Certified Enameling
3342 Emery St.
Los Angeles, CA 90023
ID No.: 800380

EQUIPMENT DESCRIPTION:

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 5: COATING AND DRYING LINE 2, EMERY STREET					
OVEN, DRYING, PTE, THREE ZONES, NATURAL GAS, 7.5 MMBTU/HR WITH A/N 516898 BURNER, ZONE 1, VENTED TO APC, NATURAL GAS, MAXON, MODEL OVENPAK LE25, WITH LOW NOX BURNER, 2.5 MMBTU/HR BURNER, ZONE 2, NATURAL GAS, MAXON, MODEL OVENPAK LE25, WITH LOW NOX BURNER, 2.5 MMBTU/HR BURNER, ZONE 3, NATURAL GAS, MAXON, MODEL OVENPAK LE25, WITH LOW NOX BURNER, 2.5 MMBTU/HR	D169	C122		CO: 2000 PPMV [RULE 407], HAP [40CFR63 SUBPART MMMM], NOX: 30 PPMV [RULE 1147], PM [RULE 404], PM: 0.1 GRAINS/SCF [RULE 409], VOC: [RULE 1107]	C6.1 D182.2 E71.3 H23.4

Process 6: CONVEYORIZED CHROME CONVERSION					
System 1: NO. 1, EMERY STREET					
OVEN, DRYING, TWO TUNNELS, NATURAL GAS, 4.1 MMBTU/HR WITH A/N 516900 BURNER, TUNNEL 1, NATURAL GAS, MAXON, MODEL OVENPAK LE15, WITH LOW NOX BURNER, 1.6 MMBTU/HR BURNER, TUNNEL 2, NATURAL GAS, MAXON, MODEL OVENPAK LE25, WITH LOW NOX BURNER, 2.5 MMBTU/HR	D163			CO: 2000 PPMV [RULE 407], NOX: 30 PPMV [RULE 1147], PM [RULE 404], PM: 0.1 GRAINS/SCF [RULE 409]	D182.2 H23.4

A/N 516899: Title V facility permit revision

BACKGROUND:

Certified Enameling submitted a/n 516898 to modify an existing oven which is permitted under p/n F59144 and a/n 362403. The applicant wants to replace the existing 1.5 and 2.5 MMBtu/hr burners with two 2.5 MMBtu/hr Maxon low-NOx burners and add another zone to the oven, zone 3, and install another 2.5 MMBtu/hr Maxon low-NOx burner in the zone. The reason for the additional zone is due to the recent demand for making steel extrusions which require additional heat treatment over aluminum extrusions. All new burners are capable of operating at a NOx concentration of no more than 30 ppmv @ 3% O_2 for Rule 1147 compliance.

Certified Enameling also submitted a/n 516900 to permit drying tunnels which serves a conveyorized chrome conversion line. The line has two drying tunnels each fitted with 1.5 MMBtu/hr natural gas fired burners. Certified Enameling wants to replace the burner of each tunnel with one 1.6 MMBtu/hr Maxon low-NOx burner and one 2.5 MMBtu/hr Maxon low-NOx burner. Both tunnels will be added to the facility permit under a single device number. Both burners are designed to operate at a NOx concentration of 30 ppmv @ 3% O_2.

Certified Enameling is a Title V facility. A Title V renewal permit was issued to this facility on September 22, 2009. Certified Enameling has proposed to revise their Title V renewal permit with application no. 516899. This permit revision is considered as a "minor permit revision" to the Title V renewal permit, as described in the Regulation XXX evaluation.

PROCESS DESCRIPTION:

Certified Enameling is a contract painter of aluminum and steel architectural extrusions. The extrusions are of a variety of sizes, some as long as 20 feet. The extrusions are suspended on a conveyor which runs through a totally enclosed tunnel where the parts undergo a chemical chromium conversion treatment consisting of a chemical spray application and water rinsing. The chromium conversion stage of the line is vented to a permitted chemical scrubber. After the conversion is complete, the parts are dried in two drying tunnels. The parts leave the drying tunnels, still hanging from a conveyor, and pass through eight spray booths where they are painted. After painting, the painted parts are cured in an oven. Certified Enameling operates up to 16 hrs/day, 6 days/wk and 50 wks/yr.

EMISSION CALCULATIONS:

NOx and CO emission estimates for the oven and drying tunnels are based on 30 ppmv and 100 ppmv, respectively. ROG, PM10 and SOx emissions are based on AER default emission factors.

A/N 516898:
Heat input: 7,500,000 Btu/hr
Gross heating value: 1,050 Btu/ft^3
Max daily gas usage = 7,500,000 Btu/hr x 1 ft^3/1,050 Btu = 7,143 ft^3/hr

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 9	PAGE 4
ENGINEERING DIVISION	APPL. NO. Below	DATE 1/12/2011
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY T. Iwata	CHECKED BY

Certified Enameling A/N 516898

with Low NOx Burner

	maximum	normal		
hr/dy	24	16	max heat input	7.50E+06 (BTU/hr)
dy/wk	7	6	gross heating value	1050 (BTU/scf)
wk/yr	52	52		
load	100%	100%		

	Emission Factors	MAX (lb/hr)	AVE (lb/hr)	MAX (lb/dy)	30-DAY (lb/dy)	MAX (lb/yr)	MAX (ton/yr)
SO_2 (R1)	0.83	0.006	0.006	0.142	NA	52	0.026
SO_2 (R2)	0.83	0.006	0.006	0.142	0.142	52	0.026
NO_2 (R1)	130	0.929	0.929	22.286	NA	8,112	4.056
NO_2 (R2)	38.6	0.276	0.276	6.617	6.617	2,409	1.204
CO (R1)	79	0.564	0.564	13.543	NA	4,930	2.465
CO (R2)	79	0.564	0.564	13.543	13.543	4,930	2.465
PM, PM_{10} (R1=R2)	7.5	0.054	0.054	1.286	1.286	468	0.234
TOC(R1=R2)	7	0.050	0.050	1.200	1.200	437	0.218
acetaldehyde	0.0043	3.1E-05	3.1E-05	7.4E-04	NA	2.68E-1	1.34E-4
acrolein	0.0027	1.9E-05	1.9E-05	4.6E-04	NA	1.68E-1	8.42E-5
ammonia	3.2	2.3E-02	2.3E-02	5.5E-01	NA	2.00E+2	9.98E-2
benzene	0.008	5.7E-05	5.7E-05	1.4E-03	NA	4.99E-1	2.50E-4
ethyl benzene	0.0095	6.8E-05	6.8E-05	1.6E-03	NA	5.93E-1	2.96E-4
formaldehyde	0.017	1.2E-04	1.2E-04	2.9E-03	NA	1.06E+0	5.30E-4
hexane	0.0063	4.5E-05	4.5E-05	1.1E-03	NA	3.93E-1	1.97E-4
napthalene	0.0003	2.1E-06	2.1E-06	5.1E-05	NA	1.87E-2	9.36E-6
PAH's	0.0001	7.1E-07	7.1E-07	1.7E-05	NA	6.24E-3	3.12E-6
propylene	0.731	5.2E-03	5.2E-03	1.3E-01	NA	4.56E+1	2.28E-2
toluene	0.0366	2.6E-04	2.6E-04	6.3E-03	NA	2.28E+0	1.14E-3
xylenes	0.0272	1.9E-04	1.9E-04	4.7E-03	NA	1.70E+0	8.49E-4

NO_2 @ 3% excess O_2------>>>	29.74	(ppmv)	SO_2 @ 3% excess O_2------>>> 0.46 (ppmv)
CO @ 3% excess O_2------>>>	99.97	(ppmv)	PM @ 12% CO_2------>>> 5.5E-09 (grain/ft^3)

Ver. 1.5

Previous Emissions:
Daily CO emissions = 10 lb/day
Daily NOx emissions = 9 lb/day
Daily PM10 emissions = 1 lb/day

New Emissions:
Daily CO emissions = 13.5 lb/day
Daily NOx emissions = 6.6 lb/day
Daily PM10 emissions = 1.3 lb/day

Emissions Difference:
Daily CO emissions = 3.5 lb/day
Daily NOx emissions = -2.4 lb/day
Daily PM10 emissions = 0.3 lb/day

A/N 516900:
Heat input: 4,100,000 Btu/hr
Gross heating value: 1,050 Btu/ft^3
Max daily gas usage = 4,100,000 Btu/hr x 1 ft^3/1,050 Btu = 3,905 ft^3/hr

Certified Enameling A/N 516900

with Low NOx Burner

	maximum	normal
hr/dy	24	16
dy/wk	7	6
wk/yr	52	52
load	100%	100%

max heat input 4.10E+06 (BTU/hr)
gross heating value 1050 (BTU/scf)

	Emission Factors	MAX (lb/hr)	AVE (lb/hr)	MAX (lb/dy)	30-DAY (lb/dy)	MAX (lb/yr)	MAX (ton/yr)
SO_2 (R1)	0.83	0.003	0.003	0.078	NA	28	0.014
SO_2 (R2)	0.83	0.003	0.003	0.078	0.078	28	0.014
NO_2 (R1)	130	0.508	0.508	12.183	NA	4,435	2.217
NO_2 (R2)	38.6	0.151	0.151	3.617	3.617	1,317	0.658
CO (R1)	79	0.308	0.308	7.403	NA	2,695	1.347
CO (R2)	79	0.308	0.308	7.403	7.403	2,695	1.347
PM, PM_{10} (R1=R2)	7.5	0.029	0.029	0.703	0.703	256	0.128
TOC(R1=R2)	7	0.027	0.027	0.656	0.656	239	0.119
acetaldehyde	0.0043	1.7E-05	1.7E-05	4.0E-04	NA	1.47E-1	7.33E-5
acrolein	0.0027	1.1E-05	1.1E-05	2.5E-04	NA	9.21E-2	4.61E-5
ammonia	3.2	1.2E-02	1.2E-02	3.0E-01	NA	1.09E+2	5.46E-2
benzene	0.008	3.1E-05	3.1E-05	7.5E-04	NA	2.73E-1	1.36E-4
ethyl benzene	0.0095	3.7E-05	3.7E-05	8.9E-04	NA	3.24E-1	1.62E-4
formaldehyde	0.017	6.6E-05	6.6E-05	1.6E-03	NA	5.80E-1	2.90E-4
hexane	0.0063	2.5E-05	2.5E-05	5.9E-04	NA	2.15E-1	1.07E-4
napthalene	0.0003	1.2E-06	1.2E-06	2.8E-05	NA	1.02E-2	5.12E-6
PAH's	0.0001	3.9E-07	3.9E-07	9.4E-06	NA	3.41E-3	1.71E-6
propylene	0.731	2.9E-03	2.9E-03	6.9E-02	NA	2.49E+1	1.25E-2
toluene	0.0366	1.4E-04	1.4E-04	3.4E-03	NA	1.25E+0	6.24E-4
xylenes	0.0272	1.1E-04	1.1E-04	2.5E-03	NA	9.28E-1	4.64E-4

NO_2 @ 3% excess O_2------>>> 29.74 (ppmv)
SO_2 @ 3% excess O_2------>>> 0.46 (ppmv)
CO @ 3% excess O_2------>>> 99.97 (ppmv)
PM @ 12% CO_2------>>> 5.5E-09 (grain/ft^3)

New Emissions:
Daily CO emissions = 7.4 lb/day
Daily NOx emissions = 3.6 lb/day
Daily PM10 emissions = 0.7 lb/day

Total Emissions From A/N 516898 & 516900:
Daily CO emissions = 10.9 lb/day
Daily NOx emissions = 1.2 lb/day
Daily PM10 emissions = 1 lb/day

RISK ASSESSMENT

A/N 516898:
The combustion of natural gas results in toxic air contaminant emissions. A Tier 2 Rule 1401 Risk Assessment was performed to determine the health risk from operating the oven. The assessment indicates a potential cancer risk of 0.051 and 0.0684 in a million at the residential and commercial receptors, respectively. The potential acute and chronic health hazard risks are both well below one. Risk assessment spreadsheets are included in application no. 516898.

A/N 516900:
Another Tier 2 Rule 1401 Risk Assessment was performed for the drying tunnels. The assessment indicates a potential cancer risk of 0.0497 and 0.0666 in a million at the residential and commercial receptors, respectively. Again, the potential acute and chronic health hazard risks are both well below one and the risk assessment spreadsheets are included in application no. 516898.

RULE ANALYSIS:

RULE 212 (c)(1): A public notice is not required for this project since the emission source is not located within 1,000 feet from the outer boundary of a school. The closest school is located 0.4 miles from the facility (SEA Charter School).

RULE 212 (c)(2) & 212(g): A public notice is not required for this project since the emission increases do not exceed any of the daily maximums as specified in Rule 212(g).

	Maximum Daily Emissions (lb/day)					
	ROG	**NO_x**	**PM_{10}**	**SO_2**	**CO**	**Pb**
Emission increase	0	1	1	0	11	0
Max Limit	**30**	**40**	**30**	**60**	**220**	**3**
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

RULE 212(c)(3): A public notice is not required for this project since there will not be an increase in emissions of toxic air contaminants listed in Table I of Rule 1401 that will result in a cancer risk equal or greater than one in a million.

RULES 401 & 402: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

RULE 407: Operation of the oven and drying tunnels are not designed to emit CO exceeding 2,000 ppmv. Compliance is expected.

RULE 409: PM emissions from the oven and drying tunnels are expected to be less than 0.1 gr/scf. Compliance is expected.

RULE 1147: The oven and drying tunnels will be fitted with low-NOx burners that are designed to emit NOx at no more than 30 ppmv @ 3% O_2. Compliance will be verified by a source test.

RULE 1303(a): The oven and drying tunnels will be fitted with low-NOx burners.

RULE 1303(b)(1): Modeling is not required for the oven or drying tunnels since the hourly emissions are less than the allowable limits.

A/N 516898 (7.5 MMBtu/hr):

Modeling Analysis	NOx (lb/hr)	CO (lb/hr)	PM10 (lb/hr)
Hourly Emissions	0.276	0.564	0.054
Allowable Limit	0.47	25.9	2.8

A/N 516900 (4.1 MMBtu/hr):

Modeling Analysis	NOx (lb/hr)	CO (lb/hr)	PM10 (lb/hr)
Hourly Emissions	0.308	0.151	0.029
Allowable Limit	0.31	17.1	1.9

RULE 1303(b)(2): The following is the emission summary for the applications. Emission offsets are not required since the potential-to-emits are below threshold levels.

A/N 516898:
Daily CO emissions = 3.5 lb/day
Daily NOx emissions = -2.4 lb/day
Daily PM10 emissions = 0.3 lb/day

A/N 516900:
Daily CO emissions = 7.4 lb/day
Daily NOx emissions = 3.6 lb/day
Daily PM10 emissions = 0.7 lb/day

RULE 1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: There will not be a cancer risk equal or greater than one in a million or an acute or chronic health risk from the intended operation of the oven or drying tunnels. See above RISK ASSESSMENT section for details. Compliance is achieved.

REGULATION XXX:

The proposed project is considered as a "minor permit revision" to the Title V permit issued to this facility. Rule 3000(b)(6) defines a "minor permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx	40
PM10	30
SOx	60
CO	220

Rule 3003(j) specifies that a proposed permit for revision shall be submitted to EPA for review. To determine if a project qualifies for a "minor permit revision", emission increases resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This is the first permit revision of the Title V renewal permit. The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

Revision	HAP	VOC	NOx	PM_{10}	SOx	CO
Previous Permit Revision Total	0	0	0	0	0	0
1st Permit Revision, modify device D169 (oven) and add device D163 (drying tunnel)	0	0	1	1	0	11
Cumulative Total	0	0	1	1	0	11
Maximum Daily	30	30	40	30	60	220

RECOMMENDATION:

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "minor permit revision", it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to the EPA for a 45-day review pursuant to Rule 3003(j). If the EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

Certified enameling R1147 burners