

Department of Environmental Quality
 Northwest Region
 Air Quality Program

**Standard
 AIR CONTAMINANT DISCHARGE PERMIT
 REVIEW REPORT**

PCC Structurals, Inc
 13350 SE Johnson Road
 Milwaukie, OR 97222
 503-652-4519

Unassigned emissions	
Emission credits	
Source test	
COMS	
CEMS	
Compliance schedule	
Special conditions	X
Annual report	X
Semi-annual report	
Quarterly report	

Monthly report	
Excess emissions report	
NSPS	
NESHAP	
NSR	
PSD	
RACT	
FCE	
Public Notice	Category II

TABLE OF CONTENTS

PERMITTING2

SOURCE DESCRIPTION.....2

COMPLIANCE.....3

SPECIAL CONDITIONS.....4

EMISSIONS4

MAJOR SOURCE APPLICABILITY5

ADDITIONAL REQUIREMENTS.....6

PUBLIC NOTICE.....6

PERMITTING

PERMITTING ACTION

1. The permit is a renewal for an existing Standard Air Contaminant Discharge Permit (ACDP) which was issued on 01/09/2002 and was originally scheduled to expire on 07/01/2006.

OTHER PERMITS

2. The source holds a NPDES storm water (1200-Z) permit.

ATTAINMENT STATUS

3. The source is located in a maintenance area for carbon monoxide (CO) and ozone. Oxides of nitrogen (NO_x) and volatile organic compounds (VOC), are precursors of ozone. The facility is a minor source of CO, NO_x and VOC.

SOURCE DESCRIPTION

OVERVIEW

4. The permittee operates two different processes at the Deer Creek facility, Core Manufacturing (both naphthalene based and solvent based) and Investment Casting. The facility commenced operations in 1998. The following is a brief description of their processes:
 - a. Core Manufacturing - The ceramic core facility produces ceramic products used in steel and titanium casting, including utility ceramics for foundry operations and ceramic cores for a variety of investment casting products. Process emissions result from the use and/or heating of alcohol-based slurries and solutions, phenolic resins, alcohol rinses and naphthalene-based products. Processing these components results in VOC, VOC HAP and non-VOC HAP emissions.
 - b. Investment Casting Operations - The investment casting operations consist of several processes based on the lost-wax investment casting method. The first process is making a wax replica of the finished product in the wax molding and assembling process. The wax replica, or pattern, is then processed in investing where the wax pattern is dipped into an aqueous-based slurry containing latex, then coated with dry sand. This creates a hard ceramic shell when it dries. The process is repeated until a desired shell thickness is obtained. The wax is then melted from the shell in the dewaxing operation. The shell is placed in ovens during the ceramic shell curing process; some shell is flash-fired prior to this step

and some is not. After the shell is cured, molten steel alloy is poured into the hollow shell in the foundry which employs both air and vacuum casting methods. The ceramic shell is removed using chemical and mechanical methods and excess metal is cut from the casting. Remaining processes consist of metal grinding, sandblasting, full penetrant inspection, radiography, welding and visual dimension. Investment casting operations emit PM, PM₁₀, NO_x, CO, VOC, PM HAP and VOC HAP.

5. The following changes have been made to the facility and or its permit since the last permit renewal:
 - a. A Core Facility baghouse was installed. NOC 020334.
 - b. A sawdust process was incorporated. NOC 020995.
 - c. A sixth Core facility electrically-powered oven was installed to support the naphthalene core-making process. NOC 021421 (06/02/2005).
 - d. An eighth wax burnout oven was installed. NOC 021570 (11/08/2005).
 - e. A fifth Investing robot cell was installed. NOC 021408.
 - f. A second boiler-clave is in the process of being installed. NOC approval pending.

PROCESS AND CONTROL DEVICES

6. Existing air contaminant sources at the facility consist of the following:
 - a. Naphthalene-based Core Process, uncontrolled - 1988.
 - b. Solvent-based slurry Core Process, uncontrolled - 1988.
 - c. Grinding operations associated with Titanium Post-Cleaning, controlled by baghouse – 02/01/1998.
 - d. Investing w/baghouse control – 11/01/1999.
 - e. Flashfire Furnace (Nos. 1 & 2) each with a gas fired afterburner.
 - f. Eight gas fired wax burnout ovens, uncontrolled – 08/01/2000, 11/08/2005 (NOC 021570).
 - g. Two Autoclave (electric), 11/01/1999.
 - h. Vacuum cast furnace, uncontrolled – 11/01/1999.
 - i. Air casting station, uncontrolled – 11/01/1999.
 - j. Propane fired equipment such as forklifts.
 - k. Post cleaning operations for nickel-, cobalt-, and chromium-based super alloys with baghouse – 08/28/2000 (NOC 018325)
 - l. Abrasive cut-off saw with dust collector – 11/30/2000.
 - m. Core facility baghouse – 10/29/2002 (NOC 021421)
 - n. Cleaning operations baghouse – 10/26/2001 (NOC 018707)

COMPLIANCE

7. The facility was inspected on 09/30/2005 and found to be in compliance with permit conditions.

8. During the prior permit period there were no complaints recorded for this facility.
9. No enforcement actions have been taken against this source since the last permit renewal.

SPECIAL CONDITIONS

10. The permit includes the requirement that the permittee operate the afterburner of the Flashfire Furnace at a set-point temperature of 1500°F at all times the furnace is in use. The permittee must take immediate corrective action to return the afterburner to normal operating conditions any time the operating temperature falls below 1450°F. Operation below 1450°F is not considered a violation, however, the destruction efficiency of the afterburner will be assumed to be zero (0) percent for these time periods when compliance with plant site emission limits is calculated.

EMISSIONS

11. Proposed PSEL information:

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limits (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	0	0	0	24	24	0
PM ₁₀	0	0	0	14	14	0
SO ₂	0	0	0	NA	NA	NA
NO _x	0	0	0	39	39	0
CO	0	0	0	99	99	0
VOC	0	0	0	39	39	0

The proposed PSELs for all pollutants are equal to the Generic PSEL in accordance with OAR 340-216-0064(4)(b) and the netting basis is zero in accordance with OAR 340-222-0040(2). In addition, the Generic PSEL is a federally enforceable limit on the potential to emit.

SIGNIFICANT EMISSION RATE ANALYSIS

12. For each pollutant, the proposed Plant Site Emission Limit is less than the Netting Basis plus the significant emission rate, thus no further air quality analysis is required. No increase in the Plant Site Emission Limit is being allowed by this permitting action.

13. An analysis of the proposed PSEL increases over the Netting Basis is shown in the following table.

Pollutant	SER	Requested increase over previous netting basis	Increase due to utilizing capacity that existed in the baseline period	Increase due to physical changes or changes in the method of operation
PM	25	24	0	24
PM ₁₀	15	14	0	14
SO ₂	40	NA	NA	NA
NO _x	40	39	0	39
CO	100	99	0	99
VOC	40	39	0	39

MAJOR SOURCE APPLICABILITY

CRITERIA POLLUTANTS

14. A major source for Title V Permit applicability is a facility that has the potential to emit more than 100 tons per year of any criteria pollutant. The potential to emit for each criteria pollutant at this facility is substantially less than 100 tons per year. Therefore, this source is not a major source of criteria pollutant emissions and is not subject to the Title V Operating Permit Program.

HAZARDOUS AIR POLLUTANTS

15. The potential to emit hazardous air pollutants (HAPs) when operating at the annual production capacity is shown below. A major source of HAPs for Title V Permit applicability is a facility that has the potential to emit 10 or more tons/year of any single HAP or 25 tons/year or more of combined HAPs. This source is not a major source of HAPs and as such is not subject to the Title V Operating Permit Program. The estimate of HAP emissions is based on information supplied by the source in the permit application.

Hazardous Air Pollutant	Potential to Emit (tons/year)
Aggregate Particulate HAP	2.19
Aggregate VOC HAP	9.47
Aggregate Other HAP	0.50
Total HAP	12.16

ADDITIONAL REQUIREMENTS

NSPS APPLICABILITY

16. There are no sources at this facility for which NSPS standards have been promulgated.

NESHAPS/MACT APPLICABILITY

17. There are no sources at this facility for which NESHAPS/MACT standards have been promulgated.

RACT APPLICABILITY

18. The facility is located in the Portland AQMA, but it is not one of the listed source categories in OAR 340-232-0010, thus the RACT rules do not apply

TACT APPLICABILITY

19. The source is meeting the states TACT/Highest and Best Rules by conducting the following activities
- a. VOC emissions that occur during the Flashfiring process are controlled with an afterburner which operates at a set point temperature of 1500°F.
 - b. It was determined that add-on controls to control VOC emissions from the Core Manufacturing facility were not practicable.
 - c. Processes producing any significant amounts of particulate matter are controlled by baghouse dust collectors with greater than 99% control efficiency.

PUBLIC NOTICE

20. The proposed Plant Site Emission Limit is equal to the previous permit. No increases in emissions are being allowed by this permit renewal.
21. The proposed permit was placed on a Category II public notice from July 28, 2006 until August 28, 2006, 5pm. No comments were received.

dpk:GG
ACDP 030020RR.doc
8/31/2006