TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit 23-3570
Air Discharge Permit Application CO-1068

Issued: May 15, 2023

St. Johns Medical Center - Delaware

SWCAA ID – 914

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Southwest Clean Air Agency

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ABBREVIATIONS

List of Acronyms

ADP ..... Air Discharge Permit
AP-42 ..... Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA
ASIL..... Acceptable Source Impact Level
BACT..... Best available control technology
CAM ..... Compliance Assurance Monitoring
CFR..... Code of Federal Regulations
EPA..... U.S. Environmental Protection Agency
EU ..... Emission Unit
MACT..... Maximum Achievable Control Technologies
NESHAP..... National Emission Standards for Hazardous Air Pollutants
NOV..... Notice of Violation/
NSPS..... New Source Performance Standard
PSD..... Prevention of Significant Deterioration
RACT..... Reasonably Available Control Technology
RCW ..... Revised Code of Washington
SCC..... Source Classification Code
SDS ..... Safety Data Sheet
SQER ..... Small Quantity Emission Rate listed in WAC 173-460
Standard..... Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
SWCAA..... Southwest Clean Air Agency
T-BACT..... Best Available Control Technology for toxic air pollutants
WAC..... Washington Administrative Code

List of Units and Measures

µg/m³..... Micrograms per cubic meter
µm..... Micrometer (10^{-6} meter)
acfm ..... Actual cubic foot per minute
bhp ..... Brake horsepower
dscfm..... Dry Standard cubic foot per minute
g/dscm..... Grams per dry Standard cubic meter
gpm ..... Gallon per minute
gr/dscf ..... Grain per dry standard cubic foot
hp ..... Horsepower
hp-hr..... Horsepower-hour
kW .....Kilowatt
MMBtu .....Million British thermal unit
MMcf.....Million cubic feet
ppm .....Parts per million
ppmv .....Parts per million by volume
ppmvd.....Parts per million by volume, dry
ppmw .....Parts per million by weight
psig .....Pounds per square inch, gauge
rpm.....Revolution per minute
scfm .....Standard cubic foot per minute
tph.....Ton per hour
tpy.....Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CH_4..... Methane
CO..... Carbon monoxide
CO_2..... Carbon dioxide
CO_2e..... Carbon dioxide equivalent
H_2S ..... Hydrogen sulfide
HAP ..... Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
NO_2 ..... Nitrogen dioxide
NO_x ..... Nitrogen oxides
O_2 ..... Oxygen
O_3 ..... Ozone
PM .....Particulate Matter with an aerodynamic diameter 100 µm or less
PM_{10}.....PM with an aerodynamic diameter 10 µm or less
$PM_{2.5}$ .....PM with an aerodynamic diameter 2.5 µm or less
SO_2.....Sulfur dioxide
SO_x.....Sulfur oxides
TAP.....Toxic air pollutant pursuant to Chapter 173-460 WAC
TSP .....Total Suspended Particulate
VOC.....Volatile organic compound

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name:	St. John Medical Center – Delaware Campus
Applicant Address:	4857 NW Lake Road, Suite 300, Camas, WA 98607
Facility Name:	St. John Medical Center – Delaware Campus
Facility Address:	1615 Delaware Street, Longview, WA 98632
SWCAA Identification:	914
Contact Person:	Chuck Johnson
Primary Process:	Hospital
SIC/NAICS Code:	8062: General Medical and Surgical Hospitals 62211: General Medical and Surgical Hospitals
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

St. John Medical Center is a 256 bed hospital owned by Peace Health that provides emergency, outpatient, and long term medical care at the Delaware Campus Facility.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CO-1068 dated February 8, 2023. Peace Health submitted ADP application CO-1068 requesting the following:

- Approval for two Unilux Boilers to replace previously permitted Cleaver Brooks Boilers

ADP 23-3570 will supersede ADP 10-2958 in its entirety.

4. PROCESS DESCRIPTION

4.a. Boilers – Process Steam. Two Unilux boilers and One Babcock and Wilcox Boiler are used to provide process steam to the entire facility. All of the boilers on site primarily fire on natural gas but have the capability to use diesel fuel in the event of a natural gas curtailment.

4.b. Emergency Power Generation. One diesel engine driven generator will be used to generate emergency electrical power at the hospital campus.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Unilux Boilers (replacements). Two natural gas or diesel fuel fired boilers with a rated heat input of 10.33 MMBtu/hr, each. The boilers are each equipped with a Power Flame model UCMR300-GO-30 burner. Exhaust gases are discharged to ambient air through a 56" by 32" stack at the top of the building, which is over 100 ' above ground.

Boiler Manufacturer:	Unilux
Model Number:	ZF 1000HS-MH
Serial Number:	Not Yet Available
Heat Rate:	10.33 MMBtu/hr
Burner Manufacturer:	Power Flame
Burner Model Number:	USMR300-GO-30
Stack Diameter:	56" by 32"
40 CFR 60 Subpart Dc:	Applicable
40 CFR 63 Subpart JJJJJJ:	Applicable

5.b. Babcock and Wilcox Boiler (existing). One Babcock and Wilcox natural gas or diesel fired boiler with a rated heat input of 23.0 MMBtu/hr. Exhaust gases are discharged to ambient air through a 64" by 42" stack at the top of the building, which is over 100 ' above the ground.

Boiler Manufacturer/Model:	Babcock and Wilcox
Serial Number:	22531
Heat Rate:	Estimated to be 23.0 MMBtu/hr based on a steam rate of 18,400 lb/hr and assumed 80% efficiency.
Installed:	1967
Stack Temperature:	575 °F
40 CFR 60 Subpart Dc:	Not Applicable
40 CFR 63 Subpart JJJJJJ:	Applicable

5.c. Emergency Generator Engine (existing). One Caterpillar model SR4B generator. The unit is powered by a Caterpillar model 3512B diesel engine rated at 2,166 horsepower.

Engine Make:	Caterpillar
Engine Model:	3512B
Engine Serial Number:	6WN00286
Engine Output Rating:	2,166 bhp
Manufacture Date:	1/18/9
Installation Date:	1999
Certification:	None
Fuel Consumption:	107.3 gal/hr at full standby load
Generator Rating:	1,500 kW
Generator Make:	Caterpillar
Generator Model:	SR4B
Exhaust Flow Rate:	12,191 dscfm
Stack Height:	85′ from ground

Stack Diameter: 10″
Stack Temperature: 944 °F
40 CFR 63 Subpart ZZZZ: Applicable

5.d. Insignificant Emission Units. The following pieces of facility equipment have been determined to have insignificant emissions, and are not registered as emission units:
Womens Center: The women's center has several pieces of fuel burning equipment.
- Two York rooftop units, rated at 0.180 MMBtu/hr, and have serial numbers NAMM010313 and NAMM010312
- One York rooftop unit model Y12AN24N5KCECEC, 0.233 MMBtu/hr, and has a serial number of NLKM119470
- Two AO Smith water heaters, which are both around 250 gallons

Cancer Center. The cancer center has one make-up air unit.
- Two Carrier Model 48TFD014-501G units, 0.224 MMBtu/hr heat input rating, and serial numbers of 0501G30541 and 0501G30544

5.e. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Unilux Boiler #1 10.33 MMBtu/hr, model ZF 1000HS-MH	Low Emissions Burner, Low Sulfur/Ash Primary Fuel (natural gas)
2	Unilux Boiler #2 10.33 MMBtu/hr, model ZF 1000HS-MH	Low Emissions Burner, Low Sulfur/Ash Primary Fuel (natural gas)
3	Babcock and Wilcox Boiler ~23.0 MMBtu/hr	Low Sulfur/Ash Primary Fuel (natural gas)
4	Emergency Generator Engine Caterpillar 3512B, 2,166 hp	Ultra Low-Sulfur Diesel Fuel (≤ 15 ppm S)

6. EMISSIONS DETERMINATION

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:
(a) Continuous emissions monitoring system (CEMS) data;
(b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
(c) Source emissions test data (other test method); and
(d) Emission factors or methodology provided in this TSD.

6.a. Unilux Boilers #1 and #2. Potential annual emissions for each unit were calculated with the assumption that the equipment will operate at full rated capacity for 8,760 hours per year. Short term emission limits are based on guarantees provided by the burner manufacturer. The limits are slightly higher than the guarantees to account for normal wear. Potential annual emissions from the combustion of diesel were calculated with the

assumption that the boilers will operate up to 200 hours per year on diesel at full rated load. Maximum annual emissions of each pollutant were calculated assuming the boilers will operate on natural gas for 8,560 hours per year, and either natural gas or diesel (whichever has the greater emissions) for an additional 200 hours per year.

Unilux Boilers - Natural Gas Firing

Heat Rate =	10.330	MMBtu/hr
Natural Gas Heat Value =	1,020	Btu/scf for AP-42 emission factors
Natural Gas Heat Value =	1,026	Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	86.691	MMscf/yr

Pollutant	ppmvd @ 3% O_2	Emission Factor lb/MMBtu	Emission Factor lb/MMscf	lb/hr	tpy	Emission Factor Source
NO_X	12	0.0146	14.9	0.150	0.644	BACT/Power Flame
CO	50	0.0370	37.7	0.382	1.634	BACT/Power Flame
VOC		0.0054	5.5	0.0557	0.2384	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2		0.00059	0.6	0.00608	0.02601	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0770	0.3294	AP-42 Sec. 1.4 (7/98)
PM_{10}		0.0075	7.6	0.0770	0.3294	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$		0.0075	7.6	0.0770	0.3294	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.1E-05	9.1E-05	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	7.6E-04	3.3E-03	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	5,171.8	40 CFR 98
CH_4	0.001	25	0.055	56.55	2.4	40 CFR 98
N_2O	0.0001	298	0.066	67.41	2.9	40 CFR 98
Total GHG - CO_2e			117.098	120,143	5,177.2	

In the future, emissions will be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

Unilux Boilers - Diesel Fuel Firing

Heat Rate =	10.33	MMBtu/hr
Fuel Oil Heat Value =	138,000	Btu/gallon (for use with GHG factors from 40 CFR 98)
Fuel Oil Heat Value =	140,000	Btu/gallon (for use with criteria and VOC factors)
Fuel Oil Sulfur Content =	0.0015%	by weight
Fuel Oil Consumption =	73.7	gallons per hour (from Unilux)
Hours Per Year =	200	
Fuel Oil Consumption =	14,740	gallons per year

Pollutant	ppmvd @ 3% O_2	lb/M gal	lb/hr	tpy	Emission Factor Source
NO_X	80	14.35	1.06	0.11	BACT/Power Flame
CO	50	5.46	0.402	0.040	BACT/Power Flame
VOC		0.2	0.0147	0.0015	AP-42 Sec. 1.3 (9/98)
SO_X as SO_2		0.216	0.0159	0.0016	Material Balance
PM total		3.3	0.243	0.024	AP-42 Sec. 1.3 (9/98)
PM_{10}		2.3	0.170	0.017	AP-42 Sec. 1.3 (9/98)
$PM_{2.5}$		1.55	0.1142	0.011	AP-42 Sec. 1.3 (9/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	CO_2e tpy
CO_2	73.96	1	163.05	23	166
CH_4	0.0030	21	0.139	0.019	0.1
N_2O	0.0006	310	0.410	0.057	0.4
Total GHG - CO_2e	73.96		163.603	23	166

In the future, emissions will be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.b. Babcock and Wilcox Boiler. Potential annual emissions from the boiler were calculated with the assumption that the equipment will operate at full rated capacity for 8,760 hours per year. The unit is not equipped with low emission burners. Maximum annual emissions of each pollutant (both fuels combined) were calculated assuming the boilers will operate on natural gas for 8,560 hours per year, and either natural gas or diesel (whichever has the greater emissions) for an additional 200 hours per year.

Babcock and Wilcox Boiler - Natural Gas Firing

Heat Rate =	23.00	MMBtu/hr
Natural Gas Heat Value =	1,020	Btu/scf for AP-42 emission factors
Natural Gas Heat Value =	1,026	Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	193.020	MMscf/yr

Pollutant	ppmvd @ 3% O_2	Emission Factor lb/MMBtu	Emission Factor lb/MMscf	lb/hr	tpy	Emission Factor Source
NO_X	81	0.0983	100.3	2.262	9.680	AP-42 Sec. 1.4 (7/98)
CO	111	0.0821	83.7	1.887	8.074	AP-42 Sec. 1.4 (7/98)
VOC		0.0054	5.5	0.1240	0.5308	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2		0.00059	0.6	0.01353	0.05791	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.1714	0.7335	AP-42 Sec. 1.4 (7/98)
PM_{10}		0.0075	7.6	0.1714	0.7335	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$		0.0075	7.6	0.1714	0.7335	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	4.7E-05	2.0E-04	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	1.7E-03	7.2E-03	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	11,515.2	40 CFR 98
CH_4	0.001	25	0.055	56.55	5.4	40 CFR 98
N_2O	0.0001	298	0.066	67.41	6.5	40 CFR 98
Total GHG - CO_2e			117.098	120,143	11,527.1	

In the future, emissions will be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

Babcock and Wilcox Boiler - Diesel Fuel Firing

Heat Rate =	23.00	MMBtu/hr
Fuel Oil Heat Value =	138,000	Btu/gallon (for use with GHG factors from 40 CFR 98)
Fuel Oil Heat Value =	140,000	Btu/gallon (for use with criteria and VOC factors)
Fuel Oil Sulfur Content =	0.0015%	by weight
Fuel Oil Consumption =	166.7	gallons per hour (from Unilux)
Hours Per Year =	200	
Fuel Oil Consumption =	33,340	gallons per year

Pollutant	ppmvd @ 3% O_2	lb/M gal	lb/hr	tpy	Emission Factor Source
NO_X	113	20.26	3.38	0.34	AP-42 Sec. 1.3 (9/98)
CO	46	5.02	0.837	0.084	AP-42 Sec. 1.3 (9/98)
VOC		0.2	0.0333	0.0033	AP-42 Sec. 1.3 (9/98)
SO_X as SO_2		0.216	0.0360	0.0036	Material Balance
PM total		3.3	0.550	0.055	AP-42 Sec. 1.3 (9/98)
PM_{10}		2.3	0.383	0.038	AP-42 Sec. 1.3 (9/98)
$PM_{2.5}$		1.55	0.2584	0.026	AP-42 Sec. 1.3 (9/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	CO_2e tpy
CO_2	73.96	1	163.05	23	375
CH_4	0.0030	21	0.139	0.019	0.3
N_2O	0.0006	310	0.410	0.057	0.9
Total GHG - CO_2e	73.96		163.603	23	376

In the future, emissions will be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.c. Other Natural Gas Fired Equipment (Cancer Center and Women's Center. Potential annual emissions from the equipment was calculated with the assumption that the equipment will operate at full rated capacity for 8,760 hours per year.

Miscellaneous Natural Gas Fired Equipment

Heat Rate =	1.640	MMBtu/hr
Natural Gas Heat Value =	1,020	Btu/scf for AP-42 emission factors
Natural Gas Heat Value =	1,026	Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	14.085	MMscf/yr

Pollutant	ppmvd @ 3% O_2	Emission Factor lb/MMBtu	Emission Factor lb/MMscf	lb/hr	tpy	Emission Factor Source
NO_X	81	0.0983	100.3	0.161	0.706	AP-42 Sec. 1.4 (7/98)
CO	111	0.0821	83.7	0.135	0.589	AP-42 Sec. 1.4 (7/98)
VOC		0.0054	5.5	0.0088	0.0387	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2		0.00059	0.6	0.00096	0.00423	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0122	0.0535	AP-42 Sec. 1.4 (7/98)
PM_{10}		0.0075	7.6	0.0122	0.0535	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$		0.0075	7.6	0.0122	0.0535	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	3.4E-06	1.5E-05	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	1.2E-04	5.3E-04	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	840.3	40 CFR 98
CH_4	0.001	25	0.055	56.55	0.4	40 CFR 98
N_2O	0.0001	298	0.066	67.41	0.5	40 CFR 98
Total GHG - CO_2e			117.098	120,143	841.2	

In the future, emissions will be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.d. Emergency Generator Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full standby load for up to 200 hours per year.

Emergency Generator Engine

Annual Operation =	200	hours
Power Output =	2,166.0	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	107.3	gal/hr (estimated assuming 7,000 Btu/hp-hr)
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	53.76	5.376	Caterpillar
CO	11.34	1.134	Caterpillar
VOC	1.560	0.1560	Caterpillar
SO_X as SO_2	0.0232	0.00232	Mass Balance
PM	0.710	0.0710	Caterpillar
PM_{10}	0.710	0.0710	Caterpillar
$PM_{2.5}$	0.710	0.0710	Caterpillar

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	73.96	1	163.054	22.501	241.44	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.24	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.58	40 CFR 98
Total GHG - CO_2e			163.613	22.579	242.27	

In the future, emissions will be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.e. Emissions Summary

Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
NO_x	17.60	+3.01
CO	13.23	-0.40
VOC	1.21	-0.18
SO_2	0.12	N/A
PM	1.62	-0.24

PM_{10}	1.59	-0.23
$PM_{2.5}$	1.57	-0.24
CO_2e	23,674	+1,739

Toxic/Hazardous Air Pollutant	Potential to Emit (lb/yr)	Project Impact (lb/yr)
benzene [0-00-0]	0.80	N/A
Formaldehyde [50-00-0]	28.54	+1.54

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this Permit consistent with implementation of Best Available Control Technology (BACT):

7.a. 40 CFR 60.7 "Notification and Recordkeeping" requires that notification must be submitted to SWCAA, the delegated authority, for date construction commenced, anticipated initial startup, and initial startup.

7.b. 40 CFR 60.8 "Performance Tests" requires that emission tests be conducted according to test methods approved in advance by the permitting authority and a copy of the results be submitted to the permitting authority.

7.c. 40 CFR 60 Subpart Dc "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to any steam generating unit with a heat input greater than or equal to 10 MMBtu/hr, but less than or equal to 100 MMBtu/hr constructed, modified, or reconstructed after June 9, 1989. The Unilux boilers are subject to this regulation.

For purposes of the Subpart, "biodiesel as defined by the American Society of Testing and Materials in ASTM D6751, or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467" is included under the definition of "distillate oil" per §60.41c.

7.d. 40 CFR 63.7 "Performance testing requirements" requires that emission tests be conducted according to test methods approved in advance by the permitting authority and a copy of the results be submitted to the permitting authority.

7.e. 40 CFR 63.9 "Notification Requirements" requires that the delegated authority be notified when any unit subject to 40 CFR 64 begins initial startup.

7.f. 40 CFR 63 Subpart ZZZZ [§63.6580 *et seq*] "National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines" establishes national emission limitations and operating limitations for HAP emitted from stationary reciprocating internal combustion engines located at major and area sources of HAP emissions. The existing Emergency Generator Engine is located at an area source of HAP and used in emergency situations; therefore, this regulation applies to the existing engine.

For existing emergency engines at an area source, the owner or operator is required to:

- Change oil and filter every 500 hours of operation or annually, whichever comes first except as allowed by 40 CFR 63.6625(i) [Table 2d(4)(a)];
- Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first [Table 2d(4)(b)];
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary [Table 2d(4)(c)];
- Install a non-resettable hour meter if one is not already installed. [§ 63.6625(f)]
- Report each instance in which the owner did not meet each operating limitation [§ 63.6640(b)];
- Limit operation of the engine to emergency use and maintenance checks and readiness testing. Operation for maintenance checks and readiness testing may be conducted only to the extent that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Operation for maintenance checks and readiness testing is limited to 100 hours per year [§ 63.6640(f)(2)(i)];
- Record the occurrence and duration of each malfunction of operation (i.e., process equipment) [§ 63.6655(a)(2)];
- Record maintenance conducted on the engine in order to demonstrate that the engine was operated and maintained according to the applicable maintenance plan [§ 63.6655(e)]; and
- Record the hours of operation of the engine by use of a 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 [§ 63.6655(f)].

For purposes of this Subpart, "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 per §63.6675.

The boilers have an annual capacity factor of less than 10% and thus qualify as limited use boilers. Owners of limited use boilers must conduct a tune-up every five years and conduct a burner inspection every 72 months. The owner must also make an effort to reduce startup and shutdown periods.

7.g. 40 CFR 63 Subpart JJJJJJ [§63.11193 et seq] "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources"

establishes national emission limitations and operating limitations for HAP emitted from boilers fired on specific fuels at area sources.

For existing oil-fired boilers at an area source, the owner or operator is required to comply with the following:

- Submit an initial notification to the Administrator by January 20, 2014.
- Demonstrate compliance with the work practice standards and the energy assessment no later than March 21, 2014, as specified in §63.11196(1) and (3);
- Conduct a one-time energy assessment (for facilities with boilers >10 MMBtu/hr) as required in §63.11214(c);
- Conduct a tune-up once every two years as specified in §63.11223(b). A tune-up report must be maintained on-site and submitted to the Administrator upon request.
- Submit notifications as required in §§63.11225(a)(1), (a)(2), and (a)(4), and (b);
- Submit a compliance report once every two years by March 1st to the delegated enforcement authority with the information specified in §63.11225(a)(1), (2), and (4); and
- Maintain records as required in §§63.11225(c) and (d).

There may be other requirements under the Subpart that apply to the facility that are not specified above. SWCAA has not yet taken delegation of this regulation; therefore, at this time, EPA is the Administrator of this regulation, and the facility must communicate directly with EPA regarding compliance demonstrations and/or reporting required by this rule.

For purposes of this Subpart, "distillate oil" includes "biodiesel as defined by the American Society of Testing and Materials in ASTM D6751-11b" per §63.11237. Also, "liquid fuels" includes "distillate oil, residual oil, any form of liquid fuel derived from petroleum, used oil meeting the specification in 40 CFR 279.11, liquid biofuels, biodiesel, and vegetable oil, and comparable fuels as defined under 40 CFR 261.38."

7.h. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act (RCW 70A.15) and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess. This law applies to the facility.

7.i. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an ADP for installation and establishment of an air contaminant source. This law applies to the facility.

7.j. WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.

The facility emits TAPs; therefore, this regulation applies to the facility.

7.k. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, SO_2, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM_{10}, $PM_{2.5}$, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.

7.l. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, SO_2, concealment and masking, and fugitive dust. This regulation applies to the facility.

7.m. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.

7.n. SWCAA 400-040(2) "Fallout" requires that emissions of PM from any source must not be deposited beyond the property under direct control of the owner(s) or operator(s) of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited. This regulation applies to the facility.

7.o. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere. This regulation applies to the facility.

7.p. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum. This source must be managed properly to maintain compliance with this regulation. This regulation applies to the facility.

7.q. SWCAA 400-040(6) "Sulfur Dioxide" requires that no person is allowed to emit a gas containing in excess of 1,000 ppmd of SO_2, corrected to 7% O_2 or 12% CO_2 as required by the applicable emission standard for combustion sources.

7.r. SWCAA 400-040(8) "Fugitive Dust Sources" requires that reasonable precautions be taken to prevent fugitive dust from becoming airborne, and minimize emissions.

7.s. SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person is allowed to cause or permit the emission of PM from any combustion or incineration unit in excess of 0.23 g/Nm^3_{dry} (0.1 gr/dscf) of exhaust gas at standard conditions.

7.t. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an ADP application to request such changes. An ADP must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits. This regulation applies to the facility.

7.u. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit, or modification. The new units meet the definition of a new source; therefore, this regulation applies to the facility.

7.v. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source will be granted unless it is evidenced that:

(1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
(2) BACT will be employed for all air contaminants to be emitted by the proposed equipment;
(3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
(4) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

The facility is located in an area that is in attainment for (PM, NO_x, CO, SO_2, O_3); therefore, this regulation applies to the facility.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

8.a. BACT Determination – Unilux Boilers. The proposed use of low-sulfur fuel (natural gas) and proper combustion controls has been determined to meet the requirements of BACT for the types and quantities of emissions from the boiler. Power Flame has certified that the burner can meet NO_x emissions standards of 9 ppm (3% O_2) while burning natural gas and 60 ppm (3% O_2) while burning diesel fuel. These emission standards generally apply

to brand new burners, therefore slightly higher emission limits have been approved to account for normal wear of the burner that can occur despite general maintenance.

8.b. BACT Determination – Babcock and Wilcox Boiler. The proposed use of low-sulfur fuel (natural gas) and proper combustion controls has been determined to meet the requirements of BACT for the types and quantities of emissions from the boiler.

8.c. BACT Determination – Emergency Engine. The use of modern diesel-fired engine design meeting EPA Tier Emission Standards, the use of ultra low-sulfur diesel fuel (≤15 ppmw), limitation of visible emissions to 5% opacity or less, and limitation of engine operation to less than 100 hr/yr for maintenance checks and readiness testing has been determined to meet the requirements of BACT for the types and quantities of air contaminants emitted from this engine.

8.d. Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.

8.e. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

9.a. Criteria Air Pollutant Review. Emissions of NO_x, CO, PM, VOC (as a precursor to O_3), and SO_2 are emitted at levels where no adverse ambient air quality impact is anticipated.

9.b. TAP Small Quantity Review. The incremental increases in TAP emissions associated with this permitting action are quantified in Section 6 of this Technical Support Document. All incremental increases in individual TAP emissions are less than the applicable small quantity emission rate (SQER) identified in WAC 173-460.

Conclusions

9.c. Construction and operation of two replacement boilers, as proposed in ADP application CO-1068, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.d. Construction and operation of two replacement boilers, as proposed in ADP application CO-1068, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.

9.e. Construction and operation of two replacement boilers, as proposed in ADP application CO-1068, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 23-3570 in response to ADP application CO-1068. ADP 23-3570 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a. Supersession of Previous Permits. ADP 23-3570 supersedes ADP 10-2958 in its entirety. Compliance will be determined under this ADP, not previously superseded ADPs. Existing approval conditions for units not affected by this project have been carried forward unchanged.

10.b. Emission Limits. Facility-wide emission limits are based on the sum of the emission limits for approved equipment calculated in Section 6 of this TSD. The Unilux boilers are limited to fuel usage consistent with 200 hours of operation at peak load.

10.c. Operational Limits and Requirements.

Emergency Generator. Approval conditions are based on limited service (200 hr/yr) for actual power interruptions. Compliance with these requirements will be demonstrated based on manufacturer's emission factors and annual operation as recorded and reported by the source. BACT requirements for this unit include the use of low sulfur diesel (sulfur content not to exceed 15 ppmw). Visible emission limits have been established consistent with proper operation of the Cummins diesel engine. Due to the technical limitations of the engine, the limit of 5% opacity does not apply during periods of start-up.

Boilers. Approval conditions for the boilers listed in this application incorporate expected operational performance and the operating schemes proposed by the permit applicant at the time of installation. New boilers approved in this permitting action are low emission models and meet current BACT criteria. Diesel fuel has been approved for use on a limited basis equivalent to 200 hours of operation per year. Approval to use diesel fuel is intended to only be applied in case of natural gas curtailment.

10.d. Monitoring and Recordkeeping Requirements. ADP 23-3570 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment, and provide for compliance with generally applicable requirements.

10.e. Reporting Requirements. 23-3570 establishes general reporting requirements for annual air emissions, upset conditions, and excess emissions. Specific reporting requirements are established for fuel consumption. Reports are to be submitted on an annual basis.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology-based emission standards and control technology determinations

must take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

To SWCAA's knowledge, this facility can comply with all applicable standards during startup and shutdown.

Emergency Generator. Visible emissions from the diesel engine driven generator are limited to 5% opacity or less during normal operation. However, the engine is not capable of reliably limiting visible emissions to less than 5% opacity until the engine achieves normal operating temperature. Therefore, the 5% opacity limit does not apply to the generator exhaust during start-up periods.

11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the approval conditions.

11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the approval conditions.

12. EMISSION MONITORING AND TESTING

12.a. Emission Testing Requirements – Unilux Boilers. Emissions testing is required once every ten years to determine compliance with the emission limits established in the ADP.

Emission Monitoring Requirements – Unilux Boilers. The Unilux boilers are required to be tuned annually to verify compliance with the emission limits specified in the ADP. Corrective action is required to be taken if the boiler is found to not be meeting the emission limit.

13. FACILITY HISTORY

13.a. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

Permit	Application	Date Issued	Description
10-2958	CO-903	11/23/2010	Approval for two new boilers. Conditions were also established for the existing boiler.

Permit	Application	Date Issued	Description
01-2335	CO-693	1/31/2001	Approval for an emergency generator.

13.b. Compliance History. A search of source records on file at SWCAA did not identify any previous or outstanding compliance issues over the past five (5) years.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a. Public Notice for ADP Application CO-1068. Public notice for ADP application CO-1068 was published on the SWCAA website for a minimum of fifteen (15) days beginning on February 16, 2023.

14.b. Public/Applicant Comment for ADP Application CO-1068. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CO-1068. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. This project is exempt from SEPA requirements pursuant to WAC 197-11-800(3) since it only involves repair and/or maintenance of existing structures, equipment or facilities, and will not involve material expansions or changes in use. SWCAA issued a Determination of SEPA Exempt (SWCAA 23-012) concurrent with issuance of ADP 23-3570.