

September 2009

Middletown Coke

Project Information

SunCoke's proposed Middletown Coke facility would consist of 100 heat recovery coke ovens in three batteries. Coke is used as a raw material to smelt iron, which is then used to produce steel. The operations at the new coke-making facility would include coal handling, coal charging, heat recovery coking, coke pushing, coke quenching and coke handling and storage. Heat recovery generators would recover waste heat from the ovens to produce electricity. The proposed facility is designed to produce up to 614,000 tons of coke per year.

Ohio EPA received an air permit application for this project initially on February 13, 2008. On November 25, 2008, the director of Ohio EPA issued a final air permit. That permit authorized the company to build and begin operation of the facility. Under that permit, Middletown Coke did some initial work at the site, but then decided to hold off on full construction.

On April 6, 2009, the company submitted a second air permit application for the same project. This second application follows a different regulatory approach compared to the first application. The original application and permit did not include the application of what are called major New Source Review (NSR) rules by netting the project's emissions to below triggering thresholds. The second application does include the NSR rules. Under the applicable rules, either approach is acceptable. Ohio EPA reviewed the second application and issued a draft permit on July 27, 2009.

What is a major NSR permit?

Major new source review is a generic term that describes air pollution rules that apply when a large air pollution source is to be installed or modified. These rules come from the federal Clean Air Act and are incorporated into Ohio rules. Their purpose is to ensure that state-of-the-art air pollution controls are installed, and to ensure that the new or modified air pollution sources do not adversely impact air quality. The NSR rules are further divided into Nonattainment NSR and Prevention of Significant Deterioration (PSD) rules.

Nonattainment NSR rules apply when companies want to construct and operate new and/or modified facilities in areas that do not meet federal air quality standards. PSD rules apply when companies want to construct and operate new and/or modified facilities in areas that do meet federal air quality standards.

What is Nonattainment New Source Review (NSR)

Nonattainment NSR rules apply to large sources to be installed or modified in areas that do not currently meet the national outdoor air quality standards. These rules are designed ensure that reasonable progress is being made to achieve attainment even though new air pollution sources are installed. These rules do this by requiring companies to obtain offsets (or reductions) from other sources so that the resulting project actually reduces air emissions. These rules also require the new or modified sources to use state-of-the-art emissions controls.

What is Prevention of Significant Deterioration (PSD)?

A PSD review ensures that a new and/or modified facility, in an area meeting air quality standards for some pollutants, does not cause that area to violate federal air quality standards.

For the PSD portions of the draft permit, the permit must include Best Available Control Technology (BACT) to control emissions; provide an air quality analysis; an additional impacts analysis and opportunity for public involvement.

What are attainment and non-attainment?

The Clean Air Act requires U.S. EPA to set standards for wide-spread pollutants that are considered harmful to public health and the environment. U.S. EPA has standards for six principal pollutants, which are called "criteria" pollutants. The criteria pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂) and particulate matter (PM). PM is divided into PM₁₀ (coarse particles 2.5 to 10 micrometers in diameter) and PM_{2.5} (fine particles less than 2.5 micrometers in diameter). For comparison, the diameter of a particle 2.5 micrometers in size is about 30 times smaller than a human hair.

If a county's air exceeds the standards for any of the criteria pollutants, U.S. EPA considers that county to be in non-attainment of the standard for that pollutant. In this particular case, Butler County attains the air quality standards for all criteria pollutants except PM_{2.5} and ozone.



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How is a NSR/PSD permit different from a netting permit?

Compared to a netting permit, a NSR/PSD permit requires a source to use the lowest achievable emission rate (LAER) and/or best available control technology (BACT), depending on the pollutant; certify compliance for all of its Ohio facilities; demonstrate a net air quality benefit from the project; perform an additional impacts analysis and obtain air pollution emissions offsets from other air pollution sources. In contrast, a netting permit requires best available technology (BAT) and for the potential source to reduce their emissions such that the overall emissions from the new project do not trigger NSR and or PSD review.

What is LAER?

LAER, the lowest achievable emissions rate, is the most stringent emission limitation. LAER permit limits can come from either the most stringent emission limitation contained in the State Implementation Plan (a plan for how the state will bring all counties into attainment for all pollutants) for the type of source proposed or from the most stringent emission limitation achieved in practice by this type of facility.

What is BACT?

BACT is the lowest amount of emissions that can be achieved by a particular industrial process. It is based upon a case-by-case decision that considers energy, environmental and economic impact. BACT can be add-on control equipment or modification of the production processes or methods to reduce emissions. BACT may also be a design, equipment, work practice or operational standard if setting an emissions standard is not practical.

What are emissions offsets?

Offsets are reductions of potential emissions from permitted sources located near the proposed facility. The company providing the offsets agrees to reduce its emissions of certain pollutants to “offset” the emissions from the proposed facility. In addition, offsets must provide a net air quality benefit — a greater than a one to one swap. Emissions offsets allow an area to move toward attainment of the air

quality standards while still allowing some industrial growth. Emissions offsets are not subject to the “five-year window” that netting credits must use to be valid.

Are there differences in permit limits between the draft NSR permit and the 2008 netting permit?

Yes, netting permits and NSR permits have different legal requirements. A summary of the differences in permit limits is below.

Pollutant	Netting permit (2008) allowable tons per year	NSR 2009 draft permit allowable tons per year
Particulate matter (PM)	194.9	168.9
Particulate matter ten microns or less (PM ₁₀)	131.6	125.0
Particulate matter 2.5 microns or less (PM _{2.5})	114.05	112.2
Sulfur dioxide (SO ₂)	1,584.75	1,152.3
Nitrogen oxides (NO _x)	479.67	477.4
Carbon monoxide (CO)	129.5	129.5
Volatile organic compounds (VOCs)	31.4	31.4
Lead	.28	.28
Sulfuric acid (H ₂ SO ₄)	36.29	34.12
Hydrochloric acid (HCl)	118.0	118.0
Hazardous Air Pollutants (HAPs)	3.6	3.6
Mercury	12.4 (pounds per year)*	12.4 (pounds per year)*

*This is an estimate of an uncontrolled amount from the bypass stacks. The applicant must conduct an emission stack test of the main stack to establish the controlled limits using the facility's lime spray dryer, carbon injection system and bag house that controls mercury emissions.

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What will happen to the 2008 netting permit if the NSR permit is approved?

If the major NSR permit is approved, then Middletown Coke will have the option to use either the netting permit or the major NSR permit.

Next steps

Ohio EPA is accepting public comments on the NSR draft air permit, which was issued on July 27, 2009. The public hearing on the draft NSR permit is at 6:45 p.m. on September 2, 2009. The public comment period will close September 8, 2009. After the end of the comment period, staff from Hamilton County Department of Environmental Services and Ohio EPA will review all comments and complete a document called a Response to Comments, in which Ohio EPA responds in writing to all relevant comments. Staff also may revise the draft permit based on public comments. The director of Ohio EPA will review the draft permit along with the Response to Comments document and either approve the permit, approve the permit with changes or propose denial of the permit. Final actions of the director are appealable to the Environmental Review Appeals Commission (ERAC).

For more information

Reporters needing more information should contact Heather Lauer in Ohio EPA's Public Interest Center by e-mail at heather.lauer@epa.state.oh.us or phone at (614) 644-2160.

Citizens interested in more information or who wish to be placed on a mailing list for announcements related to this site should contact Erika Wiggins by e-mail at erika.wiggins@epa.state.oh.us or phone at (614) 644-2160.

Many documents related to this site are on the Web at: www.epa.ohio.gov/pic/middletowncoke.aspx.
