ENGINEERING EVALUATION
Grifols Diagnostic Solutions, Inc.
PLANT NO. 22285
APPLICATION NO. 27781

BACKGROUND

Grifols is applying for an Authority to Construct and/or Permit to Operate the following equipment:

S-1053 Natural Gas Fired Boiler, Cleaver Brooks FLX-700-1200-150ST, maximum firing rate: 12 MMBtu/hr (350 BHP)

The boiler is used to produce steam to be used throughout the facility, including for sterilization and heating.

EMISSIONS SUMMARY

The boiler is manufactured by Cleaver Brooks and will have low NOx burners. The NOx, CO, and POC emissions factors are from Cleaver Brooks. Emission factors for natural gas: NOx 9 ppm; CO 46 ppm; hydrocarbons 10 ppm @ 3%O2.

There is no operating hour limit imposed for the operation, so 24 hours per day and 365 days per year operating schedule is assumed to calculate the maximum daily and annual emissions for each criteria pollutant. For each criteria pollutant, daily and annual emissions are calculated as shown below:

Daily Emissions,lb/day = (EF,lb/MMBtu) (Max. Firing Rate,MMBtu/hr) (24 hr/day)
Annual Emissions,ton/yr = (EF,lb/MMBtu) (Max. Firing Rate,MMBtu/hr) (8760 hr/yr) (ton/2000 lb)

Pollutant	Molecular Weight	Factors		Hourly	Daily	Annual	Annual
	lb/lb mole	ppmvd at 3% O2	lb/MMBTU	lb/hour	lb/day	lb/yr	tons/yr
NOx[a]	46.01	9	0.0109	0.131	3.2	1149	0.574
CO[a]	28.01	46	0.0340	0.408	9.8	3575	1.787
POC[a]	16.04	10	0.0160	0.192	4.61	1681.92	0.841
PM10[c]	-	-	0.0075	0.110	2.63	959.48	0.480
SO2[b]	64.06	1 grain/100 scf	0.0028	0.041	0.99	360.26	0.180

[a] Emission Factor from Manufacturer/Vendor
[b] Assumes 1 gr S/100 scf and full conversion of S to SO2
[c] Emission Factor from AP-42 Table 1.4-2

Plant Cumulative Increase (since 4/5/91):

This facility has no permitted emissions prior to 1991. Since this facilities sources were originally from other plants, the existing emissions were determined from the current sources as shown in Attachment A.

Pollutant	Existing (TPY)	New (TPY)	Total (TPY)
NOx	2.321	0.574	2.895
CO	0.888	1.787	2.675
POC	13.576	0.841	14.417
PM10	0.036	0.48	0.516
SO2	0.066	0.18	0.246

Toxic Risk Screening:

Emissions of toxic air contaminants from the natural gas fired boiler S-1053 are below the District trigger levels of Regulation 2, Rule 5, Table 1.

TAC	Factor	Emissions		Trigger Levels	
	lb/MMBTU	lb/hr	lb/yr	lb/hr	lb/yr
Benzene	2.06E-06	3.03E-05	0.27	2.9E+00	3.8
Formaldehyde	7.35E-05	1.08E-03	9.46	1.2E-01	18.0
Toluene	3.33E-06	4.90E-05	0.43	8.2E+01	12000.0

STATEMENT OF COMPLIANCE

The owner/operator of S-1053 Natural Gas Fired Boiler shall comply with Reg. 6-1 (Particulate Matter), Reg. 9-1-301 (Inorganic Gaseous Pollutants: Sulfur Dioxide for Limitations on Ground Level Concentrations), and Regulation 9-7.

The owner/operator is expected to comply with Regulation 6-1 since the unit is fueled with natural gas. Thus for any period aggregating more than three minutes in any hour, there should be no visible emission as dark or darker than No. 1 on the Ringlemann Chart (Regulation 6-1-301) and no visible emission to exceed 20% opacity (Regulation 6-1-302).

The owner/operator is expected to comply with Regulation 9-1. Sulfur oxides are very low since natural gas is being used to fire the boiler.

The burner manufacturer (Cleaver Brooks) confirmed NOx emissions of 9 ppmvd at 3% O2 and CO emissions of 46 ppmvd at 3% O2 while firing natural gas. The source meets the NOx and CO limits of 15 ppmvd NOx at 3% O2 and 400 ppmvd CO at 3% O2 of Regulations 9-7-307.3 (Gaseous Fuel Emission Limits). The owner/operator of S-1053 is also subject to insulation requirements (Reg. 9-7-311), stack gas temperature limits (Reg. 9-7-312), initial demonstration of compliance (Reg. 9-7-403), and annual periodic testing (Reg. 9-7-506).

The project is considered to be ministerial under the District's California Environmental Quality Act (CEQA) regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 2.1 for Boilers)

The project is within 1000 feet of the nearest school (Pacific Rim International School) and therefore is subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology (BACT): In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10}. Based on the emissions calculations above, BACT is not triggered. However, since CO emissions are close to the 10 lb/day trigger level, the applicant has agreed to enhanced monitoring through quarterly emissions checks similar to the periodic testing required in Regulation 9-7-506, except that the testing will be quarterly instead of annually.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx per Regulation 2-2-302. The District may provide offsets from the Small Facility Banking Account for a facility with emissions between 10 and 35 tons/yr of POC or NOx, provided that facility has no available offsets.

This facility's potential to emit is shown in Attachment B. This facility has the potential to emit approximately 18.3 tons/year POC, and 29.4 tons/year NOx so the POC and NOx emissions from S-1053 (0.841 TPY POC, 0.574 TPY NOx) will be offset from the Small Facilities Bank at a 1:1 ratio.

New Source Performance Standards (NSPS): S-1053 is subject to NSPS Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units—since it is between 10 MMBtu/hr and 100 MMBtu/hr. There are no SO2 or PM/opacity standards for this unit since it will be fired exclusively on natural gas. Since EPA delegates implementation and enforcement authority to the State; BAAQMD will implement and enforce this regulation. Section 60.48c(a) Reporting and recordkeeping requirements apply. Notification shall include the date of construction and actual startup, (1) design heat input capacity and identification of fuels to be combusted, (2) a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels and (3) the annual capacity factor at which the owner/operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired. Notification is required as part of the Authority to Contruct/Permit to Operate process. The design heat input capacity (12 MMBtu/hr), fuel to be used (natural gas), and anticipated annual capacity factor (8400/8760 hours = 96%) have been submitted with this application.

Section 60.48c(g)(2) requires units fired exclusively on natural gas to record and maintain records of the amount of each fuel combusted during each calendar month. Section 60.48c(i) requires that records be maintained for a period of two years. Fuel use records and maintenance of the records are included in the permit conditions.

National Emission Standards for Hazardous Air Pollutants (NESHAPs): S-1053 is exempt from Subpart JJJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources per §63.11195(e) since it is a gas-fired boiler.

Prevention of Significant Deterioration (PSD) does not apply.

PERMIT CONDITIONS

Condition # 26264

S-1053 Natural Gas Fired Boiler, Cleaver Brooks FLX-700-1200-150ST, maximum firing rate: 12 MMBtu/hr (350 BHP)
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1. The owner/operator of S-1053 shall operate this source on natural gas fuel exclusively. (basis: Cumulative Increase)

2. The heat input rate to S-1053 shall not exceed 12 MMBtu per hour. (basis: Cumulative Increase)

3. The owner/operator shall not use more than 1,051,200 therms of natural gas fuel at S-1053 in any consecutive twelve-month period. (basis: Cumulative Increase)

4. The owner/operator shall ensure that S-1053 does not exceed the following emissions limits:
    a. NO_x = 9 ppmvd @ 3%O_2 (basis: Cumulative Increase)
    b. CO = 46 ppmvd @ 3%O_2 (basis: Cumulative Increase)

5. Not later than 60 days from the startup of S-1053, the owner/operator shall conduct District approved source tests to determine initial compliance with the limits in Part 4. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test. (basis: Cumulative Increase)

6. On a quarterly basis, the owner/operator of S-1053 shall verify compliance with the limits in Part 4 using the test methods in Regulation 9-7-606. A portable analyzer may be used, however, if the portable analyzer shows an exceedance of the limits in Part 4, the owner/operator shall conduct a District-approved source

test within 90 days of the exceedance in order to demonstrate compliance with Part 4. (basis: Cumulative Increase)

7. The owner/operator of S-1053 shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. (basis: Cumulative Increase)

8. To determine compliance with the above parts, the owner/operator shall maintain the following records in a District approved log:

    a. Monthly records of natural gas consumption in therms at S-1053
    b. Source test results and portable analyzer readings, including dates and operating conditions

These logs shall be kept for at least 2 years and shall be made available to the District upon request. (basis: Recordkeeping, Cumulative Increase)

RECOMMENDATION

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source will be located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following source:

S-1053 Natural Gas Fired Boiler, Cleaver Brooks FLX-700-1200-150ST, maximum firing rate: 12 MMBtu/hr (350 BHP)

Kathleen Truesdell
Air Quality Engineer II
Engineering Division

Attachment A

SUMMARY								
			Permitted Emissions					
Status	**Source**		**PM**	**POC**	**NOx**	**SOx**	**CO**	**Reason**
exempt	23	Laboratory	-	-	-	-	-	exempt
LOE	26	Emergency diesel engine, 230 hp	-	-	-	-	-	LOE
LOE	28	Emergency diesel engine, 134 hp	-	-	-	-	-	LOE
permitted	50	Emergency diesel engine, 300 hp	0.004	0.002	0.13	0.006	0.015	Permitted emissions from application 6657
exempt	51	Storm water Sand/oil interceptor	-	-	-	-	-	exempt
permitted	56	Emergency diesel engine, 217 hp	0.002	0.002	0.031	0	0.013	Permitted emissions from application 23479
LOE	1001	Emergency diesel engine, 469 hp	-	-	-	-	-	LOE
permitted	1006	Solvent Waste Tank	-	0.05	-	-	-	Permitted emissions from application 10842
permitted	1013	Facility-wide Wipe-Cleaning	-	11.594	-	-	-	Current Condition 11040 permitted emissions limit
LOE	1025	Emergency diesel engine, 469 hp	-	-	-	-	-	LOE
permitted	1044	Emergency diesel engine, 2847 hp	0.03	0.47	2.16	0.06	0.86	Permitted emissions from application 5753
permitted	1051	Solvent Cleaning	-	0.729	-	-	-	Current Condition 25500 permitted emissions limit
permitted	1052	Solvent Cleaning	-	0.729	-	-	-	Current Condition 25501 permitted emissions limit
new source	1053	Natural gas fired boiler, 12 MMBtu/hr	0.48	0.841	0.574	0.18	1.787	Application 27781, condition 26264
		TOTAL	**0.516**	**14.417**	**2.895**	**0.246**	**2.675**	

Attachment B

			Potential to Emit					
Status	**Source**		**PM**	**POC**	**NOx**	**SOx**	**CO**	**Reason**
exempt	23	Laboratory	-	-	-	-	-	exempt
LOE	26	Emergency diesel engine, 230 hp	0.192	0.097	1.107	0.001	0.306	Potential to Emit (emergency engine, 500 hours)
LOE	28	Emergency diesel engine, 134 hp	0.112	0.056	0.646	0.000	0.179	Potential to Emit (emergency engine, 500 hours)
permitted	50	Emergency diesel engine, 300 hp	0.040	0.020	1.300	0.060	0.150	Potential to Emit (emergency engine, 500 hours)
exempt	51	Storm water Sand/oil interceptor	-	-	-	-	-	exempt
permitted	56	Emergency diesel engine, 217 hp	0.020	0.020	0.310	0.000	0.130	Potential to Emit (emergency engine, 500 hours)
LOE	1001	Emergency diesel engine, 469 hp	0.389	0.196	2.242	0.001	0.620	Potential to Emit (emergency engine, 500 hours)
permitted	1006	Solvent Waste Tank	-	0.05	-	-	-	Permitted emissions from application 10842
permitted	1013	Facility-wide Wipe-Cleaning	-	11.594	-	-	-	Current Condition 11040 permitted emissions limit
LOE	1025	Emergency diesel engine, 469 hp	0.389	0.196	2.242	0.001	0.620	Potential to Emit (emergency engine, 500 hours)
permitted	1044	Emergency diesel engine, 2847 hp	0.300	4.700	21.600	0.600	8.600	Potential to Emit (emergency engine, 500 hours)
permitted	1051	Solvent Cleaning	-	0.729	-	-	-	Current Condition 25500 permitted emissions limit
permitted	1052	Solvent Cleaning	-	0.729	-	-	-	Current Condition 25501 permitted emissions limit
new source	1053	Natural gas fired boiler, 12 MMBtu/hr	0.48	0.841	0.574	0.18	1.787	Application 27781, condition 26264
		TOTAL	**1.442**	**18.386**	**29.446**	**0.664**	**10.604**	