

October 2007

Draft Air Permit for FDS Coke Plant, Toledo

After careful review and consideration of new information and best available technology, Ohio EPA has issued a new draft modified permit-to-install to regulate air emissions from the proposed FDS Coke Plant, L.L.C. (FDS) in Toledo. Ohio EPA believes that the permit will be protective of public health and the environment.

This is the third FDS air permit that has been issued since 2004. (Please see the box on page 2 for a more detailed chronology of the permitting history.) New information submitted as part of this application prompted Ohio EPA to review the applicability of the acid rain program and the inclusion of emission limits on hydrochloric acid (HCl) emissions based on testing done at the Haverhill North Coke facility in Scioto County.

Facility Location

The FDS Coke plant would be located in Oregon and Toledo on property owned by the Toledo-Lucas County Port Authority. The property is located west of Otter Creek Road, north of Millard Avenue, east of the Maumee River and south of Lake Erie.

Facility Description

FDS would consume approximately 2.06 million tons of wet coal per year to produce approximately 1.34 million tons of furnace coke per year. The plant would also produce an estimated 57,000 tons of nut coke and 43,000 tons of coke breeze per year.

FDS would be comprised of 168 non-recovery coke-making ovens constructed in two batteries (A & B). It would also recover heat from the coking process and produce steam to provide for a co-generation facility to

produce electric power. A separate draft permit has been issued for the cooling tower associated with this process. The proposed coke plant also includes coal handling, processing and transfer processes. In this application, coke storage piles were relocated from outside to inside, which will substantially improve air quality by eliminating an outdoor source of particulate emissions.

General Permit Conditions

The permit would require FDS to install air pollution control equipment to capture pollutants from coal handling, crushing, stamping, coking and cooling.

The permit sets emission limits for mercury, hydrochloric acid, particulates, sulfur dioxide, nitrogen oxide, carbon monoxide, lead, volatile organic compounds and hazardous air pollutants. Most of the emissions limits in this permit are more stringent than those in the 2004 permit. Sulfur dioxide and mercury emissions will be continuously monitored. Initial and periodic emissions testing is required, along with detailed recordkeeping and reporting.

Bypassing

Hot gasses from the coke ovens will be routed to boilers so the heat can be recovered. State safety regulations require all boilers to be inspected annually. During those inspections, the gasses must bypass the boilers (where the air pollution control equipment is located) and go out the stack directly. Ohio EPA knows of no other coke plant in the world that is designed not to allow periodic bypassing. Ohio EPA's permit

would limit these bypasses in the FDS permit to eight days per year per stack. Even with limited bypassing, public health will be protected. However, as an added precaution, the permit will require the facility to leave room to build a redundant energy recovery system (with applicable pollution controls) if, in the judgment of Ohio EPA's director, chronic excess bypassing has occurred and is likely to continue.

Mercury

The facility would be required to use state-of-the-art mercury controls. About 90 percent of the mercury emissions would be captured and not released to the environment. Ohio EPA also added a condition in the permit requiring FDS to study the effectiveness of the mercury controls.

The permit sets an annual limit of 36 pounds of mercury emissions from the normal plant operation, plus no more than 15 pounds per year during bypasses. Ohio EPA does not have any reason to believe that the emissions of mercury from this facility are likely to cause any adverse health effects.

Ohio EPA analyzed the anticipated mercury emissions and compared them to state and federal guidelines that are protective for acute (one-hour) or chronic (lifetime) exposure to mercury. The mercury limits in this draft permit are well below those that would cause health effects (less than one percent of the safe levels).

For comparison purposes, the First Energy Bayshore plant is authorized to emit up to 198 pounds of mercury annually and the Detroit Edison plant is permitted to emit 780 pounds of mercury annually.



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Public Hearing

A public information session and hearing on the draft permit will be held at 6:30 p.m. December 6, 2007, at Clay High School, 5665 Seaman Road, Oregon.

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FDS Air Permit Chronology

June 14, 2004	Ohio EPA issued a permit-to-install (PTI #04-01360) to FDS Coke Plant, L.L.C. (FDS).
July 13, 2004	FDS, the Sierra Club and Village of Harbor View appealed the final permit to the Environmental Review Appeals Commission (ERAC).
September 20, 2005	Ohio EPA issued an administrative modification to the original 2004 PTI. The changes in the final permit were the result of negotiations between FDS and Ohio EPA to resolve the issues raised in the appeal, and of design improvements proposed by FDS.
October 10, 2005	The Village of Harbor View appealed the modified PTI to ERAC.
December 14, 2006	FDS requested a one-time, 12-month extension of its original June 14, 2004, permit. Ohio EPA granted the request for the extension, making the PTI valid until December 14, 2007.
May 31, 2007	ERAC upheld Harbor View's appeal, ruling Ohio EPA did not have authority and jurisdiction to modify the PTI while the underlying appeal on the original PTI before ERAC remained an open and pending matter. This ruling nullified the modified PTI issued in 2005.
July 1, 2007	The Ohio legislature passed legislation that granted Ohio EPA authority to modify a PTI that is under appeal.
July 24, 2007	Ohio EPA received an application from FDS to administratively modify the June 2004 permit again.
October 1, 2007	Authority to issue a new permit took effect.
October 30, 2007	Ohio EPA issued draft modified PTI (PTI #04-01360).

Outline of major changes from the original PTI

Emissions Unit	06/14/04 PTI	Modified PTI	Comments
B901 Coke oven battery with charging and pushing operations	248 ovens in 4-battery configuration.	168 ovens in 2-battery configuration.	Battery relocated 500 feet west of 6/14/04 PTI location.
	47 tons coal/charge 5,640 tons coal/day 8 charges/hr.	67 tons/charge 5,897 tons coal/day 5 charges/hr.	Total annual coal and coke production remains the same. Charges/pushes reduced from 120 to 88 per day.
	48 hour coking time.	46 hour coking time.	
	No uncontrolled venting allowed.	Venting allowed for 8 days per year per vent stack - no more than one vent stack may be in operation at a time.	
	Charging and pushing cycle: 16 hrs/day.	Charging and pushing cycle: 24 hrs/day.	Reduces hourly tons charged from 376 to 337. Reduces hourly tons pushed from 263 to 240.75.
	Water cooled charging conveyor.	Flat coal carrier using stamped coal cake.	Reduces open oven door charging time and reduces PE/PM ₁₀ emissions.
	Charging multiclone at 45,000 cfm.	Charging baghouse at 3,000 cfm.	Provides greater assurance of the control of potential PM ₁₀ or smaller particles.
	Pushing operation with loose coke.	Pushing operation with coke cake.	Reduces PE and PM ₁₀ emissions during charging and pushing.
	Pushing multiclone at 50,000 cfm.	Pushing baghouse at 9,500 cfm.	
	Additional Comments		
	Required activated carbon injection for mercury emission control.		
	Allowed FDS to request and Ohio EPA to grant increases in emission limits for mercury and lead, based on test results.		
	Revised total Hazardous Air Pollutant (HAP) emissions limitations/compliance methods based on using the allowable mercury emission limitations, rather than using the U.S. EPA emission factor (AP-42) mercury value.		
Removed Ohio Administrative Code (OAC) rule 3745-23-06 rule applicability, since the rule was vacated.			
Removed specific Maximum Achievable Control Technology (MACT) language from Part II of the permit as recommended by the draft guidance on incorporating MACT into permits.			
Modified III.5 Continuous Emissions Monitoring (CEM) language to remove extra 40 Code of Federal Regulations (CFR) 60.13 information not specifically contained in the terms and conditions. Some of these terms would have needed to be modified due to updates to 40 CFR 60.13 in 2006 and 2007. The permit already requires that FDS comply with the monitoring requirements of 40 CFR 60.13.			
Added an operational restriction for maintaining the common battery tunnel at a minimum of 1400 degrees F along with associated monitoring, recordkeeping & reporting.			

Emissions Unit	06/14/04 PTI	Modified PTI	Comments
F001 Roadways and parking areas		Relocation of roadways.	
	NOTE: Revised date of AP-42 reference (emissions factor remains the same)		
F002 coke storage piles	Outdoor coal and coke storage piles.	Relocation of coke storage piles. Not outdoor coal piles.	Coal piles will be located indoors and included in F004. Results in a substantial reduction of the estimated air impact of the open coke pile on the surrounding area.
	NOTE: Revised date of AP-42 reference (emissions factor remains the same).		
F003 Coal unloading, crushing, screening, stamping, blending, storage, transfer and conveying		Relocation of equipment. Storage piles located indoors, addition of coal blending operations, addition of coal stamping station, change from baghouse control on coal crushing to cyclones vented indoors.	
	NOTE: Revised date of AP-42 reference (emissions factor remains the same).		
F004 coke handling and processing		Relocation of equipment. Eliminate secondary coke screening. Change from baghouse on coke crushing/screening tower to cyclone vented indoors.	
	NOTE: Revised date of AP-42 reference (emissions factor remains the same)		
P001 Quench tower	Quench tower for two batteries.	Relocation of operation. Quench tower for one battery. Increase the maximum daily processing to 5,897 tons/day charge.	
	NOTE: Revised MACT references according to draft incorporation by reference policy.		
P002 Quench tower	Quench tower for two batteries.	Relocation of operation. Increase the maximum daily processing to 5,897 tons/day charge.	Quench tower for one battery.
	Revised MACT references according to draft incorporation by reference policy		
P003 Lime silo		Relocation of operation.	
	Revised date of AP-42 reference (emissions factor remains the same).		
P004 Flue gas desulfurization dust silo controlled by fabric filtration		Relocation of operation.	
	Revised date of AP-42 reference (emissions factor remains the same).		
PTI Emissions summary (tons/year unless specified)	PE 740 PM ₁₀ 283 SO ₂ 1,071 NO _x 1,050 CO 306 Lead 0.13 VOC 94 HAPs 6.42 Mercury 36 lbs	PE 690 PM ₁₀ 249 SO ₂ 1,297 NO _x 1,032 CO 285 Lead 0.20 VOC 90 *HAPs 115 Mercury 51 lbs	
	* Total HAPS include 109 tons/year of HCl emissions.		