



Ohio Chapter

**Supplementary Technical Comments of the
Sierra Club Ohio Chapter concerning
a Proposed Ohio EPA Air Discharge Permit to Install
for the Proposed FDS Coke Oven Facility in Oregon, OH**

Submitted to

**Ohio EPA Division of Air Pollution Control
Toledo Division of Environmental Services
&
U.S. Environmental Protection Agency, Region 5
Air & Radiation Division, Permits and Grants Section**

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Sierra Club Ohio Chapter

Marilyn Wall, Chapter Conservation Chair

Sandra Bihn, Project Coordinator

Tony Szilagye, Chairperson, Western Lake Erie Group

36 West Gay Street, Columbus OH 43215 (614)461-0734

Prepared by

Alexander J. Sagady, Environmental Consultant

PO Box 39, East Lansing, MI 48826-0039

ajs@sagady.com (517)332-6971 <http://www.sagady.com>

This document available on the World Wide Web at:

<http://www.sagady.com/workproduct/CommentFDS Coke Plant Toledo.pdf>

Table of Contents

1	Introduction	1
2	Issues of Defective Administrative Procedure Concerning the Issuance of the Proposed FDS Permit	2
2.1	Incomplete and Non-Final Findings of Fact and Conclusions of Law by Ohio EPA	2
2.2	Ohio EPA’s Conduct of the Public Participation Comment Proceeding on the Proposed FDS Coking Facility Violates Public Participation Requirements Binding on Ohio EPA Under 40 CFR §51.161	2
2.3	Reservation of Rights on Applicant Comments Filed in the Public Comment Period	3
2.4	Delayed Effective Date of Permit	3
3	Issues of Mercury Emissions from the Proposed FDS Coke Ovens	3
3.1	The Applicant Admits that the Proposed FDS Coke Ovens Will Emit 680 Pounds of Mercury Per Year	3
3.2	Ohio EPA/Toledo Division of Environmental Services Have Failed to Incorporate A Specific, Legally Enforceable Mercury Emission Limitation or Limit on the Amount of Mercury in the Coal Received and Processed at the Site in the Proposed Permit	5
3.3	The Applicant’s Submittal and the Ohio EPA’s Review Workproducts Concerning the Proposed Facility Contain No Review of Potential Emission Limitations, Control Measures, Physical Mercury Form Speciation or Other Aspects of Mercury Emission Control Review	5
3.4	The Scope of the Review of the Public Health and Environmental Impact Acceptability of the Proposed FDS Coke Plant Mercury Emissions Contained in Submittals by the Applicant and Review Workproducts by Ohio EPA/TDES Does Not Reach the Most Significant Impacts and Deleterious Effects	6
3.5	The Text of the Proposed Permit Contains Inconsistent and Potentially Ineffective Provisions Which May Mitigate Against Enforceability of a Compliance Determination Involving a Mercury Stack Air Emissions Testing Requirement as Well as Other Metal HAPs; the Proposed Permit Should Contain an Affirmative Duty for Periodic Mercury Stack Testing and Coal Mercury Analysis	7

3.6	Ohio EPA/TDES Approval of the Permit and Facility as Proposed with the Expected Mercury Emission Breaches a Number of Established Regulatory General Duty Requirements and Basinwide/International Agreements on the Control of Mercury in the Great Lakes Region	8
3.6.1	Ohio’s Approval of the Proposed Facility and Permit with its High Projected Emissions of Mercury and its Failure to Provide Emission Limitations and Controls Constitute an Abrogation of United States Duties Under the Great Lakes Water Quality Agreement	8
3.6.2	With Issuance of the Proposed Permit and Approval of the Facility as Proposed, Ohio EPA/TDES Would Abrogate the Great Lakes Governors’ Toxic Substance Control Agreement adopted in 1986 and Great Lakes Air Permitting Agreement Adopted by the Great Lakes Environmental Administrators in 1988	9
3.6.3	Ohio Statutory and Regulatory General Duties	10
3.6.4	Ohio EPA/TDES Has Failed to Enforce Best Available Technology Requirements in Regard to the Proposed Facility and its Projected Mercury Emission	11
3.6.5	By Failing to Properly Address the Assessment, Control and Impact Evaluation in Regard to Mercury from the FDS Coke Over Facility, The Director of Ohio EPA and TDES Have Abused Their Discretion Under Current Ohio EPA Rules	12
4	Issues of Incomplete or Inaccurate Source Emission and/or Emission Unit Characterization	13
4.1	Issues Arising from Failure of the Applicant to Characterize Hydrogen Chloride and Hydrogen Flouride as well as their Aqueous Acidic Forms; and Failure of the Permit Agencies to Require Proper Information Submittal and to Properly Determine Application Completeness	13
4.1.1	Applicant’s Submittal Fails to Consider Likely Hydrogen Chloride and Hydrogen Flouride Emissions, as well as Their Aqueous Acidic Compounds, from the Proposed Coke Oven	13
4.1.2	Applicant’s Claim of Non-Applicability of 40 CFR §63, Subpart CCCCC National Emission Standards for Hazardous Air Pollutants from Coke Oven Pushing, Quenching and Combustion Stacks Must be Disallowed	14
4.1.3	Ohio EPA/Toledo Division of Environmental Services Have Failed	

	to Properly Specify HAP Emission Limitations and HAP Testing Requirements Involving Hydrogen Chloride, Hydrogen Flouride and their Aqueous Acidic Forms	14
4.1.4	The Decision of the Ohio EPA Director/TDES on Application Completeness While Not Requiring Coal Analysis Information Sufficient to Determine Hydrogen Chloride and Hydrogen Flouride Emissions is an Abuse of Discretion	15
4.2	Issues Arising from the Matter of Condensible Particulate Emissions . . .	15
4.2.1	Introduction	15
4.2.2	The Indiana Harbor Coke Company Experience Shows Condensible Particulate Emissions are a Significant Issue with Nonrecovery Coke Oven Technology	16
4.2.3	The Provisions of the Proposed Permit Contain Significant Ambiguity as to How Condensible PM Enters into Compliance Determinations in Regard to Particulate Matter Emission Limitation	17
4.3	Source Definition Issues Relating to the Disposition of Process Steam Generated by the Heat Recovery Steam Generators	19
4.4	Questionable Claims of Process Hydrocarbon Burnout	19
4.5	Emissions of Chlorinated Dibenzo-Dioxin/Furans from the Proposed Facility	20
5	Review of the Proposed Industrial Process and Emission Control Reliability Issues and the Indiana Harbor Coke Co Experience	20
5.1	Green Pushes	21
5.2	Charging Emissions	21
5.3	Venting Emissions	21
5.4	Coke Oven Door Leaks and Taking Advantage of the MACT Rule to Evade Accountability for Door Leaks	22
6	Source Impact Analysis and Compliance with Requirements Relating to National Ambient Air Quality Standards for PM 2.5 and Ozone	23
6.1	Recent PM 2.5 Air Monitoring and Ohio EPA's Recommendation for Area	

	Designation of PM 2.5 Both Show that Lucas County Must be Considered in Violation of the National Ambient Air Quality Standard for PM 2.5 . . .	23
6.2	Air Quality Monitoring and Proposed Nonattainment Designations Indicate that Lucas County Must be Considered as Nonattainment for the Ozone National Ambient Air Quality Standards and that Existing Air Quality Monitoring Shows Violations of the Ambient Ozone Standards	24
6.3	The Applicant, Ohio EPA and Toledo Division of Environmental Services Have All Uniformly Ignored Issues of PM 2.5 and Ozone Source Impact Assessment	25
6.4	The Issuance of the Proposed FDS Coke Facility Permit Prior to the Effective Date of Final Designation Decisions on Nonattainment Area Classification for PM 2.5 and Ozone Does Not Excuse the Applicant from Other Requirements for Source Air Quality Impact Assessment and Protections Against Jeopardizing Attainment and Maintenance of National Ambient Air Quality Standards	26
6.5	Duties of the Applicant in Preparing an Air PTI Application as to Source Impact and Ambient Analysis	26
6.5.1	The Applicant Did Not Include the Required Analysis in Their Application for an Air Permit to Install of Ambient Air Quality for PM 2.5 and Ozone in the Area of the Proposed Plant	26
6.5.2	The Applicant Did Not Include the Required Analysis in Their Application to Show that Operation of Their Emission Source would Not Cause or Contribute to a Violation of the National Ambient Air Quality Standards for PM 2.5 and for Ozone	27
6.6	Duties of the Ohio EPA and Toledo Division of Environmental Services as to Source Impact Analysis and Ambient Impacts for PM 2.5 and Ozone	28
6.6.1	Ohio EPA’s Review of Emissions Must Embrace PM 2.5 as an Air Pollutant Subject to Regulation	28
6.6.2	Ohio EPA and Toledo Division of Environmental Services Cannot Make a Finding that the Proposed Source Will Not Jeopardize Attainment and Maintenance of Air Quality Standards for PM 2.5 and Ozone	29
6.6.3	An Ohio EPA/TDES Decision to Issue the Proposed Permit Under the Attainment Provisions Violates the Required Ambient Air Ceilings for Ozone and PM 2.5	31

6.6.4	The Director Has Failed to Carry Out Public Participation/Notification Requirements Concerning PM 2.5 and Ozone Ambient Air Impacts	32
7	Implications of Ohio’s NSR Permitting Rules and Federal Nonattainment NSR Rules on the Proposed FDS Coke Plant PTI Application and Proposed Permit Issuance	32
7.1	Certain Applicability Provisions of Federally Approved Ohio EPA Rules Going to Commencement of Construction Have Regulatory Impact on the Proposed Facility and the Rules Under Which It Is Permitted Apart from the Actual Timing of Final Permit Issuance	32
7.2	Provisions at OAC 3745-31-23 and 40 CFR §51.165(b)(1)-(4) Must be Read to Prohibit Issuance of the Proposed Permit	34
8	Issues Associated with Applicant’s “Best Available Control Technology” Demonstration	35
8.1	The Applicant Did Not Perform a BACT Review and Demonstration for PM 2.5 and Applicant’s PM 10 BACT Review Cannot Substitute for the Required PM 2.5 Review	35
8.2	Aspects of Applicant’s Nitrogen Oxides (NOX) BACT Demonstration Improperly Dismisses Certain NOX Controls Without a Proper Basis and Without Consistency with Other Assertions Contained in the Demonstration	36
8.3	Applicant’s BACT Review on Selective Catalytic Reduction Did Not Consider the Beneficial Effect Installation of SCR NOX Controls Would Have on Increasing the Ability of Particulate Control Equipment to Also Control Some of the Mercury Compound Emissions	38
8.4	The Applicant’s BACT Review on Venting of Uncontrolled Sulfur Dioxide and Particulate Emissions Contains Significant Methodological Errors . .	40
8.4.1	Applicant’s Cost Review Consideration of “Primary Dry Scrubber System following Additional HRSG [heat recovery steam generators] is Biased High	40
8.4.2	The Applicant’s Did Not Perform a Proper Top Down BACT Analysis for Control of Emissions from the Venting Stacks	41
8.4.3	The Applicant’s BACT Analysis Did Not Consider the Alternate Use of Boiler Soot Blowing Technology to Eliminate Venting Time. . .	41

8.5	Applicant’s BACT Review on Emissions Associated with Flat Push Hot Car Technology	41
8.6	The Applicant’s BACT Demonstration for the Quench Tower Particulate Emissions is Deficient	42
8.7	Applicant’s Material Handling BACT Review Doesn’t Embrace a Determinative Maximum Level of Control	43

1 Introduction

The Sierra Club Ohio Chapter is the Ohio voice for the nation's oldest, largest and most influential grassroots environmental organization. Our Ohio members are your friends and neighbors. Inspired by nature, we work together to protect our communities and the planet.

The Ohio Chapter works at the local, state, national and international levels to advocate for a healthy environment. We educate and organize people for conservation activism and offer opportunities to explore and enjoy the natural heritage we work to protect. In the Toledo area we are organized in the Western Lake Erie Group of the Ohio Chapter which supports these comments.

At the national, state and local level, the Sierra Club has endeavored to protect public health, environment and communities through support of strong and effective regulation of industrial air pollution sources through the Clean Air Act. We use the tools of public education, scientific and technical analysis, citizen organizing, political action at election time and litigation to advance these important goals.

Both the Sierra Club Ohio Chapter and the Western Lake Erie Group are motivated by concerns about the biological integrity of the Great Lakes in general and Lake Erie in particular. We find there is a compelling need for environmental restoration of Lake Erie, including its coastal zone wetlands, recreational areas and its fish and wildlife habitat. We stand for protecting this world-class natural resource from threats of toxic contamination, loss and/or degradation of habitat and disruption by invasive species. We also stand for the defense of important international and regional treaties on the protection of the Great Lakes which would be breached by this proposed Ohio EPA decision. Finally, we stand for environmental justice for our communities in protecting public health and environment from common air pollutants such as ozone and inhalable particulate matter which have become serious problems for the Toledo area.

In furtherance of these goals, we offer the following supplementary technical comments concerning the proposed permit for the FDS Coke Oven Facility to be sited on the border of Oregon and Toledo, OH on Maumee Bay.

These are technical comments that are supplementary and in addition to comments already provided by Sierra Club of Ohio and Sierra Club Western Lake Erie Group officers during the public hearing held on the proposed permits and during other previous public participation efforts by these Sierra Club Chapter and Group officers.

Given the comments provided herein, the Sierra Club Ohio Chapter asserts that the proposed Ohio EPA permit should not be granted to FDS Coking/US Coking Group because of the damaging environmental and public health impacts this facility will create, the failure of the proposed permit to properly regulate this facility and the administrative

agency errors committed by Ohio EPA and the Toledo Division of Environmental Services in this permit proceeding.

2 Issues of Defective Administrative Procedure Concerning the Issuance of the Proposed FDS Permit

2.1 Incomplete and Non-Final Findings of Fact and Conclusions of Law by Ohio EPA

Ohio EPA's did not provide the public with a final staff report and staff determination that evaluated all aspects of the Applicants BACT and air quality demonstration submittals at the time of the announcement of the proposed permit issuance. There was an April 19, 2004 Ohio EPA staff determination but this document is stale in light of the numerous submittals made by the Applicant during the pendency of the public comment period. Ohio EPA's failure to provide the public with a final determination on all issues raised by submittals by the Applicant and failure to provide a full 30 day review time of such an Ohio EPA staff determination deprives the public participating in this permit proceeding of due process of law.

2.2 Ohio EPA's Conduct of the Public Participation Comment Proceeding on the Proposed FDS Coking Facility Violates Public Participation Requirements Binding on Ohio EPA Under 40 CFR §51.161

The conduct of Ohio EPA in this permit proceeding has violated binding public participation requirements found at 40 CFR §51.161 which Ohio EPA has adopted by reference. These procedures require:

“....The public information must include the agency's analysis of the effect of construction or modification on ambient air quality, including the agency's proposed approval or disapproval.”

Since the Applicant submitted very substantive air quality modeling demonstrations and significant BACT demonstration material after the date of the April 19, 2004 “Staff Determination,” the “agency's analysis” is necessarily incomplete. Under this public participation regulation, the 30 day comment period is to start after such an “analysis” is issued by the agency.

The continued submittal of substantive material by the Applicant after the announcement of public comment is essentially an abuse by the Applicant of the public comment period process and this should be disallowed by Ohio EPA. Such materials were submitted all during May, 2004 during the public comment period and a full 30 days of comment period time was not provided for all aspects of the Applicant's substantive

submittals. Moreover these materials were very substantive amendments of the application and they were not signed by corporate officers as is required by the rule. This defect in procedure is in addition to the failure of Ohio EPA to provide a determination on all such material and then provide a 30 day comment period on such a matter.

2.3 Reservation of Rights on Applicant Comments Filed in the Public Comment Period

Commentors reserve the right to submit additional comments after the close of the comment period covering any so-called “public comments” filed by the Applicant during, at the close of or after the public comment period. Commentors reserve the right to submit additional comments after the close of the public comment period on aspects and/or changes in conclusions in Ohio EPA’s/TDES position that are new, distinct from or changed from the April 19, 2004 “staff determination.”

2.4 Delayed Effective Date of Permit

Commentors have shown serious errors in this permit proceeding, with the proposed permit and submittals by the Applicant. In addition, Commentors expect to review other significant comment work product by other parties, not the least of which include the Applicant. Given these conditions and particularly given the failure of the Ohio EPA/TDES to make a final staff determination available and then hold a 30 day comment period on it, Commentors ask that Ohio EPA provide a 30 day delayed effective date on any action they take if they chose to issue the proposed permit. Under the circumstances of Ohio EPA/TDES’s defective public participation and comment procedure and due process denials in this case, making any permit issuance immediately effective without such a 30 day delayed effective date will serious prejudice Commentors in the event that permit issuance justifies administrative appeals and/or litigation by Commentors.

3 Issues of Mercury Emissions from the Proposed FDS Coke Ovens

3.1 The Applicant Admits that the Proposed FDS Coke Ovens Will Emit 680 Pounds of Mercury Per Year

In Appendix B of the PTI application, the Applicant admits, through the referenced HAP [Hazardous Air Pollutant] Emission Calculation Sheet, that mercury emissions would be 3.40E-1 tons per year, or 0.34 tons of mercury. At 2000 lbs/ton that is 680 pounds.

Applicant's projected mercury emission estimate is based on U.S. EPA's Draft AP-42 emission factor for mercury emissions from nonrecovery coke oven combustion stacks of 0.00033 lbs of mercury emissions per ton of coal charged.¹

According to the documentation for EPA's AP-42 emission factors:

“An emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i. e., a population average).”

“.....Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor.“

The emission calculation also depends on the 0.0% emission control efficiency projection for the combustion stack emission control train. At 0.0% emission control efficiency this would be equivalent to an “as charged” coal mercury content of 0.165 parts per million. This can be compared to U.S. Geological Survey information on the mean mercury content of 0.24 ppm, 0.15 ppm and 0.21 ppm respectively for Northern, Central and Southern Appalachian Coal.² As a result, use of coal commonly available in the Ohio Region could potentially cause even higher emissions than what Applicant has projected.

The Applicant has submitted no coal analysis information to Ohio EPA and Toledo Environmental Services that could be used to develop an alternative mass balance mercury emission estimate. The failure of these agencies to require such analysis as part of a complete application constitutes error as such coal analysis information is needed to properly characterize mercury and other hazardous air pollutants from the proposed facility. To the extent that Ohio regulations can be interpreted to allow a discretionary decision not to require submittal of detailed coal mercury analysis information, Ohio EPA and Toledo Division of Environmental Services have abused their administrative

¹ See See Draft AP-42 Section 12.2, metallurgical industry, Table 12.2-20; Emission Factors for Coke Production, Nonrecovery Combustion Stacks, P. 12.2-(28-29)

² “Mercury in U.S. Coal – Abundance, Distribution and Modes of Occurrence,” U.S. Geological Survey, USGS Fact Sheet FS-095-01, September, 2001

discretionary authority by failing to require such information to better quantify mercury emissions.

Applicant's mercury emission estimate is comparable to reported mercury and mercury compound emissions of 719 pounds for year 2001 in EPA's Toxic Release Inventory for a slightly larger coke oven facility using nonrecovery coking technology at Indiana Harbor Coke Company in East Chicago, IN. Applicant's estimate of 680 pounds of mercury would make the facility the 48th largest mercury source in the United States considering all sources, the sixth largest source of mercury in Ohio and third largest source of mercury in the United States of Standard Industrial Code 33-Primary Metals which includes coke production, all for year 2001 data comparison.

3.2 Ohio EPA/Toledo Division of Environmental Services Have Failed to Incorporate A Specific, Legally Enforceable Mercury Emission Limitation or Limit on the Amount of Mercury in the Coal Received and Processed at the Site in the Proposed Permit

A comprehensive, computer-aided search of the proposed permit by Commentors shows that the regulators have failed to impose an air discharge emission limitation that is specific to mercury in the proposed permit. The same comprehensive search by Commentors shows that the permit writers failed to impose any standards for maximum mercury content of coal received at the site and failed to impose testing requirements for the mercury content of coal received or processed for use at the proposed coke oven.

The only limitation that would prevent the Applicant from emitting any amount of mercury emissions it could chose are the total Hazardous Air Pollutant emission limitations for the coke oven combustion stacks, coke pushing coal charging and coke battery venting emissions. These HAP emission limitations are shown in the table below:

Process	Hourly Limitation	Annual Limitation
Main Combustion Stack	1.7 lbs/hr	4.78 tons/year
Charging operations	0.04 lbs/hr	0.11 tons/year
Pushing operations	0.1 lbs/hr	0.25 tons/year
Venting	1.42 lbs/hr	0.96 tons/year

3.3 Applicant's Submittal and Ohio EPA's Review Workproducts Concerning the Proposed Facility Contain No Review of Potential Emission Limitations, Control Measures, Physical Mercury Form Speciation or Other Aspects of Mercury Emission Control Review

Applicant's disclosure of the large expected emissions of mercury is buried in the Applicant's submittal to Ohio EPA. The Application contains no demonstration of Best Available Technology for the control of mercury, consideration of alternate potential controls, consideration of limitations on coal mercury content and review of the physical speciated forms of mercury emissions.

There is no mention of the large expected emissions of mercury in Ohio EPA's public involvement materials. There is no evidence in regulatory files that Ohio EPA/Toledo Division of Environmental Services ever sought information on mercury control technology options and control alternatives from the Applicant.

3.4 The Scope of the Review of the Public Health and Environmental Impact Acceptability of the Proposed FDS Coke Plant Mercury Emissions Contained in Submittals by the Applicant and Review Workproducts by Ohio EPA/TDES Does Not Reach the Most Significant Impacts and Deleterious Effects

The Applicant submitted and Ohio EPA/TDES accepted a demonstration under Ohio EPA's unpromulgated air toxics policy showing that expected mercury ambient concentrations are less than the MAGLC concentrations based on 2.4% of the ACGIH Threshold Limit Value for occupational exposure limits.

The Ohio EPA air toxics policy and consideration of MAGLC ambient screening limitations is an attempt to determine the inhalation toxicology potential of airborne toxicant compounds. The MAGLC and Ohio air toxics policy do not consider or reach issues associated with the public health, environmental and ecological risk associated with the environmental transport, deposition, fate and ultimate toxic effect of air discharge of mercury and mercury compounds which are persistent and bioaccumulative toxicants.

Neither the Applicant, nor Ohio EPA/TDES, have performed a proper evaluation and demonstration of the most serious public health, environmental and ecological risks and consequences of the airborne discharge of the projected 680 pounds of mercury from the proposed facility. Such an evaluation and demonstration would necessarily involve a regional multipathway risk assessment study involving wet and dry deposition modeling, mercury background contamination review for physical media and biological systems, modeling of water column-soil-sediment mercury cycling relationships and biological

exposures, human health and ecological risk exposure pathway review and exposure toxicology review.

3.5 The Text of the Proposed Permit Contains Inconsistent and Potentially Ineffective Provisions Which May Mitigate Against Enforceability of a Compliance Determination Involving Mercury Stack Air Emissions Testing Requirement as Well as Other Metal HAPs; the Proposed Permit Should Contain an Affirmative Duty for Periodic Mercury Stack Testing and Coal Mercury Analysis

The proposed permit doesn't contain a provision which specifically states that mercury will be tested in a stack test emission study. On page 198, Section III(A)(I)(V)(2)(d) [sic....this should be re-lettered as subsection e] of the permit indicates that EPA Method 29 will be used. EPA's Method 29 shows mercury as one of the analytes at Section 1.1 of the text. However, it is not clear to Commentors that Section III(A)(I)(V)(2)(d) [sic this should be re-lettered as section e] on the next page would not allow a discretionary decision in the stack testing protocol approval process to have mercury, or any of the other analytes, dropped from the approved protocol.

Nothing in the proposed permit appears to require that the physical-chemical form of mercury emissions be determined, that the control efficiency for each physical-chemical form of mercury be determined in the spray dryer/fabric filter emission control train and that the pre-control inlet flue gas stream be subject to stack test review. Nothing in the permit requires testing of the mercury content of coal charged to the ovens during the stack testing operations. Nothing in the proposed permit requires a mercury emission test to be repeated when different coal sources are used at the site.

Hazardous Air Pollutant stack testing - emission limitation compliance provisions appear at other locations in the permit at Section III(A)(I)(V)(1)(u) [main stack], Section III(A)(I)(V)(1)(z) [charging], Section III(A)(I)(V)(1)(uu) [pushing] and Section III(A)(I)(V)(1)(dddd) (vent stacks). Each of these provisions contains similar language that is objectionable:

“Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4, 18, ***and 12 or 29*** of 40 CFR Part 60, Appendix A.” (emphasis added by commentors)

Commentors interpret the emphasized objectionable language of this paragraph to allow a Method 12 test, which reports lead compounds, to substitute as an alternative for and a replacement to conducting a multi-metals test [including mercury as an analyte] under Method 29. The results of the Method 12 test then, under the language in the proposed permit, could be used to determine the entire contribution of metals Hazardous

Air Pollutants to the total HAPs for comparing to the total HAP limits in the sections noted above for compliance determination for HAPs. While it might make sense to allow Method 12 to substitute for the specific lead analyte method contained in Method 29, the present language can be read to allow Method 12 to substitute for all of metals of Method 29. This should not be allowed by the proposed permit as it would jeopardize HAP metal stack testing requirements for mercury and all of the other metal HAP toxicants listed in the Method 29 analyte list section.

3.6 Ohio EPA/TDES Approval of the Permit and Facility as Proposed with the Expected Mercury Emission Breaches a Number of Established Regulatory General Duty Requirements and Basinwide/International Agreements on the Control of Mercury in the Great Lakes Region

3.6.1 Ohio's Approval of the Proposed Facility and Permit with its High Projected Emissions of Mercury and its Failure to Provide Emission Limitations and Controls Constitute an Abrogation of United States Duties Under the Great Lakes Water Quality Agreement

Annex 12 of the Great Lakes Water Quality Agreement between the United States and Canada provides:

“Regulatory strategies for controlling or preventing the input of persistent toxic substances to the Great Lakes System shall be adopted in accordance with the following principles:

The intent of programs specified in this Annex is to virtually eliminate the input of persistent toxic substances in order to protect human health and to ensure the continued health and productivity of living aquatic resources and human use thereof;

The philosophy adopted for control of inputs of persistent toxic substances shall be zero discharge; and

The reduction in the generation of contaminants, particularly persistent toxic substances, either through the reduction of the total volume or quantity of waste or through the reduction of the toxicity of waste, or both, shall, wherever possible, be encouraged.

The Parties shall take all reasonable and practical measures to rehabilitate those portions of the Great Lakes System adversely affected by persistent toxic substances.”³

Issuance of the proposed permit for the proposed facility with a large projected emission of mercury, no review of mercury emission controls and no evaluation of the environmental consequences of the expected emission can hardly be stated to be a United States action reflecting “...virtual elimination...” of mercury as a persistent bioaccumulative toxicant.

A more specific provision found at Annex 15 of the Great Lakes Water Quality Agreement on “Airborne Toxic Substances” provides:

“Pollution Control Measures.

The Parties, in cooperation with State and Provincial Governments, shall develop, adopt and implement measures for the control of the sources of emissions of toxic substances and the elimination of the sources of emissions of persistent toxic substances in cases where atmospheric deposition of these substances, singly or in synergistic or additive combination with other substances, significantly contributes to pollution of the Great Lakes System. Where such contributions arise from sources beyond the jurisdiction of the Parties, the Parties shall notify the responsible jurisdiction and the Commission of the problem and seek a suitable response.

The Parties shall also assess and encourage the development of pollution control technologies and alternative products to reduce the effect of airborne toxic substances on the Great Lakes System.”

Again, issuance of a proposed permit with no specific emission limitations for mercury and a large potential emission of this persistent and bioaccumulative toxicant at a site on the shores of Lake Erie can hardly be considered as meeting either the letter or spirit of this international agreement on which the United States is a signatory.

³ See <http://www.epa.gov/glnpo/glwqa/> for the full text.

3.6.2 With Issuance of the Proposed Permit and Approval of the Facility as Proposed, Ohio EPA/TDES Would Abrogate the Great Lakes Governors' Toxic Substance Control Agreement adopted in 1986 and Great Lakes Air Permitting Agreement Adopted by the Great Lakes Environmental Administrators in 1988

In 1986, the Great Lakes Governors adopted the Great Lakes Toxic Substance Control Agreement⁴ which called for controlling Great Lakes toxic substances through the environmental permitting process. This agreement called for:

“The signatory States agree to consider the effects of airborne pollutants on human health and aquatic life when setting air emission standards and granting air emission permits, and to better integrate their respective air and water programs to address atmospheric deposition affecting the lakes.”

To further the goals, objectives and achievements of the Agreement by the Great Lakes Governors, the Great Lakes environmental administrators entered the “Great Lakes States Air Permitting Agreement.”⁵ This agreement, which was signed by Ohio EPA, provides, in part:

“For the pollutants listed on Table A [which includes mercury], each permitting authority shall utilize all applicable air pollution regulations to insure that BACT is being installed on any new or modified source which is subject to the state’s New Source Review Program, an on existing sources, considering a diminimus cutoff, which are required to obtain an operating permit. States which do not have the current legal authority to assure that BACT is installed on new and existing sources of the pollutants in Table A shall pursue through their appropriate regulatory process authority to implement the governors’ and environmental administrators’ agreements.”

“For purposes of this agreement, BACT means emission limits, operating stipulations, and/or technology requirements based on the maximum degree of reduction which each Great Lakes state determinates is achievable through application of processes or available methods, systems, and techniques for the control of each of the pollutants listed in Table A, taking into account energy, environmental, and economic impacts, and other costs.”

⁴ For text of this agreement, see <http://www.cglg.org/pub/toxics/index.html>

⁵ A copy of this agreement is available at <http://www.sagady.com/stuff/GLStateAirPermittingAgreement.pdf>

“Emission limits, operating stipulations, and/or technology requirements shall be established as permit conditions for each of the pollutants listed in Table A. Whenever warranted, sources will also be required to conduct an emission verification test to assure compliance with the allowed emission limits during the initial verification test as well as during periodic verification tests.”

Ohio EPA/TDES issuance of the proposed permit and approval of the proposed facility as presently proposed with no emission limitations, no evaluation of impacts and no emission control technology abrogates both of the above cited Great Lakes agreements.

3.6.3 Ohio Statutory and Regulatory General Duties

Ohio EPA/TDES indifference to mercury emission controls, limitations, risk assessment, public health, environmental and ecological impacts from the emissions at the proposed FDS coke oven facility violates statutory general duties at ORC §3704.02 and OAC 3745-15-02. The latter authority provides:

“It is the purpose of all air pollution regulations to set forth such requirements as shall be necessary to secure and maintain those levels of air quality which are consistent with the protection of health and the prevention of injury to plant, animal life, and property in the state of Ohio, and to provide for the comfortable enjoyment of the natural attractions of the state to the greatest extent practical. All regulations of the director shall be construed in such manner as to effectuate this purpose.” OAC 3745-15-02.

The large emission of mercury itself meets the definition of “air pollution” at both ORC §3704.01(D) and OAC 3745-15-01(D). The emission of large amounts of airborne mercury which is a persistent and bioaccumulative toxicant as in the present case also constitutes a “public nuisance,” which is prohibited by OAC 3745-15-07(A).

In addition to the discussion of general duties above, please see the separate discussion in the section of this comment on Best Available Control Technology determinations for general duty requirements in the environmental impact review process of BACT determinations that requires consideration of mercury releases as part of that process as well.

3.6.4 Ohio EPA/TDES Has Failed to Enforce Best Available Technology Requirements in Regard to the Proposed Facility and its Projected Mercury Emission

Ohio EPA requires that sources subject to the Ohio new source review use “best available technology” (BAT) which is defined as:

“(P) “Best available technology” means any combination of work practices, raw material specifications, throughput limitations, source design characteristics, an evaluation of the annualized cost per ton of air pollutant removed, and air pollution control devices that have been previously demonstrated to the director of environmental protection to operate satisfactorily in this state or other states with similar air quality on substantially similar air pollution sources.” OAC 3745-31-01(P).

A decision on Ohio BAT as defined is an explicit part of the required decisionmaking criteria by the Director of Ohio EPA under 3745-31-05(A)(3).

Ohio EPA has published an interpretive guide #42 as to the meaning of Ohio BAT which includes consideration of environment factors, such as air and water quality impacts, land impacts, aesthetic impacts and the avoidance of “excessive degradation of these environmental areas.”

By failing to require the Applicant to submit an Ohio BAT demonstration concerning mercury, by failing to consider coal mercury content limitations, by failing to consider and review potential mercury control measures, by failing to evaluate the health, environmental and ecological consequences of the airborne mercury releases planned by the proposed facility and by failing to provide a specific mercury emission limitation, Ohio EPA and TDES have failed to comply with the Ohio BAT requirement through the Director’s violation of 3745-31-05(A)(3).

3.6.5 By Failing to Properly Address the Assessment, Control and Impact Evaluation in Regard to Mercury from the FDS Coke Oven Facility, The Director of Ohio EPA and TDES Have Abused Their Discretion Under Current Ohio EPA Rules

OAC 3745-31-09(C)(1) requires a completeness determination on Applicants PTI submittals to Ohio EPA and OAC 3745-31-04(A) requires a decision by the Director of Ohio EPA on what he/she “deems necessary” to be submitted in an application for a PTI. By failing to require the Applicant to submit an Ohio BAT demonstration that addressed mercury emissions and potential control measures and by failing to require the Applicant to evaluate the public health, environmental and ecological acceptability of the proposed mercury emission through a multipathway human health and ecological risk assessment

study, the Director of Ohio EPA/TDES have abused their discretion in making either an announced and/or *de facto* finding of application completeness under OAC 3745-31-09(C)(1) and in accepting applicant's submittal under OAC 3745-31-04(A).

Similarly, the above cited failures by the Director of Ohio EPA/TDES constitute an abuse of discretion of the Director's authority...

"In deciding whether to grant or deny a permit to install, the director may take into consideration the social and economic impact of the air contaminants, water pollutants, or other adverse environmental impact that may be a consequence of issuance of the permit to stall or plan approval." OAC 3745-31-05(B)

By failing to incorporate a mercury content limitation for coal received and processed at the proposed FDS Coke Oven facility and by failing to set and enforce a fully protective air discharge emission limitation for mercury in the proposed permit, the Director of the Ohio EPA/TDES have abused their discretion under rules providing that.....

"The director may impose such special terms and conditions as are appropriate or necessary to ensure compliance with the applicable laws and to ensure adequate protection of environmental quality." OAC 3745-31-05(C), in part.

4 Issues of Incomplete or Inaccurate Source Emission and/or Emission Unit Characterization

4.1 Issues Arising from Failure of the Applicant to Characterize Hydrogen Chloride and Hydrogen Flouride as well as their Aqueous Acidic Forms; and Failure of the Permit Agencies to Require Proper Information Submittal and to Properly Determine Application Completeness

4.1.1 Applicant's Submittal Fails to Consider Likely Hydrogen Chloride and Hydrogen Flouride Emissions, as well as Their Aqueous Acidic Compounds, from the Proposed Coke Oven

Applicant has not submitted any information to quantify hydrogen chloride and hydrogen flouride emissions from the proposed facility. Both of these substances are designated hazardous air pollutants under 42 USC §7412(b) and are known to be emitted by coal combustion facilities in substantial quantities. Although emission factors for these two pollutants do not appear in the draft AP-42 table of HAP emission factors for nonrecovery coke ovens, this is not an excuse for failing to quantify hydrogen chloride and hydrogen flouride when both the Applicant and the permit issuing agency is required to quantify all HAPs for purposes of MACT Applicability requirements.

EPA's final AP-42 emission factor for bituminous coal combustion indicates a factor of 1.2 lbs/ton for hydrogen chloride and 0.15 lbs/ton for hydrogen flouride.⁶ At 2.06 MM tons (wet coal) per year at 8% moisture that is 1.91 MM tons (dry coal) per year. The resulting uncontrolled hydrogen chloride emission rate would be 1150 tons of hydrogen chloride and 145 tons of hydrogen flouride. A recent article in Coal Age magazine details the average chlorine content of various United States coal from various regions;⁷ the article indicates the following coal chlorine contents for coals that might be used at the proposed coke oven by reason of distance from mine location to market considerations:

Supply region	Typical chlorine content (ppm)
Central Appalachia	1027
Illinois Basin	1224
Monongahela River	1071
North Appalachia; Ohio	831

As a result, candidate coal region coal supplies indicate that nominal chlorine content might range from 800-1000 ppm. At 1.91 MMT dry coal consumption per year, the nominal process input rate calculated on this basis would be 1530 to 1910 tons of hydrogen chloride per year.

As a result of these estimates of uncontrolled emission rates of hydrogen chloride ranging from 1150 to 1910 tons per year and 145 tons per year of hydrogen flouride, the issue of hydrogen chloride and hydrogen flouride acid gases cannot be discounted. The permit granting agency should have required submittal of coal analysis information and control efficiency information in order to properly characterize emissions of these compounds. In the absence of such information, the application is incomplete and not approvable; Ohio EPA/Toledo Division of Environmental Services abused their discretion in choosing not to gain submittal of such information when it made a permit issuance decision.

With total H-Cl and HF acid gases ranging from 1300 to 2050 tons per year, HAPs from these two pollutants alone would be from 26 to 41 tons per year at 98% control efficiency from acid gas scrubbing in addition to the admitted 6.7 tons per year of other pollutants.

⁶ See Page 1.1-36, Table 1.1-15 of EPA AP-42 1.1 for bituminous coal combustion.

⁷ See http://coalage.com/ar/coal_mercury_emissions_fuel/

4.1.2 Applicant's Claim of Non-Applicability of 40 CFR §63, Subpart CCCCC National Emission Standards for Hazardous Air Pollutants from Coke Oven Pushing, Quenching and Combustion Stacks Must be Disallowed

Considering likely hydrogen chloride and hydrogen flouride emissions, the proposed coke oven is undoubtedly a major stationary source of hazardous air pollutants and the claim of the Applicant that it is a minor source for 42 USC §7412(b) Hazardous Air Pollutants (HAPs) must be disallowed. In particular, the claim of the Applicant that they are exempted from requirements at 40 CFR §63, Subpart CCCCC National Emission Standards for Hazardous Air Pollutants from Coke Oven Pushing, Quenching and Combustion Stacks because they do not reach the major source threshold provided at 40 CFR §63.7281 must also be disallowed as a corollary finding. Finally, the permit must be amended to ensure that the facility will comply with all aspects of 40 CFR §63, Subpart CCCCC that would apply to a nonrecovery coke oven operation.

4.1.3 Ohio EPA/Toledo Division of Environmental Services Have Failed to Properly Specify HAP Emission Limitations and HAP Testing Requirements Involving Hydrogen Chloride, Hydrogen Flouride and their Aqueous Acidic Forms

The permitting agencies have imposed total hazardous air pollutant emission limitations on main combustion stack, pushing, charging and vent stack emissions, but the facility will not be able to comply with these emission limitations under any scenario where actual total HAP emissions are being determined because none of the emission limitations consider hydrogen chloride and hydrogen flouride. Failure to fully characterize the hazardous air pollutant emissions from the proposed facility as potential limits thus fails to properly inform both the Applicant and the public of expected emission limitations and impacts from this facility.

In particular, venting emissions of hydrogen chloride will be completely uncontrolled with no acid gas control train. If venting is carried out on 1/6th of the uncontrolled gas flow and pollutant rate, venting will emit the HAPs hydrogen chloride and hydrogen flouride at the rate of 50-76 lbs per hour which is far higher than the 1.42 lbs per hour of total HAPs allowed under the permit.

Ohio EPA/Toledo Division of Environmental Services have failed to properly specify required test methods for compliance that would ensure that tests for hydrogen chloride and hydrogen flouride are carried out. The permit should be amended to require additional Method 26 and 26A testing for these compounds in each emission limitation compliance method section where HAPs are regulated for the main combustion stack, pushing, charging and venting as well as at section III(A)(V)(2)(d).

4.1.4 The Decision of the Ohio EPA Director/TDES on Application Completeness While Not Requiring Coal Analysis Information Sufficient to Determine Hydrogen Chloride and Hydrogen Flouride Emissions is an Abuse of Discretion

OAC 3745-31-09(C)(1) requires a completeness determination on Applicant's PTI submittals to Ohio EPA and OAC 3745-31-04(A) requires a decision by the Director of Ohio EPA on what he/she "deems necessary" to be submitted in an application for a PTI. By failing to require that the Applicant submit coal analysis information sufficient to properly determine hazardous air pollutant emissions, including hydrogen chloride and hydrogen flouride, from processing such coal at the facility, the Director of Ohio EPA/TDES have abused their discretion in making either an announced and/or *de facto* finding of application completeness under OAC 3745-31-09(C)(1) and in accepting applicant's submittal as sufficient under OAC 3745-31-04(A).

4.2 Issues Arising from the Matter of Condensable Particulate Emissions

4.2.1 Introduction

In exploring certain primary combustion-related emissions at the proposed FDS Coke facility, Applicant and Ohio EPA/TDES relied heavily on published draft AP-42 emission factors for nonrecovery coke ovens and some engineering estimates. However, the published nonrecovery coke oven emission factors are really only based on a single facility, the Jewell Coke site in VA that is not necessarily representative of the proposed site because it doesn't incorporate either spray-dryer fabric filter emission controls and heat recovery steam generators. In addition, the applicant has asserted an engineering estimate of 0.03 grains per dry standard cubic foot for an uncontrolled PM emission factor but there is no basis provided in Applicant's submittal for this factor.

4.2.2 The Indiana Harbor Coke Company Experience Shows Condensable Particulate Emissions are a Significant Issue with Nonrecovery Coke Oven Technology

Commentors have reviewed regulatory files on the Indiana Harbor Coke Company (IHCC) facility in East Chicago, IN. This facility is the only nonrecovery coke oven operating in the United States that also incorporates a spray dryer/fabric filter emission control train and heat recovery steam generators for a co-generation effort. This facility is slightly larger than the proposed FDS Coke facility with 268 ovens, 16 vent stacks and heat recovery generators, a maximum coal charge capability of 2794.5 tons of dry coal/day, 2,039,985 tons of dry coal/year (2,203,184 tons of coal per year, wet basis) and 2013.6 tons of coke pushed per day.

Date of Test/method	Stack/Process Unit	Filterable PM	Condensable PM	Total PM
12/14-16/98; 1-4, 5, 202; 585 tons/hr dry coal charged during test	A & B Battery Charging Stack, 202, baghouse	0.458 lb/hr, 0.0008 lb/ton 0.0019 gr/acf; 0.0020 gr/dscf	1.38 lb/hr, 0.0023 lb/ton; 0.0054 gr/acf; 0.0059 gr/dscf	1.837 lb/hr, 0.0031 lb/ton; 0.0073 gr/acf; 0.0079 gr/dscf
12/15-17/98; 1-4, 5, 202; 573 tons/hr dry coal charged during test	C and D battery Charging Stack, 203, baghouse	0.292 lb/hr, 0.0005 lb/ton; 0.0013 gr/acf; 0.0014 gr/dscf	3.122 lb/hr, 0.0054 lb/ton; 0.0135 gr/acf; 0.0144 gr/dscf	3.414 lb/hr, 0.0059 lb/ton; 0.0148 gr/acf; 0.0158 gr/dscf
12/15-16/98, 1-4, 5, 202; 223.2 tons/hr coke during test	Pushing Baghouse Stack, 204	3.824 lb/hr; 0.017 lb/ton; 0.0023 gr/acf; 0.0025 gr/dscf	6.279 lbs/hr; 0.028 lb/ton; 0.0039 gr/acf; 0.0042 gr/dscf	10.103 lb/hr; 0.045 lb/ton; 0.0062 gr/acf; 0.0067 gr/dscf
12/14-15/98; 1-4, 5, 202; 244 tons/hr, 3566.5 tons/day during test	Screening Station Stack 265; baghouse control	0.443 lb/hr; 0.0019 gr/acf; 0.0020 gr/dscf	3.044 lb/hr; 0.0130 gr/acf; 0.0138 gr/dscf	3.487 lb/hr; 0.0149 gr/acf; 0.0158 gr/dscf
12/2/99; 1-5, 9,202; 90% of rated steam capacity	Main combustion stack, 201; baghouse control	4.29 lb/hr	33.25 lb/hr	37.45 lb/hr; all pm=pm10
5/11-12/98; 169,261 acfm; 39,002 dscm; 1502 degF	A battery #2 vent			0.0033 gr/acf; 0.0146 gr/dscf; 4.865 lb/hr
4/30-5/1/02; 1-4, 5, 9, 202; 39 tons of dry coal per oven	Emergency Vent Stack B-1			8.65 lbs/hr

The table above shows stack emission testing results for various process units of interest at the IHCC facility. Copies of this original stack test evaluations/reports are available from Commentors on request.

These data show that condensable particulate matter constitute the majority of the PM release from combustion-related emission sources at this nonrecovery coke oven, sometimes by an overwhelming majority. In particular note the 12/2/99 PM testing results on the main combustion stack showing that condensable particulate matter constitutes 89% of the total PM emissions and the C and D charging emission stack showing condensable PM at 91% of the total.

4.2.3 The Provisions of the Proposed Permit Contain Significant Ambiguity as to How Condensible PM Enters into Compliance Determinations in Regard to Particulate Matter Emission Limitations

Provision III(A)(V)(2)(d) [sic...should be “c”] on page 198 properly shows Method 201 and 202 as the stack test methods for evaluating PM 10, but no method is listed for total particulate emissions, PE, in this table. As a threshold issue this opens the way for all total Particulate Emission (PE) limitations in the permit to be solely based on filterable-only particulate emissions leaving condensible PM emissions to be totally unregulated as to the PE listed emission limitations. This is confirmed by the language contained in the prior section on testing requirements and compliance methods where there is sole reliance on EPA Method 5.⁸ This is a highly objectionable approach to testing compliance with total Particulate Emission limitations when the large majority of combustion-related emissions will be condensible particulate matter.

A second and important issue on condensible PM goes to the PM10 emission limitation compliance evaluation methods in the proposed permit. Condition III(A)(V)(1)(c) states:

“If required, Method 201 shall be used to demonstrate compliance.If required, the permittee shall demonstrate compliance through the emission testing performed in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M...”

Commentors interpret this language to give both the permittee and Ohio EPA the option of allowing only test method 201 to reflect the compliance test with PM 10. Since Method 201 is a filterable-only test, this language is highly objectionable in allowing this latitude. Even if this first sentence containing the sole Method 201 reference is struck, the second sentence still leaves the compliance determination method unclear. Nothing in the second sentence says that the PM results from Method 201 and the PM results from Method 202 must be added together and the total compared to the PM 10 emission limitation. Commentors interpret the second sentence to potentially allow the Permittee to separately compare each method PM result to the PM 10 emission limitation without the duty to add the results together.

Commentors remind Ohio EPA/TDES that compliance determinations for ensuring that modeled PM10 air quality demonstrations are representative require that filterable and condensible PM stack test results must be added together to evaluate compliance with PM10 emission limitations and this is a matter of considerable federal interest. In fact, EPA does not approve this approach of setting PM 10 compliance only to filterable “front half” PM stack test determination. EPA has recognized that....

⁸ See, for example, condition III(A)(V)(1)(b), (dd), (ww) and others

“...condensable emissions are also PM10, and that emissions that contribute to ambient PM10 concentrations are the sum of in-stack PM10 and condensable emissions.”⁹

Similarly, EPA’s Office of Air Quality Planning and Standards has stated unequivocally that “[s]ince CPM is considered PM-10 and, when emitted, can contribute to ambient PM-10 levels, applicants for PSD permits must address CPM if the proposed emission unit is a potential CPM emitter.”¹⁰ In light of filterable and condensable PM stack test results from the Indiana Harbor Coke Co. facility showing that condensable PM can account for the majority of PM emitted from combustion sources, the proposed FDS Coke plant will undoubtedly be a significant emitter of condensable PM emissions. EPA has repeatedly required permitting authorities to include condensable PM10 limits and testing methods in permits.¹¹ The agency also insists that Condensable PM10 be considered in the applicant’s BACT analysis, and in the permitting authority’s review of that analysis.¹² In the present case, it does not appear that condensable PM was considered at all in the Applicant’s BACT determination. This is a BACT determination strategy that is clearly not allowed by U.S. EPA.

The issue of condensable particulate emissions is not just an academic one. A high rate of condensable particulate emissions can cause significant visible emissions from a stack, including the formation of “detached” plumes which form after a short time of airborne cooling after emission. The mix between “front half” and “back half” condensable particulate emissions can change with emission control technologies that lower flue gas temperatures, such as wet scrubbing. The Applicant has not discussed this issue in the BACT review and application.

All of the rest of the PM 10 emission limitation compliance determination provisions of III(A)(V)(1) have similar problems and must be corrected and clarified to

⁹ 55 Fed. Reg. 12426 (March 17, 1990). See also 55 Fed. Reg. 14246 (April 17, 1990) (“emissions that contribute to ambient PM10 concentrations are the sum of in-stack [non-condensable] PM10 . . . and condensable emissions.”); 55 Fed. Reg. 41546 (October 12, 1990) (“condensable particulate matter (CPM) emissions form very fine particles in the PM10 size range and are considered PM10 emissions”); 56 Fed. Reg. 65433 (December 17, 1991) (same).

¹⁰ March 31, 1994 letter from Thompson Pace, SO2/Particulate Matter Program Branch, EPA Office of Air Quality Planning and Standards to Sean Fitzsimmons, Iowa Department of Natural Resources

¹¹ See, e.g., In re: AES Puerto Rico L.P., PSD Appeal Nos. 98-29, 98-30, 98-31 (EAB, May 27, 1999), at 31-34.

¹² See, e.g., In re: Steel Dynamics, Inc., PSD Appeal Nos. 994, 995 (EAB, June 22, 2000), at 25-31.

ensure that both filterable and condensible PM stack emission test results are added together and that this sum be compared to the applicable PM10 and PE emission limitations.

4.3 Source Definition Issues Relating to the Disposition of Process Steam Generated by the Heat Recovery Steam Generators

The Applicant originally submitted plans and drawing showing that an electric co-generation plan was to be sited in association with the proposed coke oven facility. Later, the Applicant indicated that such a plant was not presently planned. However, it is clear that the Applicant has some kind of plan to sell or use this steam product. Connection of steam lines to another facility has the potential to create source aggregation that would potentially transform how the coke oven facility would be viewed in that it could become a source modification rather than a new source. At the very least, construction of an electricity co-generation plant in the future would create particulate emissions associated with cooling towers and such an emission unit must be evaluated for PM BACT and source impact analysis in conjunction with all other sources.

4.4 Questionable Claims of Process Hydrocarbon Burnout

The Applicant has submitted no detailed technical schematic diagrams of the common, refractory lines gas collection tunnel of the proposed facility. Yet, the Applicant is making claims of 7 seconds of gas retention at elevated temperatures, 10 ppm VOC emission levels and other aspects of ideal hydrocarbon burnout. Commenters assert that these claims must be supported by additional technical information disclosure before they are accepted by Ohio EPA with issuance of a proposed permit and before the Applicant is granted a permit containing no continuous hydrocarbon monitoring. The evidence from the Indiana Harbor facility that condensible particulate emissions are elevated in comparison to the Jewel Coke experience is an indicator that such hydrocarbon burnout may not be as good as the Applicant is claiming.

In particular, it is difficult to accept Applicants claim of 7 second retention time claims when some oven ducts to the common tunnel are directly adjacent to either venting discharge locations of ductwork to heat recovery steam generators. Ovens in these near-discharge locations cannot possibly have the significant retention times from their duct input to the common tunnel as more distant ovens further away from venting locations or where ducting to the heat recovery steam generators is very close. Charging operations in the ovens close to venting locations/HRSG duct may have significant potential to cause elevated VOCs and organic compound HAPs discharges on a transient basis out of emergency vents and the main stacks. Such transient VOCs may have the potential to cause downwind odors and excessive VOC emissions.

The Applicant must be required to submit detailed drawings which will ensure that claims about temperature and retention times are true for all oven locations on the common, refractory lined discharge tunnel.

4.5 Emissions of Chlorinated Dibenzo-Dioxin/Furans from the Proposed Facility

What is clearly emerging from the results at Indiana Harbor with all of the condensible PM emissions is that hydrocarbon burnout in such nonrecovery ovens is not to the extent that might have been previously portrayed. The incomplete VOC/hydrocarbon burnout, together with the likely presence of molecular chlorine and hydrochloric acid in the flue gas train and the passage of the flue gases through some elevated temperatures in the flue gas train all together mean that potential chlorinated dibenzodioxin/furan formation might occur. This issue should be further evaluated before permit issuance as this is, again, a matter of Great Lakes Air Permitting Agreement compliance.

5 Review of the Proposed Industrial Process and Emission Control Reliability Issues and the Indiana Harbor Coke Co Experience

Commentors have had long conferences with a U.S. EPA air enforcement official and an Indiana Department of Environmental Management inspector¹³ concerning compliance, operational and design problems that have taken place at the Indiana Harbor Coke Co (IHCC) facility in East Chicago, IN. This facility was heavily promoted in the mid-1990s in a similar manner as the FDS Coking facility is presently being promoted with many of the same claims being made at the time for the Indiana facility. However, the experience at the Indiana facility and the passage of time is that many claims made have not been supported by the actual experience of operations and problems at this facility. IHCC has been subject to both state and federal air enforcement in association with such claims and the facility has sought relaxations of its permit after issuance because of some of the problems. These are detailed in this section below.

5.1 Green Pushes

A green push is an operation of removing coke from an oven when not all of the coal has not been sufficiently heated and carbonized so that volatiles are still present in the pushed coke. Although the Applicant in the present case says that green pushes are eliminated, the experience at IHCC is that not all green pushes are eliminated. Green

¹³ Kaushal Som, EPA Air and Radiation Division air enforcement; Dave Sampias, IDEM air inspector, Merrillville, IN IDEM district office

pushes still occur when there hasn't been sufficient coking time, when the volatility of the coal is unexpectedly high and in regions of the oven such as the edges where heating is not as great or as uniform.

The Applicant has characterized VOC Emissions as though there will be no green pushes. Nothing in the proposed permit requires the Applicant to monitor and record green pushes. Since green pushes are a source for VOCs to enter quench water and be re-emitted, failure to consider that green pushes may actually occur will contribute to emission characterization underestimates.

5.2 Charging Emissions

IHCC still apparently has problems with charging emissions during the last part of the charging cycle when coal comes into contact with hot oven surfaces. During these times, particularly during elevated wind conditions, charging causes excessive particulate emissions that lead to opacity excursions. The Applicant's claims for face velocity on charging hood gas collection don't account for these types of problems.

5.3 Venting Emissions

IHCC has admitted that design and operation mistakes significantly contributed to excessive uncontrolled venting from coke oven emergency vent stacks at the East Chicago facility. While some of these problems have been corrected, measures to correct the balance of the problems are being denied as technically feasible given the claim that coke ovens cannot be brought down to cold shutdown and turnaround absent a complete rebuilding and reconstruction.

At IHCC, the combined backpressure influence of the emission control train, the problem of deposits on heat recovery steam generator heat transfer surfaces and the additional backpressure caused by such deposits, plus the under sizing of the exhaust discharge tunnel and induced draft fan capability, plus the demands for higher volatility coal to maintain adequate elevated temperatures for steam production have all lead to significantly more uncontrolled venting than was planned during the facility permitting. IHCC has sought permit revision for venting up to 19% of the time on a 24 hour basis and 14% of the time on an annual basis. Although unanticipated venting has been a problem at IHCC, it appears that the Applicant and the proposed permit are seeking permission to vent for longer period of time (up to 2016 hours per year) than even what was experienced at IHCC. In addition, the FDS facility will exacerbate its venting problems with its design of using a lessor number of heat recovery steam generators in a manner that, when venting occurs, more ovens will be implicated in such venting. If IHCC can limit the number of ovens subject to venting involvements, then the Applicant should also

be able to alter their design in such a manner as well as part of BACT review and consideration on venting emissions.

Finally, the Applicant must be required and the permit should be amended to require that all vent openings be instrumented to the operator. Vent openings will be system pressure mediated in addition to being caused by direct operator intervention. The Applicant must show that both types of vent openings will be fully known to operators and that such vent openings, even if they are partial openings caused by system pressures, will be recorded and limited as per any requirements in the proposed permit.

5.4 Coke Oven Door Leaks and Taking Advantage of the MACT Rule to Evade Accountability for Door Leaks

IDEM inspector observations indicate that door leaks are still a problem at the IHCC nonrecovery coke ovens. The leaks tend to occur at the bottoms of the doors in locations where the charged coal bed contacts the bottoms of such doors.

The proposed permit for the FDS facility doesn't effectively regulate door leaks. The existing MACT rule allow the option of recording a negative pressure in the oven once a day to substitute for inspections and accountability on door leaks. The FDS application emission characterization assumes zero VOC, PM and HAP emission from door leaks, so such a projection is unduly optimistic in light of the IHCC experience. The emission limitation and compliance requirements of the proposed permit do not provide any door leak emission limitation, prohibition, inspection/monitoring or record keeping require requirements. The proposed permit should not be issued with provisions that allow the operator to rely only once a day negative pressure monitoring as a substitute for substantive door leak limitations, monitoring and record keeping requirements, as well as emission inventory reporting.

6 Source Impact Analysis and Compliance with Requirements Relating to National Ambient Air Quality Standards for PM 2.5 and Ozone

The most fundamental defect of Applicant's submittal, as well as Ohio EPA's proposed determination and the proposed permit, involve a complete abdication of clear requirements to determine the ambient impact of the proposed facility on community air quality and to ensure that emissions from the proposed coke oven will not jeopardize attainment and maintenance of National Ambient Air Quality Standards.

This impermissible and unlawful failure is being carried out by Ohio EPA and the Applicant under a false assumption that issuance of the proposed permit prior to the effective date of U.S. EPA's nonattainment designations in Lucas County for PM 2.5 and ozone allows both Applicant and Ohio EPA to ignore all other source impact analysis

requirements for PM 2.5 and ozone. Ohio EPA’s failure to consider these issues contravenes requirements of the Ohio air pollution control statute and jeopardizes public health.

6.1 Recent PM 2.5 Air Monitoring and Ohio EPA’s Recommendation for Area Designation of PM 2.5 Both Show that Lucas County Must be Considered in Violation of the National Ambient Air Quality Standard for PM 2.5

Ambient air quality monitoring for PM 2.5 has been conducted in Lucas County since 1999.¹⁴ The following table shows the results of that monitoring for three PM 2.5 ambient air quality monitoring sites, all of which are located with Toledo addresses. All of the values in the table are for the arithmetic annual mean PM 2.5 concentration detected in micrograms/cubic meter:

Year ----Site	Site 390950024; 348 S. Erie	Site 390950025; 600 Collins Park	Site 390950026; 4208 Airport Hwy
1999	15.7	13.5	16.5
2000	19.5	15.7	15.1
2001	15.7	14.4	15.5
2002	15.0	15.3	14.9
2003	14.5	14.3	14.3 / 15.8
3 year average, 2001- 2003	15.1	14.7	14.8 / 15.4
PM 2.5 NAAQS, annual average	15.0		

Based on the table the S. Erie monitor is showing annual PM 2.5 standard violations for 4 of the last 5 years, the Collins park monitor shows such violations for 2 of the last 5 years and the Airport Highway monitor is showing violations for 4 of the last 5 years. The criteria for designating Lucas County as nonattainment under the Clean Air Act is to show the average of the last 3 years of data. The County meets the criteria for nonattainment designation based on the S. Erie site and other monitoring site annual averages not showing annual standard violations for an average of results in years 2001-2003 are showing that the monitored indications are only marginally in compliance with the PM 2.5 NAAQS.

Based on the air monitoring data and EPA’s guidance for considering what areas were subject to a designation of nonattainment for PM 2.5, Ohio EPA proposed and

¹⁴ This data derived by the author from a search for ambient PM 2.5 data for Lucas County at <http://www.epa.gov/air/data/index.html> Hard copy of the search is available from the preparer.

recommended that Lucas County be designated as nonattainment in their submittal to U.S. EPA.¹⁵ Ohio EPA's proposed submittal constitutes an implicit acceptance by that agency that Lucas County violates the PM 2.5 NAAQS. Michigan has also recommended to EPA that Monroe County, MI (which is adjacent to Lucas County, OH) be designated as nonattainment for PM 2.5 based on 3 years of air quality monitoring results showing PM 2.5 NAAQS violations at an air monitoring site in Luna Pier, MI.

As a result, both Lucas County, OH and Monroe County, MI must be considered in violation of the PM 2.5 NAAQS for purpose of source impact ambient assessments for a proposed new source of filterable and condensible PM 2.5 and PM 2.5 precursors of sulfur dioxide, nitrogen oxides and certain volatile organic compounds.

6.2 Air Quality Monitoring and Proposed Nonattainment Designations Indicate that Lucas County Must be Considered as Nonattainment for the Ozone National Ambient Air Quality Standards and that Existing Air Quality Monitoring Shows Violations of the Ambient Ozone Standards

Ozone air quality monitoring is conducted at 4 locations in Lucas County. Ozone monitoring results¹⁶ for the last 3 years is shown in the table below; the table shows the 4th maximum highest 8 hour average recorded each year at each site in parts per million ozone:

Year – Site	348 S. Erie, Toledo	200 S. Byrne Rd, Waterville	306 N. Yondota, Jerusalem Twp	Friendship Park, 2930 131st St. Toledo
2001	0.083	0.078	0.091	0.092
2002	0.092	0.086	0.096	0.094
2003	0.086	0.088	0.094	0.088
3 yr average of 4 th highest maximum	0.087	0.084	0.094	0.091

The information shows that all 4 of the Lucas County monitors are showing ozone NAAQS violations in 2 or 3 of the last years and that 3 of the 4 monitors are showing 3 year averages of the 4th highest 8 hour average to the extent that a nonattainment designation is justified. The 3 monitors are the ones that are closest to the proposed site for the FDS coke ovens.

¹⁵ Ohio EPA proposed submittal is at <http://www.epa.gov/pmdesignations/documents/04Recommendations/5/s/Ohio.pdf>

¹⁶ This data derived by the author from a search for ambient ozone data for Lucas County at <http://www.epa.gov/air/data/index.html> Hard copy of the search is available from the preparer.

In fact, in July of 2003, Ohio EPA recommended that Lucas County be designated as nonattainment for the ozone NAAQS.¹⁷

As a result, Lucas County must be considered as being in violation of the ozone NAAQS for purpose of air quality source impact assessment requirements for a proposed new major stationary source of nitrogen oxides and volatile organic compounds.

6.3 The Applicant, Ohio EPA and Toledo Division of Environmental Services Have All Uniformly Ignored Issues of PM 2.5 and Ozone Source Impact Assessment

In submitting their application, the Applicant included no existing air quality information for PM 2.5 and ozone; nothing in their submittal provides any source impact assessment, analysis and/or air quality modeling results for PM 2.5 and ozone. Neither Ohio EPA, nor TDES, acknowledged the pre-existing PM 2.5 and ozone ambient air quality problems in Lucas County or gave any consideration to the potential impact of the proposed FDS Plant on PM 2.5 and ozone either in Lucas County or in downwind areas of Michigan.

6.4 The Issuance of the Proposed FDS Coke Facility Permit Prior to the Effective Date of Final Designation Decisions on Nonattainment Area Classification for PM 2.5 and Ozone Does Not Excuse the Applicant from Other Requirements for Source Air Quality Impact Assessment and Protections Against Jeopardizing Attainment and Maintenance of National Ambient Air Quality Standards

Both the Applicant and Ohio EPA/TDES have engaged in an unsupportable position that existing PM 2.5 and ozone problems in Lucas County and in downwind areas of Michigan can be disregarded in permitting the proposed facility merely because Lucas County, the site of the proposed plant, has not yet been formally designated as a nonattainment area for PM 2.5 and ozone by the U.S. Environmental Protection Agency under 42 U.S.C. Section 7407. Such a position is in palpable error and jeopardizes air quality and public health of citizens in Lucas County and surrounding areas.

With a January 22, 2003 notice of direct final approval in the Federal Register and the previous conditional approval in 2001, U.S. EPA ultimately approved the Ohio PSD

¹⁷ See notice at <http://www.epa.gov/ozonedesignations/documents/03Recommendations/5/s/Ohio.pdf>

New Source Review program and rules¹⁸ as part of the Ohio State Implementation Plan under the Clean Air Act. In addition to the stated Ohio EPA rules, Ohio also adopted by reference the complete set of federal rules on “Requirements for Preparation, Adoption, and Submittal of Implementation Plans, Subpart I – Review of New Sources and Modifications.”¹⁹ Selected elements of these Ohio Rules and Federal Rules that Ohio adopted by reference²⁰ are discussed below.

6.5 Duties of the Applicant in Preparing an Air PTI Application as to Source Impact and Ambient Analysis

6.5.1 The Applicant Did Not Include the Required Analysis in Their Application for an Air Permit to Install of Ambient Air Quality for PM 2.5 and Ozone in the Area of the Proposed Plant

OAC 3745-31-14(B) provides [with similar and applicable requirements at 40 CFR §51.166(m)(1)(i)]:

“Criteria air pollutants that require pre-application analysis. Any application for a major stationary source or major modification shall contain an analysis of ambient air quality in the area that the major stationary source or major modification would affect for each of the following air pollutants: (1) For a stationary source, each criteria air pollutant that the stationary source would have the potential to emit in a significant amount....”

The Applicant has already admitted in their Application that nitrogen oxides and VOCs are emitted by the proposed facility in significant amounts. As for PM 2.5, OAC 3745-31-01(WWW)(2) and 40 CFR §51.166(b)(23)(ii) provides that Clean Air Act regulated pollutants not listed at 40 CFR §51.166(b)(23)(ii) or in OAC 3745-31-01(WWW)(1) are “significant” if emitted at “any emission rate.” Moreover, emissions of PM 2.5 precursors of sulfur dioxide, nitrogen oxides and volatile organic compounds are admitted by the Applicant to be emitted at rates that are “significant.”

In addition, OAC 3745-31-12(C)(4) requires submittal of....

“The air quality impact of the major stationary source or major modification, including meteorological and topographical data necessary to estimate such impact;”

¹⁸ See 68 FR 2909 and 66 FR 51570

¹⁹ See 40 CFR Part 51, Subpart I

²⁰ 40 CFR Part 51, Subpart I was adopted by reference at OAC 3745-31-01(III)(2)(n)

Again, no such impact information was submitted for PM 2.5 and Ozone.

As a result of the above, the Applicant was bound under the approved Ohio regulations to include “an analysis of ambient air quality in the area” for PM 2.5 and ozone. No such analysis appears in Applicant’s PTI application submittal.

6.5.2 The Applicant Did Not Include the Required Analysis in Their Application to Show that Operation of Their Emission Source would Not Cause or Contribute to a Violation of the National Ambient Air Quality Standards for PM 2.5 and for Ozone

Both OAC 3745-31-16(B) and 40 CFR §51.166(k) provide:

Any owner or operator of a proposed major stationary source or major modification shall demonstrate that allowable emissions increases from the proposed major stationary source or major modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), **would not cause or contribute to** air pollution in violation of: (1) **Any national ambient air quality standard....** (Emphasis added)

Nothing in Applicant’s submittal provides a demonstration that direct emissions of PM 2.5 and PM 2.5 precursor emissions of condensible particulate matter, nitrogen oxides, sulfur dioxide, sulfuric acid aerosol and high molecular weight volatile organic compounds will not cause or contribute to violations of the PM 2.5 National Ambient Air Quality Standard. No PM 2.5 emissions data were supplied in the application from this combustion source which can be expected to be a significant emitter of PM 2.5.

As a matter of fact, PM 2.5 concentrations across Lucas County on an annual basis either exceed or are marginally under the PM 2.5 National Ambient Air Quality Standard. It is simply an unavoidable fact that building a significant contributor of PM 2.5 emissions and PM 2.5 precursor emissions will exacerbate the existing county-wide violation of the PM 2.5 NAAQS that is explicitly and implicitly acknowledged by the Ohio EPA proposals to designate the entire county as a PM 2.5 nonattainment area (see discussion in prior section). Applicant is simply unable to show that it will not jeopardize attainment and maintenance of this PM 2.5 NAAQS so it chose silence on this issue in its permit application submittal. This silence, however, does not excuse the Applicant from making the required showings under OAC 3745-31-16(B) and 40 CFR §51.166(k).

Similarly, the Applicant failed in its submittals to satisfy the requirement for a showing under OAC 3745-31-16(B) and 40 CFR §51.166(k) for source impact analysis for the effect of its new emissions of nitrogen oxides (NOX) and volatile organic compounds (VOC) on whether such emissions would cause or contribute to ozone air

quality standard violations in Lucas County, OH and in Southeastern Michigan. Ohio EPA has implicitly acknowledged that all of Lucas County, OH should be considered nonattainment for ozone. Similarly, Monroe County and most of Southeastern Michigan have been recommended as nonattainment areas for ozone. Yet there is no content in the application that makes a showing on whether the FDS Coke Facility will cause or contribute to this pre-existing ozone air quality problem. In fact, commentors assert that construction and operation of the FDS Coke facility can only exacerbate pre-existing ozone problems in both Lucas County and Southeastern Michigan and that it would be nearly impossible to show that the proposed facility would not cause or contribute to a violation of the Ozone NAAQS.

6.6 Duties of the Ohio EPA and Toledo Division of Environmental Services as to Source Impact Analysis and Ambient Impacts for PM 2.5 and Ozone

6.6.1 Ohio EPA's Review of Emissions Must Embrace PM 2.5 as an Air Pollutant Subject to Regulation

OAC 3745-31-13(B) provides:

“Air pollutants covered. The requirements contained in rules 3745-31-10 through 3745-31-20 of the Administrative Code shall apply to any major stationary source and any major modification as defined by these rules with respect to each air pollutant subject to regulation under the Clean Air Act that the stationary source would emit.....”

40 CFR §51.166(b)(49) provides:

“Regulated NSR pollutant, for purposes of this section, means the following:

(i) Any pollutant for which a national ambient air quality standard has been promulgated and any constituents or precursors for such pollutants identified by the Administrator (e.g. volatile organic compounds are precursors for ozone)....”

Because a National Ambient Air Quality Standard PM 2.5 has been promulgated at 40 CFR §50.7 and is presently in effect it is undeniable that PM 2.5 is a criteria pollutant that is “....subject to regulation under the Clean Air Act.” It is also undeniable that the proposed FDS Coke oven facility would both directly emit PM 2.5 as a combustion source, as well as emitting PM 2.5 precursors such as nitrogen oxides, sulfur dioxide, sulfuric acid, ammonia, condensable particulate matter and certain high molecular weight volatile organic compounds.

Accordingly, both Ohio and EPA rules ensure that issues of PM 2.5 must be considered during PSD NSR permitting activities. That such consideration has not taken

place is grounds for denial of the proposed permit for the proposed FDS coke oven facility.

6.6.2 Ohio EPA and Toledo Division of Environmental Services Cannot Make a Finding that the Proposed Source Will Not Jeopardize Attainment and Maintenance of Air Quality Standards for PM 2.5 and Ozone

Under OAC 3745-31-05(A)(1):

(A) The director shall issue a permit to install, on the basis of the information appearing in the application, or information gathered by or furnished to the Ohio environmental protection agency, or both, if he determines that the installation or modification and **operation** of the air contaminant source will:

(1) Not **prevent or interfere with the attainment or maintenance of applicable ambient air quality standards**; and

(2) Not result in a violation of any applicable laws, including but not limited to:.....(c) Requirements pertaining to installation of major stationary sources or major modifications in attainment and nonattainment areas as contained in rule 3745-31-10 to rule 3745-31-27 of the Administrative Code.” (emphasis added)

In addition, note that 40 CFR §51.160 provides:

“(a) Each plan must set forth legally enforceable procedures that enable the state or local agency to determine whether the construction or modification of a facility, building, structure or installation, or combination of these will result in.....(2) Interference with attainment or maintenance of a national standard in the state in which the proposed source (or modification) is located or in a neighboring State.

(b) Such procedures must include means by which the State or local agency responsible for final decisionmaking on an application for approval to construct or modify will prevent such construction or modification if.....(2) It will interfere with the attainment or maintenance of a national standard.”

Given the Applicant’s failure to include an analysis of the impact of the proposed facility on ambient air quality for PM 2.5 and ozone detailed in prior sections, and nothing placed in the record by Ohio EPA and Toledo Division of Environmental Services on the PM 2.5 and ozone matter, the Ohio EPA Director’s decision to issue the permit and implicit finding that under OAC 3745-31-05(A)(1) cannot be supported on the

record and is inconsistent with the Director's findings discussed in prior sections that Lucas County should be designated as nonattainment for PM 2.5 and ozone.

The Director must be able to make a finding that "operation" at a future date of the facility will not interfere with attainment and maintenance of the PM 2.5 and ozone ambient air quality standards. It is unavoidable in the circumstance in which the Director has already determined that the entirety of Lucas County must be designated as nonattainment for ozone and PM 2.5 that commencement of operations of this source in the future will necessarily exacerbate adverse air quality monitoring results for ozone and PM 2.5 given current adverse monitoring results. The Director thus cannot make a finding that "operation" of the source in the future will not interfere with attainment and maintenance of the PM 2.5 and ozone NAAQS, particularly with a failure of the Applicant to include needed emissions and ambient impact analysis. The Director also has an obligation to be able to make such a finding for downwind areas in Michigan as well.

It is well established that the final effective date for ozone nonattainment designations is June 15, 2004. The Director can only make a finding as to ambient impact and NAAQS interference for ozone from "operations" of the FDS facility in a prospective manner after the June 15, 2004 date. Under the circumstances there can be no escape from holding that the facility as permitted will interfere and contribute to adverse air quality in Lucas County and downwind after that effective date in any prospective determination. Any finding to the contrary by the Director is against the great weight of evidence and, at the least, constitutes an abuse of any discretion the Director might have in the matter.

6.6.3 An Ohio EPA/TDES Decision to Issue the Proposed Permit Under the Attainment Provisions Violates the Required Ambient Air Ceilings for Ozone and PM 2.5

OAC 3745-31-11(C) and 40 CFR §51.166(d) require that "issuance of a permit to install" and Federally approved state implementation plans for application of PSD NSR permitting, respectively, prohibits....

".....that no ambient concentration of an [air] pollutant shall exceed.....the concentration permitted under the national primary ambient air quality standard...."

This is a "bright line" prohibition which Ohio EPA/TDES are attempting to cross with issuance of the proposed FDS Coking permit to install to the Applicant.

The Prevention of Significant Deterioration New Source Review Program was never intended to be used in circumstances in which existing air quality is in violation of national ambient air quality standards as it presently is for PM 2.5 and ozone in Lucas

County. Instead, the intent of the framers of the Clean Air Act was that such circumstances be addressed under the Part D nonattainment new source review provisions.

The proposed permit itself, when issued, would become part of the Ohio State Implementation Plan. However, the federal regulation at 40 CFR §51.166(d) clearly contemplates that approved state implementation plans would never countenance a new source review procedure in which a permit would be granted to a new facility that would exacerbate current problems of an area in complying with the PM 2.5 and ozone NAAQS. The language of the approved Ohio attainment NSR program as embodied in the federal SIP approval of OAC 3745-31-11(C) was put in place to ensure that issuance of a proposed permit to install could never take place in a situation where the expected combined impact of the proposed facility and existing adverse air quality exceeded the PM 2.5 and ozone NAAQS. The entire thrust of the attainment PSD NSR SIP program was that actions under that program would never be allowed so that air quality would be deteriorated to an ambient air concentration level above the NAAQS for PM 2.5 and ozone. As a result, under both the federal regulation and the Ohio EPA rules, the Director is prohibited from issuing a permit that would allow such air quality deterioration for PM 2.5 and ozone.

6.6.4 The Director Has Failed to Carry Out Public Participation/Notification Requirements Concerning PM 2.5 and Ozone Ambient Air Impacts

OAC 3745-31-09(H)(1) requires:

“Public participation/notification requirements: The director shall:

Notify the public, by advertisement in a newspaper of general circulation in each county in which the proposed air contaminant source would be constructed, of the application, the draft action (if issued), the ambient air impact that is expected from the air contaminant source or modification, if any....”

Moreover, 40 CFR §51.161(a) requires that:

“The legally enforceable procedures in §51.160 must also require the State or local agency to provide opportunity for public comment on information submitted by owners and operators. The public information must include the agency’s analysis of the effect of construction or modification on ambient air quality, including the agency’s proposed approval or disapproval.”

The public notice issued by Ohio EPA did not mention any information on the PM 2.5 and ozone ambient air impact of the proposed facility. There was no information in the notice on PM 2.5 emissions and no information at all about the expected PM 2.5 and

ozone impacts of the facility. There was no information on current air quality problems with PM 2.5 and ozone in the notice and no mention was made of the potential for the proposed facility to exacerbate these current problems. Ohio EPA's notice did not meet the minimum requirements for public notice and this error was harmful because it obscured public knowledge, discussion and comment on the fact that emissions from the proposed FDS coke oven would exacerbate pre-existing air quality problems with PM 2.5 and ozone.

7 Implications of Ohio's NSR Permitting Rules and Federal Nonattainment NSR Rules on the Proposed FDS Coke Plant PTI Application and Proposed Permit Issuance

7.1 Certain Applicability Provisions of Federally Approved Ohio EPA Rules Going to Commencement of Construction Have Regulatory Impact on the Proposed Facility and the Rules Under Which It Is Permitted Apart from the Actual Timing of Final Permit Issuance

Ohio's attainment New Source Review rule provides the following:

“(A) Start construction limitations. In accordance with this chapter of the Administrative Code, no major stationary source or major modification located in an attainment area shall begin actual construction unless, at a minimum, the requirements in rules 3745-31-01 through 3745-31-20 of the Administrative Code have been met and the stationary source has obtained a valid Ohio EPA permit to install.....”

(C) Attainment/non attainment applicability. The requirements contained in rules 3745-31-10 through 3745-31-20 of the Administrative Code apply only to any major stationary source or major modification that **would be constructed** in an area that is designated as attainment or unclassifiable under 40 CFR 81.336. (OAC 3745-31-13(A) & (C)) (emphasis added)

Paragraphs A and C read together above show a separate and distinct requirement binding on the Applicant apart from mere Ohio EPA PTI issuance that prohibits commencement of construction of a facility considered under the attainment NSR rules at the time of such a commencement of construction. As per the Applicant's planned construction schedule, at the prospective future time of the commencement of construction of the proposed FDS coke oven, the facility will most definitely be located in an ozone nonattainment area as such a final designation will be in place as of June 15, 2004. Paragraphs A and C together act as a prohibition to bar issuance of a proposed permit carried forth under the attainment NSR provisions in OAC 3745-31-10 through 3745-31-20 since these provisions require a future prospective determination in

permitting determined as of the date of commencement of construction rather than as of the date of permit issuance.

Similar provisions are found in Ohio EPA's nonattainment NSR rules:

“(A) Start construction limitations. No owner or operator of a major stationary source or major modification located in a nonattainment area shall begin actual construction of such major stationary source or major modification unless, as a minimum, the requirements in rules 3745-31-21 through 3745-31-27 of the Administrative Code have been met and the owner or operator of the stationary source has obtained a valid Ohio EPA permit to install.”

“(C) Attainment/non attainment applicability. Except as provided in rule 3745-31-21 of the Administrative Code, the requirements contained in rules 3745-31-21 through 3745-31-27 of the Administrative Code apply only to any major stationary source or major modification that would be constructed in an area designated under 40 CFR 81.336 as nonattainment for an air pollutant from which the stationary source or modification is major.” OAC 3745-31-21(A) & (C)

The plain meaning of all of the provisions in this subsection is that the type of NSR applicability that comes into play depends on the attainment/nonattainment status of the area where the FDS coke oven is to be constructed as of the time that construction is expected to commence as per the Applicant's timetable. For ozone, commencement of construction will take place after June 15, 2004 when ozone nonattainment status of the Lucas County source location will be definitively known as per a recent Federal Register notice.²¹ As a result, Rule 3745-31-21 requires that permitting of the proposed FDS coke ovens take place under the nonattainment NSR rules of OAC 3745-31-21 through 3745-31-27.

7.2 Provisions at OAC 3745-31-23 and 40 CFR §51.165(b)(1)-(4) Must be Read to Prohibit Issuance of the Proposed Permit

OAC 3745-31-23 is written to apply to facilities located in attainment/unclassifiable areas if emissions from such a source...

“...would exceed the following significance levels **at any locality that does not meet the National Ambient Air Quality Standard...**

(C) Review of specified major stationary sources for air quality impact.

²¹ See 69 FR 23858

(4) The determination as to whether a major stationary source would cause or contribute to a violation of a National Ambient Air Quality Standard **should be made as of the new stationary source's start-up date.**"

Under this rule, areas of Lucas County outside the property line of the proposed FDS coke oven are presumed to be in violation of the PM 2.5 and ozone NAAQS because of the currently pending Ohio EPA proposal on PM 2.5, PM 2.5 air quality monitoring data and because of the pending redesignation as of June 15, 2004 published in the Federal Register for Lucas County as a ozone nonattainment area. Areas immediately outside of the FDS property would be "at any locality" as per the rule language. Although the rule does not provide a numerical criteria for a "significant" ambient impact, it should be noted that other aspects of the Ohio Rules designate any amount of PM 2.5 emissions as significant and that NOX and VOC are clearly significant emissions as to ozone.

According to the PTI application commencement of construction of the proposed facility is set for August 2004 and commencement of operation is set for June 2006. According to a U.S. EPA website,²² final PM 2.5 non-attainment designations which will include Lucas County given Ohio EPA's pending recommendation will be published in December 2004.

As a result, the PTI application source impact assessment and ambient NAAQS standard compliance assessment should have been performed as to the conditions in June of 2006 according to OAC 3745-31-23(4). The PTI application and Ohio EPA's review of it never considered that a future date at startup would likely have to be considered and that aspect of this rule applied as it was an attainment area that was clearly in transition for PM 2.5 and ozone.

Similarly, 40 CFR §51.165(b)(1) provides that preconstruction permitting state implementation plans satisfying the Clean Air Act Part D nonattainment requirements apply for:

"Such a program shall apply to any such source or modification that would locate in any area designated as attainment or unclassifiable for any national ambient air quality standard pursuant to section 107 of the Act, which is would cause of contribute to a violation of any national ambient air quality standard." 40 CFR §51.165(b)(1)

Commenters conclude that OAC 3745-31-23 is applicable to the present situation with the proposed PTI application and proposed permit and that the requirements of OAC

²² <http://www.epa.gov/pmdesignations/>

3745-31-23(B) for LAER, compliance certification and net air quality benefit are also required. Since the PTI application and Ohio EPA's review never considered these issues and requirements, the proposed permit cannot be approved.

8 Issues Associated with Applicant's "Best Available Control Technology" Demonstration

8.1 The Applicant Did Not Perform a BACT Review and Demonstration for PM 2.5 and Applicant's PM 10 BACT Review Cannot Substitute for the Required PM 2.5 Review

Applicant's combustion-based process undoubtedly is a direct discharge source of PM 2.5 from the main combustion stack, charging operations, pushing operations, coke quenching and from door leaks. In particular, condensible particulate matter will preferentially form very small particles that are PM 2.5.

The definition of Best Available Control Technology provides, in part, for....

"Best available control technology means an emission limitation (including a visible emission standard) based on the maximum degree of reduction for **each regulated NSR pollutant** which would be emitted from any proposed major stationary source or major modification which the reviewing authority, on a base-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available method, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant....." 40 CFR §51.166(b)(12) (emphasis added)

The regulations further define "regulated NSR pollutant" as...

"Regulated NSR pollutant, for purposes of this section, means the following:

- (i) any pollutant for which a national ambient air quality standard has been promulgated and any constituents or precursors for such pollutants identified by the Administrator (e.g., volatile organic compounds are precursors for ozone)....." 40 CFR §51.166(b)(49), in part

Although Ohio has adopted 40 CFR part 51, Subpart I by reference, similar language has also been placed into Ohio EPA's rules at OAC 3745-31-01(O) with the same ultimate consequence that a BACT demonstration must address all significant criteria pollutant emissions at a new major stationary source and that any emission of PM 2.5 is "significant" under OAC 3745-31-01(WWW)(2).

Notwithstanding the requirement for the major source FDS coke facility to produce a BACT determination on PM 2.5 in its PTI application, the Applicant has not performed such a determination and the BACT determination and the proposed permit must be rejected on this basis. The BACT determination provided for PM 10 cannot suffice for the requirement for a BACT determination for PM 2.5 since the plain meaning of the regulations is that PM 2.5 is a separate and distinct NAAQS criteria pollutant regulated under the Act. In addition it should be noted that PM 2.5 will have a greater potential human health respiratory/cardiac impact than particles of PM 10 that happen to be larger than 2.5 microns.

For the aforementioned reasons, Applicant's PTI application and the proposed permit must be disallowed because of the failure to conform to the PM 2.5 BACT demonstration requirement.

8.2 Aspects of Applicant's Nitrogen Oxides (NOX) BACT Demonstration Improperly Dismisses Certain NOX Controls Without a Proper Basis and Without Consistency with Other Assertions Contained in the Demonstration

The Applicant has rejected Selective Non-Catalytic Reduction (SNCR) as a NOX BACT control option on the basis of technical infeasibility. Applicant claims in their May 2004 comprehensive BACT review that:

“SNCR requires the addition of ammonia or a similar type of selective reductant in the combustion where the temperature is in the 1500 deg F to 2000 deg F range. In the case of the heat recovery coking process, the required temperature window is available only for a brief period during the combustion cycle and may occur anywhere along the coke over battery. Injection of a reductant into the gas stream that is within the temperature window is not possible, since the location is highly variable. For this reason, SNCR is not technically feasible.”²³

Then, in Section 1.3 on carbon monoxide and VOC controls, it is asserted:

“In the heat recovery coking process, volatile matter is released from the coal bed and combusted within the coke oven. The goal of the heat recovery coking process is complete combustion, and thereby, the release of all the available energy. This approach inherently produces low emissions of CO and VOCs. The gases remain in the sole flues and common tunnel approximately 7 seconds where they are exposed to oxidizing conditions and temperatures from 1,600 deg to 2,500

²³ Applicant's May 2004 Battelle consolidated BACT review, p.4

deg F. These operating conditions can be compared to controlled-air incineration, which is considered state-of-the-art for destroying organic compounds and CO.”²⁴

Then, in every other mention in the BACT report and in air quality modeling assumptions, the Applicants use 1800 degF as their nominal gas temperature characteristic, including for dispersion from vent releases and engineering calculations on such controls.

EPA cites the temperature window for SNCR as 1600 degF to 2100 deg F.²⁵

The applicant cannot claim that temperatures of 1,600 to 2,500 deg F will be maintained for CO and VOC control with 7 seconds of gas retention time and then turn around and claim that temperatures will lower and not maintained in this range for purposes of arguing against the implementation of SNCR NOX control.

Reagent injection for SNCR can be automatically adjusted or even eliminated if the required reduction reaction temperatures are not present. An ammonia slip detector can also keep ammonia from becoming a problem with these systems. The Applicant is going to want to maintain stable temperatures at any rate in order to stabilize steam production rates for their steam customer. Stable steam rates require limiting the excess perturbation of process operating temperatures. Applicant’s summary dismissal of SNCR is not credible under the circumstances.

8.3 Applicant’s BACT Review on Selective Catalytic Reduction Did Not Consider the Beneficial Effect Installation of SCR NOX Controls Would Have on Increasing the Ability of Particulate Control Equipment to Also Control Some of the Mercury Compound Emissions

The Applicant’s BACT review concerning selective catalytic reduction failed to consider that installation of SCR would, in addition to providing significant NOX control, potentially increase mercury compound control efficiency. SCR systems are known to catalyze the conversion of elemental mercury [virtually uncontrolled in traditional PM control systems] to oxidized forms which can more easily be collected by downstream spray dryer/fabric filter PM control systems. Given the enormous problem that mercury emissions poses for this facility, such consideration in a BACT review should have taken place from the standpoint of proper environmental management. However, this type of evaluation is also a required part of BACT ‘top down’ review.

²⁴ Applicant’s May 2004 Batelle BACT report, p. 10

²⁵ <http://www.epa.gov/ttn/catc/dir1/fsncr.pdf>

The first time this doctrine was clearly articulated was in a case of a municipal waste combustor in California in which citizen commentators appealed a decision of EPA Region IX on a proposed PSD permit for the North County Resource Recovery Associates.²⁶

In a remand order back to EPA Region IX, then-EPA Administrator Lee Thomas wrote as to petitioner's allegations:

“Among the reasons the petitioners present for granting review is Region IX's alleged failure to establish emission limitation for all pollutants, including hazardous pollutants, that will or could possibly be emitted from the facility; the alleged inadequacy of Best Available Control Technology (BACT) determinations;..... With one exception, Region IX has addressed each of petitioners' allegations and has provided rational explanations for not making any alterations in its permit determination.

The exception concerns Region IX's assertion that EPA lacks the authority to “consider” pollutants not regulated by the Clean Air Act when making a PSD determination. This assertion is correct only if it is read narrowly to mean EPA lacks the authority to imposed limitations or other restrictions directly on the emission of unregulated pollutants. EPA clearly has not such authority over emissions of unregulated pollutants.

Region IX's assertion is overly broad, however, if it is means as a limitation on EPA's authority to evaluate, for example, the environmental impact of unregulated pollutants in the course of making a BACT determination for the regulated pollutants. EPA's authority in that respect is clear.....

As defined in §169(3) the term BACT refers to an “emission limitation” that is set on a case-by-case basis for regulated pollutants, “taking into account energy, environmental, and economic impacts and other costs” associated with the particular emission control system that is selected to achieve the BACT emissions limitation. 42 USC §7479(3) (emphasis added) (40 CFR §52.21(b)(12).

Hence, if application of a control system results directly in the release (or removal) of pollutants that are not currently regulated under the Act, the net environmental impact of such emissions is eligible for consideration in making the BACT determination. The analysis may take the form of comparing the incremental environmental impact of alternative emission control systems with the control system proposed as BACT; however, as in any BACT determination, the exact

²⁶ EPA Administrative Decision In the Matter of North County Resource Recovery Associates, Remand Order, PSD Appeal No. 85-2, June 5, 1986.

form of the analysis and the level of detail required will depend upon the facts of the individual case. Depending upon what weight is assigned to the environmental impact of a particular control system, the control system proposed as BACT may have to be modified or rejected in favor of another system.

In other words, EPA may ultimately choose more stringent emission limitations for a regulated pollutant than it would otherwise have chosen if setting such limitations would have the incremental benefit of restricting a hazardous but, as yet, unregulated pollutant.” (Decision at p 3-4)

The precedent that PSD BACT determinations must consider the effects of control technology decisions on unregulated pollutants as part of the environmental impact analysis has been extended and clarified in EPA’s transitional guidance memo after the passage of the 1990 Clean Air Act Amendments.

“Toxic Effect of Unregulated Pollutants Still Considered in BACT Analysis -- Based on the remand decision on June 3, 1986 by the EPA Administrator in North County Resource Recovery Associates (PSD Appeal No. 85-2), the impact on emissions of other pollutants, including unregulated pollutants, must be taken into account in determining BACT for a regulated pollutant. When evaluating control technologies and their associated emissions limits, combustion practices, and related permit terms and conditions in a BACT proposal, the applicant must consider the environmental impacts of all pollutants not regulated by PSD. Once a project is subject to BACT due to the emission of nonexempted pollutants, the BACT analysis should therefore consider all pollutants, including Title III hazardous air pollutants previously subject to PSD, in determining which control strategy is best.”²⁷

As such, both the Applicant and Ohio EPA/TDES must consider the effects of all control technology selections, options and the setting of emission standards for criteria pollutants on unregulated pollutants from this process. This would include such pollutants as poly-chlorinated dibenzo-dioxins/furans, polycyclic aromatic hydrocarbons, other products of incomplete combustion and potentials for increased collection efficiency of toxic metals. None of this analysis has been carried out in Applicant’s current technology determination and BACT review report.

²⁷ Ibid, March 11, 1991 Seitz memo at P. 3.

8.4 The Applicant's BACT Review on Venting of Uncontrolled Sulfur Dioxide and Particulate Emissions Contains Significant Methodological Errors

8.4.1 Applicant's Cost Review Consideration of "Primary Dry Scrubber System following Additional HRSG [heat recovery steam generators] is Biased High

In consideration of using 12 heat recovery steam generators and venting only one vent instead of a pair of vents, Applicant makes the assumption:

"This option assumes that the HRSGs are the same size as those in the current design and that the waste heat tunnel is the maximum size cylindrical tunnel that may be accommodated by the oven design."

This assumption significantly biases financial consideration of this option high because only half of the steam generating capacity is needed to handle the high temperature gas load from half of the ovens. This option also increases the amount of sulfur dioxide removed to greater than 395 tons because the facility would no longer have to release emissions from 2 vents at the same time.

The Applicant should recalculate this option with smaller HRSG units of half of the size and include a deduct for less expense due to shorter high temperature ductwork. This option, together with having smaller steam generation units serving a smaller number of ovens in a group, must also be considered regardless of cost since installation of this type of technology has been used at other nonrecovery coke ovens.

8.4.2 The Applicant's Did Not Perform a Proper Top Down BACT Analysis for Control of Emissions from the Venting Stacks

The Applicant assigned 100% the costs for sulfur dioxide control options for the BACT review on venting to the calculation of the cost per ton of controlling sulfur dioxide when some of these costs should have been apportioned to the need for particulate emissions control. This cost accounting increased the cost per ton of sulfur dioxide removed across the board because no portion of these costs were attributed to the need and justification for particulate control. The emission control train controls particulate emissions by direct filtration and by gas cooling in the spray dryer which allows some of the high boiling point condensibles to be caught in the fabric filter.

The Applicant never showed the basis for the assumption that the PM emissions from venting were at 0.03 grains per dry standard cubic foot so it is not possible to know if this was just filterable particulate or filterable plus condensible particulate. As a result it is difficult to determine whether Applicant's source emission characterization of the venting particulate emissions acknowledges the problem that venting emissions at 1800 degF will necessarily involve significant condensible particulate matter and the potential

for detached plumes, odors and other deleterious effects that have not been disclosed by Applicant. For example, if the Applicant cannot maintain temperatures in the common high temperature duct at a sufficiently high level as it seeks excuses from SNCR controls, the potential for formation of coal tar product aerosols must be considered that would be products of incomplete combustion.

8.4.3 The Applicant's BACT Analysis Did Not Consider the Alternate Use of Boiler Soot Blowing Technology to Eliminate Venting Time.

Experience at the Indiana Harbor Coke Co. nonrecovery coke oven indicates that soot blowing capability is the most appropriate design to avoid the need for venting instead of other types of manual cleaning of boiler tube heat exchanger surfaces. Boiler soot blowers are conventional, off-the-shelf commonly used technologies and the Applicant doesn't have any excuse for not using this type of technology to reduce or eliminate a considerable need for venting time.

8.5 Applicant's BACT Review on Emissions Associated with Flat Push Hot Car Technology

Applicant's effort to escape baghouse controls in favor of mechanical cyclone collectors for a flat push hot car approach to pushing appears to be an effort to achieve excessive subcategorization of a source with the PSD BACT determination process. Applicant's BACT review failed to uncover the following two RACT/BACT/LAER determinations for other facilities:

Bethlehem Steel Corp -MD 0.03 lbs PM/ton pushed
Inland Steel - IN 0.02 lbs PM/ton pushed

These are both lower than the rates sought as permissible by the Applicant as per a May 12, 2004 review by Matt Stanfield showing a rate of 0.06 lbs pm/ton coke pushed for the flat push method plus cyclone collector.

Applicant's determination should have addressed the measures taken by these two entities to achieve lower coke pushing PM emission rates.

The Applicant's coke pushing BACT demonstration failed to consider the fact that mechanical cyclone controls generally show low control efficiencies for fine particles which should be a significant part of the required BACT environmental review in a future PM 2.5 nonattainment area.

Applicant's BACT analysis didn't consider the emission control performance and limits achieved at the shed/fabric filter controlled Indiana Harbor facility, which tested at

-.017 lb/ton filterable PM and 0.028 lb/ton Condensable, which is still lower than the 0.06 lb PM/ton pushed performance/permit level sought by the Applicant. Shed control has the advantage [provided the shed is maintained] of providing better performance in windy conditions which will be significant for a facility located on the shores of a large body of water. The Applicant's face velocity claims of 0.5 m/s can easily be overcome by windy conditions to cause emissions.

Commenters support EPA Region V's comments expressing criticism on Applicant's attempt to write-off mobile scrubber technology. It seems clear that such a technology would achieve better control of fine particles and would have the benefit of controlling acid gases, condensable particulate matter and VOC oxygenates that would be uncontrolled in a mechanical cyclone PM control system.

8.6 The Applicant's BACT Demonstration for the Quench Tower Particulate Emissions is Deficient

The Applicant has not provided engineering information on drift elimination factors for demisting baffles at the quench tower. The Applicant must be required to indicate the drift elimination factor of the baffle/mist eliminators in the same way that cooling tower operators must show this factor and consider alternate efficiency factors for such mist elimination.

In addition, the combined quenching/pushcar BACT determination is deficient because dry quenching with heat recovery was never considered by the Applicant and this is a technically feasible quenching approach that must be considered in a top down BACT analysis. Finally, to the extent that this facility will still have green pushes, then the quench water tank and the quench water settling pond become VOC emission units subject to emissions characterization and BACT control evaluation. Such review was never incorporated in Applicant's submittals.

8.7 Applicant's Material Handling BACT Review Doesn't Embrace a Determinative Maximum Level of Control

Applicant's material handling BACT review for coal and coke handling, storage and processing shows wide ranges of expected emission control efficiencies in Table 28 on page 48 of the consolidated May 2004 Battelle BACT review document. Specifying a BACT PM control efficiency of 85-95% or 70-99% doesn't constitute a selection of the maximum degree of control achievable considering economic and environmental factors. The Applicant must choose the maximum degree of control under the rules for BACT determination.

The Applicant's material handling BACT review suffers from an assumption about a high moisture content for coal that may not be achievable to maintain during summer and windy conditions. Emission calculations should be revised to account for more realistic coal moisture conditions in hot summer climates and windy conditions.