.38E-03						1.38E-03
Zinc	No	1.74E-02						1.74E-02
HAPs Total								**1.19**

St Lukes Downtown CIP

Greenhouse Gas Emissions Summary

Criteria Pollutants	**CO_2**	**CO_2**	**N_2O**	**N_2O**	**CH_4**	**CH_4**	**CO2e**	**CO2e**
Emissions Unit Name	Metric Tons/Yr	Short Tons/Yr	Metric Tons/Yr	Short Tons/Yr	Metric Tons/Yr	Short Tons/Yr	Metric Tons/Yr	Short Tons/Yr
Gen 1	144	159	0.0012	0.0013	0.006	0.006	144	159
Gen 2	144	159	0.0012	0.0013	0.006	0.006	144	159
Gen 3	144	159	0.0012	0.0013	0.006	0.006	144	159
Gen 4	144	159	0.0012	0.0013	0.006	0.006	144	159
Gen 5	144	159	0.0012	0.0013	0.006	0.006	144	159
Gen 6	144	159	0.0012	0.0013	0.006	0.006	144	159
Gen 5A	1.76	1.94	0.00001	0.00002	0.00007	0.00008	1.77	1.95
Gen 6A	2.61	2.88	0.00002	0.00002	0.0001	0.0001	2.62	2.89
Boiler #1 (NG)	13,056	14,392	0.025	0.027	0.25	0.27	13,070	14,407
Boiler #1 (ULSD) - Worst Case	13,078	14,416	0.0252	0.0278	0.248	0.274	13,092	14,431
Boiler #2 (NG)	13,056	14,392	0.025	0.027	0.25	0.27	13,070	14,407
Boiler #2 (ULSD) - Worst Case	13,078	14,416	0.0252	0.0278	0.248	0.274	13,092	14,431
Boiler #3 (NG)	13,056	14,392	0.025	0.027	0.25	0.27	13,070	14,407
Boiler #3 (ULSD) - Worst Case	13,078	14,416	0.0252	0.0278	0.248	0.274	13,092	14,431
Boiler #4 (NG)	13,056	14,392	0.0246	0.0271	0.246	0.271	13,070	14,407
Boiler #4 (ULSD) - Worst Case	13,078	14,416	0.0252	0.0278	0.248	0.274	13,092	14,431
Boiler #5 (NG)	13,056	14,392	0.0246	0.0271	0.246	0.271	13,070	14,407
Boiler #5 (ULSD) - Worst Case	13,078	14,416	0.0252	0.0278	0.248	0.274	13,092	14,431
Total Facility Wide	**66,259**	**73,037**	**0.13**	**0.15**	**1.3**	**1.4**	**66,330**	**73,116**

Notes:

If a source exceeds major source thresholds for conventional criteria pollutants, then BACT for GHG shall be applied.

Since the St. Luke's Regional Medical Center is not a major source, it is not subject to GHG BACT requirements.

St. Lukes Children's Pavillion

Uncontrolled Potential to Emit Criteria Pollutant Summary

Stationary Sources	Emission Rate (ton/year)						Emission Rate (lb/hr)					
	PM	PM-10	NOx	SO2	CO	VOC	PM	PM-10	NOx	SO2	CO	VOC
Raypak Boiler 1 (1.99 MM)	0.07	0.07	0.86	0.0052	0.72	0.05	0.015	0.015	0.196	0.0012	0.165	0.011
Raypak Boiler 2 (1.99 MM)	0.07	0.07	0.86	0.01	0.72	0.05	0.01	0.01	0.20	0.00	0.16	0.01
Raypak Boiler 3 (1.99 MM)	0.07	0.07	0.86	0.01	0.72	0.05	0.01	0.01	0.20	0.00	0.16	0.01
Raypak HWH (0.5 MM)	0.02	0.02	0.21	0.001	0.18	0.01	0.004	0.004	0.05	0.0003	0.04	0.003
Total Stationary Sources	**0.2**	**0.2**	**2.8**	**0.02**	**2.3**	**0.15**	**0.05**	**0.05**	**0.64**	**0.00**	**0.54**	**0.04**

St Lukes Downtown CIP

Note: 6 emergency engines are proposed with exactly the same maximum heat input rating. PTE emissions for 1 new egen is provided below.

Generator Name	**Cummins**			
Model No.	**DQKAE**	EPA Certified Tier 2	Displacement	60.1 L
Engine Power Rating (kW)	2,000		16 Cylinder	3.76 L/Cyl
Engine Power Rating (hp)	2,922	Cummins Exhaust Emissions Data		
Fuel Consumption (gal/hr)	141.0			
Maximum Firing Rate (gal/yr)	14,100			
Fuel Type	Distillate #2			
- maximum sulfur content (%)	0.0015	ULSD		
Maximum Heat Input Rating (MMBtu/hr)	19.74			
Annual Maint Limit (hrs/yr)	100	Assume:	Uncontrolled PTE is equal to Controlled PTE	
Heat Value of Fuel (Btu/min)	140,000			

		Uncontrolled Potential to Emit				
Pollutant	**CAS No.**	**Emission Factor (lb/MMBtu)**	**Emission Factor (g/hp-hr)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Total Particulate Matter (PM)[1,2]			0.03	0.19	19.34	0.010
Nitrogen Oxides (NOx)[1] as NO_2			5.60	36.11	3610.91	1.81
Sulfur Oxides[3]		0.0015		0.03	2.99	0.001
Carbon Monoxide (CO)[1]			0.32	2.06	206.34	0.10
HC[1,4]			0.08	0.52	51.58	0.026

			Uncontrolled Potential to Emit		
Toxics[5]	**CAS Number**	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Benzene	71-43-2	7.76E-04	1.75E-04	1.53E+00	7.66E-04
Formaldehyde	50-00-0	7.89E-05	1.78E-05	1.56E-01	7.79E-05
Naphthalene	91-20-3	1.30E-04	2.93E-05	2.57E-01	1.28E-04
Toluene	108-88-3	2.81E-04	6.33E-05	5.55E-01	2.77E-04
Xylenes	1330-20-7	1.93E-04	4.35E-05	3.81E-01	1.90E-04
Acetaldehyde	75-07-0	2.52E-05	5.68E-06	4.97E-02	2.49E-05
Acrolein	107-02-8	7.88E-06	1.78E-06	1.56E-02	7.78E-06
Propylene	115-07-1	2.79E-03	6.29E-04	5.51E+00	2.75E-03
Acenaphthalylene	203-96-8	9.23E-06	2.08E-06	1.82E-02	9.11E-06
Acenaphthene	83-32-9	4.68E-06	1.05E-06	9.24E-03	4.62E-06
Fluorene	86-73-7	1.28E-05	2.88E-06	2.53E-02	1.26E-05
Phenanthrene	85-01-8	4.08E-05	9.19E-06	8.05E-02	4.03E-05
Anthracene	120-12-7	1.23E-06	2.77E-07	2.43E-03	1.21E-06
Fluoranthene	206-44-0	4.03E-06	9.08E-07	7.96E-03	3.98E-06
Pyrene	129-00-0	3.71E-06	8.36E-07	7.32E-03	3.66E-06
Benzo(g,h,i)pyrlene	191-24-2	5.56E-07	1.25E-07	1.10E-03	5.49E-07

Benz(a)anthracene	56-55-3	6.22E-07	1.40E-07	1.23E-03	6.14E-07
Benzo(b)fluoranthene	205-99-2	1.11E-06	2.50E-07	2.19E-03	1.10E-06
Benzo(k)fluoranthene	205-82-3	2.18E-07	4.91E-08	4.30E-04	2.15E-07
Chrysene	218-01-9	1.53E-06	3.45E-07	3.02E-03	1.51E-06
Dibenzo(a,h)anthracene	53-70-3	3.46E-07	7.80E-08	6.83E-04	3.42E-07
Indeno(1,2,3-cd)pyrene	193-39-5	4.14E-07	9.33E-08	8.17E-04	4.09E-07
Benzo(a)pyrene	50-32-8	2.57E-07	5.79E-08	5.07E-04	2.54E-07
POM [6]			1.01E-06	8.88E-03	4.44E-06

[1] NOx, CO, HC, and PM emission factors were derived from Caterpillar performance data at 100% load.

[2] PM emission factor is assumed to equal PM_{10} and $PM_{2.5}$

[3] SO_2 emission factor multiplied by percent sulfur content of fuel (EPA AP-42 Table 3.4-1) EF = 1.01 x (sulfur content) = 0.0015

[4] HC emission factor is used to estimate VOCs.

[5] Toxic emission factors are derived from EPA AP-41, Table 3.4-3 and Table 3.4-4.

[6] POM (polycyclic organic matter) 7-PAH group, sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

Note: Toxic emission factors derived from EPA AP-42 Tables 3.4-3 and 3.4-4.

GHG Emissions				
Pollutant[8]	Emissions (metric tons)	GWP[9]		CO_2e
CO_2	143.91	1		143.911
CH_4	0.0058	25		0.146
N_2O	0.00117	298		0.348
Total	143.92			144.41

For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:

CO2 = 1x10-3 x Fuel x HHV x EF

CO2 = Annual CO2 mass emissions in Metric Tons	=	143.91
Fuel = Volume of fuel used (gallons)	=	14,100
HHV = High Heat Value from Table C-1 (mmBTU/short ton)	=	0.138
EFCO2 = Emission factor (kg/mmBTU)	=	73.96

For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:

CH4, N2O = 1x10-3 x Fuel x HHV x EF

CH4 = Annual CH4 mass emissions in Metric Tons	=	0.006
N2O = Annual N2O mass emissions in Metric Tons	=	0.0012
Fuel = Volume of fuel used (gallons)	=	14,100
HHV = High Heat Value from Table C-1 (mmBTU/short ton)	=	0.138
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03
EFCH4 = Emission factor (kg/mmBTU)	=	6.00E-04

Notes

[8] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O

St. Lukes Regional Medical Center - Boise (Generator #5)

Generator Name -CAT	**65 kW**
Model No.	**3304**
Engine Power Rating (kW)	71
Engine Power Rating (hp)	95
Fuel Type	Distillate #2
- maximum sulfur content	0.0015
Fuel Consumption (gal/hr)	1.7
Maximum Firing Rate (gal/yr)	172.8
Maximum Heat Input Rating (MMBtu/hr)	0.242
Annual Maint limit (hr/yr)	100
Heat Value of Fuel (Btu/gal)	140,000

CAT Performance data
Assume: 1 hp = 2547.1 Btu/hr

ULSD

		Uncontrolled Potential to Emit				
Pollutant[1]	**CAS No.**	**Emission Factor (gram/hr)**	**Emission Factor (lb/MMBTU)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Total Particulate Matter (PM)[2]		43		0.09	9	0.005
Nitrogen Oxides (NOx)		1,297		2.86	286	0.14
Sulfur Oxides[3]			0.0015	0.0004	0.04	1.83E-05
Carbon Monoxide (CO)		1,057		2.33	233	0.12
HC		123		0.27	27	0.01

			Uncontrolled Potential to Emit		
Toxics[4]	**CAS Number**	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Benzene	71-43-2	9.33E-04	2.58E-06	2.26E-02	1.13E-05
Formaldehyde	50-00-0	1.18E-03	3.26E-06	2.86E-02	1.43E-05
Naphthalene	91-20-3	8.48E-05	2.34E-07	2.05E-03	1.03E-06
Toluene	108-88-3	4.09E-04	1.13E-06	9.90E-03	4.95E-06
Xylenes	1330-20-7	2.85E-04	7.87E-07	6.90E-03	3.45E-06
Acetaldehyde	75-07-0	7.67E-04	2.12E-06	1.86E-02	9.28E-06
Acrolein	107-02-8	9.25E-05	2.56E-07	2.24E-03	1.12E-06
1,3-Butadiene	106-99-0	3.91E-05	1.08E-07	9.46E-04	4.73E-07
Acenaphthylene	203-96-8	5.06E-06	1.40E-08	1.22E-04	6.12E-08
Acenaphthene	83-32-9	1.42E-06	3.92E-09	3.44E-05	1.72E-08
Fluorene	86-73-7	2.92E-05	8.07E-08	7.07E-04	3.53E-07
Phenanthrene	85-01-8	2.94E-05	8.12E-08	7.11E-04	3.56E-07
Anthracene	120-12-7	1.87E-06	5.17E-09	4.52E-05	2.26E-08
Fluoranthene	206-44-0	7.61E-06	2.10E-08	1.84E-04	9.21E-08
Pyrene	129-00-0	4.78E-06	1.32E-08	1.16E-04	5.78E-08
Benzo(a)anthracene	56-55-3	1.68E-06	4.64E-09	4.07E-05	2.03E-08
Benzo(b)fluoranthene	205-99-2	9.91E-08	2.74E-10	2.40E-06	1.20E-09
Benzo(k)fluoranthene	205-82-3	1.55E-07	4.28E-10	3.75E-06	1.88E-09
Benzo(g,h,I)perylene	191-24-2	4.89E-07	1.35E-09	1.18E-05	5.92E-09
Chrysene	218-01-9	3.53E-07	9.75E-10	8.54E-06	4.27E-09
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	1.61E-09	1.41E-05	7.05E-09
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	1.04E-09	9.07E-06	4.54E-09
Benzo(a)pyrene	50-32-8	1.88E-07	5.19E-10	4.55E-06	2.27E-09
POM[5]			9.48E-09	8.31E-05	4.15E-08

[1]Generator emissions data supplied by Western States CAT. Emission factors were utilized to estimate emissions for particulate matter (PM), oxides of nitrogen (NOx).

carbon monoxide (CO), and hydrocarbons (HC) in lieu of volatile organic compounds (VOCs).

[2] PM emission factor is assumed to equal PM_{10} and $PM_{2.5}$.

[3] SO_2 emission factor multiplied by percent sulfur content of fuel (EPA AP-42 Table 3.4-1) EF = 1.01 x (sulfur content) = 0.0015

[4] Toxic emission factors are derived from EPA AP-42, Table 3.3-2.

[5] POM (polycyclic organic matter) 7-PAH group, sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

GHG Emissions				
Pollutant[6]	Emissions (metric tons)	GWP[7]		CO_2e
CO_2	1.76	1		1.764
CH_4	7.16E-05	25		1.79E-03
N_2O	1.43E-05	298		4.26E-03
Total	1.76			1.77

For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:

CO2 = 1x10-3 x Fuel x HHV x EF

CO2 = Annual CO2 mass emissions in Metric Tons	=	1.76
Fuel = Volume of fuel used (gallons)	=	172.8
HHV = High Heat Value from Table C-1 (mmBTU/short ton)	=	0.138
EFCO2 = Emission factor (kg/mmBTU)	=	73.96

For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:

CH4, N2O = 1x10-3 x Fuel x HHV x EF

CH4 = Annual CH4 mass emissions in Metric Tons	=	7.16E-05
N2O = Annual N2O mass emissions in Metric Tons	=	1.43E-05
Fuel = Volume of fuel used (gallons)	=	172.8
HHV = High Heat Value from Table C-1 (mmBTU/sho	=	0.138
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03
EFCH4 = Emission factor (kg/mmBTU)	=	6.00E-04

Notes

[6] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O

[7] GWP = Global Warming Potential - 40 CFR 98 Subpart A, Table A-1, revised 2013 GWP.

St. Lukes Regional Medical Center - Boise (Generator #6)

Generator Name -CAT	**105 kW**
Model No.	**3304**
Engine Power Rating (kW)	105
Engine Power Rating (hp)	140.8
Fuel Type	Distillate #2
- maximum sulfur content	0.0015
Fuel Consumption (gal/hr)	2.6
Maximum Firing Rate (gal/yr)	256.2
Maximum Heat Input Rating (MMBtu/hr)	0.359
Annual Maint limit (hr/yr)	100
Heat Value of Fuel (Btu/gal)	140,000

Assume: 1 hp = 2547.1 Btu/hr

ULSD

				Uncontrolled Potential to Emit		
Pollutant[1]	**CAS No.**	**Emission Factor (lb/hp-hr)**	**Emission Factor (lb/MMBTU)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Total Particulate Matter (PM)[2]		0.0022		0.31	31	0.02
Nitrogen Oxides (NOx)		0.031		4.36	436	0.22
Sulfur Oxides[3]			0.0015	0.001	0.05	2.72E-05
Carbon Monoxide (CO)		0.0068		0.96	96	0.05
TOC Exhaust		0.003		0.35	35	0.02

			Uncontrolled Potential to Emit		
Toxics[4]	**CAS Number**	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Benzene	71-43-2	9.33E-04	3.82E-06	3.35E-02	1.67E-05
Formaldehyde	50-00-0	1.18E-03	4.83E-06	4.23E-02	2.12E-05
Naphthalene	91-20-3	8.48E-05	3.47E-07	3.04E-03	1.52E-06
Toluene	108-88-3	4.09E-04	1.67E-06	1.47E-02	7.33E-06
Xylenes	1330-20-7	2.85E-04	1.17E-06	1.02E-02	5.11E-06
Acetaldehyde	75-07-0	7.67E-04	3.14E-06	2.75E-02	1.38E-05
Acrolein	107-02-8	9.25E-05	3.79E-07	3.32E-03	1.66E-06
1,3-Butadiene	106-99-0	3.91E-05	1.60E-07	1.40E-03	7.01E-07
Acenaphthylene	203-96-8	5.06E-06	2.07E-08	1.81E-04	9.07E-08
Acenaphthene	83-32-9	1.42E-06	5.81E-09	5.09E-05	2.55E-08
Fluorene	86-73-7	2.92E-05	1.20E-07	1.05E-03	5.24E-07
Phenanthrene	85-01-8	2.94E-05	1.20E-07	1.05E-03	5.27E-07
Anthracene	120-12-7	1.87E-06	7.66E-09	6.71E-05	3.35E-08
Fluoranthene	206-44-0	7.61E-06	3.12E-08	2.73E-04	1.36E-07
Pyrene	129-00-0	4.78E-06	1.96E-08	1.71E-04	8.57E-08
Benz(a)anthracene	56-55-3	1.68E-06	6.88E-09	6.03E-05	3.01E-08
Benzo(b)fluoranthene	205-99-2	9.91E-08	4.06E-10	3.55E-06	1.78E-09
Benzo(k)fluoranthene	205-82-3	1.55E-07	6.35E-10	5.56E-06	2.78E-09
Benzo(g,h,I)perylene	191-24-2	4.89E-07	2.00E-09	1.75E-05	8.77E-09
Chrysene	218-01-9	3.53E-07	1.45E-09	1.27E-05	6.33E-09
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	2.39E-09	2.09E-05	1.05E-08
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	1.54E-09	1.34E-05	6.72E-09
Benzo(a)pyrene	50-32-8	1.88E-07	7.70E-10	6.74E-06	3.37E-09
POM[5]			1.41E-08	1.23E-04	6.16E-08

[1] No CAT emission factors available for this generator. Therefore, criteria pollutant emission factors were derived from Section 3.3 Gasoline and Diesel Industrial Engines (EPA AP-42 Table 3.3-1). Emission factors were utilized to estimate emissions for PM, NOx, CO, and hydrocarbons (HC) in lieu of VOCs.

[2] PM emission factor is assumed to equal PM_{10} and $PM_{2.5}$.

[3] SO_2 emission factor multiplied by percent sulfur content of fuel (EPA AP-42 Table 3.4-1) EF = 1.01 x (sulfur content) = 0.0015

[4] Toxic emission factors are derived from EPA AP-42, Table 3.3-2.

[5] POM (polycyclic organic matter) 7-PAH group, sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

GHG Emissions				
Pollutant[6]	Emissions (metric tons)	GWP[7]		CO_2e
CO_2	2.61	1		2.615
CH_4	1.06E-04	25		2.65E-03
N_2O	2.12E-05	298		6.32E-03
Total	2.61			2.62

For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:
CO2 = 1x10-3 x Fuel x HHV x EF

CO2 = Annual CO2 mass emissions in Metric Tons	=	2.61
Fuel = Volume of fuel used (gallons)	=	256.2
HHV = High Heat Value from Table C-1 (mmBTU/short ton)	=	0.138
EFCO2 = Emission factor (kg/mmBTU)	=	73.96

For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:
CH4, N2O = 1x10-3 x Fuel x HHV x EF

CH4 = Annual CH4 mass emissions in Metric Tons	=	1.06E-04
N2O = Annual N2O mass emissions in Metric Tons	=	2.12E-05
Fuel = Volume of fuel used (gallons)	=	256.2
HHV = High Heat Value from Table C-1 (mmBTU/short	=	0.138
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03
EFCH4 = Emission factor (kg/mmBTU)	=	6.00E-04

Notes
[6] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O
[7] GWP = Global Warming Potential - 40 CFR 98 Subpart A, Table A-1, revised 2013 GWP.

St Lukes Downtown CIP

Note: 5 dual-fired boilers are proposed with exactly the same maximum heat input rating. PTE emissions for 1 new boiler is provided below.

Boiler NG (MMBtu/hr)	**27.92**
Boiler ULSD (MMBtu/hr)	**26.84**
Manufacturer	**CBEX Premium**
Fuel Type (Primary)	**Natural Gas**
Fuel Type (Backup)	**ULSD**
Boiler HP (BHP)	**700**
Natural Gas*	
Maximum Operation Limit (hrs/yr)	**8,760**
Maximum Firing Rate (MMcf/yr)	**240**
Heat Value of NG (Btu/scf)	**1,020**
Maximum Firing Rate (MMcf/hr)	**2.74E-02**
Ultra Low Sulfur Diesel**	
Maximum Operating Limit (hrs/yr)	**48**
NG Operating Hours (hrs/yr)	**8,712**
Sulfur Content in Fuel (%)	**0.0015**
Maximum Fuel Usage (gal/hr)	**191.0**
Maximum Fuel Usage (gal/yr)	**9,168**
Heat Value of ULSD (Btu/gal)	**140,159**

Low Nox 30 PPM System

Altitude correction per manufacturer

* Note: Annual worst-case assumed 8712 annual hours of operation using natural gas + 48 hours using diesel fuel.

** Ultra low sulfur diesel (ULSD) is 0.0015% sulfur content

				NG Uncontrolled Potential to Emit[1]			ULSD Uncontrolled Potential to Emit[1]			Worst Case*		
Criteria Pollutant	**Natural Gas Emission Factor (lb/10^6 BTU)**	**ULSD Emission Factor (lb/10^6 BTU)**	**ULSD Emission Factor (lb/10^3 gal)[4]**	**Emission Rate[2,3] (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**	**Emission Rate (lb/hr)[5]**	**Emission Rate (lb/yr)[6]**	**Emission Rate (ton/yr)[6]**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Total PM_{10}	0.0075	0.024		0.21	1,834	0.92	0.63	1,855	0.93	0.63	1,855	0.93
$PM_{2.5}$	0.0075	0.024		0.21	1,834	0.92	0.63	1,855	0.93	0.63	1,855	0.93
Nitrogen Oxides (NOx)	0.035	0.115		0.98	8,560	4.28	3.09	8,662	4.33	3.09	8,662	4.33
Sulfur Oxides	0.0006		0.213	0.02	147	0.07	0.04	148	0.07	0.04	148	0.07
Carbon Monoxide (CO)	0.0187	0.008		0.52	4,574	2.29	0.21	4,559	2.28	0.52	4,574	2.29
VOC	0.0036	0.0014		0.10	880	0.44	0.04	877	0.44	0.10	880	0.44
Lead[7]				1.37E-05	0.120	5.99E-05				1.37E-05	0.120	5.99E-05

				NG Uncontrolled Potential to Emit			ULSD Uncontrolled Potential to Emit			Worst Case		
Toxics	**CAS No.**	**NG Emission Factor[8] (lb/10^6 scf)**	**ULSD Emission Factor[9] (lb/ 10^3 gal)**	**NG Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**	**ULSD Emission Rate (lb/hr)**	**Combined Emission Rate (lb/yr)[6]**	**Combined Emission Rate (ton/yr)[6]**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
2-Methylnaphthalene	91-57-6	2.40E-05		6.57E-07	5.75E-03	2.88E-06	0	0	0	6.57E-07	5.75E-03	2.88E-06
3-Methylchloranthrene	56-49-5	1.80E-06		4.93E-08	4.32E-04	2.16E-07	0	0	0	4.93E-08	4.32E-04	2.16E-07
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05		4.38E-07	3.84E-03	1.92E-06	0	0	0	4.38E-07	3.84E-03	1.92E-06
Acenaphthene	83-32-9	1.80E-06	2.11E-05	4.93E-08	4.32E-04	2.16E-07	4.03E-06	6.23E-04	3.11E-07	4.03E-06	6.23E-04	3.11E-07
Acenaphthylene	203-96-8	1.80E-06	2.53E-07	4.93E-08	4.32E-04	2.16E-07	4.83E-08	4.32E-04	2.16E-07	4.93E-08	4.32E-04	2.16E-07
Anthracene	120-12-7	2.40E-06	1.22E-06	6.57E-08	5.75E-04	2.88E-07	2.33E-07	5.84E-04	2.92E-07	2.33E-07	5.84E-04	2.92E-07
Benzo(a)anthracene	56-55-3	1.80E-06	4.01E-06	4.93E-08	4.32E-04	2.16E-07	7.66E-07	4.66E-04	2.33E-07	7.66E-07	4.66E-04	2.33E-07
Benzene	71-43-2	2.10E-03	2.14E-04	5.75E-05	5.04E-01	2.52E-04	4.09E-05	5.03E-01	2.51E-04	5.75E-05	5.04E-01	2.52E-04
Benzo(a)pyrene	50-32-8	1.20E-06		3.28E-08	2.88E-04	1.44E-07	0	2.86E-04	1.43E-07	3.28E-08	2.88E-04	1.44E-07
Benzo(b)fluoranthene	205-99-2	1.80E-06	1.48E-06	4.93E-08	4.32E-04	2.16E-07	2.83E-07	4.43E-04	2.21E-07	2.83E-07	4.43E-04	2.21E-07
Benzo(g,h,i)perylene	191-24-2	1.20E-06	2.26E-06	3.28E-08	2.88E-04	1.44E-07	4.32E-07	3.07E-04	1.53E-07	4.32E-07	3.07E-04	1.53E-07
Benzo(k)fluoranthene	207-08-9	1.80E-06	1.48E-06	4.93E-08	4.32E-04	2.16E-07	2.83E-07	4.43E-04	2.21E-07	2.83E-07	4.43E-04	2.21E-07
Chrysene	218-01-9	1.80E-06	2.38E-06	4.93E-08	4.32E-04	2.16E-07	4.55E-07	4.51E-04	2.26E-07	4.55E-07	4.51E-04	2.26E-07
Dibenz(a,h)anthracene	53.70-3	1.20E-06	1.67E-06	3.28E-08	2.88E-04	1.44E-07	3.19E-07	3.01E-04	1.51E-07	3.19E-07	3.01E-04	1.51E-07
Dichlorobenzene	25321-22-6	1.20E-03		3.28E-05	2.88E-01	1.44E-04	0	2.86E-01	1.43E-04	3.28E-05	2.88E-01	1.44E-04
Ethylbenzene	100-41-4		6.36E-05	0	0	0	1.21E-05	5.83E-04	2.92E-07	1.21E-05	5.83E-04	2.92E-07

Fluoranthene	206-44-0	3.00E-06	4.84E-06	8.21E-08	7.19E-04	3.60E-07	9.24E-07	7.60E-04	3.80E-07	9.24E-07	7.60E-04	3.80E-07
Fluorene	86-73-7	2.80E-06	4.47E-06	7.66E-08	6.71E-04	3.36E-07	8.54E-07	7.09E-04	3.54E-07	8.54E-07	7.09E-04	3.54E-07
Formaldehyde	50-00-0	7.50E-02	3.30E-02	2.05E-03	1.80E+01	8.99E-03	6.30E-03	1.82E+01	9.09E-03	6.30E-03	1.82E+01	9.09E-03
Hexane	110-54-3	1.80E+00		4.93E-02	4.32E+02	2.16E-01	0	4.29E+02	2.15E-01	4.93E-02	4.32E+02	2.16E-01
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	2.14E-06	4.93E-08	4.32E-04	2.16E-07	4.09E-07	4.49E-04	2.24E-07	4.09E-07	4.49E-04	2.24E-07
Naphthalene	91-20-3	6.10E-04	1.13E-03	1.67E-05	1.46E-01	7.31E-05	2.16E-04	1.56E-01	7.79E-05	2.16E-04	1.56E-01	7.79E-05
Pentane	109-66-0	2.60E+00		7.12E-02	6.23E+02	3.12E-01				7.12E-02	6.23E+02	3.12E-01
Phenanthrene	85-01-8	1.70E-05	1.05E-05	4.65E-07	4.08E-03	2.04E-06	2.01E-06	4.15E-03	2.08E-06	2.01E-06	4.15E-03	2.08E-06
Pyrene	129-00-0	5.00E-06	4.25E-06	1.37E-07	1.20E-03	5.99E-07	8.12E-07	1.23E-03	6.16E-07	8.12E-07	1.23E-03	6.16E-07
Toluene	108-88-3	3.40E-03	6.20E-03	9.31E-05	8.15E-01	4.08E-04	1.18E-03	8.68E-01	4.34E-04	1.18E-03	8.68E-01	4.34E-04
o-Xylene	1330-20-7		1.09E-04	0	0	0	2.08E-05	9.99E-04	5.00E-07	2.08E-05	9.99E-04	5.00E-07
POM [10]				3.12E-07	2.59E-03	1.29E-06	2.51E-06	2.84E-03	1.35E-06	2.51E-06	2.84E-03	1.35E-06

				NG Uncontrolled Potential to Emit			ULSD Uncontrolled Potential to Emit			Worst Case		
Toxic-Metals	**CAS Number**	**NG Emission Factor [11] ($lb/10^6$ scf)**	**ULSD Emission Factor [12] ($lb/10^{12}$ BTU)**	**NG Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**	**ULSD Emission Rate (lb/hr)**	**Combined Emission Rate (lb/yr)[6]**	**Combined Emission Rate (ton/yr)[6]**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Arsenic	7440-38-2	2.00E-04	4.00E+00	5.47E-06	4.80E-02	2.40E-05	1.07E-04	5.28E-02	2.64E-05	1.07E-04	5.28E-02	2.64E-05
Barium	7440-39-3	4.40E-03		1.20E-04	1.06E+00	5.28E-04		1.05E+00	5.25E-04	1.20E-04	1.06E+00	5.28E-04
Beryllium	7440-41-7	1.20E-05	3.00E+00	3.28E-07	2.88E-03	1.44E-06	8.05E-05	6.73E-03	3.36E-06	8.05E-05	6.73E-03	3.36E-06
Cadmium	7440-43-9	1.10E-03	3.00E+00	3.01E-05	2.64E-01	1.32E-04	8.05E-05	2.66E-01	1.33E-04	8.05E-05	2.66E-01	1.33E-04
Chromium	7440-47-3	1.40E-03	3.00E+00	3.83E-05	3.36E-01	1.68E-04	8.05E-05	3.38E-01	1.69E-04	8.05E-05	3.38E-01	1.69E-04
Cobalt	7440-48-4	8.40E-05		2.30E-06	2.01E-02	1.01E-05		2.00E-02	1.00E-05	2.30E-06	2.01E-02	1.01E-05
Copper	7440-50-8	8.50E-04	6.00E+00	2.33E-05	2.04E-01	1.02E-04	1.61E-04	2.10E-01	1.05E-04	1.61E-04	2.10E-01	1.05E-04
Lead			9.00E+00				2.42E-04	1.16E-02	5.80E-06	2.42E-04	1.16E-02	5.80E-06
Manganese	7439-96-5	3.80E-04	6.00E+00	1.04E-05	9.11E-02	4.56E-05	1.61E-04	9.83E-02	4.92E-05	1.61E-04	9.83E-02	4.92E-05
Mercury	7439-97-6	2.60E-04	3.00E+00	7.12E-06	6.23E-02	3.12E-05	8.05E-05	6.59E-02	3.29E-05	8.05E-05	6.59E-02	3.29E-05
Molybdenum	7439-98-7	1.10E-03		3.01E-05	2.64E-01	1.32E-04		2.62E-01	1.31E-04	3.01E-05	2.64E-01	1.32E-04
Nickel	7440-02-0	2.10E-03	3.00E+00	5.75E-05	5.04E-01	2.52E-04	8.05E-05	5.05E-01	2.52E-04	8.05E-05	5.05E-01	2.52E-04
Selenium	7782-49-2	2.40E-05	1.50E+01	6.57E-07	5.75E-03	2.88E-06	4.03E-04	2.50E-02	1.25E-05	4.03E-04	2.50E-02	1.25E-05
Vanadium	7440-62-2	2.30E-03		6.30E-05	5.52E-01	2.76E-04		5.48E-01	2.74E-04	6.30E-05	5.52E-01	2.76E-04
Zinc	7440-66-6	2.90E-02	4.00E+00	7.94E-04	6.95E+00	3.48E-03	1.07E-04	6.92E+00	3.46E-03	7.94E-04	6.95E+00	3.48E-03

Notes:

[1] Uncontrolled emissions are equal to controlled emissions

[2] PM10 and PM2.5 emission factors from manufacturer (Cleaver Brooks) and filterable plus condensable at 100-percent load

[3] NOX, SOC, CO, and VOC emission factors from manufacturer (Cleaver Brooks)

[4] SO_2 emission factor based on distillate oil fired boiler < 100 MMBTu/hr (EPA AP-42, Section 1.3 Fuel Oil Combustion, Table 1.3-1).

[5] All criteria emission from Cleaver Brooks. PM10 and PM2.5 are condensable and filterable combined.

[6] For ULSD, annual emissions based on 48 hours of operation under ULSD and 8712 hours of operation under NG

[7] Natural gas lead emissions based on 0.0005 $lb/10^5$ scf from small uncontrolled boilers (EPA AP-42, Section 1.4 Natural Gas Combustion, Tables 1.4-1 and 1.4-2).

[8] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[9] Toxic Air Pollutants (EPA AP-42, Section 1.3 Fuel Oil Combustion, Table 1.3-9).

[10] POM (Polycyclic organic matter) 7 PAH group is the sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

[11] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

[12] Metals from Fuel Oil Combustion (EPA AP-42, Section 1.3 Fuel Oil Combustion, Table 1.3-10).

St Lukes Downtown CIP

GHG Emissions Compound [13]	NG Emissions (metric tons)	ULSD Emissions (metric tons)	GWP[14]	NG CO_2e	ULSD CO_2e
CO_2	13056.17	13078.20	1	13056.17	13078.20
CH_4	0.25	0.25	25	6.15	6.21
N_2O	0.025	0.025	298	7.33	7.52
Total	13056.44	13078.48		13069.65	13091.93

			ULSD & NG
For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:			
CO2 = 1x10-3 x Fuel x HHV x EF		**(ULSD)**	**(NG)**
CO2 = Annual CO2 mass emissions in Metric Tons	=	13078.20	13056.17
Fuel = Volume of fuel used (standard cubic feet)	=	238,469,647	239,783,529
Fuel = Volume of fuel used (gallons)	=	9,168	
HHV = High Heat Value from Table C-1 (mmBTU/short ton)	=	0.138	1.03E-03
EFCO2 = Emission factor (kg/mmBTU)	=	73.96	53.07
For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:			
CH4, N2O = 1x10-3 x Fuel x HHV x EF			
CH4 = Annual CH4 mass emissions in Metric Tons	=	0.2485	0.2460
N2O = Annual N2O mass emissions in Metric Tons	=	0.02523	0.02460
Fuel = Volume of fuel used (standard cubic feet)	=	238,469,647	239,783,529
Fuel = Volume of fuel used (gallons)	=	9,168	
HHV = High Heat Value from Table C-1 (mmBTU/short ton)	=	0.138	1.03E-03
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03	1.00E-03
EFN2O = Emission factor (kg/mmBTU)	=	6.00E-04	1.00E-04

Notes

[13] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O

[14] GWP = Global Warming Potential - 40 CFR 98 Subpart A, Table A-1, revisions effective Jan 1, 2014.

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Wet Cooling Tower

Note: 5 identical Cooling Towers (CT) are proposed. PTE emissions for 1 CT is provided below.

Water Flow Rate (gal/min)	2,680	Design
Flow of cooling water (lbs/hr)	1,341,072	Calculated
TDS of blowdown (mg/l or ppmw) - Maximum ppm at blowdown	2,500	Design
Flow of dissolved solids (lbs/hr)	3,353	Calculated
Fraction of flow producing PM_{10} drift (See Note 2)	0.558	See Note 2
Fraction of flow producing $PM_{2.5}$ drift (See Note 2)	0.002	See Note 2
Control efficiency of drift eliminators (gal drift/gal flow)	0.0002	See Note 3
PM emissions from tower (lb/hr)	0.671	Calculated
PM_{10} emissions from tower (lb/hr)	0.374	Calculated
$PM_{2.5}$ emissions from tower (lb/hr)	0.001	Calculated
PM emissions from tower (tpy)	2.937	Calculated
PM_{10} emissions from tower (tpy)	1.640	Calculated
$PM_{2.5}$ emissions from tower (tpy)	0.006	Calculated

Other Parameters

Number of cells per tower (outlet fans)	1	(5 cell towers) -1 cell per tower
Height at cell release (ft):	62.2	confirmed from roof diagram from Hummel
Height at cell release (m):	18.95	
Discharge flow per cell (ACFM):	284,460	per cell
Diameter of each cell (ft):	13.9	
Diameter of each cell (m):	4.24	
Area of cell discharge (ft^2):	152	
Average Temperature of cell discharge (degF):	77	
Average Temperature of cell discharge (K):	298.16	
Exit Velocity (ft/s):	31.2	
Exit Velocity (m/s):	9.52	

Notes:

(1) Cooling Tower design data from Balitimore Aircoil Company, Inc.

(2) From "Calculating Realistic PM_{10} Emissions From Cooling Towers" (J. Reisman, G. Frisbie). Presented at 2001 AWMA Annual Meeting.

(3) Based on AP-42, Table 13.4-1 by converting drift emission factor into percentage.

St Lukes Downtown CIP

TDS= **2,500** ppmw

EPRI Droplet Diameter (µm) [1]	Droplet Volume (µm3)	Droplet Mass (µg)	Particle Mass (Solids) (µg)	Solid Particle Volume (µm3)	Solid Particle Diameter (µm)	EPRI % Mass Smaller [1]	TSP % Mass Smaller	PM10 % Mass Smaller	PM2.5 % Mass Smaller
10	524	5.24E-04	1.31E-06	0.59	1.04	0			
20	4189	4.19E-03	1.05E-05	4.76	2.09	0.196			0.208
30	14137	1.41E-02	3.53E-05	16.06	3.13	0.226			
40	33510	3.35E-02	8.38E-05	38.08	4.17	0.514			
50	65450	6.54E-02	1.64E-04	74.37	5.22	1.816			
60	113097	1.13E-01	2.83E-04	128.52	6.26	5.702			
70	179594	1.80E-01	4.49E-04	204.08	7.30	21.348			
90	381704	3.82E-01	9.54E-04	433.75	9.39	49.812		55.844	
110	696910	6.97E-01	1.74E-03	791.94	11.48	70.509			
130	1150347	1.15E+00	2.88E-03	1307.21	13.57	82.023			
150	1767146	1.77E+00	4.42E-03	2008.12	15.65	88.012			
180	3053628	3.05E+00	7.63E-03	3470.03	18.78	91.032			
210	4849048	4.85E+00	1.21E-02	5510.28	21.91	92.468			
240	7238229	7.24E+00	1.81E-02	8225.26	25.04	94.091			
270	10305995	1.03E+01	2.58E-02	11711.36	28.18	94.689	85.406		
300	14137167	1.41E+01	3.53E-02	16064.96	31.31	96.288			
350	22449298	2.24E+01	5.61E-02	25510.57	36.52	97.011			
400	33510322	3.35E+01	8.38E-02	38079.91	41.74	98.34			
450	47712938	4.77E+01	1.19E-01	54219.25	46.96	99.071			
500	65449847	6.54E+01	1.64E-01	74374.83	52.18	99.071			
600	113097336	1.13E+02	2.83E-01	128519.70	62.61	100			

Data from "Calculating Realistic PM10 Emissions from Cooling Towers"

St Lukes Downtown CIP
PM Standard Calculations

Compliance with IDAPA Rule 677 PM Standard for Fuel Burning Equipment

Unit	Cleaver Brooks Dual	
Fuel	No. 2 Diesel	
Rated Heat Input (MM Btu/hr)	26.84	per boiler
PM Emission Rate (lb/hr)	0.63	
Exit/Flue Gas Flowrate Calculation		
F_d (Table 19-2, EPA Method 19) (dscf/MM Btu) [1,2]	9,190	
Exit flowrate @ 0% O_2: (acfm)	6,557	
Exit flowrate @ 0% O_2: (dscfm)[5]	3,034	
Exit flowrate @ 3% O_2 for Natural Gas: (dscfm) [3]	3,542	
Calculated Grain Loading (gr/dscf @ 3% O_2) [4]	0.021	per boiler
PM Loading Standard (IDAPA 58.01.01.677) (gr/dscf @ 3% 02)	0.050	
Compliance w/ PM Loading Standard	Yes	

[1] Appendix A-7 to 40 CFR part 60, Method 19—Determination of sulfur dioxide removal efficiency and particulate, sulfur dioxide and nitrogen oxides emission rates, Table 19-2 (F Factors for Various Fuels)

[2] Fd, Volumes of combustion components per unit of heat content (scf/million Btu). Fd for No. 2 diesel fuel is 9,190 dscf/106 Btu.

[3] (Flow $_{3\%}$) = (Flow $_{0\%}$)x (20.9/(20.9 - 3)), where 20.9 = Oxygen concentration in ambient air

[4] (PM lb/hr x (7,000 gr/lb) /flow (dscfm) x(60 min/ hr) = gr/dscf

St Lukes Downtown CIP
PM Standard Calculations

Compliance with IDAPA Rule 677 PM Standard for Fuel Burning Equipment

Unit	Cleaver Brooks Dual Fuel	
Fuel	Natural Gas	
Rated Heat Input (MM Btu/hr)	27.92	per boiler
PM Emission Rate (lb/hr)	0.21	
Exit/Flue Gas Flowrate Calculation		
F_d (Table 19-2, EPA Method 19) (dscf/MM Btu) [1,2]	8,710	
Exit flowrate @ 0% O_2: (acfm)	6,557	
Exit flowrate @ 0% O_2: (dscfm)[5]	3,034	
Exit flowrate @ 3% O_2 for Natural Gas: (dscfm) [3]	3,542	
Calculated Grain Loading (gr/dscf @ 3% O_2) [4]	0.007	per boiler
PM Loading Standard (IDAPA 58.01.01.677) (gr/dscf @ 3% 02)	0.015	
Compliance w/ PM Loading Standard	Yes	

[1] Appendix A-7 to 40 CFR part 60, Method 19—Determination of sulfur dioxide removal efficiency and particulate, sulfur dioxide and nitrogen oxides emission rates, Table 19-2 (F Factors for Various Fuels)

[2] Fd, Volumes of combustion components per unit of heat content (scf/million Btu). Fd for Natural gas fuel is 8710 dscf/106 Btu.

[3] (Flow $_{3\%}$) = (Flow $_{0\%}$)x (20.9/(20.9 - 3)), where 20.9 = Oxygen concentration in ambient air

[4] (PM lb/hr x (7,000 gr/lb) /flow (dscfm) x(60 min/ hr) = gr/dscf

[5] dscfm = acfm *(Standard Temp {R}) / (Stack Temp {R}) * (Stack Pressure {in Hg}) / (Standard Pressure {in Hg})

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: November 7, 2019

TO: Zach Pierce, Permit Writer, Air Program

FROM: Darrin Mehr, Dispersion Modeling Analyst, Air Program

PROJECT: P-2007.0043 PROJ 62291 – Permit to Construct (PTC) Application for the St. Luke's Regional Medical Center Permit Revision for the Replacement of Six Diesel-fired Emergency Electrical Engines at the Existing Facility in Boise, Idaho

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs)

Contents

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a Non-Carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
ACFM	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ARM	Ambient Ratio Method
bhp	Brake horsepower
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
Btu/hr	British Thermal Units per hour
CFR	Code of Federal Regulations
cfm	Cubic Feet per Minute
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
DEQ	Idaho Department of Environmental Quality
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
fps	Feet per second
GEP	Good Engineering Practice
hr	Hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
Jacobs	Jacobs Engineering Group Inc. (permittee's permitting and modeling consultant)
K	Kelvin
kW	Kilowatts
m	Meters
MACT	Maximum Achievable Control Technology
m/s	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NO	Nitrogen Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NEI	National Emissions Inventory
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standard
NWS	National Weather Service
NW AIRQUEST	Northwest International Air Quality Environmental Science and Technology Consortium
O_3	Ozone
Pb	Lead

PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	Parts Per Billion
PRIME	Plume Rise Model Enhancement
PTC	Permit to Construct
PTE	Potential to Emit
SIL	Significant Impact Level
SLRMC	St. Luke's Regional Medical Center (permittee)
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
tons/year	Ton(s) per year
T/yr	Tons per year
ULSD	Ultra Low Sulfur Diesel
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VCU	Vapor Control Unit
VOCs	Volatile Organic Compounds
°F	Degrees Fahrenheit
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

1.1 General Project Summary

On November 30, 2018, St. Luke's Regional Medical Center (SLRMC) submitted an application for a Permit to Construct (PTC) revision to the facility's PTC, issued to the existing facility located at 190 East Bannock Street, Boise, Idaho.

PTC P-2007.0048 Project 62146, was issued on July 11, 2019, for an expansion project at the downtown Boise facility. The current project addresses the six new diesel-fired emergency generator engines, which will have different emission rates and release parameters than the emissions units permitted under Project 62146. The emergency electrical generator sets in the current PTC are each rated at 2,000 kilowatt (kW) electricity output at full load at 2,937 brake horsepower (bhp) engine power output, and were to be manufactured by Caterpillar. Six diesel-fired emergency electrical engines manufactured by Cummins will be installed instead of the Caterpillar units. Each Cummins generator set is rated to produce 2,000 kW of electricity at full load, with engine power output of 2,922 bhp. Emission factors for the Cummins engines reduce estimated emission rates for some criteria air pollutants compared to those for the Caterpillar engines. Exhaust flow rate and exit temperature release parameters for the Cummins engine stacks will differ from those modeled for the Caterpillar engines. There are no other changes requested for these generator engines, including stack locations and release heights, building dimensions, or other assumptions and emission rates applied in the facility's ambient impact analyses. The Caterpillar emissions units have not been installed and were never operational. DEQ requested that SLRMC submit a revised facility-wide modeling demonstration reflecting the new Cummins engines under the requested allowable emission rates and operating limitations. No other changes to Project 62146 emissions units or model setup were requested.

DEQ requested that SLRMC submit a revised ambient air impact analysis reflecting the changes to the emergency generator engine emission rates and release parameters. The project 62146 ambient impact analyses and modeling report provide the basis for the current project's analyses.

The expansion project is a PTC modification for the proposed planned Phases 1 and 2 changes to the existing hospital campus, including the following:

- Replacement of five of the seven existing diesel-fired emergency generators with six new diesel-fired emergency generators. These will be manufactured by Cummins Inc. Two small emergency generator engines will remain in service.
- Replacement of four existing 29 MMBtu/hr dual fuel-fired boilers capable of combusting natural gas and No. 2 distillate fuel oil (diesel) as a backup fuel type, with five new dual fuel-fired boilers rated at 28 MMBtu/hr on natural gas and 27 MMBtu/hr on diesel.
- Five new single cell cooling towers.
- The facility's buildings will be extensively altered as a result of the facility expansion project. Boilers and emergency generator engines will be installed in new structures and new locations.
- Jacobs and SLRMC submitted a PTC exemption concurrence for the St. Luke's Children Pavilion, which is located adjacent to the SLRMC campus. The exemption concurrence request was later withdrawn and SLRMC self-exempted the project. The Children's Pavilion sources were treated as existing emissions units in this permitting project.

Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the proposed modification or the entire facility (where necessary) were

submitted to DEQ to demonstrate that the proposed modification would not cause or significantly contribute to a violation of any ambient air quality standard as required by IDAPA 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03). Jacobs Engineering Group Inc. (Jacobs), SLRMC's permitting and modeling consultant, submitted analyses and applicable information and data to enable DEQ to evaluate potential impacts to ambient air.

The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the pollutant dispersion modeling analyses used to demonstrate that the estimated emissions associated with operation of the facility as modified will not cause or significantly contribute to a violation of the applicable air quality standards. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. This modeling review also did not evaluate the accuracy of emissions estimates. Evaluation of emissions estimates was the responsibility of the permit writer and is addressed in the main body of the DEQ Statement of Basis.

The submitted air quality impact analyses: 1) utilized appropriate methods and models according to established DEQ/EPA rules, policies, guidance, and procedures; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the facility as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from applicable emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project do not result in increased emissions and modeling was not required to demonstrate compliance with any TAPs increments. Table 1 presents key assumptions and results to be considered in the development of the permit.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
Emergency Electrical Generator Engines Operating Hours (GEN1-GEN6) The proposed Cummins engines were modeled with emission rates accounting for 5 hours per day and 100 hours per year. Testing and maintenance operation of emergency engines are included in impact analyses for all criteria pollutants except for 1-hour NO_2. Each engine was modeled with emission rates reflecting 100% load capacity.	Limited daily and annual operation assumptions were applied to the SIL and NAAQS analyses. Contributions of the engines to the total daily and annual ambient impacts were minimal compared to unrestricted operation. The annual limit of 100 hours per year per engine is appropriate given the 1-hour NO_2 modeling exemption requires this operating limitation, and annual impacts for annual $PM_{2.5}$ and NO_2 were based on this assumption. There are no restrictions regarding time-of-day operation of generator engines for testing and maintenance.
Differences Between Structures and Sources in the PTC Project 90% Complete Phase 2 Plans and the As-Built Plans The project was approved on the information contained in the Project 62146 PTC application materials. No revisions were submitted with this project. If there are significant variations between the 90% complete Phase 2 specifications and the future as-built specifications,	Permit applications and associated air impact analyses must be based on the best information at the time the application is submitted. Changes to the building or emission unit design that increase emission rates or adversely affect dispersion characteristics for the exhaust plumes must be identified and evaluated for potential increases in ambient impacts by SLRMC.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES	
SLRMC must evaluate whether the NAAQS compliance analyses are valid and whether revisions to the analyses reflecting the as-built specifications are appropriate.	

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department, using DEQ/EPA established guidance, policies, and procedures, that operation of the proposed facility or modification will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

1.2 Summary of Submittals and Actions

July 11, 2019: DEQ issued a PTC to SLRMC for the expansion project at the Boise facility.

July 25, 2019: Representatives for DEQ, SLRMC, and Jacobs met at DEQ's State Office for a pre-application meeting to discuss the requested changes for six diesel-fired emergency generator engines and the permitting and modeling requirements for changes to the PTC P-2007.0043 PROJ 62146, issued July 11, 2019.

DEQ recommended that Jacobs and SLRMC use updated ambient background concentrations in the revised modeling analyses, where appropriate.

August 23, 2019: DEQ received a PTC application and modeling files from Jacobs, on behalf of SLRMC.

September 18, 2019: DEQ declared the application complete.

2.0 Background Information

2.1 Permit Requirements for Permits to Construct

PTCs are issued to authorize the construction of a new source or modification of an existing source or permit. Idaho Air Rules Section 203.02 requires that emissions from the new source or modification not cause or significantly contribute to a violation of an air quality standard, and Idaho Air Rules Section 203.03 requires that emissions from a new source or modification comply with applicable toxic air pollutant (TAP) increments of Idaho Air Rules Sections 585 and 586.

2.2 Project Location and Area Classification

The facility is located in Boise, Idaho, in Ada County. This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a

nominal 2.5 micrometers ($PM_{2.5}$). The area operates under limited maintenance plans for CO and PM_{10}.

2.3 Modeling Applicability for Criteria Pollutants

2.3.1 Below Regulatory Concern and DEQ Modeling Guideline Level I and II Thresholds

Idaho Air Rules Section 203.02 state that a PTC cannot be issued unless the application demonstrates to the satisfaction of DEQ that the new source or modification will not cause or significantly contribute to a NAAQS violation. Atmospheric dispersion modeling is used to evaluate the potential impact of a proposed project to ambient air and demonstrate NAAQS compliance. However, if the emissions associated with a project are very small, project-specific modeling analyses may not be necessary.

If project-wide potential to emit (PTE) values for criteria pollutants would qualify for a below regulatory concern (BRC) permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more criteria pollutants exceeding the BRC threshold of 10% of emissions defined by Idaho Air Rules as significant, then an air impact analysis may not be required for those pollutants. DEQ's regulatory interpretation policy[1] of exemption provisions of Idaho Air Rules Section 221 is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant." The interpretation policy also states that the exemption criteria of uncontrolled PTE not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year.

Site-specific air impact analyses may not be required for a project, even when the project cannot use the BRC exemption from the NAAQS demonstration requirements. If the emissions increases associated with a project are below modeling applicability thresholds established in the *Idaho Air Modeling Guideline* ("State of Idaho Guideline for Performing Air Quality Impact Analyses[2]," available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf), then a project-specific analysis is not required. Modeling applicability emissions thresholds were developed by DEQ based on modeling of a hypothetical source and were designed to reasonably ensure that impacts are below the applicable SIL. DEQ has established two threshold levels: Level 1 thresholds are unconditional thresholds, requiring no DEQ approval for use; Level 2 thresholds are conditional upon DEQ approval, which depends on evaluation of the project and the site, including emissions quantities, stack parameters, number of sources emissions are distributed amongst, distance between the sources and the ambient air boundary, and the presence of sensitive receptors near the ambient air boundary. As a hospital complex open to members of the general public, ambient air was assumed to exist in all areas immediately outside of the facility structures where the public might gain access. Level 1 modeling thresholds are appropriate for this project and Level 2 thresholds were not approved by DEQ.

SLRMC was issued PTC P-2007.0048 on June 8, 2007, to replace the facility's Tier 2 Operating Permit and to increase short-term operating limitations on the emergency electrical generator engines. This project will alter the entire facility layout with the construction of numerous large structures, removal of most of the existing emissions units at the main campus, and installation of new emissions or relocation of existing emissions. Post-project facility-wide emissions were compared to the BRC

emission levels, which are equal to 10% of the significant emission rates. If annual facility-wide emissions exceeded the BRC thresholds, post-project emissions were compared to the Level 1 modeling thresholds contained in Table 2 of the DEQ *Modeling Guideline.*

As shown below in Table 2, the project's emissions increases of PM_{10}, $PM_{2.5}$, CO, and NO_x exceeded the Level 1 Modeling Applicability Thresholds, and a site-specific impact analysis was required for these pollutants. Impact analyses were not required for SO_2 and lead emissions because emissions were below facility-wide BRC thresholds. The values listed in Table 2 were obtained from the emission inventory spreadsheet submitted for Project 62291.

Table 2. CRITERIA POLLUTANT SIL AND NAAQS COMPLIANCE DEMONSTRATION APPLICABILITY

Pollutant	Averaging Period	BRC[a] Threshold (T/yr)[b]	Post Project Facility-wide Emissions (T/yr)	Project Exempted Based on Facility-wide BRC?	Level 1 Modeling Thresholds	Applicable Potential Emissions Increase for the Project	Project Exempted Based on Level I Thresholds?
PM_{10}[c]	24-hour	1.5	14.6	No	0.22 lb/hr[e]	7.0 lb/hr	No
$PM_{2.5}$[d]	24-hour	1.0	4.8	No	0.054 lb/hr	4.7 lb/hr	No
	Annual				0.35 T/yr	4.8 T/yr	No
Carbon Monoxide (CO)	1-hour and 8-hour	10	12.2	No	15 lb/hr	18.3 lb/hr	No
Sulfur Dioxide (SO_2)	1-hour and 3-hour	4.0	0.4	Yes	NA	NA[f]	NA
Nitrogen Oxides (NOx)	1-hour	4.0	32.9	No	0.20 lb/hr	239.3 lb/hr[g]	No
	Annual				1.2 T/yr	32.9 T/yr	No
Lead (Pb)	monthly	0.06	3.0E-04	Yes	14 lb/month	NA	NA

a. Below Regulatory Concern equal to 10% of the significant emission rate.
b. Tons per year.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
e. Pounds per hour.
f. Not applicable.
g. Emergency generator engine NOx emissions count toward applicability but are not required to be included in 1-hour NO_2 SIL and NAAQS modeling per DEQ policy.

2.3.2 Ozone Modeling Applicability

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NO_x, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses (see Section 3.3.3) cannot be used to estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O_3 has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

> *. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."*
>
> *The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."*

Allowable emissions increase estimates for the project of VOCs at 2.4 tons/year and NOx at 32.9 tons/year are well below the 100 tons/year threshold, and DEQ determined it was not appropriate or necessary to require a quantitative source-specific O_3 impact analysis.

Requested allowable facility-wide criteria pollutant emissions were below annual significant emission rate thresholds. Secondary formation of ozone on an 8-hour basis was not required to be evaluated for particulate formation from VOCs and NOx emissions.

2.3.3 Secondary Particulate Formation Modeling Applicability

The impact from secondary particulate formation resulting from emissions of NOx, SO_2, and/or VOCs was assumed by DEQ to be negligible on the basis of the magnitude of emissions and the short distance from emissions sources to modeled receptors where maximum PM_{10} and $PM_{2.5}$ impacts would be anticipated.

Facility-wide requested allowable criteria pollutant emissions were below annual significant emission rate thresholds. Secondary formation of $PM_{2.5}$ on 24-hour and annual bases was not required to be evaluated for particulate formation from SO_2 and NO_x.

2.4 Significant and Cumulative NAAQS Impact Analyses

If maximum modeled pollutant impacts to ambient air from emissions sources associated with a new facility or the emissions increase associated with a modification exceed the SILs of Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis may also be required for permit revisions driven by compliance/enforcement actions, any correction of emissions limits or other operational parameters that may affect pollutant impacts to ambient air, or other cases where DEQ believes NAAQS may be threatened by the emissions associated with the facility or proposed project.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts, according to established DEQ/EPA guidance, policies, and procedures, from applicable facility-wide emissions and emissions from any nearby co-contributing sources. A DEQ-approved

background concentration value is then added to the modeled result that is appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 3. Table 3 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis.

Table 3. APPLICABLE REGULATORY LIMITS

Pollutant	Averaging Period	Significant Impact Levels[a] ($\mu g/m^3$)[b]	Regulatory Limit[c] ($\mu g/m^3$)	Modeled Design Value Used[d]
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.2	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m. Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w. Annual 4th highest daily maximum 8-hour concentration averaged over three years.

If the cumulative NAAQS impact analysis predicts a violation of the standard, the permit cannot be issued if the proposed project or facility has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. The facility or project does not have a significant contribution to a violation if impacts are below the SIL at all specific receptors

showing violations during the time periods when modeled violations occurred.

Compliance with Idaho Air Rules Section 203.02 is demonstrated if: a) specific applicable criteria pollutant emissions increases are at a level defined as Below Regulatory Concern (BRC), using the criteria established by DEQ regulatory interpretation[1], or alternatively, if BRC is not applicable, pollutant emissions increases are at a level below the Level 1 de minimis modeling threshold or the DEQ-approved Level 2 modeling threshold in the DEQ *Modeling Guideline*[2]; or b) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling applicable emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60 (NSPS), 61 (NESHAP), or 63 (MACT), then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion. The proposed boilers (BLR1-BLR5) and proposed emergency generator engines (GEN1-GEN6) are subject to federal standards and were exempted from modeling for TAPs increment compliance.
Existing emergency generator engines (modeling IDs GEN5A and GEN6A) and all Children's

Pavilion project boilers and hot water heaters are existing emissions units and were subject to TAPs applicability determinations under previous projects. These emissions units are not subject to TAPs compliance demonstration for current Project 62146.

TAPs emissions from emissions units not regulated by an NSPS, NESHAP, or MACT did not exceed any screening emission rate limit listed in Sections 585 and 586 of the Idaho *Air Rules*. TAPs modeling was not required for this project.

3.0 Analytical Methods and Data

3.1 Modeling Methodology

This section describes the modeling methods used by the applicant's consultant, Jacobs, to demonstrate compliance with applicable air quality standards.

3.1.1 Overview of Analyses

Jacobs performed project-specific air impact analyses that were determined by DEQ to be reasonably representative of the facility, using established DEQ policies, guidance, and procedures. Results of the submitted analyses, in combination with DEQ's analyses, demonstrated compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 4 provides a brief description of parameters used in the modeling analyses.

Table 4. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Boise, Idaho	The area is an attainment or unclassified area for all criteria pollutants, and operates under limited maintenance plans for the 1971 CO NAAQS and the 1987 PM_{10} NAAQS.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 18081.
Meteorological Data	Boise	AERMET version 16216 was used to process five consecutive years—2012 through 2016. See Section 3.3 of this memorandum for additional details. Surface data from the Boise airport and upper air data from Boise, Idaho were used. Meteorological data were processed using the U star adjustment to more accurately simulate low winds.
Terrain	Considered	Receptor elevations and hill height scales were determined using AERMAP version 11103 and a 1 arc second National Elevation Dataset (NED) file based on the NAD83 datum. The facility is located within Zone 11.
Building Downwash	Considered	Plume downwash was considered for the structures associated with the facility and numerous nearby structures.
Receptor Grid	Grid 1	10-meter spacing minimum in a 620-meter (x) and 580 meter (y) in a rectangular grid covering all areas immediately exterior to SLRMC buildings. Additional receptors were added in areas close to emission points with areas of the highest ambient impacts.
	Grid 2	100-meter spacing in a 2,500-meter (x) by 2,500-meter (y) rectangular grid centered on Grid 1.
	Grid 3	500-meter spacing in a 11,000-meter (x) by 10,500-meter (y) rectangular grid centered on Grid 2.

3.1.2 Modeling Protocol

A modeling protocol was submitted to DEQ on September 26, 2018, for Project 62146. On November 2, 2018, DEQ issued a conditional modeling protocol approval letter for the PTC modification project to SLRMC and Jacobs. DEQ and Jacobs agreed that the current project would be based on the September 26, 2018, modeling protocol and DEQ protocol approval. Project-specific modeling was conducted using data and methods described in the modeling protocol and the *Idaho Air Modeling Guideline*[2].

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of air pollutant concentrations in ambient air be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple-source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

Jacobs used AERMOD version 18081 to evaluate pollutant impacts to ambient air from the facility. AERMOD version 19191 was made available on August 21, 2019, but was not used for the submitted analyses (received by DEQ on August 23). Differences between version 18081 and 19191 are not likely to cause measurable differences for the modeling used in this project.

NO_2 1-hour impacts can be assessed using a tiered approach to account for $NO/NO_2/O_3$ chemistry. Tier 1 assumes full conversion of NO to NO_2. Tier 2 Ambient Ratio Method (ARM) assumes a 0.80 default ambient ratio of NO_2/NOx. Tier 2 ARM2[3] was recently developed and replaces the previous ARM. Recent EPA guidance[4] on compliance methods for NO_2 states the following for ARM2:

> "This method is based on an evaluation of the ratios of NO_2/NO_x from the EPA's Air Quality System (AQS) record of ambient air quality data. The ARM2 development report (API, 2013) specifies that ARM2 was developed by binning all the AQS data into bins of 10 ppb increments for NO_x values less than 200 ppb and into bins of 20 ppb for NO_x in the range of 200-600 ppb. From each bin, the 98th percentile NO_2/NO_x ratio was determined and finally, a sixth-order polynomial regression was generated based on the 98th percentile ratios from each bin to obtain the ARM2 equation, which is used to compute a NO_2/NO_x ratio based on the total NO_x levels."

Tier 3 methods account for more refined assessment of the NO to NO_2 conversion, using a supplemental modeling program with AERMOD to better account for $NO/NO_2/O_3$ atmospheric chemistry. Either the Plume Volume Molar Ratio Method (PVMRM) or the Ozone Limiting Method (OLM) can be specified within the AERMOD input file for the Tier 3 approach. EPA guidance (Memorandum: from Tyler Fox, Leader, Air Quality Modeling Group, C439-01, Office of Air Quality Planning and Standards, USEPA; to Regional Air Division Directors. *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard.* March 01, 2011) has not indicated a preference for one option over the other (PVMRM vs OLM) for particular applications.
The Tier 2 ARM2 and Tier 3 PVMRM and OLM methods are now regulatory options following the publication of final changes to EPA's Guideline on Air Quality Models on January 17, 2017. Jacobs used the Tier 2 ARM2 method with a regulatory default maximum ARM value of 0.9 and an alternative minimum ARM value of 0.2 for the NAAQS compliance demonstration. EPA guidance for

establishing an alternative minimum value states that the ARM2_MIN value should be no lower than the maximum NO_2/NO_x in-stack ratio for the sources contributing to the design impact.

The modeling protocol for Project 62146 requested the use of the 0.2 NO_2/NOx ISR for all emissions units in a Tier 3 analysis. Although Jacobs did not specifically request the use of an alternative minimum NO_2 ratio (ARM2_MIN) of 0.2 for a Tier 2 ARM2 compliance method in the modeling protocol, DEQ agrees it is an appropriate alternative minimum value for this project and approves its use for the demonstration in place of the default 0.5 value. The alternative ARM2 minimum value was adequately supported in the modeling report, which included a listing of California's San Joaquin Valley Air Pollution Control District for natural gas combustion in boilers.

The new and existing diesel-fired emergency electricity generator engines are exempted from 1-hour NO_2 modeling requirements.

Tier 1 full conversion of NOx to NO_2 was applied in the SIL analyses.

The Beta algorithms for treatment of point sources with horizontal release orientation or equipped with a rain cap that impedes the vertical momentum of exhaust plumes were adopted as guideline techniques with the revisions to Appendix W (Guideline on Air Quality Models). The Appendix W final rule was signed by the Administrator on December 2016, and published in January 17, 2017, in the Federal Register, with a delayed final effective date of May 22, 2017. This method eliminated momentum-induced plume rise while still accounting for thermal buoyancy-induced plume rise. Jacobs applied the algorithms for horizontal stacks to two existing emergency electrical generator engine stacks (GEN5A and GEN6A).

3.2 Background Concentrations

The modeling conducted for the previous PTC project used the ambient background lookup tool developed by the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST) based on 2009-2011 ambient monitoring data and regional scale photochemical modeling of emissions inventories, which was recently replaced by a new ambient background tool developed by the Idaho Department of Environmental Quality, Washington State Department of Ecology, and Oregon Department of Environmental Quality. The new NW AIRQUEST ambient background lookup tool is based on ambient monitoring data from July 2014 through June 2017, and uses regional scale modeling, conducted by Washington State University, of pollutants in Washington, Oregon, and Idaho, using the Community Multi-Scale Air Quality Model (CMAQ), a gridded photochemical atmospheric dispersion model, using a fine resolution 4-kilometer grid. The current 2014-2017 background concentration tool may be accessed at the following link: https://arcg.is/1jXmHH.

The background concentration is added to the design value for each pollutant and averaging period. The default ambient background values based on the 2014-2017 NW AIRQUEST lookup tool were used for 24-hour PM_{10}, 24-hour $PM_{2.5}$, annual $PM_{2.5}$, and annual NO_2 in the cumulative compliance demonstrations. The DEQ-approved background concentrations are shown in Tables 5. The single value 1-hour NO_2 background value was based on the 2009-2011 NW AIRQUEST value used in Project 62146, and was not updated using the current 2014-2017 ambient backgrounds, which is appropriate given the Cummins emergency generator engines are not required to be included in the 1-hour NO_2 NAAQS analyses. The single value background is the more conservative background and was used to justify the use of the more refined diurnal background set of values used to demonstrate compliance with the 1-hour NO_2 NAAQS.

Table 5. AMBIENT BACKGROUND CONCENTRATIONS		
Pollutant	**Averaging Period**	**Background Concentration ($\mu g/m^3$)[a]**
CO[b]	1-hour	5,280 (4,610 ppb[f])
	8-hour	3,010 (2,630 ppb[f])
PM_{10}[c]	24-hour	79.9
$PM_{2.5}$[d]	24-hour	26.8
	Annual	8.1
NO_2[e]	1-hour	95.9 (single value)
		Hourly dataset of diurnal values (see below)
	Annual	25.2 (13.4 ppb[f])

a. Micrograms per cubic meter, except where noted otherwise.
b. Carbon monoxide.
c. Particulate matter with an aerodynamic diameter of 10 microns.
d. Particulate matter with an aerodynamic diameter of 2.5 microns.
e. Nitrogen dioxide.
f. Parts per billion by volume.

1-Hour NO_2

Jacobs used an alternative ambient background for 1-hour NO_2 cumulative impact analysis consisting of a diurnally-varying dataset that was approved for use in a previous project for a different facility in the Boise area. This project's dataset applied an additional factor that accounted for the higher ambient backgrounds expected to exist at the SLRMC facility location than observed at the monitoring location. The dataset was scaled by the ratio of the NW AIRQUEST default 1-hour NO_2 background values for the SLRMC site to the default value obtained at the monitor site. The ratio provided an increase of 11% to the diurnal background dataset established from a Meridian, Idaho NO_2 ambient monitor. The diurnal dataset reflects hour-to-hour variation in ambient backgrounds that provide a more representative NO_2 ambient background profile than a single value for all hours within a day. The background values listed in Table 6 were approved by DEQ in Project 62146, and were used by Jacobs to establish compliance with the 1-hour NO_2 NAAQS.

Table 6. DEQ-APPROVED ALTERNATIVE DIURNALLY VARIABLE 1-HOUR NO_2[a] AMBIENT BACKGROUNDS		
Hour (hour ending)	**Baseline Hourly Background Concentration ($\mu g/m^3$)[b]**	**Scaled Hourly Background Concentration (111% of Baseline) ($\mu g/m^3$)**
1	56.38	62.58
2	48.88	54.26
3	48.88	54.26
4	47.41	52.63
5	50.42	55.97
6	54.52	60.52
7	58.28	64.69
8	58.28	64.69
9	60.16	66.78
10	52.50	58.28
11	46.30	51.39
12	37.30	41.74
13	33.84	37.56
14	33.84	37.56
15	33.84	37.56
16	35.64	39.56
17	41.36	45.91

Table 6. DEQ-APPROVED ALTERNATIVE DIURNALLY VARIABLE 1-HOUR NO_2[a] AMBIENT BACKGROUNDS		
Hour (hour ending)	**Baseline Hourly Background Concentration ($\mu g/m^3$)[b]**	**Scaled Hourly Background Concentration (111% of Baseline) ($\mu g/m^3$)**
18	58.81	65.28
19	65.50	72.71
20	69.56	77.21
21	80.80	89.69
22	82.23	91.28
23	75.20	83.47
24	64.48	71.57

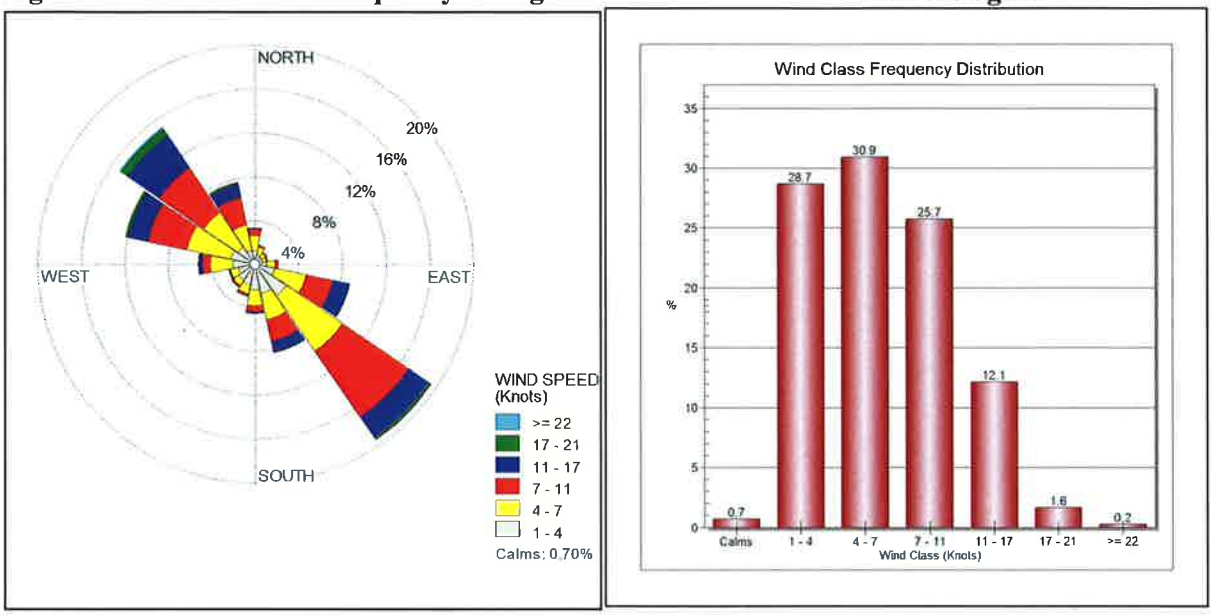
a. Nitrogen dioxide.
b. Micrograms per cubic meter.

3.3 Meteorological Data

DEQ provided Jacobs with an AERMOD-ready meteorological dataset for use in the modeling analyses. The dataset is the same one used in the previous facility expansion project, and was generated from monitored surface and Automated Surface Observing System (ASOS) data collected for five consecutive years for 2012 through 2016, at the Boise airport (FAA airport code KBOI, station ID 7268010-24131). Upper air data were obtained from the National Weather Service (NWS) Station site in Boise, Idaho (station ID 726810-24131). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. DEQ modeling staff evaluated annual moisture conditions for the AERSURFACE runs based on thirty years of Boise airport precipitation data. Conditions were determined to be "wet" for 2014, with 15.47 inches of precipitation in this year. The years 2012, 2013, 2015, and 2016 were determined to be "average" years for precipitation. Average moisture conditions were established for years of moisture exceeding the 30th percentile of the thirty year mean value of 11.2 inches. Continuous snow cover at the Boise airport site was determined to not have existed during these years. AERMINUTE version 15271 was used to process ASOS wind data for use in AERMET. AERMET version 16216 was used to process surface and upper air data and to generate a model-ready meteorological data input file. DEQ determined these data were representative for the project site and approved use of this dataset for the project.

DEQ provided separate datasets processed with and without the "adjust U star" (ADJ_U*) option with AERMET. The ADJ_U* option adjusts the surface friction velocity (u*) to address AERMOD's tendency to over predict from some sources under stable, low wind speed conditions. The method was approved as a regulatory guideline method in EPA's final rulemaking for changes to the 40 CFR 51, Appendix W-Guideline on Air Quality Models, published in the Federal Register on January 17, 2017. The submitted analyses were performed using the ADJ_U* option. Figure 1 presents wind direction, frequency, and magnitude of wind speed in the meteorological dataset's wind rose. Missing data and calms were each less than 1% of the total data.

Figure 1. Wind Rose and Frequency Histogram for 2012-2016 Boise Meteorological Data



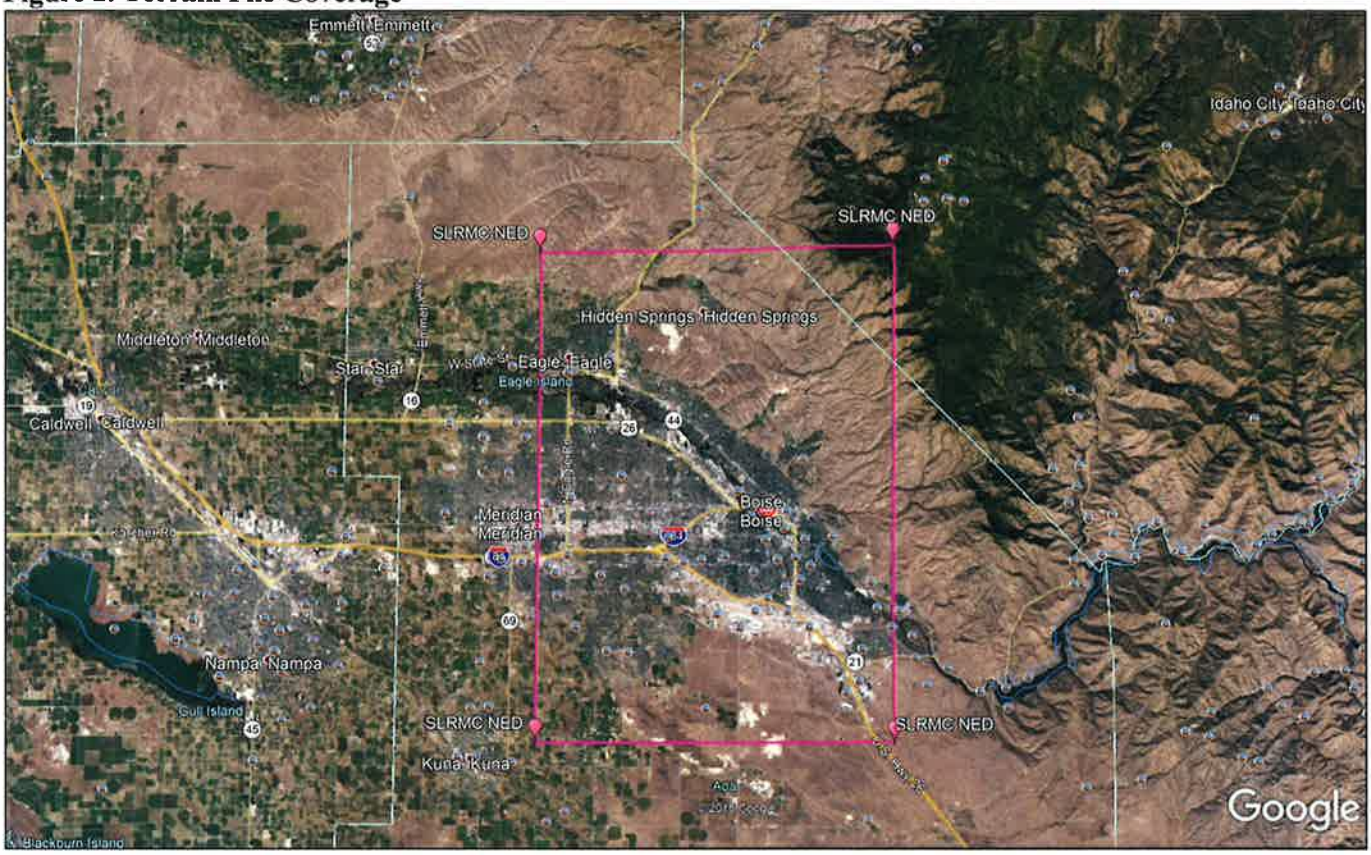
1 knot = 1.7 feet per second

3.4 Terrain Effects

Jacobs used a National Elevation Dataset (NED) file, in "tif" format and in the NAD83 datum, to calculate elevations of receptors. A 1 arc second file provided 30-meter resolution of elevation data for the terrain preprocessor AERMAP version 11103. AERMAP extracts the elevations from the NED file and assigns them to each receptor in the modeling domain. All of the project's impacts of concern were limited to the facility's property and the area immediately surrounding the property, which is flat terrain.

AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. Figure 2 shows the extent of coverage for the NED file.

Figure 2. Terrain File Coverage



3.5 Building Downwash Effects on Modeled Impacts

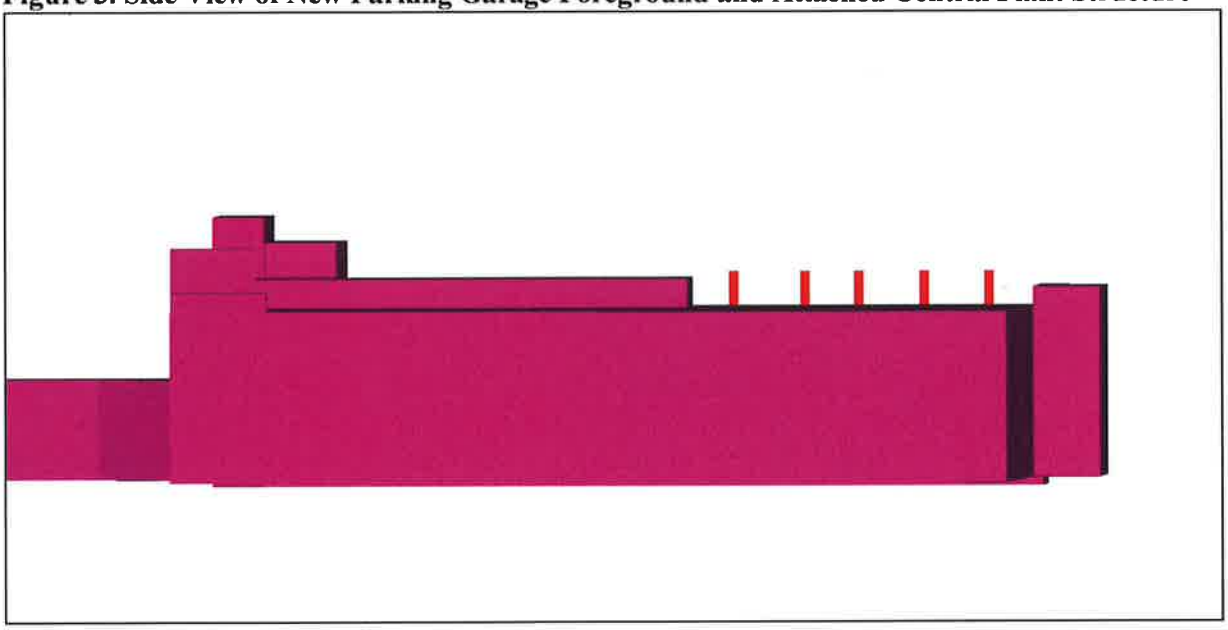
Potential downwash effects on the emissions plume were accounted for in the model by using building dimensions and locations in SLRMC's model setup. The Building Profile Input Program for the PRIME downwash algorithm (BPIP-PRIME) was used to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and release parameters for input to AERMOD. Modeled structure base elevations and stack base elevations matched, thereby assuring that downwash is appropriately handled in the model. Base elevations of stacks were not determined using AERMAP. Instead, the base elevations of the building in which the stack is placed were used. This assured that the proper roof-height-to-stack-height ratio was maintained in the model.

DEQ accepted the BPIP model setup as submitted. Jacobs and SLRMC did not identify any deviations from the previous project's setup. Additional structural layout diagrams were not submitted for Project 62291. There are numerous complex structures that will be constructed for this project. A complete set of architectural diagrams, including structure tier heights, was not submitted with the application; however, a list of tier heights for structures was included in the modeling report. Relief diagrams showing the elevation profiles of the new Central Plant, housing the proposed five cooling towers, and five boilers and the Shipping and Receiving Building, housing the six proposed emergency electricity generator engines, were included in application materials. The Shipping and Receiving and Central Plant structures contain all of the highest-emitting sources at the facility, and the surrounding structures present the most important structure-caused downwash effects.

The maximum ambient impacts were predicted to occur at elevated receptors located on the section of the new parking garage with the highest elevation. The location of the elevated receptors with the highest ambient impacts for the project is within the topmost publicly accessible level of the garage, which is placed on the structure identified as "SEParkG" in the BPIP file, as shown in Figure 5. These elevated receptors were placed at elevations of 851 meters, which is 2.1 meters above the roof (tier height) of the garage. Each of the five boiler stacks terminates at an elevation of 849.3 meters, so these elevated receptors are placed at an elevation of 1.7 meters (5.6 feet) above the boiler stack release heights. The stacks are located in close proximity to the elevated parking garage receptors which allows for only minimal pollutant dispersion from the point of release to the elevated receptors.

The five new boiler stacks (red stacks) are visible on the right side of the building profile in Figure 3. The five cooling towers are to the left of the boiler stacks and are hidden from view by the roof of the parking garage.

Figure 3. Side View of New Parking Garage Foreground and Attached Central Plant Structure



Figures 4 and 5 show the layout of the Central Plant boilers and cooling tower stacks from other viewpoints. Figure 10 presents the receptor elevations for ground level and elevated receptors.

Figure 4. Parking Garage and Central Plant Structure Boilers 1-5 and Cooling Towers 1-5

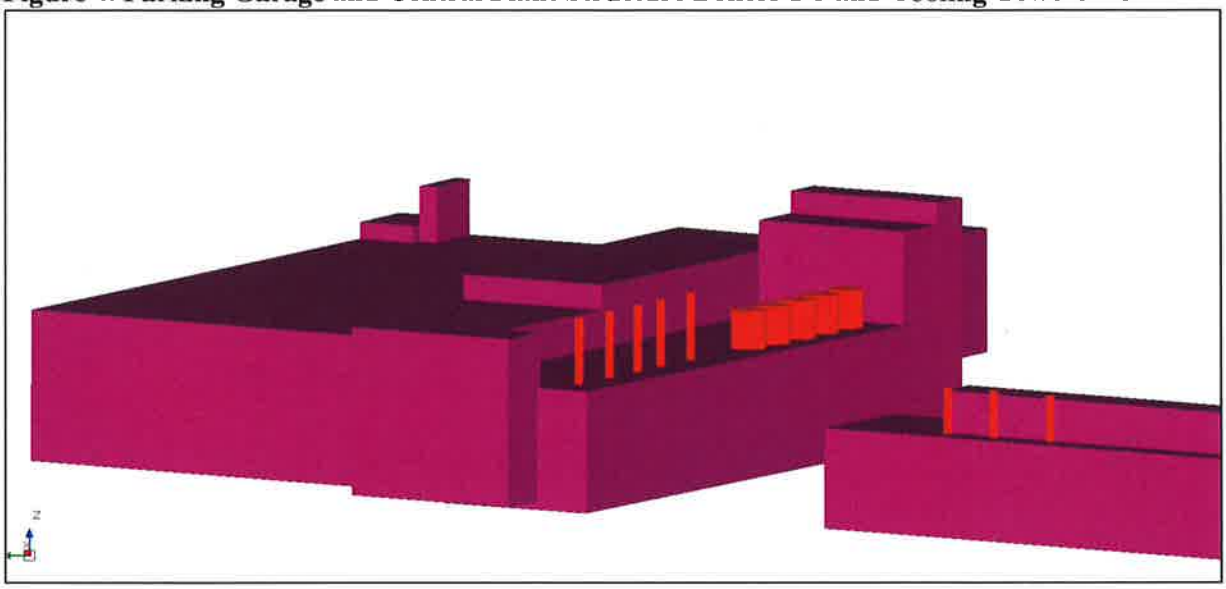
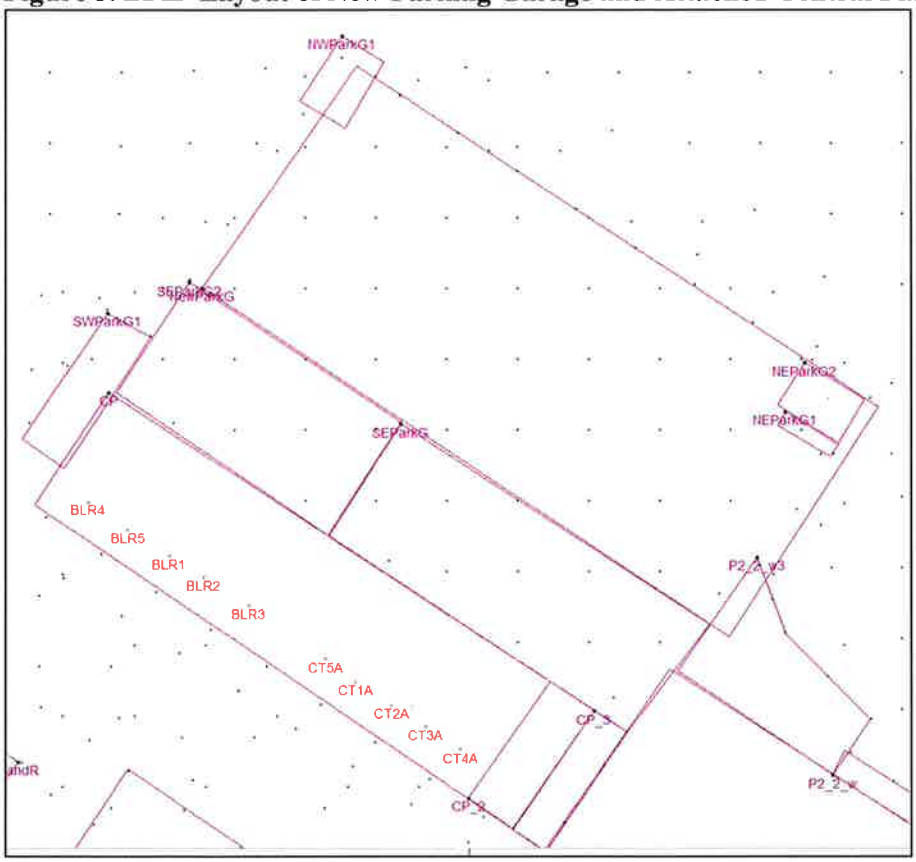


Figure 5. BPIP Layout of New Parking Garage and Attached Central Plant Structures



The new Shipping and Receiving Building with the six new emergency generator engine stacks (GEN1-GEN6) is shown in Figure 6. The locations of the stacks were not changed in the current

project. Although the generator stacks extend only slightly above the highest tier of this structure, building-induced downwash concerns are expected to be minimal given the modeled release parameters for the six new emergency generator engines. The previous project modeled exhaust exit velocities of 44.6 m/s and exit temperature of 635.7 Kelvin (648.6°F) for the engines manufactured by Caterpillar. The six engines manufactured by Cummins were modeled with exit velocities of 45.9 m/s and exit temperatures of 685.9K (775°F)

Figure 6. Six Emergency Generator Stacks on Shipping and Receiving Building

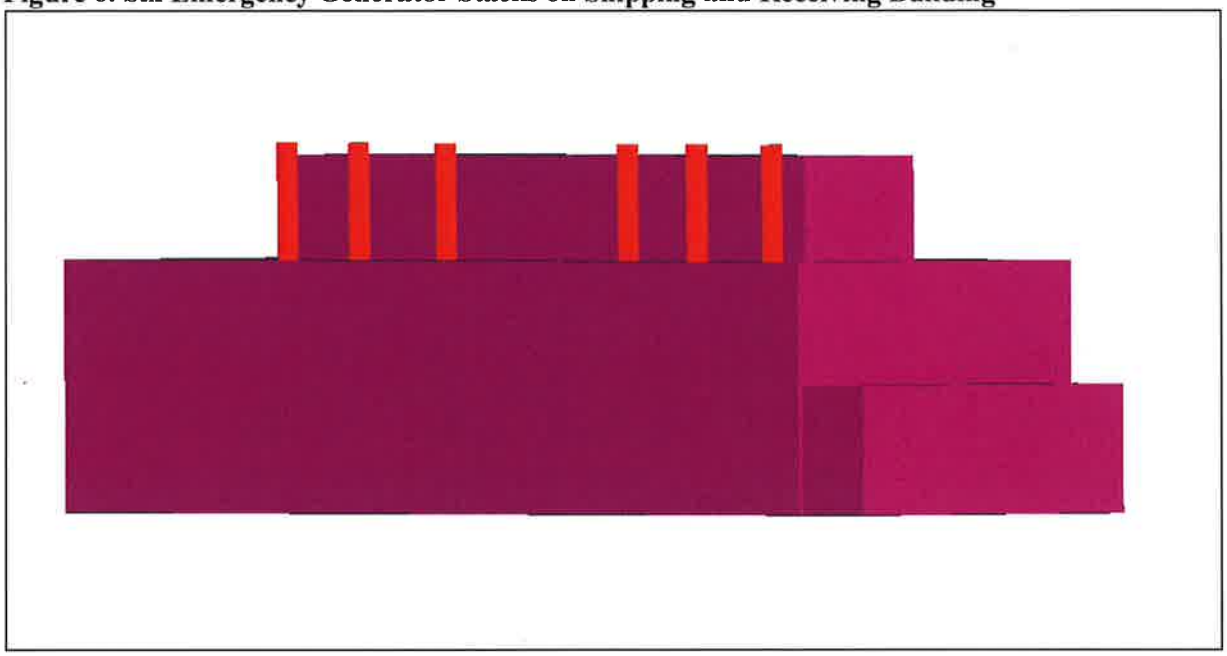


Table 7 lists the modeling demonstration's modeled tier heights for each building.

Table 7. BPIP Structure Base Elevations and Tier Heights

BPIP[a] Model Name	Building Description in BPIP	Number of Building Tiers	Tier Number	Building Base Elevation (m)[b]	Building Base Elevation (ft)[c]	Tier Height Above Base Elevation (m)	Tier Height Above Base Elevation (ft)
Main_bt-1	Main_bt	1	1	828	2,715.8	12.5	41.0
MainW_t1-1	MainW_t1	1	1	828	2,715.8	16.19	53.1
MainW_t2-1	MainW_t2	8	1	828		19.15	62.8
MainW_t2-2	MainW_t2	*	2	*		20.13	66.0
MainW_t2-3	MainW_t2	*	3	*		20.19	66.2
MainW_t2-4	MainW_t2	*	4	*		20.25	66.4
MainW_t2-5	MainW_t2	*	5	*		20.31	66.6
MainW_t2-6	MainW_t2	*	6	*		20.38	66.8
MainW_t2-7	MainW_t2	*	7	*		20.44	67.0
MainW_t2-8	MainW_t2	*	8	*		20.5	67.2
MainW_sd-1	MainW_sd	1	1	828	2,715.8	5	16.4
MainW_t3-1	MainW_t3	1	1	828	2,715.8	16.5	54.1

Table 7. BPIP Structure Base Elevations and Tier Heights							
BPIP[a] Model Name	Building Description in BPIP	Number of Building Tiers	Tier Number	Building Base Elevation (m)[b]	Building Base Elevation (ft)[c]	Tier Height Above Base Elevation (m)	Tier Height Above Base Elevation (ft)
N_Lg_tp-1	N_Lg_tp	1	1	828	2,715.8	15.8	51.8
Mid3_t2-1	Mid3_t2	1	1	828	2,715.8	13.5	44.3
MainW_t4-1	MainW_t4	1	1	828	2,715.8	20	65.6
Mid_2-1	Mid_2	1	1	828	2,715.8	6	19.7
Mid1_t1-1	Mid1_t1	1	1	828	2,715.8	8	26.2
MainE_t1-1	MainE_t1	1	1	828	2,715.8	19	62.3
MainE_t2-1	MainE_t2	1	1	828	2,715.8	19	62.3
MainE_t3-1	MainE_t3	1	1	828	2,715.8	19	62.3
MainE_bt-1	MainE_bt	1	1	828	2,715.8	15.77	51.7
MainE_t4-1	MainE_t4	1	1	828	2,715.8	19	62.3
Main_NE-1	Main_NE	1	1	828	2,715.8	41.65	136.6
N_lg_bt-1	N_lg_bt	1	1	828	2,715.8	12.19	40.0
MainSW_b-1	MainSW_b	1	1	828	2,715.8	15.24	50.0
Tower1-1	Tower1	1	1	828	2,715.8	56.39	185.0
Tower2-1	Tower2	1	1	828	2,715.8	53.64	175.9
Mid_3-1	Mid_3	1	1	828	2,715.8	15.9	52.2
N_3-1	N_3	1	1	828	2,715.8	4.5	14.8
N_2-1	N_2	1	1	828	2,715.8	6	19.7
Mid3_t1-1	Mid3_t1	1	1	828	2,715.8	14.79	48.5
MainSW_t-1	MainSW_t	1	1	828	2,715.8	19.5	64.0
Entran-1	Entran	1	1	828	2,715.8	9.5	31.2
Mid_1-1	Mid_1	1	1	828	2,715.8	5.5	18.0
Mid1_t2-1	Mid1_t2	1	1	828	2,715.8	5	16.4
MainW_b2-1	MainW_b2	1	1	828	2,715.8	4	13.1
N_lg_t2-1	N_lg_t2	1	1	828	2,715.8	15.8	51.8
Tower1_2-1	Tower1_2	1	1	828	2,715.8	50.95	167.1
MainE_sm-1	MainE_sm	1	1	828	2,715.8	8.8	28.9
Entran_2-1	Entran_2	1	1	828	2,715.8	6	19.7
N_lg_bt2-1	N_lg_bt2	1	1	828	2,715.8	4.5	14.8
CHP-1	CHP	2	1	828	2,715.8	47.5	155.8
CHP-2	CHP	*	2	*		52	170.6
Ex_1-1	Ex_1	1	1	828	2,715.8	33.53	110.0
Ex_2-1	Ex_2	1	1	828	2,715.8	9.14	30.0
Ex_4-1	Ex_4	1	1	828	2,715.8	25.91	85.0
Ex_5-1	Ex_5	1	1	828	2,715.8	15.24	50.0
Ex_6-1	Ex_6	1	1	828	2,715.8	13.72	45.0
Ph2_1-1	Ph2_1	1	1	828	2,715.8	36.08	118.3
Ph2_2-1	Ph2_2	1	1	828	2,715.8	14.77	48.4
P2_t1-1	P2_t1	1	1	828	2,715.8	40.94	134.3
P2_t2-1	P2_t2	1	1	828	2,715.8	43.35	142.2
P2_2_t1-1	P2_2_t1	1	1	828	2,715.8	23.3	76.4
P2_2_t2-1	P2_2_t2	1	1	828	2,715.8	19.01	62.4
P2_2_t3-1	P2_2_t3	1	1	828	2,715.8	20.42	67.0
P2_2_t4-1	P2_2_t4	1	1	828	2,715.8	21.68	71.1
P2_-1	P2_	1	1	828	2,715.8	36.11	118.4
P2_3_b-1	P2_3_b	1	1	828	2,715.8	14.85	48.7
P2_4_b-1	P2_4_b	1	1	828	2,715.8	19.01	62.4
P2_5_b-1	P2_5_b	1	1	828	2,715.8	14.77	48.4
P2_6_b-1	P2_6_b	1	1	828	2,715.8	10.5	34.4
P2_6_b2-1	P2_6_b2	1	1	828	2,715.8	14.77	48.4
P2_6_en-1	P2_6_en	1	1	828	2,715.8	3.8	12.5

Table 7. BPIP Structure Base Elevations and Tier Heights							
BPIP[a] Model Name	Building Description in BPIP	Number of Building Tiers	Tier Number	Building Base Elevation (m)[b]	Building Base Elevation (ft)[c]	Tier Height Above Base Elevation (m)	Tier Height Above Base Elevation (ft)
P2_2_tt-1	P2_2_tt	1	1	828	2,715.8	14.77	48.4
P2_2_t7-1	P2_2_t7	1	1	828	2,715.8	19.04	62.5
P2_2_s-1	P2_2_s	1	1	828	2,715.8	43.35	142.2
P2_s-1	P2_s	1	1	828	2,715.8	40.07	131.4
CP_2-1	CP_2	1	1	828	2,715.8	24.54	80.5
CP_3-1	CP_3	1	1	828	2,715.8	27.23	89.3
P2_2_w-1	P2_2_w	1	1	828	2,715.8	14.77	48.4
P2_2_w2-1	P2_2_w2	1	1	828	2,715.8	14.77	48.4
P2_2_w3-1	P2_2_w3	1	1	828	2,715.8	10.5	34.4
NewParkG-1	NewParkG	1	1	828	2,715.8	17.93	58.8
SEParkG-1	SEParkG	1	1	828	2,715.8	20.9	68.6
SEParkG2-1	SEParkG2	1	1	828	2,715.8	17.93	58.8
SWParkG1-1	SWParkG1	1	1	828	2,715.8	19.93	65.4
CP-1	CP	1	1	827	2,712.6	14.43	47.3
SandR-1	SandR	2	1	827	2,712.6	11.91	39.1
SandR-2	SandR	*	2	*		16.86	55.3
NWParkG1-1	NWParkG1	1	1	828	2,715.8	19.93	65.4
NEParkG1-1	NEParkG1	1	1	828	2,715.8	24.54	80.5
NEParkG2-1	NEParkG2	1	1	828	2,715.8	19.93	65.4
Park_lot-1	Park_lot	1	1	829.61	2,721.1	8.61	28.2
Park_top-1	Park_top	1	1	829.61	2,721.1	14.71	48.2
SandR2-1	SandR2	1	1	827	2,712.6	6.1	20.0
Park2-1	Park2	1	1	828	2,715.8	18.29	60.0

a. Building Profile Input Program.
b. Meters.
c. Feet.

3.6 *Facility Layout*

The facility expansion project will require the construction of numerous new structures, including structures where the primary emissions units supporting operations will be housed. Six large emergency electrical generator engines, five cooling towers, and five boilers are the primary new sources for this project. Existing sources include two emergency generators that will remain in the same location and the Children's Pavilion. The Children's Pavilion emission units were self-exempted by SLRMC in July 2016.

The outlines of the building were spot-checked against the provided plot plan. Detailed architectural drawings of the entire facility were not submitted with the permit application. No changes were noted between the current project and Project 62146 structure and emission release point setups. Figure 7 depicts all structures in the modeling analyses. Point source locations are shown in Figure 9.

Figure 7. Model Setup View of all Structures and Sources

3.7 Ambient Air Boundary

The ambient air boundary was established as areas immediately exterior to the facility's buildings. The general public is allowed access to all of these areas. Jacobs and SLRMC also conservatively treated unenclosed parking structure areas as ambient air. Jacobs placed discrete receptors within the parking structures at the topmost level of the parking structures where the public is allowed to access. DEQ concludes that SLRMC and Jacobs appropriately addressed air pollutant impacts to areas considered to qualify as ambient air, as described in DEQ's *Modeling Guideline*[2].

3.8 Receptor Network

Table 4 describes the receptor network used in the submitted modeling analyses. The receptor grids used in the model provided good resolution of the maximum design concentrations for the project and provided extensive coverage. The full receptor grid was used for SIL and NAAQS ambient air impact analyses. DEQ determined that the receptor network was effective in reasonably assuring compliance with applicable air quality standards at all ambient air locations. The complete extent of the receptor grid is depicted below in Figure 8. A view of the receptor spacing close to the facility is shown in Figure 9. Note that receptors are located in parking garage areas where the public is allowed access and are placed at the highest elevations where the public is allowed access. Elevations of discrete receptors within the region where the highest ambient impacts were predicted to occur are shown in Figure 10. Maximum design impacts for the project were predicted to occur at receptors with the highest elevations that are located on the new parking garage adjoining the new Central Plant, where the five new boilers and five new cooling towers will be located. Two receptors on the west side of the new parking garage/Central Plant structure, and not located on a structure, were assigned elevations of 846 meters (2,749 feet) instead of elevations of the 829 meters (2,719 feet) of the surrounding

receptors, essentially making these two receptors flagpole receptors. The use of flagpole receptors generally results in higher predicted impacts at these receptors so there is no detrimental effect on the compliance demonstration. Impacts at these receptors will be conservative estimates.

Figure 8. Full Receptor Grid – 11-Kilometer by 10.5-Kilometer Coverage

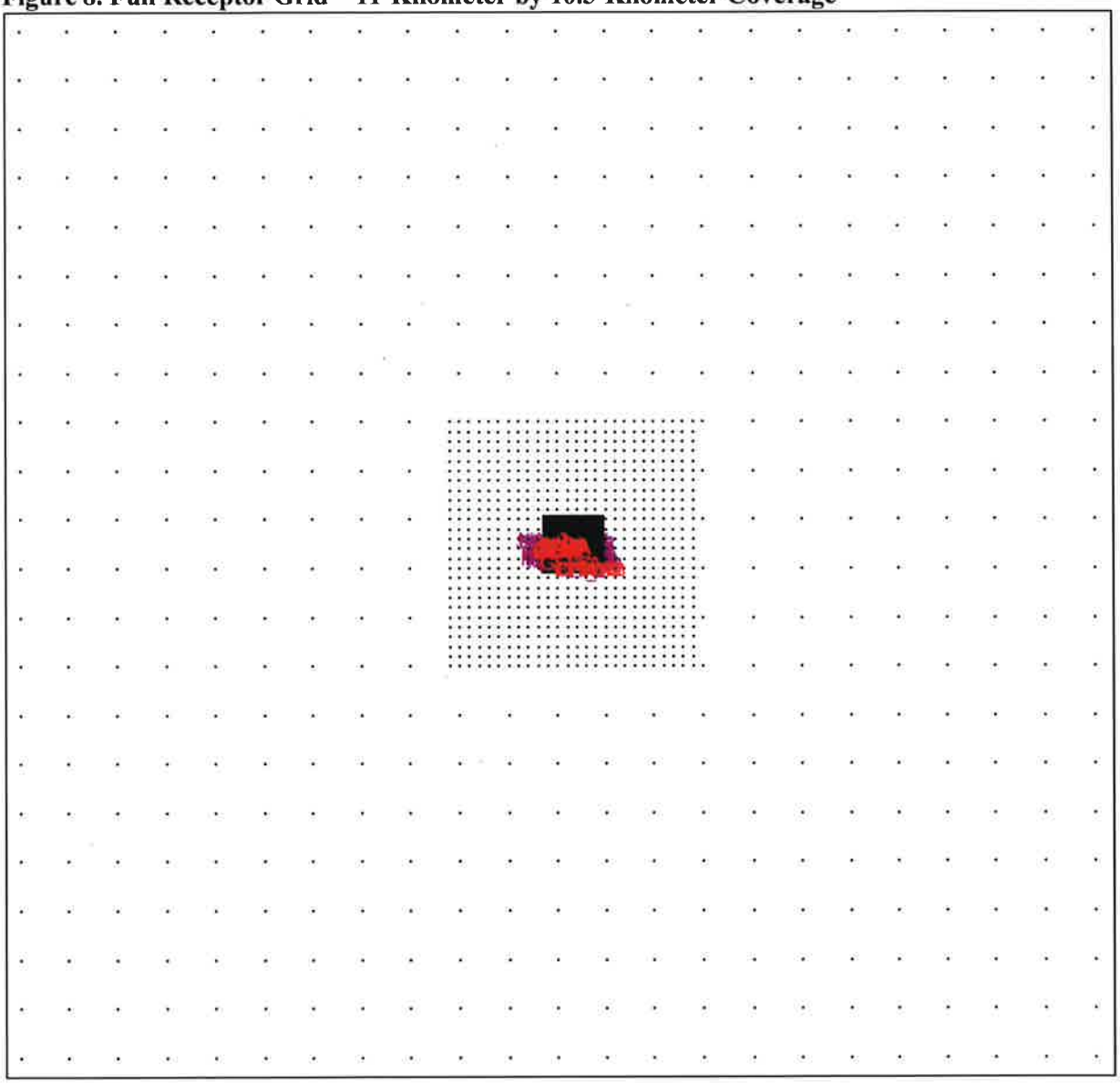
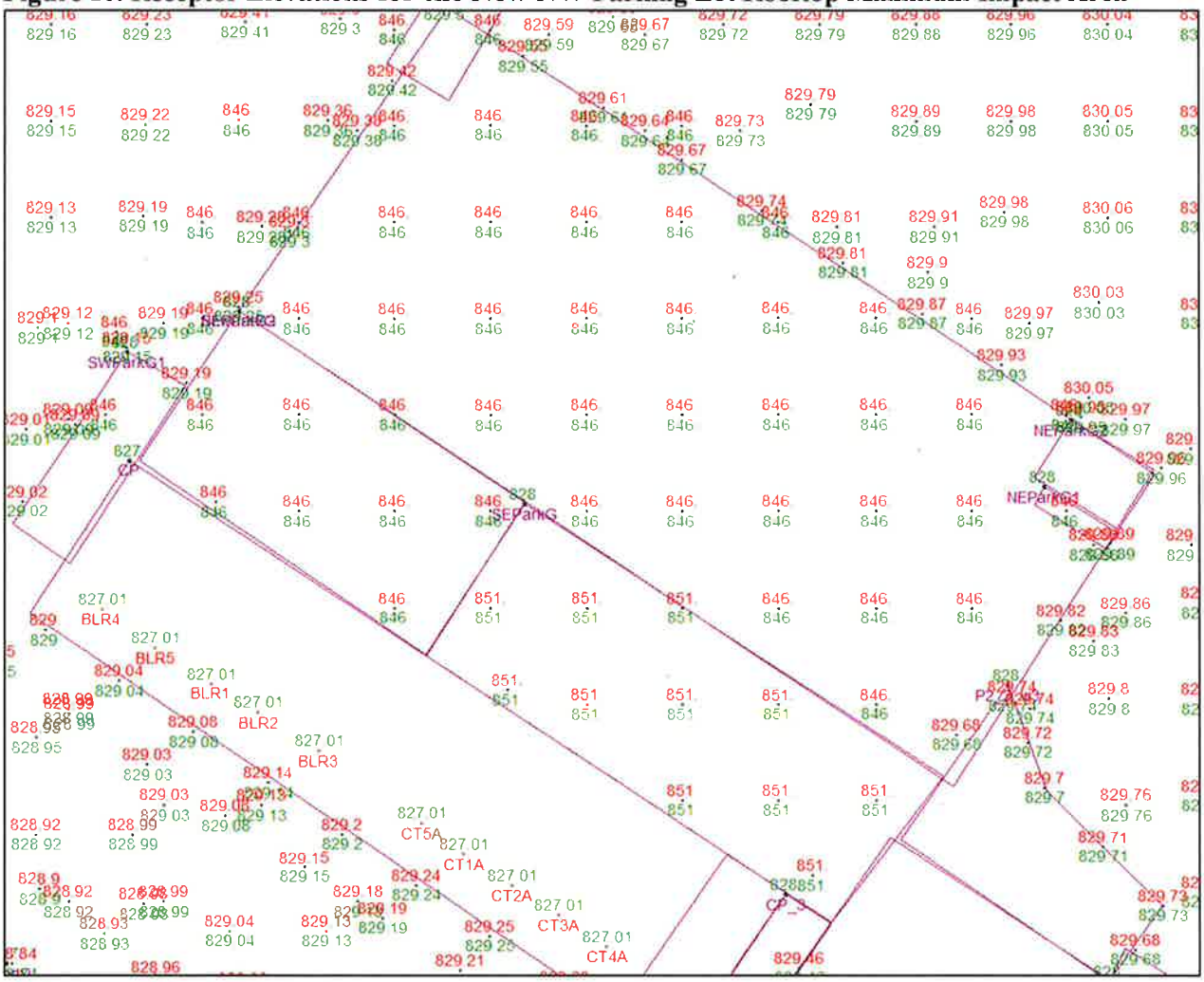


Figure 9. Fine Resolution Grid for Entire SLRMC Campus

Figure 10. Receptor Elevations for the New NW Parking Lot Rooftop Maximum Impact Area



(Elevations are in units of meters)

3.9 Emission Rates

Review and approval of estimated emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emissions estimates is not addressed in this modeling review memorandum. DEQ air impact analyses review included verification that the potential emissions rates provided in the emissions inventory were properly used in the model. The modeled emission rates must represent the maximum allowable rate as averaged over the specified period.

Emission rates used for the dispersion modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emissions inventory. All modeled criteria air pollutant and TAP emission rates must be equal to or greater than the facility's potential emissions calculated in the PTC emissions inventory or proposed permit allowable emission rates.

Two operating scenarios were included in the analyses. The five proposed boilers (model IDs BLR1 –

BLR5) were modeled with emission rates at two loads: 75% and 100%, with release parameters that are appropriate for each load. The modeling must adequately demonstrate compliance using the maximum design concentration from anticipated operations. The 75% load condition reflects load demand conditions that are more likely to occur than the maximum rated capacity load. None of the other SLRMC emissions units are affected by these operating scenario assumptions and were modeled with 100% load emission rates. This approach identified maximum ambient impacts for this project.

3.9.1 Criteria Pollutant Emissions Rates for Significant Impact Level and NAAQS Analyses

Significant impact level (SIL) analyses were submitted as part of the ambient impact analyses. Table 8 lists criteria pollutant continuous (24 hours/day) emission rates used to evaluate SIL and NAAQS compliance for standards with averaging periods of 24 hours or less, except where noted. Table 10 lists criteria pollutant continuous (8,760 hours/year) emission rates used to evaluate SIL and NAAQS compliance for standards with an annual averaging period.

External emission rate files were used to model the five new dual fuel-fired boilers (model IDs BLR1-BLR5) for the 1-hour NO_2, 24-hour $PM_{2.5}$, 1-hour CO, and 8-hour CO SIL and NAAQS modeling analyses. The external emission rate files establish an emission rate for every hour within the five year period modeled. Hourly emission rates reflect normal operation combusting natural gas and testing and maintenance operation combusting diesel during five separate test periods of 3 hours in duration each. This project did not alter the external emission rate input files used in the July 11, 2019, PTC modification project.

Short-term average PM_{10} and $PM_{2.5}$ emissions for all eight emergency generator engines were modeled at the listed hourly rates for 24 hours/day, and reflect 5 operational hours/per day at the 100% load condition, averaged evenly over 24 hours/day. Annual NO_2 emissions for all eight emergency generator engines were modeled at the 100% load condition emission rates for 8,760 hours/year and reflect operation at 100 hours/year averaged evenly over 8,760 hours/year.

Existing emissions units in operation prior to the initiation of Project 62146 are not considered as part of the "modification project" and were modeled only for the cumulative NAAQS compliance analyses. Existing emissions units are footnoted and described in Tables 8 and 9. The modeled rates must be equal to or greater than permit allowable facility-wide emissions for the listed averaging period.

Table 8. SIL[a] AND NAAQS[b] SHORT-TERM CRITERIA POLLUTANT EMISSION RATES

Emissions Point	Description	PM_{10}[d] (lb/hr)[c]	$PM_{2.5}$[e] (lb/hr)	NO_x[f] (lb/hr)	CO[g] (lb/hr)
Operating Scenario 1 – 75% Boiler Load					
BLR1	Boiler 1 – natural gas – New	0.47[j]	0.16	0.73	0.39
	Boiler 1 – diesel – New	0.47	0.47	2.3	0.16
BLR2	Boiler 2 – natural gas – New	0.47[j]	0.16	0.73	0.39
	Boiler 2 – diesel – New	0.47	0.47	2.3	0.16
BLR3	Boiler 3 – natural gas – New	0.47[j]	0.16	0.73	0.39
	Boiler 3 – diesel – New	0.47	0.47	2.3	0.16
BLR4	Boiler 4 – natural gas – New	0.47[j]	0.16	0.73	0.39
	Boiler 4 – diesel – New	0.47	0.47	2.3	0.16
BLR5	Boiler 5 – natural gas – New	0.47[j]	0.16	0.73	0.39
	Boiler 5 – diesel – New	0.47	0.47	2.3	0.16
Operating Scenario 2 – 100% Boiler Load					
BLR1	Boiler 1 – natural gas – New	0.63[j]	0.21	0.98	0.52
	Boiler 1 – diesel – New	0.63	0.63	3.09	0.21

Table 8. SIL[a] AND NAAQS[b] SHORT-TERM CRITERIA POLLUTANT EMISSION RATES					
Emissions Point	**Description**	**PM_{10}[d] (lb/hr)[c]**	**$PM_{2.5}$[e] (lb/hr)**	**NO_x[f] (lb/hr)**	**CO[g] (lb/hr)**
BLR2	Boiler 2 – natural gas – New	0.63[j]	0.21	0.98	0.52
	Boiler 2 – diesel – New	0.63	0.63	3.09	0.21
BLR3	Boiler 3 – natural gas – New	0.63[j]	0.21	0.98	0.52
	Boiler 3 – diesel – New	0.63	0.63	3.09	0.21
BLR4	Boiler 4 – natural gas – New	0.63[j]	0.21	0.98	0.52
	Boiler 4 – diesel – New	0.63	0.63	3.09	0.21
BLR5	Boiler 5 – natural gas – New	0.63[j]	0.21	0.98	0.52
	Boiler 5 – diesel – New	0.63	0.63	3.09	0.21
The following emissions points were modeled at 100% load emission rates:					
GEN1	Cummins Emergency Generator Engine – New	0.040	0.040	0[i]	2.06
GEN2	Cummins Emergency Generator Engine – New	0.040	0.040	0[i]	2.06
GEN3	Cummins Emergency Generator Engine – New	0.040	0.040	0[i]	2.06
GEN4	Cummins Emergency Generator Engine – New	0.040	0.040	0[i]	2.06
GEN5	Cummins Emergency Generator Engine – New	0.040	0.040	0[i]	2.06
GEN6	Cummins Emergency Generator Engine – New	0.040	0.040	0[i]	2.06
GEN5A[h]	Existing Emergency Generator Engine	0.020	0.020	0[i]	2.33
GEN6A[h]	Existing Emergency Generator Engine	0.065	0.065	0[i]	0.96
CT1A	Cooling Tower #1 – New	0.37	0.011	0	0
CT2A	Cooling Tower #2 – New	0.37	0.011	0	0
CT3A	Cooling Tower #3 – New	0.37	0.011	0	0
CT4A	Cooling Tower #4 – New	0.37	0.011	0	0
CT5A	Cooling Tower #5 – New	0.37	0.011	0	0
CPBLR1[h]	Existing Children's Pavilion Boiler	0.015	0.015	0.20	0.16
CPBLR2[h]	Existing Children's Pavilion Boiler	0.015	0.015	0.20	0.16
CPBLR3[h]	Existing Children's Pavilion Boiler	0.015	0.015	0.20	0.16
CPWH1[h]	Existing Children's Pavilion Hot Water Heater	0.004	0.004	0.025	0.04
CPWH2[h]	Existing Children's Pavilion Hot Water Heater	0.004	0.004	0.025	0.04

a. Significant impact level.
b. National ambient air quality standards.
c. Pounds per hour.
d. Particulate matter with a mean aerodynamic diameter of 10 microns or less.
e. Particulate matter with a mean aerodynamic diameter of 2.5 microns or less.
f. Nitrogen oxides.
g. Carbon monoxide.
h. Existing source exempted from SIL analyses but subject to NAAQS analyses
i. Emergency electrical generator engines are exempted from modeling requirements for the 1-hour average NO_2 SIL and NAAQS in accordance with DEQ policy for testing and maintenance operation of 100 hours or less.[5]
j. The worst-case PM_{10} emission rate was modeled for all hours of operation. This emission rate is for diesel combustion, which is 300% of the natural gas emission rate, and this emission rate provides a conservative ambient impact.

Table 9. SIL AND NAAQS ANNUAL CRITERIA POLLUTANT EMISSION RATES			
Emissions Point	**Description**	**$PM_{2.5}$[a] (lb/hr)[b]**	**NO_x[c] (lb/hr)**
Operating Scenario 1 – 75% Boiler Load			
BLR1	Dual Fuel-fired Boiler – New	0.16	0.74
BLR2	Dual Fuel-fired Boiler – New	0.16	0.74
BLR3	Dual Fuel-fired Boiler – New	0.16	0.74
BLR4	Dual Fuel-fired Boiler – New	0.16	0.74
BLR5	Dual Fuel-fired Boiler – New	0.16	0.74
Operating Scenario 2 – 100% Boiler Load			
BLR1	Dual Fuel-fired Boiler – New	0.21	0.99
BLR2	Dual Fuel-fired Boiler – New	0.21	0.99
BLR3	Dual Fuel-fired Boiler – New	0.21	0.99

Table 9. SIL AND NAAQS ANNUAL CRITERIA POLLUTANT EMISSION RATES			
Emissions Point	**Description**	**$PM_{2.5}$[a] (lb/hr)[b]**	**NO_x[c] (lb/hr)**
BLR4	Dual Fuel-fired Boiler – New	0.21	0.99
BLR5	Dual Fuel-fired Boiler – New	0.21	0.99
The following emissions points were modeled at 100% load emission rates:			
GEN1	Cummins Emergency Generator Engine – New	0.0022	0.41
GEN2	Cummins Emergency Generator Engine – New	0.0022	0.41
GEN3	Cummins Emergency Generator Engine – New	0.0022	0.41
GEN4	Cummins Emergency Generator Engine – New	0.0022	0.41
GEN5	Cummins Emergency Generator Engine – New	0.0022	0.41
GEN6	Cummins Emergency Generator Engine – New	0.0022	0.41
GEN5A	Existing Emergency Generator Engine	0.0011	0.033
GEN6A	Existing Emergency Generator Engine	0.0035	0.050
CT1A	Cooling Tower #1 – New	0.0014	0
CT2A	Cooling Tower #2 – New	0.0014	0
CT3A	Cooling Tower #3 – New	0.0014	0
CT4A	Cooling Tower #4 – New	0.0014	0
CT5A	Cooling Tower #5 – New	0.0014	0
CPBLR1	Existing Children's Pavilion Boiler	0.016	0.20
CPBLR2	Existing Children's Pavilion Boiler	0.016	0.20
CPBLR3	Existing Children's Pavilion Boiler	0.016	0.20
CPWH1	Existing Children's Pavilion Hot Water Heater	0.0046	0.024
CPWH2	Existing Children's Pavilion Hot Water Heater	0.0046	0.024

a. Particulate matter with a mean aerodynamic diameter of 2.5 or less.
b. Pounds per hour.
c. Nitrogen oxides.

3.9.2 Toxic Air Pollutant Emissions

The increase in emissions from the proposed project are required to demonstrate compliance with the toxic air pollutant (TAP) increments, with an ambient impact analyses for any applicable TAP having a requested potential emission rate that exceeds the screening emissions level (EL) specified by Idaho Air Rules Section 585 or 586. Review of the TAPs emissions inventory is the responsibility of the permit writer. Jacobs and DEQ's permit writer determined that the proposed new boilers and emergency generator engines were subject to federal emission standards, and all TAPs that also qualify as HAPs were not subject to modeling requirements.

Estimated emission rates did not exceed the non-carcinogenic ELs and carcinogenic ELs specified in Sections 585 and 586 of the *Idaho Air Rules*, respectively. Modeling was not required to be performed to demonstrate compliance with TAP increments.

3.10 Emission Release Parameters

Tables 10 and 11 list emission release parameters for modeled sources for the SLRMC facility for the SIL and NAAQS analyses in metric and English units, respectively.

Table 10. SIL AND NAAQS ANALYSES – EMISSION POINT RELEASE PARAMETERS – METRIC									
Release Point	Source Description	UTM Coordinates[a]		Stack Base Elevation (m)	Stack Height (m)	Stack Gas Temp (K)[c]	Stack Exit Velocity (m/s)[d]	Stack Diam (m)	Stack Release Type
		Easting (m)[b]	Northing (m)						
Operating Scenario 1 – 75% Boiler Load									
BLR1	Dual Fuel-fired Boiler – New	565,056.64	4,829,351.61	827.01	22.33	414.3	11.0	0.61	Default[e]
BLR2	Dual Fuel-fired Boiler – New	565,061.51	4,829,348.59	827.01	22.33	414.3	11.0	0.61	Default[e]
BLR3	Dual Fuel-fired Boiler – New	565,067.78	4,829,344.65	827.01	22.33	414.3	11.0	0.61	Default[e]
BLR4	Dual Fuel-fired Boiler – New	565,045.27	4,829,359.27	827.01	22.33	414.3	11.0	0.61	Default[e]
BLR5	Dual Fuel-fired Boiler – New	565,050.84	4,829,355.32	827.01	22.33	414.3	11.0	0.61	Default[e]
Operating Scenario 2 – 100% Boiler Load									
BLR1	Dual Fuel-fired Boiler – New	565,056.64	4,829,351.61	827.01	22.33	445	14.46	0.61	Default[e]
BLR2	Dual Fuel-fired Boiler – New	565,061.51	4,829,348.59	827.01	22.33	445	14.46	0.61	Default[e]
BLR3	Dual Fuel-fired Boiler – New	565,067.78	4,829,344.65	827.01	22.33	445	14.46	0.61	Default[e]
BLR4	Dual Fuel-fired Boiler – New	565,045.27	4,829,359.27	827.01	22.33	445	14.46	0.61	Default[e]
BLR5	Dual Fuel-fired Boiler – New	565,050.84	4,829,355.32	827.01	22.33	445	14.46	0.61	Default[e]
The following emissions points were modeled at 100% load emission rates:									
GEN1	Cummins Emergency Generator Engine – New	565,016.79	4,829,317.29	827.01	17.42	685.9	45.9	0.41	Default[e]
GEN2	Cummins Emergency Generator Engine – New	565,013.56	4,829,312.13	827.01	17.42	685.9	45.9	0.41	Default[e]
GEN3	Cummins Emergency Generator Engine – New	565,009.05	4,829,305.68	827.01	17.42	685.9	45.9	0.41	Default[e]
GEN4	Cummins Emergency Generator Engine – New	564,997.51	4,829,291.03	827.01	17.42	685.9	45.9	0.41	Default[e]
GEN5	Cummins Emergency Generator Engine – New	564,994.22	4,829,285.99	827.01	17.42	685.9	45.9	0.41	Default[e]
GEN6	Cummins Emergency Generator Engine – New	564,990.37	4,829,280.44	827.01	17.42	685.9	45.9	0.41	Default[e]
GEN5A	Existing Emergency Generator Engine	565,140.18	4,829,178.10	827.78	17.80	670	50.0	0.20	Horizontal
GEN6A	Existing Emergency Generator Engine	565,137.48	4,829,174.79	827.78	17.80	702	50.0	0.20	Horizontal
CT1A	Cooling Tower #1 – New	565,082.89	4,829,333.92	827.01	18.95	298	9.52	4.24	Default[e]
CT2A	Cooling Tower #2 – New	565,087.86	4,829,330.62	827.01	18.95	298	9.52	4.24	Default[e]
CT3A	Cooling Tower #3 – New	565,092.73	4,829,327.59	827.01	18.95	298	9.52	4.24	Default[e]
CT4A	Cooling Tower #4 – New	565,097.61	4,829,324.34	827.01	18.95	298	9.52	4.24	Default[e]

Table 10. SIL AND NAAQS ANALYSES – EMISSION POINT RELEASE PARAMETERS – METRIC									
Release Point	Source Description	UTM Coordinates[a]		Stack Base Elevation (m)	Stack Height (m)	Stack Gas Temp (K)[c]	Stack Exit Velocity (m/s)[d]	Stack Diam (m)	Stack Release Type
		Easting (m)[b]	Northing (m)						
CT5A	Cooling Tower #5 – New	565,078.56	4,829,337.09	827.01	18.95	298	9.52	4.24	Default[e]
CPBLR1	Existing Children's Pavilion Boiler	565,329.31	4,829,098.51	827.78	53.34	325	9.11	0.20	Default[e]
CPBLR2	Existing Children's Pavilion Boiler	565,330.99	4,829,100.46	827.78	53.34	325	9.11	0.20	Default[e]
CPBLR3	Existing Children's Pavilion Boiler	565,332.49	4,829,102.31	827.78	53.34	325	9.11	0.20	Default[e]
CPWH1	Existing Children's Pavilion Hot Water Heater	565,326.40	4,829,103.28	827.78	52.43	325	5.27	0.10	Default[e]
CPWH2	Existing Children's Pavilion Hot Water Heater	565,325.07	4,829,101.34	827.78	52.43	325	5.27	0.10	Default[e]

a. Universal Transverse Mercator, NAD83 horizontal datum, Zone 11.
b. Meters.
c. Kelvin.
d. Meters per second.
e. Default release represents a vertical orientation with an uninterrupted release point.

Table 11. SIL AND NAAQS ANALYSES – EMISSIONS POINT RELEASE PARAMETERS – ENGLISH									
Release Point	Source Description	UTM Coordinate[a] Easting (m)[b]	UTM Coordinate Northing (m)	Stack Base Elevation (ft)[c]	Stack Height (ft)	Stack Gas Temp (°F)[d]	Stack Flow Velocity (fps)[e]	Stack Diam (ft)	Stack Release Type
Operating Scenario 1 – 75% Boiler Load									
BLR1	Dual Fuel-fired Boiler – New	565,056.64	4,829,351.61	2,713.3	73.2	286.1	36.1	2.0	Default[f]
BLR2	Dual Fuel-fired Boiler – New	565,061.51	4,829,348.59	2,713.3	73.2	286.1	36.1	2.0	Default[f]
BLR3	Dual Fuel-fired Boiler – New	565,067.78	4,829,344.65	2,713.3	73.2	286.1	36.1	2.0	Default[f]
BLR4	Dual Fuel-fired Boiler – New	565,045.27	4,829,359.27	2,713.3	73.2	286.1	36.1	2.0	Default[f]
BLR5	Dual Fuel-fired Boiler – New	565,050.84	4,829,355.32	2,713.3	73.2	286.1	36.1	2.0	Default[f]
Operating Scenario 2 – 100% Boiler Load									
BLR1	Dual Fuel-fired Boiler – New	565,056.64	4,829,351.61	2,713.3	73.2	341.3	47.4	2.0	Default[f]
BLR2	Dual Fuel-fired Boiler – New	565,061.51	4,829,348.59	2,713.3	73.2	341.3	47.4	2.0	Default[f]
BLR3	Dual Fuel-fired Boiler – New	565,067.78	4,829,344.65	2,713.3	73.2	341.3	47.4	2.0	Default[f]
BLR4	Dual Fuel-fired Boiler – New	565,045.27	4,829,359.27	2,713.3	73.2	341.3	47.4	2.0	Default[f]
BLR5	Dual Fuel-fired Boiler – New	565,050.84	4,829,355.32	2,713.3	73.2	341.3	47.4	2.0	Default[f]
The following emissions points were modeled at 100% load emission rates:									
GEN1	Cummins Emergency Generator Engine – New	565,016.79	4,829,317.29	2,713.3	57.2	775	150.6	1.33	Default[f]
GEN2	Cummins Emergency Generator Engine – New	565,013.56	4,829,312.13	2,713.3	57.2	775	150.6	1.33	Default[f]

Table 11. SIL AND NAAQS ANALYSES – EMISSIONS POINT RELEASE PARAMETERS – ENGLISH									
Release Point	**Source Description**	**UTM Coordinate[a] Easting (m)[b]**	**UTM Coordinate Northing (m)**	**Stack Base Elevation (ft)[c]**	**Stack Height (ft)**	**Stack Gas Temp (°F)[d]**	**Stack Flow Velocity (fps)[e]**	**Stack Diam (ft)**	**Stack Release Type**
GEN3	Cummins Emergency Generator Engine – New	565,009.05	4,829,305.68	2,713.3	57.2	775	150.6	1.33	DefaulRt[f]
GEN4	Cummins Emergency Generator Engine – New	564,997.51	4,829,291.03	2,713.3	57.2	775	150.6	1.33	Default[f]
GEN5	Cummins Emergency Generator Engine – New	564,994.22	4,829,285.99	2,713.3	57.2	775	150.6	1.33	Default[f]
GEN6	Cummins Emergency Generator Engine – New	564,990.37	4,829,280.44	2,713.3	57.2	775	150.6	1.33	Default[f]
GEN5A	Existing Emergency Generator Engine	565,140.18	4,829,178.10	2,715.8	58.4	746.3	164.0	0.66	Horizontal
GEN6A	Existing Emergency Generator Engine	565,137.48	4,829,174.79	2,715.8	58.4	803.9	164.0	0.66	Horizontal
CT1A	Cooling Tower #1 – New	565,082.89	4,829,333.92	2,713.3	62.2	76.7	31.2	13.9	Default[f]
CT2A	Cooling Tower #2 – New	565,087.86	4,829,330.62	2,713.3	62.2	76.7	31.2	13.9	Default[f]
CT3A	Cooling Tower #3 – New	565,092.73	4,829,327.59	2,713.3	62.2	76.7	31.2	13.9	Default[f]
CT4A	Cooling Tower #4 – New	565,097.61	4,829,324.34	2,713.3	62.2	76.7	31.2	13.9	Default[f]
CT5A	Cooling Tower #5 – New	565,078.56	4,829,337.09	2,713.3	62.2	76.7	31.2	13.9	Default[f]
CPBLR1	Existing Children's Pavilion Boiler	565,329.31	4,829,098.51	2,715.8	175.0	125.3	29.9	0.66	Default[f]
CPBLR2	Existing Children's Pavilion Boiler	565,330.99	4,829,100.46	2,715.8	175.0	125.3	29.9	0.66	Default[f]
CPBLR3	Existing Children's Pavilion Boiler	565,332.49	4,829,102.31	2,715.8	175.0	125.3	29.9	0.66	Default[f]
CPWH1	Existing Children's Pavilion Hot Water Heater	565,326.40	4,829,103.28	2,715.8	172.0	125.3	17.3	0.33	Default[f]
CPWH2	Existing Children's Pavilion Hot Water Heater	565,325.07	4,829,101.34	2,715.8	172.0	125.3	17.3	0.33	Default[f]

a. Universal Transverse Mercator, NAD83 datum, Zone 11.
b. Meters.
c. Feet.
d. Degrees Fahrenheit.
e. Feet per second.
f. Vertical and uninterrupted release.

DEQ's permitting policies and guidance require that each permit application have stand-alone documentation to support the appropriateness of release parameters used in the air impact analyses. The modeling report submitted to DEQ by SLRMC and Jacobs provided justification and documentation of assumptions and data supporting key release parameters used to model these point sources.

Stack base elevations and structure base elevations where the stacks were located were identical, which created a consistent relationship between stack and structures base elevations versus building tier heights for evaluating building downwash effects with BPIP-PRIME.

PROPOSED FACILITY EXPANSION PROJECT SOURCES

- **New Emergency Electrical Generator Engines (GEN1, GEN2, GEN3, GEN4, GEN5, GEN6)**
  This project addresses a revision to July 11, 2019, PTC issued for the expansion project at the

SLRMC Boise facility, with the six permitted emergency engines manufactured by Caterpillar Inc., being replaced with six emergency engines manufactured by Cummins Inc. The six Cummins generator engines are identical diesel-fired units designed to generate 2,000 kW at 100% load for each unit. Developed engine horsepower at 100% load is 2,922 bhp. Emission rates for 100% load were modeled for the analyses with 75% load exit temperature, exhaust flow rate, and exit velocity. Exit temperature and volumetric flow rates justification documentation included a Cummins manufacturer's specification sheet. The modeled release exit temperature of 775°F (685.9 K) and the modeled exhaust flow rate of 12,554 ACFM matched the specification sheet values.

The reference exhaust stack diameter is not listed in the specification sheet. The stack diameter is supported with a specification sheet for a roof thimble silencer enclosing each engine's exhaust stack roof penetration on the Shipping and Receiving Building. The 16-inch diameter unit was highlighted on the specification sheet, which matched the modeled exit diameter.

Stack exit velocity is based on the exit diameter of 1.33 feet and volumetric flow rate of 12,554 ACFM, resulting in a modeled exit velocity was 45.9 meters/second. DEQ views exit velocities greater than 50 meters/second as high values requiring additional substantiation and this exit velocity does not exceed this threshold. Jacobs requested confirmation from Cummins that the flow rate and exhaust temperature would not be affected by passing through the rooftop thimble silencer unit. The engine manufacturer representative—a Senior Product Engineer for Cummins Sales and Service, Rocky Mountain Region—indicated in email correspondence that the thimble silencer will not affect the exhaust flow rate and temperature (See Attachment B to the Revised Modeling Report). The revised modeling report is Attachment F to the project's permit application.

Modeled stack release heights were obtained from architectural drawings for the Shipping and Receiving Building and modeling report release parameter descriptions. The modeled release height was 57.2 feet above grade provides a termination height of 18 feet above the height of the building tier where the stacks are located. An additional structure tier was located immediately next to the emergency generator stacks with a tier height of 55.3 feet above grade, giving the generator engines 2 feet of clearance above the highest tier of the Shipping and Receiving Building.

The modeled release parameters for the proposed emergency generator engines were appropriately supported in the modeling report.

- **New Boilers – Dual fuel-fired Boilers 1 through 5 (BLR1, BLR2, BLR3, BLR4, BLR5)** The five boilers are identical units manufactured by Cleaver Brooks. Supporting documentation was provided by the project vendor/design firm email communications to Jacobs and SLRMC and manufacturer's design specification sheets from Cleaver Brooks for the emissions units for the Boise site elevation. The specification sheets provided exhaust temperature and volumetric flow rate at the modeled 75% and 100% load conditions. Each boiler is equipped with an economizer. Stack exit temperature and flow rate was confirmed to be representative of conditions following the economizer, which resulted in reduced exit temperature, exhaust flow rate, and exit velocity. The flow rate and exit velocity values presented in the Cleaver Brooks specification sheet support a stack diameter of 2.0 feet. This modeled stack diameter for each boiler was confirmed by Jacobs in the February 5, 2019, incompleteness response. The volumetric flow rates and temperatures for natural gas

combustion were applied in the external emission rate file for both natural gas and diesel combustion cases. The diesel combustion exit temperature is approximately 40°F lower for both load cases and the flow rates differ slightly between fuel type at each load. The difference between diesel and natural gas release parameters affected a limited number of hours modeled, and was determined through a DEQ 1-hour NO_2 NAAQS sensitivity run conducted for Project 62146 for the 100% load case to not adversely affect the design concentration presented in the modeling report.

Stack release height for each of the identical boilers was established by Jacobs using architectural drawings for the new Central Plant building. A detailed description of the estimates for building tier heights versus the stack release heights was provided in the February 5, 2019, submittal. The release heights were re-evaluated and revised to a final height of 73.25 feet above grade, which includes an extension of 15 feet higher than depicted in the architectural drawings for each boiler stack. Each boiler stack base elevation appropriately matched the building base elevation.

Central plant boiler release parameters were appropriately supported.

- **New Cooling Towers (CT1A, CT2A, CT3A, CT4A, CT5A)**
  Supporting documentation consisted of a Baltimore Aircoil Company manufacturer's specification sheet for flow rate, and exit velocity and SLRMC architectural relief drawings for release height. Each of the five new cooling towers will be a single cell unit. The exhaust fan diameter represents the stack diameter of each unit which was confirmed by the specification sheet. The modeled exhaust flow rate of 284,460 ACFM matched the specification sheet's listed flow rate. Jacobs modeled an exit temperature of 76.7°F, which DEQ accepted as adequately conservative given that the extremely large amount of exhaust will provide the majority of the exhaust stream plume rise rather than the thermal buoyancy component, and the $PM_{2.5}$ and PM_{10} emission rates from the cooling tower units are small. The modeled stack release height was 62.2 feet above grade. The BPIP file tier height for Central Plant Building where the cooling towers are located upon was modeled at 47.3 feet above grade which provides for a cooling tower structure height of 15 feet. The numerical elevations listing in Attachment B – Architectural Drawings of the March 19, 2019, submittal indicates the tier height may be 34.3 feet above grade rather than 47.3 feet.

  The modeled release parameters for the proposed cooling towers were appropriately supported in the modeling report.

EXISTING SOURCES

Existing Emergency Electrical Generator Engines

- **Emergency Generator Engines GEN5A and GEN6A.** Stack release heights of 58.4 feet above base elevation and 0.66 feet diameter were field-measured according to the modeling report. Exit temperature was established using interpolated values based on Washington State Department of Ecology document[6] on diesel-fired emergency generators. Jacobs applied an assumed 50 meters/second exit velocity which is Idaho DEQ's standard threshold for additional justification requirements for engines.

  The modeled release parameters for the existing emergency generator engines were

appropriately supported in the modeling report.

Children's Pavilion
The modeling protocol documentation included the PTC exemption documentation for the Children's Pavilion.

- **Hot Water Boilers Model IDs CPWH1 and CPWH2.** A manufacturer's documentation sheet listed flow rate of 150 cubic feet per minute (cfm) and a vent diameter of 4 inches. An exit temperature was found in the specifications. Jacobs assumed the exit temperature was 125°F, which appears to be a reasonable value. Jacobs converted the flow rate to actual cubic feet per minute based on atmospheric pressure at site elevation and a temperature of 125°F using the ideal gas law. The stack release heights of 172 feet were listed in the PTC exemption modeling report and appeared reasonable with the termination point extending 1.5 feet above the 170.5 feet tier height for the mechanical penthouse at the top of the building.

- **Boilers CPBLR1 – CPBLR3.** A manufacturer's data sheet listed an 8-inch flue diameter, a 520 cfm flow rate, and reference temperature of 150°F. Jacobs converted the flow rate to actual cubic feet per minute based on atmospheric pressure at site elevation and the 150°F exhaust temperature using the ideal gas law. The stack release heights of 175 feet were listed in the PTC exemption modeling report and appeared reasonable with the termination point extending 4.5 feet above the 170.5 feet mechanical penthouse building tier height at the top of the building.

  The Children's Pavilion stack release parameters were adequately supported.

DEQ concludes that the release parameters used in the modeling analyses were adequately supported and were appropriate for this project.

4.0 Results for Air Impact Analyses

Jacobs accounted for two operating scenarios for the project based on 75% load and 100% load conditions for the five new dual fuel-fired boilers.

4.1 Results for Significant Impact Analyses

Table 13 provides results for the 24-hour and annual $PM_{2.5}$, 24-hour PM_{10}, 1-hour and annual NO_2, and 1-hour and 8-hour CO significant impacts level (SIL) analyses. Emissions increases of SO_2 and lead resulting from the proposed project (or facility-wide emissions levels) were below applicable DEQ BRC permitting or DEQ modeling thresholds that trigger site-specific impact analyses. Cumulative NAAQS impact analyses were required for 1-hour NO_2, annual NO_2, 24-hour $PM_{2.5}$, annual $PM_{2.5}$, and 24-hour PM_{10} because the applicable SILs were exceeded. Predicted design impacts listed in Table 12 were obtained from the project's modeling output files.

Table 12. RESULTS FOR SIGNIFICANT IMPACT ANALYSES					
Pollutant	**Averaging Period**	**Operating Scenario**	**Modeled Design Value Concentration ($\mu g/m^3$)[a]**	**SIL[b] ($\mu g/m^3$)**	**Percent of SIL**
$PM_{2.5}$[c]	24-hour	75% Boiler Load	8.2[g]	1.2	683%
		100% Boiler Load	8.3[g]		692%
	Annual	75% Boiler Load	1.4[h]	0.2	700%
		100% Boiler Load	1.6[h]		800%
PM_{10}[d]	24-hour	75% Boiler Load	33.7[i]	5.0	674%
		100% Boiler Load	34.3[i]		686%
NO_2[e]	1-hour	75% Boiler Load	185.3[j]	7.5	2,471%
		100% Boiler Load	204.6[j]		2,728%
	Annual	75% Boiler Load	8.4[k]	1.0	840%
		100% Boiler Load	9.4[k]		940%
CO[f]	1-hour	75% Boiler Load	224.9[l]	2,000	11%
		100% Boiler Load	224.9[l]		11%
	8-hour	75% Boiler Load	148.7[m]	500	30%
		100% Boiler Load	148.7[m]		30%

a. Micrograms per cubic meter.
b. Significant impact level.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
e. Nitrogen dioxide.
f. Carbon monoxide.
g. Modeled design value is the maximum 5-year mean of highest 24-hour values from each year of a 5-year meteorological dataset.
h. Modeled design value is the maximum 5-year mean of annual average values from each year of a 5-year meteorological dataset.
i. Modeled design value is the maximum of highest 24-hour values from a 5-year meteorological dataset, or the maximum of 24-hour value from five individual years of meteorological data.
j. Modeled design value is the maximum 5-year mean of maximum 1st highest daily 1-hour maximum impacts for each year of a 5-year meteorological dataset. The SIL compliance design value was calculated assuming complete conversion of total NO_x to NO_2.
k. Modeled design value is the maximum annual impact of the individual years of a 5-year meteorological dataset. Complete conversion of NO_x to NO_2 was assumed.
l. Modeled design value is the maximum 1-hour average impact of any of 5 individual years of meteorological data.
m. Modeled design value is the maximum 1-hour average impact of any of 5 individual years of meteorological data.

4.2 Results for Cumulative NAAQS Impact Analyses

The results for the cumulative impact analyses are listed in Table 13. Ambient impacts for the facility were below the applicable NAAQS for both operating scenarios.

Table 13. RESULTS FOR CUMULATIVE IMPACT ANALYSES							
Pollutant	**Averaging Period**	**Operating Scenario**	**Modeled Design Value Concentration ($\mu g/m^3$)[a]**	**Background Concentration ($\mu g/m^3$)**	**Maximum Total Ambient Impact ($\mu g/m^3$)**	**NAAQS[b] ($\mu g/m^3$)**	**Percent of NAAQS**
NO_2[c]	1-hour	75% Boiler Load	172.7[f]	Diurnally-variable background included in model	172.7	188	92%
		100% Boiler Load	168.9[f]		168.9		90%
	Annual	75% Boiler Load	8.8[g]	25.2	34.0	100	34%
		100% Boiler Load	8.8[g]		34.0		34%
$PM_{2.5}$[d]	24-hour	75% Boiler Load	4.6[h]	26.8	31.4	35	90%
		100% Boiler Load	4.8[h]		31.6		90%

Table 13. RESULTS FOR CUMULATIVE IMPACT ANALYSES							
Pollutant	**Averaging Period**	**Operating Scenario**	**Modeled Design Value Concentration ($\mu g/m^3$)[a]**	**Background Concentration ($\mu g/m^3$)**	**Maximum Total Ambient Impact ($\mu g/m^3$)**	**NAAQS[b] ($\mu g/m^3$)**	**Percent of NAAQS**
	Annual	75% Boiler Load	1.4[i]	8.1	9.5	12	79%
		100% Boiler Load	1.6[i]		9.7		81%
PM_{10}[e]	24-hour	75% Boiler Load	24.3[j]	79.9	104.2	150	69%
		100% Boiler Load	25.4[j]		105.3		70%

a. Micrograms per cubic meter.
b. National ambient air quality standards.
c. Nitrogen dioxide.
d. Particulate matter with an aerodynamic diameter of 2.5 microns or less.
e. Particulate matter with an aerodynamic diameter of 10 microns or less.
f. Modeled design value is the maximum 5-year mean of 8th highest daily 1-hour maximum impacts for each year of a 5-year meteorological dataset.
g. Maximum annual average impact from 5 individual years of meteorological data.
h. Modeled design value is the maximum 5-year mean of 8th highest 24-hour average impacts for each year of a 5-year meteorological dataset.
i. Maximum annual impact averaged over 5 years of meteorological data.
j. Design value is the 6th highest impact from a 5-year meteorological dataset.

4.3 Weight-of-Evidence Compliance Methods

4.3.1 1-Hour NO_2 NAAQS Compliance Demonstration

The ambient impact analyses used by Jacobs to support compliance with the 1-hour NO_2 NAAQS for the July 11, 2019, PTC was not affected by this project's scope of switching engines manufactured by Caterpillar for engines manufactured by Cummins. The emergency engines are exempt from 1-hour NO_2 SIL and NAAQS modeling requirements per DEQ policy[5]. See the revised modeling report's Attachment G—Weight of Evidence-Comparative Analyses—to review Jacobs' discussion supporting the 1-hour NO_2 NAAQS demonstration. The discussion examined methods and assumptions starting at the most conservative approach and whether that method successfully demonstrated NAAQS compliance, and if compliance was not adequately demonstrated, evaluated additional methods that removed some level of conservatism in the predicted ambient impacts. Both 75% and 100% boiler loads were analyzed. DEQ requested Jacobs include both loads to verify that the maximum design concentration was identified for the project. The intention of this weight-of-evidence discussion was to establish the reasoning behind the analyses that were actually used by Jacobs and SLRMC to demonstrate compliance with the 1-hour NO_2 NAAQS.

All eight diesel-fired emergency generator engines are exempt from 1-hour NO_2 SIL and NAAQS modeling requirements so the modeled emissions units included the five proposed dual fuel-fired boilers at the new Central Plant and the three small boilers and hot water heaters located at the Children's Pavilion building. The Children's Pavilion sources do not contribute any appreciable impacts at the receptors of concern due to small NOx emission rates, very high release heights of 172 to 175 feet above grade, and the proximity of the Children's Pavilion sources with the receptors of concern.

The weight-of-evidence analyses compared and contrasted separate modeling scenarios that included variances of the following:

- **Ambient background concentration**—Two cases were analyzed—a single annualized default value versus the diurnally-variable 24-hour backgrounds.
- **Load level**—Three cases were analyzed—75% load emission rates with 75% load exit temperature and velocity; 100% load emission rates and 75% load exit temperature and velocity (conservative); and 100% load emission rates and 100% load exit temperature and velocity.
- **Receptor grid**—Two cases were analyzed—a full receptor grid and a receptor grid removing all elevated parking garage receptors.

The weight-of-evidence analyses provided the following conclusions:

- The conservative single value 1-hour average NO_2 ambient background provided results that exceeded the NAAQS for both 75% and 100% loads with a full receptor grid. The use of the alternative diurnal background dataset, which is less conservative, was warranted to demonstrate NAAQS compliance.

- If impacts at the elevated parking garage receptors were disregarded, the project demonstrated compliance for all load level cases regardless of whether 4 boilers or all 5 boilers were assumed to operate. The elevated receptors, which are located at nearly the same elevation as the release height of the five proposed Central Plant boiler stacks proved to be an issue for compliance. This situation occurred using the conservative approach where the boilers were modeled with 100% load emission rates and reduced 75% load exit velocity and exit temperature and the conservative single background value.

The project's goals were to have a PTC that allowed concurrent operation of all five proposed new boilers at all times at 100% capacity. A restriction on operations was not requested. DEQ must treat any area that qualifies as ambient air as such and requested that SLRMC provide a final demonstration which supports compliance under requested allowable operations at all locations regarded as ambient air. The weight-of-evidence discussion for the 1-hour NO_2 NAAQS demonstration clearly documents that Jacobs considered applying conservative approaches before employing less conservative DEQ-approved methods in their modeling demonstration.

DEQ approved the methods used by Jacobs in the 1-hour NO_2 NAAQS analyses. The DEQ-approved single value annualized 1-hour NO_2 ambient background value of 80.8 $\mu g/m^3$, combined with the project's design impact, resulted in a total concentration exceeding the NAAQS for the 100% load condition, which led to the use of the diurnal backgrounds. The diurnally-variable 1-hour NO_2 backgrounds were based on Meridian site monitoring data and were appropriately scaled to 111% of the Meridian site's diurnal dataset values. All five boilers were modeled as operating concurrently under both the 75% and 100% loads during periods of normal operations on natural gas and test firing on diesel fuel under the proposed testing and maintenance schedule, and demonstrated compliance with the 1-hour NO_2 NAAQS. The elevated parking lot receptors were treated as ambient air at all times and the project's design concentrations were located at one of these receptors.

5.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the SLRMC facility will not cause or significantly contribute to a violation of any NAAQS and will not exceed allowable TAP increments.

References

1. *Policy on NAAQS Compliance Demonstration Requirements of IDAPA 58.01.01.203.02 and 403.02.* Idaho Department of Environmental Quality Policy Memorandum. Tiffany Floyd, Administrator, Air Quality Division, June 10, 2014.

2. *State of Idaho Guideline for Performing Air Quality Impact Analyses.* Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

3. *Ambient Ratio Method Version 2(ARM2) for use with AERMOD for1-hr NO_2 Modeling Development and Evaluation Report,* Prepared for American Petroleum Institute, 1220 L Street NW, Washington, DC 20005, by M. Podrez, RTP Environmental Associates, Inc., 2031 Broadway, Suite 2, Boulder, Colorado 80302, September 20, 2013.

4. *Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard,* R. Chris Owen and Roger Brode, Environmental Protection Agency, Office of Air Quality Planning and Standards, September 30, 2014.

5. *DEQ Guidance for Minor New Source Review Modeling of 1-Hour NO_2 from Intermittent Testing of Emergency Engines*, State of Idaho Department of Environmental Quality September 2013, Doc. I D AQ-011 (September 2013).

6. *Suitability of Diesel-Powered Emergency Generators for Air Quality General Order of Approval: Evaluation of Control Technology, Ambient Impacts, and Potential Approval Criteria*, Washington State Department of Ecology, Air Quality Program, General Order Engineering Team, June 26, 2006.

APPENDIX C – 40 CFR 60 SUBPART DC

Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

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§60.40c Applicability and delegation of authority.

(a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

Saint Luke's will install 5 dual fuel fired boilers in 2019. The boilers rated capacaities are between 26.84 MMBtu/hr and 27.92 MMBtu/hr depending on whether diesel or natural gas will be combusted, respectively.

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under §60.14.

(e) Affected facilities (*i.e.* heat recovery steam generators and fuel heaters) that are associated with stationary combustion turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators, fuel heaters, and other affected facilities that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator, fuel heater, or other affected facility is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(f) Any affected facility that meets the applicability requirements of and is subject to subpart AAAA or subpart CCCC of this part is not subject to this subpart.

(g) Any facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not subject to this subpart.

(h) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_X standards under this subpart and the SO_2 standards under subpart J or subpart Ja of this part, as applicable.

(i) Temporary boilers are not subject to this subpart.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (*i.e.*, the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see §60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see §60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see §60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see §60.17).

Dry flue gas desulfurization technology means a SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels,

skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§60.42c Standard for sulfur dioxide (SO_2).

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that combusts only coal shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere

from the affected facility any gases that contain SO_2 in excess of the emission limit is determined pursuant to paragraph (e)(2) of this section.

Coal is not one of the fuels, this paragraph does not apply.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts only coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is fired with coal refuse, the affected facility subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO_2 emissions limit or the 90 percent SO_2 reduction requirement specified in paragraph (a) of this section and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO_2 emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 50 percent (0.50) of the potential SO_2 emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 260 ng/J (0.60 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO_2 reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).

(1) Affected facilities that have a heat input capacity of 22 MW (75 MMBtu/h) or less;

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area; or

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

Coal is not one of the fuels; the above paragraphs do not apply.

(d) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the following:

(1) The percent of potential SO_2 emission rate or numerical SO_2 emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel;

(ii) Has a heat input capacity greater than 22 MW (75 MMBtu/h); and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s = \frac{(K_a H_a + K_b H_b + K_c H_c)}{(H_a + H_b + H_c)}$$

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Where:

E_s = SO_2 emission limit, expressed in ng/J or lb/MMBtu heat input;

K_a = 520 ng/J (1.2 lb/MMBtu);

K_b = 260 ng/J (0.60 lb/MMBtu);

K_c = 215 ng/J (0.50 lb/MMBtu);

H_a = Heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [MMBtu];

H_b = Heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (MMBtu); and

H_c = Heat input from the combustion of oil, in J (MMBtu).

Performance testing is not required,

(f) Reduction in the potential SO_2 emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO_2 emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO_2 control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

Percent reduction requirements do not apply to St. Luke's.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

The exeption at paragraph (h) applies.

(h) For affected facilities listed under paragraphs (h)(1), (2), (3), or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under §60.48c(f), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).

(3) Coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(i) The SO_2 emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§60.43c Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

Coal is not one of the fuels; the above paragraphs do not apply.

(b) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

This paragraph does not apply because wood is not combusted.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility 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. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph (c).

This paragraph does not apply because the heat input ratings of the boilers are less than 30 MMBtu/hr.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e)(1) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2), (e)(3), and (e)(4) of this section.

(2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

The above paragraphs(e)(1)- (e)(3) do not apply because the heat input ratings of the boilers are less than 30 MMBtu/hr.

(4) An owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under §60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO_2 emissions is not subject to the PM limit in this section.

St. Luke's will be limited to ultra low sulfur fuel (15 ppmw).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and §60.8(b), performance tests required under §60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in §60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

The underlined exception above applies here and paragraphs (b), (c), (d), (e), and (f) of this section do not apply.

(b) The initial performance test required under §60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO_2 emission limits under §60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) of this section and §60.8, compliance with the percent reduction requirements and SO_2 emission limits under §60.42c is based on the average percent reduction and the average SO_2 emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO_2 emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 of appendix A of this part are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average SO_2 emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS. Method 19 of appendix A of this part shall be used to calculate E_{ao} when using daily fuel sampling or Method 6B of appendix A of this part.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E_{ho} ($E_{ho}o$) is used in Equation 19-19 of Method 19 of appendix A of this part to compute the adjusted E_{ao} ($E_{ao}o$). The $E_{ho}o$ is computed using the following formula:

$$E_{ho}o = \frac{E_{ho} - E_w(1 - X_k)}{X_k}$$

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Where:

$E_{ho}o$ = Adjusted E_{ho}, ng/J (lb/MMBtu);

E_{ho} = Hourly SO_2 emission rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0.

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(2) The owner or operator of an affected facility that qualifies under the provisions of §60.42c(c) or (d) (where percent reduction is not required) does not have to measure the parameters E_w or X_k if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19 of appendix A of this part.

(f) Affected facilities subject to the percent reduction requirements under §60.42c(a) or (b) shall determine compliance with the SO_2 emission limits under §60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO_2 emission rate is computed using the following formula:

$$\%P_s = 100\left(1 - \frac{\%R_g}{100}\right)\left(1 - \frac{\%R_f}{100}\right)$$

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Where:

$\%P_s$ = Potential SO_2 emission rate, in percent;

$\%R_g$ = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$ = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_go$) is computed from $E_{ao}o$ from paragraph (e)(1) of this section and an adjusted average SO_2 inlet rate ($E_{ai}o$) using the following formula:

$$\%R_go = 100\left(1 - \frac{E^*_{wo}}{E^*_{ai}}\right)$$

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Where:

$\%R_go$ = Adjusted $\%R_g$, in percent;

$E_{ao}o$ = Adjusted E_{ao}, ng/J (lb/MMBtu); and

$E_{ai}o$ = Adjusted average SO_2 inlet rate, ng/J (lb/MMBtu).

(ii) To compute $E_{ai}o$, an adjusted hourly SO_2 inlet rate ($E_{hi}o$) is used. The $E_{hi}o$ is computed using the following formula:

$$E_{hi}o = \frac{E_{hi} - E_w(1 - X_k)}{X_k}$$

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Where:

$E_{hi}o$ = Adjusted E_{hi}, ng/J (lb/MMBtu);

E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0; and

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under §60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under §60.46c(d)(2).

(h) For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in §60.48c(f), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under §60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

§60.42c(c)(2) does not apply; coal is not combusted.

(j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under §60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or E_{ho} pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

$\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section do not apply.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

§60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under §60.43c shall conduct an initial performance test as required under §60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) of this section.

The source is not subject to the PM and/or opacity standards under §60.43c. None of paragraphs following paragraphs, (a)(1)-(a)(8), apply.

(1) Method 1 of appendix A of this part shall be used to select the sampling site and the number of traverse sampling points.

(2) Method 3A or 3B of appendix A-2 of this part shall be used for gas analysis when applying Method 5 or 5B of appendix A-3 of this part or 17 of appendix A-6 of this part.

(3) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:

(i) Method 5 of appendix A of this part may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 of appendix A of this part may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B of appendix A of this part may be used in Method 17 of appendix A of this part only if Method 17 of appendix A of this part is used in conjunction with a wet scrubber system. Method 17 of appendix A of this part shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part may be used in conjunction with a wet scrubber system.

(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(5) For Method 5 or 5B of appendix A of this part, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320±25 °F).

(6) For determination of PM emissions, an oxygen (O_2) or carbon dioxide (CO_2) measurement shall be obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.

(7) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rates expressed in ng/J (lb/MMBtu) heat input shall be determined using:

(i) The O_2 or CO_2 measurements and PM measurements obtained under this section, (ii) The dry basis F factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.

(8) Method 9 of appendix A-4 of this part shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under §60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the

demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

The source is not subject to a PM standard as described previously. Nor is it subject to paragraph (c) below for PM testing.

(c) In place of PM testing with Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall install, calibrate, maintain, and operate a CEMS and shall comply with the requirements specified in paragraphs (c)(1) through (c)(14) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with §60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under §60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under §60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (d) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.

(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.

(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraph (c)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (c)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic

average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.

(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (c)(7) of this section are not met.

(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall be used; and

(ii) For O2 (or CO_2), Method 3A or 3B of appendix A-2 of this part, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.

(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in §60.8, 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.

(d) The owner or operator of an affected facility seeking to demonstrate compliance under §60.43c(e)(4) shall follow the applicable procedures under §60.48c(f). For residual oil-fired affected facilities, fuel supplier certifications are only allowed for facilities with heat input capacities between 2.9 and 8.7 MW (10 to 30 MMBtu/h).

The facility will show compliance by demonstrating fuel sulfur content is less than 0.5% usting the applicable procedures under §60.48c(f).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§60.46c Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2 emission limits under §60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2 concentrations and either O_2 or CO_2 concentrations at the outlet of the SO_2 control device (or the outlet of the steam generating unit if no SO_2 control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under §60.42c shall measure SO_2 concentrations and either O_2 or CO_2 concentrations at both the inlet and outlet of the SO_2 control device.

The exception at paragraph (e) applies here; fuel sulfur content certification from the supplier. It follows that paragraphs (b), (c) and (d) for SO_2 monitoring below do not apply.

(b) The 1-hour average SO_2 emission rates measured by a CEMS shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under §60.42c. Each 1-hour average SO_2 emission rate must be based on at least 30 minutes of operation, and shall be calculated using the data points required under §60.13(h)(2). Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.

(3) For affected facilities subject to the percent reduction requirements under §60.42c, the span value of the SO_2 CEMS at the inlet to the SO_2 control device shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted, and the span value of the SO_2 CEMS at the outlet from the SO_2 control device shall be 50 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of §60.42c, the span value of the SO_2 CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an

owner or operator may elect to determine the average SO_2 emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by using Method 6B of appendix A of this part. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B of appendix A of this part shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B of appendix A of this part may be used in lieu of CEMS to measure SO_2 at the inlet or outlet of the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in §3.2 and the applicable procedures in section 7 of Performance Specification 2 of appendix B of this part. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described under §60.48c(f), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

As stated previously a CEM for SO_2 is not required.

§60.47c Emission monitoring for particulate matter.

As previously described particulate matter standard do not apply to the boilers at St. Luke's.

§60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device 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 §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B of this part.

The source is not subject to emission limits; compliance is demonstrated by fuel supplier certification of sulfur content no requirement for PM apply.

(c) In addition to the applicable requirements in §60.7, the owner or operator of an affected facility subject to the opacity limits in §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the

requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator

None of the above paragraphs apply, the source is not subject to an opacity limit.

(d) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO_2 emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO_2 emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2 or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of appendix B of this part.

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier;

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c; and

(iii) The sulfur content or maximum sulfur content of the oil.

The facility must submit reports and keep records including this information.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(4) For other fuels:

(i) The name of the supplier of the fuel;

(ii) The potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input; and

(iii) The method used to determine the potential sulfur emissions rate of the fuel.

The facility has not proposed to combust residual fuel oil.

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in §60.48c(f) to demonstrate compliance with the SO_2 standard, fuels not subject to an emissions standard

(excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

(h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under §60.42c or §60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

Does not apply as the capacity factor is relevant to this source.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

APPENDIX D – 40 CFR 63 SUBPART ZZZZ

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

WHAT THIS SUBPART COVERS

§63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§63.6585 Am I subject to this subpart?

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.

St. Luke's Regional Medical Center (SLRMC) operates 8 Rice Subject to this Subpart.

Engine	Control Devices	Applicable Federal Regulation
New Emergency Generator Engines (6): Manufacturer: Caterpillar Model: 3516C Model Year: 2018 Rating: 2,397 bhp Fuel: #2 Fuel Oil	None	40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ*
Emergency Generator Engine 5A: Manufacturer: Caterpillar Model: 3304 Serial Number: 83Z02429 Model Year: unknown but prior to 2006 Rating: 95 hp Fuel: #2 Fuel Oil	None	40 CFR 63 Subpart ZZZZ
Emergency Generator Engine 6A: Manufacturer: Caterpillar Model: 3304 Serial Number: 4B10118 Model Year: unknown but prior to 2006 Rating: 140.8 hp Fuel: #2 Fuel Oil	None	40 CFR 63 Subpart ZZZZ

*Complies with 40 CFR 63 Subpart ZZZZ by complying with 40 CFR 60 Subpart IIII

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

SLRMC is not subject to part 70 permitting because it is not a major source as defined by that subpart.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in §63.6675, which includes operating according to the provisions specified in §63.6640(f).

SLRMC does not meet any of the following exceptions.

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(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.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(f) and the

requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) 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:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

SLRMC 6 new Caterpillar engines are subject to 40 CFR part 60 subpart IIII as opposed to this Subparts requirements

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) 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 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your 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 before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your 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 after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(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.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

EMISSION AND OPERATING LIMITATIONS

§63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

SLRMC is a not a major source; this subsection does not apply.

§63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

SLRMC is a not a major source; this subsection does not apply.

§63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

SLRMC is a not a major source; this subsection does not apply.

§63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

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.

SLRMC is not subject to source testing.

(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 that apply to you.

SLRMC is not subject to Table 2d because it is not a major source and does not have Existing CI Stationary RICE >500 HP

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

SLRMC does not operate non-emergency engines.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

SLRMC does not operate non-emergency engines.

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in §63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in §63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in §63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

SLRMC does not operate non-emergency engines.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

SLRMC does not operate non-emergency engines.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in §63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in §63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in §63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

SLRMC does not operate non-emergency engines.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) 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.

SLRMC does not operate non-emergency engines.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in §63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

SLRMC indicated that they are subject to this paragraph.

(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

SWLRMC is not a major source of HAP

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either §63.6603(b)(1) or §63.6603(b)(2), or are on offshore vessels that meet §63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

GENERAL COMPLIANCE REQUIREMENTS

§63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements 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.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

TESTING AND INITIAL COMPLIANCE REQUIREMENTS

§63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

SLRMC is only subject to operating requirements and a no source testing is required.

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

SWLRMC is not a major source of HAP and these requirements do not apply.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 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) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial

compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) 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.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

SWLRMC is not a major source of HAP and these requirements do not apply.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

SLRMC is not subject to performance testing.

(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.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§63.6615 When must I conduct subsequent performance tests?

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.

SLRMC is not subject to performance testing.

§63.6620 What performance tests and other procedures must I use?

SLRMC is not subject to performance testing.

(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. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(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, unless otherwise specified in this subpart.

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

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

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Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, 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_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction 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:

$$F_o = \frac{0.209\ F_d}{F_c} \quad (Eq.\ 2)$$

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Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume 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_2 produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2, as follows:

$$X_{CO2} = \frac{5.9}{F_o} \quad (Eq.\ 3)$$

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Where:

X_{co2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2—15 percent O_2, the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad \text{(Eq. 4)}$$

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Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{co2} = CO_2 correction factor, percent.

$\%CO_2$ = Measured CO_2 concentration 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; 78 FR 6702, Jan. 30, 2013]

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§63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(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 O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

SLRMC is not required to operate a CEMS nor is it proposing to do so.

(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.

(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 (6) 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.

SLRMC is not required to install a CPMS

(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)(ii) 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.

(c) If you are operating 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 monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

Landfill or digest gas is not combusted at SLRMC.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

All of SLRMC engines are compression ignition engines. This paragraph does not apply.

(e) 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:

(1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;

The above paragraphs apply to SLRMC

(2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;

(3) An existing emergency or black start stationary RICE located at an area source of HAP 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;

(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;

(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.

(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(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 (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 that meet either §63.6603(b)(1) or §63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet §63.6603(c) do not have to meet the requirements of this paragraph (g).

SLRMC does not operate non-emergency engines.

(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.

(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.

(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 business 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 business 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.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 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 Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid 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 business 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 business 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.

SLRMC does not operate a SI engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

Table 5 of the subpart does not have any applicable requirements for SLRMC engines.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

Table 1b and 2b do not apply to SLRMC

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645.

§63.6645 does not apply to existing emergency RICE which SLRMC has

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

Does not apply, SLRMC engines are compression ignition.

(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

Does not apply, SLRMC engines are compression ignition.

(1) The compliance demonstration must consist of at least three test runs.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

CONTINUOUS COMPLIANCE REQUIREMENTS

§63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(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.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements 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.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

SLRMC engines are compression ignition and these paragraphs do not apply.

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

The new RICE at SLRMC are exempted from this subpart at §63.6590(c)and they do not have reconstructed or rebuilt 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.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used

for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

SLRMC is not a major source and this paragraph does not apply.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

NOTIFICATIONS, REPORTS, AND RECORDS

§63.6645 What notifications must I submit and when?

(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:

63.7(b) and (c) do not apply because performance testing is not required.

63.8(e), (f)(4) and (f)(6) do not apply because a continuous emission monitoring system is not required.

63.9(b) through (e) do not apply because testing is not required.. 63.9(g) does not apply because a continuous monitoring system is not required. 63.9(h) is the notification of compliance status or when a an affected source becomes subject to a relevant standard. The notification is due within 60days of the compliance demonstrations, which for SLRMC existing CI engines was over a decade ago. Therefore it is not repeated in the permit. SLRMC has not proposed any new sources subject to this requirement.

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in §63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

SLRMC is not a major source and this subpart does not apply.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

SLRMC is not a major source and this subpart does not apply.

(d) As specified in §63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

SLRMC is not a major source and this subpart does not apply.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

SLRMC is not a major source and this subpart does not apply.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in §63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major 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).

SLRMC is not required to conduct a performance test.

(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).

SLRMC is not required to conduct a performance test and Tables 4 and 5 do not apply.

(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).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in §63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in §63.6603(d) and identifying the state or local regulation that the engine is subject to.

SLRMC existing CI RICE are less than 300 HP and this paragraph does not apply.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§63.6650 What reports must I submit and when?

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

SLRMC certified that none of the requirements of Table 7 apply. Therefore paragraph (a) above and (b)and (c) below do not apply.

(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.

SLRMC does not use a CMS to comply

(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.

SLRMC is not subject to title V permitting.

(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.

SLRMC does not meet these criteria

(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.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in §63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

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

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in §63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in §63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in §63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in §63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in §63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §63.13.

SLRMC certified that none of the requirements of §63.6650 apply

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§63.6655 What records must I keep?

(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.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

SLRMC is not required to operate and CEMS or CPMS.

(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.

(c) If you are operating 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 keep the records of your daily fuel usage monitors.

Does not apply

(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.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in §63.6640(f)(2)(ii) or (iii) or §63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

SLRMC did not certify whether the existing RICE meet the standards applicable to non-emergency engines so this requirement is included in the permit to address that scenario.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§63.6660 In what form and how long must I keep my records?

(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).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

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OTHER REQUIREMENTS AND INFORMATION

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§63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 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 any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. 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 the General Provisions specified in Table 8 except for the initial notification requirements: A new 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 emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

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§63.6670 Who implements and enforces this subpart?

(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).

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§63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see §63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

(4) Fails to satisfy the general duty to minimize emissions established by §63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (*e.g.* biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in §63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in §63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in §63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in §63.6640(f)(2)(ii) or (iii) and §63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in §63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO_2, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.,* remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in §63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to §63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to §63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

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Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

Does not apply to SLRMC, the source is not major.

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

Does not apply SLRMC is not major and engines are CI.

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

SLRMC existing CI engines are less than 500 HP; this table does not apply.

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

SLRMC existing CI engines are less than 500 HP and the source is not major, therefore this table does not apply.

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

SLRMC is not a major source and this table does not apply.

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

Provisions applicable to SLRMC are underlined in the table.

As stated in §§63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;[1] b. Inspect air cleaner every 1,000 hours of operation or annually,	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

	whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
4. Emergency stationary CI RICE and black start stationary CI RICE.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	

	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of	

	operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1] b. Inspect spark plugs every 1,440 hours of	

	operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

[1]Sources have the option to utilize an oil analysis program as described in §63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

[2]If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

SLRMC is not required to conduct a performance test.

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

SLRMC is not required to conduct a performance test.

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

SLRMC engines do not meet the applicability criteria in this table and it therefore does not apply.

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

SLRMC must comply with item 9 in this table.

As stated in §63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed	a. Reduce CO emissions and using an oxidation catalyst, and	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is

non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	using a CPMS	achieved[a]; and ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved[a]; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to §63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to §63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A 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.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde	i. Collecting the catalyst inlet temperature data according to

	emissions and using NSCR	§63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.[a]
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit[a]; and ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and

		demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit[a]; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow 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.
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at

		or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and

		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in §63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2; and either ii. Collecting the catalyst inlet temperature data according to §63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.
15. Existing non-emergency 4SRB stationary	a. Install NSCR	i. Conducting annual compliance

RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year		demonstrations as specified in §63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to §63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

[a]After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

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Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

SLRMC certified that none of the applicability criteria of Table 7 apply.

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in §63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.1	General applicability of the General Provisions	Yes.	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes.	
§63.4	Prohibited activities and circumvention	Yes.	
§63.5	Construction and reconstruction	Yes.	

§63.6(a)	Applicability	Yes.	
§63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§63.6(b)(5)	Notification	Yes.	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§63.6(c)(3)-(4)	[Reserved]		
§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§63.6(d)	[Reserved]		
§63.6(e)	Operation and maintenance	No.	
§63.6(f)(1)	Applicability of standards	No.	
§63.6(f)(2)	Methods for determining compliance	Yes.	
§63.6(f)(3)	Finding of compliance	Yes.	
§63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes.	
§63.6(j)	Presidential compliance exemption	Yes.	
§63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§63.6610, 63.6611, and 63.6612.
§63.7(a)(3)	CAA section 114 authority	Yes.	
§63.7(b)(1)	Notification of performance test	Yes	Except that §63.7(b)(1) only applies as specified in §63.6645.
§63.7(b)(2)	Notification of rescheduling	Yes	Except that §63.7(b)(2) only applies as specified in §63.6645.
§63.7(c)	Quality assurance/test plan	Yes	Except that §63.7(c) only applies as specified in §63.6645.
§63.7(d)	Testing facilities	Yes.	

§63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at §63.6620.
§63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at §63.6620.
§63.7(e)(3)	Test run duration	Yes.	
§63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§63.7(f)	Alternative test method provisions	Yes.	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§63.7(h)	Waiver of tests	Yes.	
§63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§63.8(a)(2)	Performance specifications	Yes.	
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring for control devices	No.	
§63.8(b)(1)	Monitoring	Yes.	
§63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	
§63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§63.8(c)(1)(i)	Routine and predictable SSM	No	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§63.8(d)	CMS quality control	Yes.	
§63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which

			applies to COMS.
		Except that §63.8(e) only applies as specified in §63.6645.	
§63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that §63.8(f)(4) only applies as specified in §63.6645.
§63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that §63.8(f)(6) only applies as specified in §63.6645.
§63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§63.9(b)(1)-(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
		Except that §63.9(b) only applies as specified in §63.6645.	
§63.9(c)	Request for compliance extension	Yes	Except that §63.9(c) only applies as specified in §63.6645.
§63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that §63.9(d) only applies as specified in §63.6645.
§63.9(e)	Notification of performance test	Yes	Except that §63.9(e) only applies as specified in §63.6645.
§63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(1)	Notification of performance evaluation	Yes	Except that §63.9(g) only applies as specified in §63.6645.
§63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that §63.9(g) only applies as specified in §63.6645.	
§63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources

			using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
			Except that §63.9(h) only applies as specified in §63.6645.
§63.9(i)	Adjustment of submittal deadlines	Yes.	
§63.9(j)	Change in previous information	Yes.	
§63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§63.10(b)(2)(i)-(v)	Records related to SSM	No.	
§63.10(b)(2)(vi)-(xi)	Records	Yes.	
§63.10(b)(2)(xii)	Record when under waiver	Yes.	
§63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§63.10(b)(3)	Records of applicability determination	Yes.	
§63.10(c)	Additional records for sources using CEMS	Yes	Except that §63.10(c)(2)-(4) and (9) are reserved.
§63.10(d)(1)	General reporting requirements	Yes.	
§63.10(d)(2)	Report of performance test results	Yes.	
§63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.10(d)(4)	Progress reports	Yes.	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	
§63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that §63.10(e)(3)(i) (C) is reserved.
§63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.

§63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§63.11	Flares	No.	
§63.12	State authority and delegations	Yes.	
§63.13	Addresses	Yes.	
§63.14	Incorporation by reference	Yes.	
§63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

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Appendix A to Subpart ZZZZ of Part 63—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

DOES NOT APPLY TO SLRMC

APPENDIX E – 40 CFR 60 SUBPART IIII

Title 40: Protection of Environment
Part 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

SLRMC will operate 6 emergency CI ICE (ie. GENs 1-6). Each engine will be manufactured by Caterpillar, Model 3516C, and rated at 2,000 kW (2,937 HP).

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of §60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

§60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants for model year 2007 engines, and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

Comply with emission standards (Table 1 per 40 CFR 89.112): NHMC + NOx = 6.4 g/kw-hr; CO = 3.5 g/kw-hr; PM= 0.20 g/kw-hr.

§60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§60.4201 and 60.4202 during the certified emissions life of the engines.

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in table 1 to this subpart Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

Each 2,000 kW emergency stationary CI ICE (ie. GENs 1-6) maintains a total displacement = 69 liters/ 12 cylinders = 5.75 liter/cylinder. EPA Certified Tier II.

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

SLRMC will use ultra low sulfur diesel fuel with a maximum sulfur content of 15 ppmv for all emergency generators.

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

(h) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

A non-resettable hour meter will be installed on each emergency generator.

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

Maintenance and testing will not exceed 100 hr/yr per emergency generator.

(ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

(h) The requirements for operators and prohibited acts specified in 40 CFR 1039.665 apply to owners or operators of stationary CI ICE equipped with AECDs for qualified emergency situations as allowed by 40 CFR 1039.665.

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (d) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Title 40: Protection of Environment
Part 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

§ 63.6585 Am I subject to this subpart?

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.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

SLRMC maintains and operates 2 emergency internal combustion engines (ICE) (ie, Gen 5A and Gen 6A) that were installed before June 12, 2006 and 6 emergency ICE (ie. Gens 1-6) after June 12, 2006. This facility is classified as an area source of HAP emissions defined as potential-to-emit (PTE) 10 tons per year (tpy) or less for any single HAP or PTE less than 25 tpy for total HAPs.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

APPENDIX F – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: St. Luke's Regional Medical Center
Address: 190 East Bannock St.
City: Boise
State: ID
Zip Code: 83712
Facility Contact: Chad Baart
Title: Manager
AIRS No.: 001-00029

N	Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
Y	Did this permit require engineering analysis? Y/N
N	Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	4.31	-4.3
SO_2	0.0	12.6	-12.6
CO	0.0	1.65	-1.7
PM10	13.0	0	13.0
VOC	1.2	0	1.2
Total:	0.0	18.56	**-4.4**
Fee Due	**$ 1,000.00**		

Comments:

APPENDIX G – FACILITY DRAFT COMMENTS

No comments were received from the facility.