

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGE 1	PAGES 5
	APPL. NO. PC 485175-83	DATE 11/6/2009
	PROCESSOR MFN	REVIEWER DR/HW

PERMIT TO CONSTRUCT ANALYSIS

FACILITY MAILING ADDRESS

CARLTON FORGE WORKS
7743 E. ADAMS STREET
PARAMOUNT, CA 90723

(ID: 022911 NOx RECLAIM Cycle 2 - TITLE V)

EQUIPMENT LOCATION

SAME AS ABOVE

EQUIPMENT DESCRIPTION

APPLICATION NO. 485175 - FACILITY PERMIT MODIFICATION

APPLICATION NO. 485176 - CHANGE OF CONDITION

PROCESS 1: HEAT TREATING

D20 FURNACE, NO. R503, SAUDER INDUSTRIES, CUSTOM BUILT, METAL FORGING, WITH FOUR HAUCK LOW NO_x BURNERS, MODEL NO. RSVG-125, 4,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 485177 - CHANGE OF CONDITION

PROCESS 1: HEAT TREATING

D19 FURNACE, NO. R502, SAUDER INDUSTRIES, CUSTOM BUILT, METAL FORGING, WITH FOUR HAUCK LOW NO_x BURNERS, MODEL NO. RSVG-125, 4,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 485178 - PERMIT TO CONSTRUCT

PROCESS 1: HEAT TREATING

D200 FURNACE, NO. 714, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, WITH TWO ECLIPSE LOW NO_x BURNERS, MODEL NO. FN0150, 3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

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APPLICATION NO. 485179 - PERMIT TO CONSTRUCT

PROCESS 1: HEAT TREATING

D198 FURNACE, NO. 713, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, WITH TWO ECLIPSE LOW NO_x BURNERS, MODEL NO. FN0150, 3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 485180 - PERMIT TO CONSTRUCT

PROCESS 1: HEAT TREATING

D196 FURNACE, NO. 712, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, WITH TWO ECLIPSE LOW NO_x BURNERS, MODEL NO. FN0150, 3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 485181 - PERMIT TO CONSTRUCT

PROCESS 1: HEAT TREATING

D194 FURNACE, NO. 711, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, WITH TWO ECLIPSE LOW NO_x BURNERS, MODEL NO. FN0150, 3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 485182 - PERMIT TO CONSTRUCT

PROCESS 1: HEAT TREATING

D192 FURNACE, NO. 710, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, WITH TWO ECLIPSE LOW NO_x BURNERS, MODEL NO. FN0150, 3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 485183 - PERMIT TO CONSTRUCT

PROCESS 1: HEAT TREATING

D190 FURNACE, NO. 709, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, WITH TWO ECLIPSE LOW NO_x BURNERS, MODEL NO. FN0150, 3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

HISTORY

Application No. 485175 was filed on July 8, 2008, for a RECLAIM/Title V Facility permit modification. Application Nos. 485176 and 485177 were filed on July 8, 2008 as Administrative Change to the Permits to Operate. Application Nos. 485178-485183 were filed on July 8, 2008, for Class I Permits to Construct.

There was no compliance activity found in District records (CLASS computer database) for the past 2 years for Carlton Forge Works.

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PROCESS DESCRIPTION

Carlton Forge Works (CFW) primarily forges billet from exotic metals to specific shapes and rolled rings, primarily for the aerospace industry.

The proposed furnaces will be used to forge ferrous and non-ferrous metals and will enable CFW to process materials efficiently while reducing overall emissions. These six furnaces have a maximum heat input of 3.0 mmbtu/hr, whereas the typical furnace at CFW is 6.0 mmbtu/hr; 80% of the total furnaces owned by CFW are rated 6.0 mmbtu/hr or above.

The metal may be loaded into either a cold or hot furnace. After the heat is completely soaked through, the metal is removed from the furnace for the forging process. There may be more than one heating cycle per day depending on the materials to be forged, quantity of pieces and forging temperature.

EVALUATION

Forging Furnaces D19 & D20 - Administrative Change

The applicant has requested to update the furnace identification number for device ID D19 from R204 to R502 and for device ID D20 from R205 to R503. The requested change is considered an administrative change of condition. There are no production or emission increases associated with this administrative change of condition. The previous emissions shall be brought forward.

Forging Furnaces D190-D200 - Permit to Construct

Operating Schedule – 16 hrs/day, 6 days/wk, 50 weeks/yr (Average)

24 hrs/day, 7 days/wk, 52 weeks/year (Maximum)

Heat rating – 3.0 MMBTU/hr

Monthly Fuel limit – 1.37143 mmcf (applicant request)

Load factor – Average Load = 100%

Maximum Load = 100%

Operating Temperature – 1800°F (Average)

2150°F (Maximum)

NOx emissions – 50 ppmv @ 3% O₂ (To be verified with a conditioned source test)

Consultant is requesting 50 ppmv be used for emission calculations and reporting purposes as allowed in R2012.

- HC, SOx, CO and PM emissions from the 2006-2007 AER Program

- PM₁₀ = 1.0 PM, based on 1/30/92, Fred Del Rosario memo.

See attached sheet for criteria pollutant emission calculations.

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RULES COMPLIANCE

RULE 212: Public Notification

Paragraph 212 (c)(1) Requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. According to the website geodistance.com the closest school, Lincoln Elementary School is beyond a 1200 feet from Carlton Forge Work’s property line. A 30-Day Public Notice is not required under this paragraph.

Paragraph 212(c)(2) The equipment will not result in on-site emission increase exceeding the daily maximums as specified in the table in Rule 212(g). Therefore, a 30-day public notice period will not be required under this paragraph.

Paragraph 212(c)(3) Public notice will not be required under this paragraph. See Rule 1401 evaluation section.

RULE 401: Compliance is expected. Visible emissions are not expected from the proper operation of this equipment. There has been no visible emission citations associated with the operation of similar furnaces at this facility.

RULE 402: Compliance is expected. Nuisance is not expected with the proper operation and maintenance of this furnace. There is no record of any nuisance complaints or citations associated with forging furnaces at this facility.

RULE 404: The equipment is in compliance with this rule. Natural gas combustion is the only source of PM contaminants. The maximum expected PM concentration of 0.002 gr/dscf is well below the allowable limit of 0.17 gr/dscf (see Table 404(a)) for a furnace discharge of 1,300 dscfm.

RULE 407: Compliance is expected. CO is expected to be below 2000 ppm. Company has source test results on record for similar equipment with CO emissions averaging less than 50 ppm @ 3% O₂.

RULE 431.1: Compliance is expected. The furnace will be fired on natural gas with sulfur compounds (as H₂S) less than 16 ppm.

REG XIII/XX: BACT for a forging furnace is 50 ppmv @ 3% O₂ for NO_x and natural gas combustion for SO_x. As requested by the applicant, 50 ppmv shall be conditioned to this furnace as both its NO_x BACT limit and for RECLAIM reporting purposes. NO_x compliance shall be verified with required source test of furnace once constructed. See device condition D28.4

Modeling is met. Emission rates for the furnaces are below the screening level of Table A-1 of Rule 1303.

Heat Input (mmBtu/hr)	NO _x (lb/hr)	CO (lb/hr)	PM (lb/hr)
>2 <5	0.31	17.1	1.9
D190-D200	0.18	0.10	0.02

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Carlton Forge Works is a NOx RECLAIM facility. On January 30, 2008 and April 30, 2008, they purchased 16,800 pounds and 5,000 pounds respectively of **NOx RTCs**. At most 1,053 pounds will be used by each of the proposed forging furnaces, device IDs D190-D200.

Offsets are not required; all non-RECLAIM pollutants are below Table A of Rule 1304 (d).

REG XIV: Forging Furnaces are in compliance of Tier 2 analysis. See attached calculations sheets. District default toxic emission factors used as published in the 2006-2007 General Instruction Book for the Annual Emission Report Program.

REG XXX: This is a De Minimis Significant Permit Revision to the Title V permit. EPA 45-day review period is required.

RECOMMENDATION

Forging Furnaces - Administrative Change

Issue a Permit to Operate to Application Nos. 485176 (D20) and 485177 (D19) as described in this report and the Facility Permit

Forging Furnaces - Permit to Construct

Issue a Permit to Construct, to Application Nos. 485178, 485179, 485180, 485181, 485182, and 485183 as described in this report and in the Facility Permit.