

ENVIRONMENT QUALITY BOARD
OF
DEPARTMENT OF ENVIRONMENTAL PROTECTION

* * * * *

In RE: Proposed amendments to Pennsylvania's air
quality regulations and the state implementation plan-
small sources of NOx, large stationary internal
combustion engines and cement kilns.

Before: Dean E. VanOrden, Member
Terry Black, Member
Francine Carlini

Location: South East Regional Park
Main Conference Room
555 North Lane
Conshohocken, PA

Hearing: November 25, 2002
1:00 p.m.

WITNESSES: Michael Hoffman, Derek Grasso, Timothy
Hartman

Reporter: Sharon Marsh

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P R O C E E D I N G S

MS. CARLINI:

Good afternoon. I would like to welcome you to this Environmental Quality Board public hearing on proposed amendments to Pennsylvania's air quality regulations and the state implementation plan. My name is Francine Carlini and I am the air quality program manager for the Department of Environmental Protection in Conshohocken. Due to the unavailability of any EQB member to attend today, I will be chairing this public hearing. With me this afternoon from DEP are to my right, Dean Van Orden. He's chief stationary sources section Bureau of Air Quality. And Terry Black is to my left. He's chief regulation and policy development section, Bureau of Air Quality.

The proposed rulemaking upon which we will hear testimony today is a proposed two-part rule that would establish additional ozone season control requirements in Chapter 129 and new ozone season requirements in Chapter 145 of Title 25 of the Pennsylvania Code. The proposed rulemaking would reduce emissions of nitrogen oxides from small sources of NOx in Bucks, Chester, Delaware, Montgomery and Philadelphia Counties and from large stationary

1 internal combustion engines and cement kilns across
2 Pennsylvania.

3 The proposed amendments for small NOx
4 sources in Chapter 129 are based on model rules
5 developed by the Ozone Transport Commission to achieve
6 and maintain the health based one hour ozone standard.
7 The amendments are consistent with recommendations of
8 the Southeast Pennsylvania Ozone Stakeholders Working
9 Group and propose a compliance date of May 1st, 2005.

10 The proposed amendments for the large
11 stationary internal combustion engines and cement
12 kilns in Chapter 145 are based upon proposals and
13 models developed by the Environmental Protection
14 Agency to reduce ozone transport throughout the
15 eastern United States under the NOx State
16 Implementation Plan Call, also known as the NOx SIP
17 Call. The proposed rulemaking represents
18 Pennsylvania's fair share in reducing transported air
19 pollution and also proposes a compliance date of May
20 1st, 2005.

21 The regulations, if approved, will be
22 submitted to the EPA as a revision to the State
23 Implementation Plan. The SIP, which is a requirement
24 of the Clean Air Act, is a plan that provides for the
25 implementation, maintenance and enforcement of the

1 National Ambient Air Quality Standards in
2 Pennsylvania.

3 Notice of the EQB's proposal was
4 published in the Pennsylvania Bulletin on October the
5 19th, 2002, with a public comment period that is
6 scheduled to close on December the 26th, 2002. Notice
7 of this proposed rulemaking was also published in
8 various newspapers across the state. In addition to
9 the hearing today, two other public hearings were held
10 for this proposed rulemaking. On November the 18th in
11 Harrisburg and on November the 20th in Pittsburgh.

12 In order to give everyone an equal
13 opportunity to comment on this proposal, I would like
14 to establish the following ground rules. I will first
15 call upon the witnesses who have pre-registered to
16 testify at today's hearings as included on the
17 schedule of witnesses. After hearing from these
18 witnesses I will provide any other interested parties
19 with the opportunity to testify as time allows. Oral
20 testimony is limited to five minutes for each witness.
21 Organizations are requested to designate one witness
22 to present testimony on its behalf. Each witness is
23 asked to submit three written copies of his or her
24 testimony to aid in transcribing the hearing. Please
25 hand me your copies prior to presenting your

1 testimony. Please state your name and address for the
2 record prior to presenting your testimony. We will
3 also appreciate your help in spelling names and terms
4 that may not be generally familiar so that the
5 transcript can be as accurate as possible. Interested
6 persons may submit written comments in addition to or
7 in place of oral testimony presented here. All
8 comments must be received by the EQB by December the
9 26th, 2002. Comments should be addressed to the
10 Environmental Quality Board, P.O. Box 8477,
11 Harrisburg, Pennsylvania 17105-8477. Comments can
12 also be E-mailed to Regcomments, that's
13 R-E-G-C-O-M-M-E-N-T-S, @State.PA.US. All comments
14 received at today's hearing and in writing by December
15 the 26th will be considered by the EQB and become part
16 of a comment/response document prepared for the EQB
17 --- prepared for the EQB's review prior to taking
18 final action on this regulation. Anyone interested in
19 a transcript of this hearing may contact the reporter
20 here today to arrange to purchase a copy.

21 I will now call the first witness. We
22 thought that the best place for the witness to sit
23 would be right where you're sitting Terry. So if you
24 wouldn't mind. So when you're giving testimony if you
25 could just sit at this chair right here in the front

1 which would help the court reporter to make sure she
2 gets your testimony accurately. The first witness who
3 is pre-registered is Mike Hoffman.

4 MR. HOFFMAN:

5 Good afternoon. My name is Mike Hoffman.
6 I am testifying today on behalf of my company,
7 NiSource. In these comments I also represent five
8 other natural gas pipeline companies, El Paso
9 Corporation, Williams Gas Pipelines, Duke Energy
10 Corporation, National Fuel Gas Supply Corporation and
11 Dominion Transmission. Our companies operate natural
12 gas stationary reciprocating internal combustion
13 engines to pump natural gas through our pipeline
14 systems to residential, commercial, industrial and
15 electrical generation customers in Pennsylvania and
16 other states in the northeast. We appreciate the
17 opportunity to speak to the Environmental Quality
18 Board about the proposed amendments to Pennsylvania
19 Code Chapters 129 and 145 that would mandate a second
20 round of retrofit NOx controls on the gas pipeline
21 engines we operate in Pennsylvania.

22 We have three main areas of concern about
23 the proposed amendments.

24 First, there are significant mistakes and
25 other problems with the DEP regulatory analysis that

1 prevent it from being acceptable as justification for
2 the proposed regulations.

3 Second, based on our experience with NOx
4 control for gas internal combustion engines, we
5 believe that the proposed NOx limits are technically
6 infeasible.

7 And lastly, a number of the provisions in
8 the proposed regulation will place an unnecessary
9 compliance burden on the operators of stationary
10 internal combustion engines.

11 First, I would like to discuss the
12 problems with the DEP regulatory analysis. There are
13 three serious mistakes in the Regulatory Analysis Form
14 prepared by the Department of Environmental
15 Protection. First, it does not take into account that
16 the engines that will be impacted have already
17 installed retrofit NOx controls. This means that
18 there is little additional NOx reduction to be gained
19 by the proposed rules, and that the cost-per-ton
20 estimates are wrong.

21 Second, the regulatory analysis for the
22 Chapter 145 proposal is premature in that it is based
23 on an EPA proposal, not a final EPA regulation.

24 Finally, the regulatory analysis mistakes
25 EPA's estimate of average control effectiveness with a

1 compliance emission limit.

2 Each of the 17 gas transmission engines
3 in the five-county Philadelphia nonattainment area,
4 and Pennsylvania's ten large engines listed by EPA in
5 the NOx SIP Call Inventory, have installed NOx
6 controls since 1995 under Pennsylvania's NOx RACT
7 rules. As I will discuss later in these comments, it
8 is not technically feasible for all engines to meet
9 the NOx emission levels proposed in these amendments.
10 But even if it were possible to achieve additional
11 control, most of the NOx reduction from these sources
12 has already happened.

13 For example, an engine that was at 27
14 grams per brake horsepower-hour in 1990 is now
15 controlled to around 3 grams per brake horsepower-
16 hour. There is little incremental reduction available
17 now in forcing the engine to 1.5 grams per brake
18 horsepower-hour. Such an incremental reduction would
19 be about six percent of the total reduction already
20 achieved. For the Chapter 129 proposal this means
21 that there is little potential contribution from the
22 engine population in helping Pennsylvania meet the
23 small NOx shortfall in the Philadelphia nonattainment
24 area SIP.

25 For the Chapter 145 proposal, the

1 presence of NOx controls on engines which EPA counted
2 as uncontrolled means that it is likely that no
3 additional statewide engine NOx controls are necessary
4 to meet EPA requirements. Finally, we question
5 whether it is reasonable or equitable to require two
6 successive rounds of NOx control for IC engines.

7 Our next major point is that we believe
8 that it is both unwise and against Pennsylvania
9 regulatory policy to justify the proposed amendments
10 to Chapter 145 with a regulatory analysis based only
11 on an EPA proposal rather than on EPA final
12 regulation. DEP's regulatory analysis depends only on
13 the proposal issued by EPA in February of 2002, and
14 does not address two significant actions that EPA has
15 taken since publishing the proposal.

16 To respond to comments on its proposal,
17 EPA requested states provide additional information on
18 the effectiveness of retrofit NOx controls installed
19 on lean-burn engines. This information has now been
20 placed in EPA's rulemaking docket. This information
21 is relevant to the number that EPA adopts for the
22 average control effectiveness used in calculating the
23 engine portion of state NOx budgets. In its proposal
24 EPA indicated that it would select a number in the
25 range of 1.5 to 3.0 grams per brake horsepower-hour.

1 The docket material appears to support a number at the
2 higher end of this range.

3 A second development is that in August
4 2002, EPA issued a guidance memorandum on the content
5 of state rules for engines submitted to EPA as a part
6 of the NOx SIP Call. In its memorandum EPA states,
7 quote, where states choose to regulate large internal
8 combustion engines, EPA encourages the states to allow
9 owners and operators of large internal combustion
10 engines the flexibility to achieve the NOx tons per
11 season reduction by selecting from among a variety of
12 technologies or a combination of technologies applied
13 to various sizes and types of internal combustion
14 engines, end of quote.

15 Except for the provision for limited
16 averaging, the proposed amendments are inflexible in
17 requiring all affected engines to meet a single
18 emission limit. The Pennsylvania proposal even
19 removes the flexibility in the OTC model rules which
20 allowed emission trading.

21 Our final point of concern with the DEP
22 regulatory analysis is that it mistakes EPA's estimate
23 of the average effectiveness of retrofit NOx control
24 for a NOx emission limit. EPA is calculating a NOx
25 budget, not writing an engine control regulation. The

1 difference is that for an average, roughly half of the
2 engines will be above or below the estimate. And
3 emission limit is far more stringent in that all
4 engines will have to be below the number. In this
5 regard the EPA number is significantly less stringent
6 than the Chapter 145 proposal.

7 To sum up our comments about the
8 regulatory justification for the Chapter 129 and
9 Chapter 145 proposals, at this point DEP does not know
10 the final NOx SIP Call budget for Pennsylvania.

11 DEP does not know the average percent NOx
12 reduction from engines that will be used by the EPA in
13 calculating the engine budgets.

14 DEP has confused EPA's average NOx
15 reduction figure with a compliance limit.

16 And DEP has proposed a program that is
17 inconsistent with the flexible approach advocated by
18 EPA's recent guidelines.

19 I would like to turn now to the second
20 section of my comments ---.

21 MS. CARLINI:

22 I'm going to have to ask you to wrap up,
23 Mike.

24 MR. HOFFMAN:

25 Okay.

1 MS. CARLINI:

2 You can submit your written comments.

3 Derek Grasso will be next.

4 MR. GRASSO:

5 You did say five minutes at the beginning
6 but the published notice said ten minutes. So my ---
7 at least the notice that I had said ten minutes. Mine
8 will probably go a few minutes over five.

9 MS. CARLINI:

10 I'm not aware of the discrepancy.

11 MR. GRASSO:

12 I'll do my best to get it close to five.

13 MS. CARLINI:

14 Okay. Yeah, we have a number of people
15 here. Are you all going to be providing testimony
16 here today? How many people are providing ---?

17 UNIDENTIFIED SPEAKER:

18 It does say ten minutes.

19 MS. CARLINI:

20 Ten minutes. Well, in that case, I have
21 to apologize to Mike. If you want to take your second
22 five minutes.

23 MR. HOFFMAN:

24 I think I've already covered everything
25 here and at other hearings.

1 MS. CARLINI:

2 All right. So you've made your point
3 basically at other hearings. I'll amend the opening
4 statement here and we'll allow ten minutes, but can I
5 get a count of who is testifying?

6 MR. GRASSO:

7 I'll be testifying.

8 MS. CARLINI:

9 Right. And Tim and anyone else
10 testifying? Okay. All right.

11 MR. GRASSO:

12 Good afternoon. My name is Derek Grasso,
13 D-E-R-E-K. And I am manager of Regulatory Affairs for
14 the American Refuel Company. Today I'm going to offer
15 an overview of our preliminary comments concerning the
16 Department's proposed additional NOx control
17 requirements under Section or Chapter 129.201. Refuel
18 will be submitting more detailed comments by the
19 December 26th deadline. Refuel owns and operates the
20 Delaware Valley Resource Recovery Facility in Chester.
21 This facility combusts about 3,000 tons per day of
22 municipal solid waste from the surrounding communities
23 and converts it into about 80 megawatts of
24 electricity. The primary purpose of the facility and
25 others like it is the safe and environmentally sound

1 reduction of solid waste volume by 90 percent and the
2 recovery of energy from that waste.

3 In addition to reducing landfill space
4 requirements, the facility also provides other
5 environmental benefits including the offsetting of
6 fossil fuel use with an indigenous fuel, reduction of
7 greenhouse gas emissions, and the recovery of metals
8 from ash recycling.

9 Refuel operates under contract with
10 surrounding Pennsylvania communities, some of which
11 will directly bare at least half the cost of any costs
12 associated with new regulatory requirements.

13 As you're aware the proposed section
14 would expand recent ozone season NOx control measures
15 to boilers which combust materials other than fossil
16 fuels. This includes municipal waste, waste to energy
17 facilities such as ours. Refuel believes that waste
18 energy facilities should not be subject to the
19 proposed rule. We base this belief on issues of
20 technical liability, cost and the relative
21 environmental benefit gained. Waste to energy is
22 already required to meet NOx emission limits that were
23 established by the US EPA under recent maximum
24 achievable control technology rules that were derived
25 specifically for these types of boilers. It's unclear

1 at this time if add on NOx control equipment is
2 technically viable on the type of boilers that are
3 used at Refuel's Chester facility. Even if it is
4 viable, the estimated cost would be prohibitive,
5 especially in comparison to the cost borne by
6 facilities whose sole purpose is power production.
7 Power production is only one purpose and benefit of
8 waste energy and new standards applicable to them
9 should take into account the entire
10 environmental picture and not just one aspect of it.

11 Refuel would be happy to work with the
12 Department to determine an appropriate NOx emission
13 level for waste to energy. Our technical input and
14 that of other stakeholders has often been requested
15 when agencies are developing regulations of such major
16 significance.

17 Waste energy boilers are not designed,
18 constructed nor operated in the same manner as fossil
19 fuel units because their fundamental purpose is
20 different. Their primary purpose is the conversion of
21 a relatively heterogeneous, wet municipal solid waste
22 to energy. They do not use a uniform and consistent
23 fuel, and as a result, there are technical and
24 economic considerations that are unique to these types
25 of units. Given the nature of the fuel, the units are

1 less thermally efficient than dedicated power
2 production units, requiring larger amounts of excess
3 air and less densely packed heat recovery systems.
4 These boilers also do not have access to NOx reduction
5 options that are available to other types of units
6 such as low NOx burners, fuel switching during the
7 ozone season or load curtailment.

8 It appears however, that the assumption
9 has been made that one emission standard is
10 appropriate for all boilers regardless of purpose,
11 fuel or design. And that the only classification that
12 matters is one of size.

13 It should be noted again that new federal
14 standards, specifically for waste energy facilities,
15 went into effect in 2000. These maximum achievable
16 control technology or MAX standards are equivalent to
17 the performance of the top 12 percent of all similar
18 units in the country. NOx is one of the parameters
19 regulated under that standard. The new emission
20 standards were promulgated after years of technical
21 review of the capabilities of these new types of
22 facilities, and they represent the best level of
23 control that can be reasonably obtained.

24 Refuel's Chester facility has six
25 combustion units, each less than 250 million BTUs per

1 hour in size. These units are designed such that
2 their NOx emission levels are actually very low
3 compared to many other waste to energy facilities but
4 they're still higher than the proposed limit of .2
5 pounds per million BTU. We're not aware of anyone who
6 has considered additional NOx control on units such as
7 ours because the emission levels have been recognized
8 to be already quite low for municipal solid waste
9 combustion. In order to achieve the proposed limit,
10 Refuel currently believes that the facility would
11 require the installation of selective catalytic
12 reduction, or SCR. No waste to energy facility in the
13 US is equipped with SCR. In part because its cost has
14 shown to be prohibitively expensive for such
15 relatively small facilities. Our units are much
16 smaller than fossil fuel units that typically use SCR.
17 SCR units such as ours may also require flue gas
18 reheating, presumably with natural gas which would be
19 ironic, given the normal nature of our fuel. SCR is
20 typically considered only for large dedicated power
21 production facilities where economies of scale apply.
22 Installing SCRs in a small 80 megawatt plant would be
23 economically out of line with requirements for large
24 fossil fuel power facilities. We've not yet had the
25 opportunity to develop detailed cost estimates,

1 however, based upon general information, we believe
2 that the cost of an SCR installation to be roughly
3 equivalent to more than \$10,000 per ton of NOx
4 removed. Recall that one half of that cost would be
5 the responsibility of one Pennsylvania county.

6 Overall we question the environmental
7 benefit of imposing emission limits more stringent
8 than recent maximum achievable control technology
9 standards for NOx on waste energy. We believe that
10 one size does not fit all with regard to emission
11 reductions and emission standards. The Department
12 should encourage energy production from a wide range
13 of fuels, including waste. And should establish
14 stringent, yet achievable, emission standards that are
15 appropriate for each. Many large dedicated natural
16 gas or oil fired plants require little or no add-on
17 NOx control to achieve current limits. Those that do
18 require add-on control have the appropriate economies
19 of scale. However, this rule would likely require the
20 most expensive control technology available on waste
21 to energy plants that produce a fraction of the
22 electricity that the large fossil plants do,
23 penalizing them and the communities that use them for
24 providing an alternative local energy source. While
25 we recognize the ozone season is the goal of the

1 proposal it should not be viewed in isolation from the
2 other unique environmental benefits and purposes of
3 waste energy. These include reductions in landfill
4 space, the reduction of fossil fuel use and reduction
5 of greenhouse gas emissions.

6 Thank you for the opportunity to comment.
7 We will be submitting more detailed comments by the
8 close of the comment period and I'll be happy to take
9 any questions.

10 MS. CARLINI:

11 Okay. Derek, you were going to testify
12 on behalf of the association?

13 MR. GRASSO

14 Yeah. Let me get that.

15 MS. CARLINI:

16 You might as well stay and ---.

17 MR. GRASSO:

18 Sure.

19 MS. CARLINI:

20 Now that you have the seat warm.

21 MR. GRASSO:

22 This is on behalf of the Integrated Waste
23 Services Association. I spoke earlier to provide an
24 overview of our company, American Refuel's comments
25 concerning the Department's proposed rulemaking. I

1 now wish to testify on behalf of the Integrated Waste
2 Services Association or IWSA.

3 The IWSA represents 68 waste energy
4 facilities around the country, including the five
5 facilities that convert Pennsylvania's trash into
6 clean, renewable power. Refuel is a member of the
7 IWSA. In addition to Refuel, IWSA members also
8 include Cobanta Energy Company, Montaney Power
9 Corporation and Willa-Brater (phonetic) Technologies
10 as well as more than 25 municipalities that have
11 certified waste energy plants and several dozen other
12 organizations that work in the waste energy field.

13 IWSA members own and/or operate the five
14 waste energy plants in Pennsylvania. US EPA recently
15 released a comprehensive inventory of emissions from
16 all waste energy facilities in the country documenting
17 a dramatic, and in EPAs own words, outstanding
18 reduction in air emissions from waste energy
19 facilities due to the facilities' compliance with the
20 new Cleaner Act Standards. The industry and their
21 municipal partners spent more than one billion dollars
22 to equip every large unit facility with state of the
23 art emission control equipment. Large unit facilities
24 represent more than 90 percent of the national
25 capacity. Small unit facilities currently are

1 completing a similar retrofit of existing plants that
2 will be completed by 2005.

3 It is important to stress that the New
4 Cleaner Act Standards required EPA to analyze and make
5 a determination of what constitutes that state of the
6 art in pollution control. Such an analysis resulted
7 in the promulgation of some of the toughest standards
8 in the world for waste energy facilities. Municipal
9 governments have made a significant investment to meet
10 these standards, but by all accounts the money was
11 well spent. Equipping facilities with the most modern
12 pollution control resulted in significant pollutant
13 emission reductions including a greater than 90
14 percent reduction in emissions for several facilities.
15 EPA facility operators realize that NOx emissions can
16 be lowered only to a certain level in waste energy
17 facilities because of the inherent inefficiency of the
18 fuel and poor design. These limitations, and the fact
19 that our facilities are not significant sources of
20 NOx, speak against the imposition of additional
21 controls on waste energy facilities.

22 Waste energy is already required to meet
23 stringent NOx emission rules. Addition pollution
24 control equipment has not been determined to be
25 technically viable on the basis used at these

1 facilities and the cost of experimenting to determine
2 if emissions may be lowered, would be extremely costly
3 after a significant amount of money has already been
4 spent to modernize the plants. As I mentioned in my
5 earlier testimony, waste energy boilers are not
6 designed and are not operated in the same manner as
7 fossil fuel units because their fundamental purpose is
8 different. Their primary purpose is the effective
9 destruction of relatively heterogeneous, wet municipal
10 solid waste. These boilers do not have access to NOx
11 control options that are available to many fossil fuel
12 units, such as low NOx burners, fuel switching or low
13 curtailment. The IWSA and its members would be
14 pleased to work with the Department to determine the
15 most effective method to control NOx emissions. The
16 industry has proven its commitment to environmental
17 improvements. We ask only that the regulators
18 investigate and impose fair rules that maximize the
19 environmental benefit by properly balancing all
20 aspects of waste energy. Those benefits include the
21 reduction of greenhouse gases that are released into
22 our atmosphere, providing fuel diversity for energy
23 consumers, lowering the environmental impacts
24 associated with trash management and providing a dual
25 benefit of clean, safe, trash disposal and renewable

1 energy generation. Thank you for your time today.

2 MS. CARLINI:

3 Thank you. Did you want to give us
4 copies?

5 MR. GRASSO:

6 Is it all right if I e-mail them to the
7 appropriate person tomorrow? There were some 11th
8 hour changes to this.

9 MS. CARLINI:

10 Sure. Tim Hartman.

11 MR. HARTMAN:

12 Good afternoon and thank you for this
13 opportunity to speak with you today. My name is Tim
14 Hartman, H-A-R-T-M-A-N. I'm the Executive Director of
15 the Waste System Authority of Eastern Montgomery
16 County. The office is located at 151 West Marshall
17 Street, Building #3, Suite 100, Norristown,
18 Pennsylvania 19401.

19 I am speaking on behalf of the Board of
20 Directors of the Waste System Authority of Eastern
21 Montgomery County. As the public sector partner of
22 Montenay's waste to energy project in Plymouth
23 Township, Pennsylvania, the Authority pays
24 approximately 90 percent the cost of operating this
25 facility and will so for the duration of our service

1 agreement which ends December 31st, 2014. Any
2 additional project costs resulting from the proposed
3 regulations fall squarely on the Authority, its 22
4 member municipalities, their residents and businesses.
5 Late last week we were notified by Montenay Montgomery
6 Limited Partnership that the proposed regulations
7 might apply to the Montgomery County Resource Recovery
8 Facility.

9 Earlier it was my understanding that the
10 proposed regulations were not intended to cover waste
11 to energy facilities. It is also my understanding
12 that the Air Quality Technical Advisory Committee did
13 not contact waste to energy facilities as part of
14 their evaluation of the proposed rulemaking.

15 Under Section 111(d) 129 of the Clean Air
16 Act the Environmental Protection Agency promulgated
17 Emission Guidelines to control the emission of
18 combustor gases of existing large municipal waste
19 combustors. The Guidelines are codified in 40 CFR
20 Part 60, Subpart Cb. These guidelines comprehensively
21 regulate emissions of specific pollutants, including
22 NOx, for all large waste to energy facilities
23 constructed on or before September 20th, 1994 in the
24 United States. In 1998 the Pennsylvania Department of
25 Environmental Protection submitted a state plan for

1 large waste to energy facilities to EPA. In
2 accordance with the plan, the Department has
3 implemented the Emission Guidelines by incorporating
4 the applicable requirement of 40 CFR Part 60, Subpart
5 Cb into Federally Enforceable State Operating Permits.
6 Years of effort were expended by the Department
7 personnel and industry representatives to develop fair
8 limits consistent with the federal guidelines issued
9 by EPA. The Waste System Authority of Eastern
10 Montgomery County and Montenay have been proactive in
11 our operation of the resource recovery facility
12 regarding the reduction of NOx. The Authority has
13 spent in excess of \$1.7 million to install a NOx
14 reduction system to comply with 40 CFR Part 60,
15 Subpart Cb. Our NOx reduction system has been
16 operating continuously since 1999. In addition, due
17 to the existing market for emission reduction credits,
18 Montenay and the Authority have been investigating the
19 over control of NOx below the existing permit limits.
20 The proposed rule would undermine our efforts to
21 control beyond the permit limits for all 12 months of
22 the year.

23 In our view, the Department should amend
24 these proposed regulations to exclude the existing
25 waste to energy facilities that are subject to the

1 federal and state implemented Emission Guidelines.

2 Thank you, again, for this opportunity to
3 address the panel.

4 MS. CARLINI:

5 Is there anyone else who would like to
6 give testimony?

7 In that case I hereby adjourn this
8 hearing. It's 1:30.

9 * * * * *

10 HEARING CONCLUDED AT 1:30 P.M.

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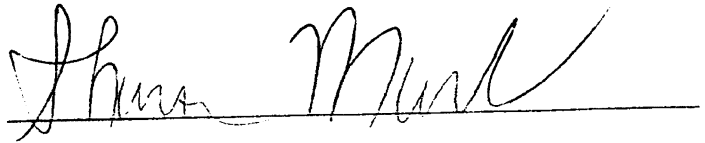
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(Conshohocken meaning)

**Comments on Proposed Rulemaking
to amend 25 PA Code Chapters 121, 129 and 145**

Small Sources of NOx Cement Kilns and large Internal Combustion Engines

Public Hearing held at the
Department of Environmental Protection
Southeast Regional Office
Conshohocken, PA

Original: 2302

November 25, 2002

My name is Tim Hartman, Executive Director of the Waste System Authority of Eastern Montgomery County, located at 151 West Marshall St., Bldg. #3, Suite #100, Norristown, PA 19401.

I am speaking on behalf of the Board of Directors of the Waste System Authority of Eastern Montgomery County. As the public sector partner of Montenay's waste to energy project in Plymouth Township, the Authority pays approximately 90% of the cost of operating this Facility for the duration of our service agreement, which ends on December 31, 2014. Additional project costs resulting from the proposed regulations fall on the Authority, its twenty-two member municipalities, their residents and businesses. Late last week, we were notified by Montenay Montgomery Limited Partnership, that the proposed regulations might apply to the Montgomery County Resource Recovery Facility.

It is my understanding that the proposed regulations were not intended to cover waste-to-energy facilities. It is also my understanding that the Air Quality Technical Advisory Committee did not contact waste-to-energy facilities as part of their evaluation of the proposed rulemaking.

Under section 111(d)/129 of the Clean Air Act, the Environmental Protection Agency (EPA) promulgated Emission Guidelines to control the emission of combustor gases from existing large municipal waste combustors (December 19, 1995 and August 15, 1997). The guidelines are codified at 40 CFR Part 60, Subpart Cb. These guidelines comprehensively regulate emissions of specific pollutants, including NOx, for all large (capable of combusting more than 250 tons per day) waste-to-energy facilities constructed on or before September 20, 1994 in the United States. In 1998, the Pennsylvania Department of Environmental Protection submitted a State Plan for large waste-to-energy facilities to EPA. In accordance with the Plan, the Department has implemented the Emission Guidelines by incorporating the applicable requirement of 40 CFR Part 60, Subpart Cb into Federally Enforceable State Operating Permits. Years of effort were expended by Department personnel and industry representatives to develop fair limits consistent with federal guidelines issued by the EPA.

The Waste System Authority of Eastern Montgomery County and Montenay have been proactive in our operation of the resource recovery facility regarding the reduction of NOx. The Authority has spent in excess of \$1.7 million to install a NOx reduction system to comply with 40 CFR Part 60, Subpart Cb. Our NOx reduction system has been operating continuously since 1999. In addition, due to the existing market for emission reduction credits (ERC's), Montenay and the Authority have been investigating the over control of NOx below the existing permit limits. The proposed rule would undermine our efforts to over control beyond the permit limits for all twelve (12) months of the year.

In our view, the Department should amend these proposed regulations to exclude the existing waste-to-energy facilities that are subject to the federal and state-implemented Emission Guidelines.

Original: 2302

~~At the hearing~~
(Conshohocken)

Comments of Six Natural Gas Pipeline Companies on
Proposed Amendments to Pennsylvania Chapter 129 and Chapter 145
NOx Emissions Control Requirements for Stationary IC Engines

Good afternoon. My name is Mike Hoffman. I am testifying today on behalf of my company, NiSource. In these comments I also represent five other natural gas pipeline companies: El Paso Corporation, Williams Gas Pipelines, Duke Energy Corporation, National Fuel Gas Supply Corporation, and Dominion Transmission. Our companies operate natural gas stationary reciprocating IC engines to pump natural gas through our pipeline systems to residential, commercial, industrial and electrical generation customers in Pennsylvania and other states in the Northeast. We appreciate the opportunity to speak to the Environmental Quality Board about the proposed amendments to Pennsylvania Code Chapters 129 and 145 that would mandate a second round of retrofit NOx controls on the gas pipeline engines we operate in Pennsylvania.

We have three main areas of concern about the proposed amendments:

First, there are significant mistakes and other problems with the DEP regulatory analysis that prevent it from being acceptable as justification for the proposed regulations;

Second, based on our experience with NOx control for gas IC engines, we believe that the proposed NOx limits are technically infeasible; and,

Lastly, a number of the provisions in the proposed regulations will place an unnecessary compliance burden on the operators of stationary IC engines.

First, I would like to discuss problems with the DEP regulatory analysis.

There are three serious mistakes in the Regulatory Analysis Form prepared by the Department of Environmental Protection (DEP). First, it does not take into account that

the engines that will be impacted have already installed retrofit NOx controls. This means that there is little additional NOx reduction to be gained by the proposed rules, and that the cost-per-ton estimates are wrong. Second, the regulatory analysis for the Chapter 145 proposal is premature in that it is based on an EPA proposal, not a final EPA regulation. Finally, the regulatory analysis mistakes EPA's estimate of *average* control effectiveness with a compliance emission *limit*.

Each of the seventeen gas transmission engines in the five-county Philadelphia nonattainment area, and Pennsylvania's ten "large" engines listed by EPA in the NOx SIP Call Inventory, have installed NOx controls since 1995 under Pennsylvania's NOx RACT rules. As I will discuss later in these comments, it is not technically feasible for all engines to meet the NOx emission levels proposed in these amendments. But even if it were possible to achieve additional control, most of the NOx reduction from these sources has already happened.

For example, an engine that was at 27 grams per brake horsepower-hour in 1990 is now controlled to around 3 grams per brake horsepower-hour. There is little incremental reduction available now in forcing the engine to 1.5 g/bhp-hr. Such an incremental reduction would be about 6% of the total reduction already achieved. For the Chapter 129 proposal this means that there is little potential contribution from the engine population in helping Pennsylvania meet the small NOx shortfall in the Philadelphia nonattainment area SIP.

For the Chapter 145 proposal, the presence of NOx controls on engines which EPA counted as uncontrolled means that it is likely that no additional statewide engine NOx controls are necessary to meet EPA requirements. Finally, we question whether it is reasonable or equitable to require two successive rounds of NOx control for IC engines.

Our next major point is that we believe that it is both unwise and against Pennsylvania regulatory policy to justify the proposed amendments to Chapter 145 with a regulatory analysis based only on an EPA proposal, rather than on an EPA final regulation. DEP's

regulatory analysis depends only on the proposal issued by EPA in February 2002, and does not address two significant actions that EPA has taken since publishing the proposal.

To respond to comments on its proposal, EPA requested states provide additional information on the effectiveness of retrofit NOx controls installed on lean-burn engines. This information has now been placed in EPA's rulemaking docket. This information is relevant to the number that EPA adopts for the average control effectiveness used in calculating the engine portion of state NOx budgets. In its proposal EPA indicated that it would select a number in the range of 1.5 to 3.0 g/bhp-hr. The docket material appears to support a number at the higher end of this range.

A second development is that in August 2002, EPA issued a guidance memorandum on the content of state rules for engines submitted to EPA as a part of the NOx SIP Call. In its memorandum EPA states:

“Where States choose to regulate large IC engines, EPA encourages the States to allow owners and operators of large IC engines the flexibility to achieve the NOx tons per season reductions by selecting from among a variety of technologies or a combination of technologies applied to various sizes and types of IC engines.”

Except for the provision for limited averaging, the proposed amendments are inflexible in requiring all affected engines to meet a single emission limit. The Pennsylvania proposal even removes the flexibility in the OTC model rules, which allowed emission trading.

Our final point of concern with the DEP regulatory analysis is that it mistakes EPA's estimate of the *average* effectiveness of retrofit NOx control for a NOx emission *limit*. EPA is calculating a NOx budget, not writing an engine control regulation. The difference is that for an *average*, roughly half of the engines will be above or below the estimate. An emission limit is far more stringent, in that *all* engines will have to be below the number. In this regard the EPA number is significantly less stringent than the Chapter 145 proposal.

To sum up our comments about the regulatory justification for the Chapter 129 and Chapter 145 proposals:

- At this point DEP does not know the final NOx SIP Call Budget for Pennsylvania;
- DEP does not know the average percent NOx reduction from engines that will be used by EPA in calculating the engine budgets;
- DEP has confused EPA's average NOx reduction figure with a compliance limit; and,
- DEP has proposed a program that is inconsistent with the flexible approach advocated by EPA's recent guidance.

I would like to turn now to the second section of my comments: our concern that the proposed NOx limits are not technically feasible for all engines.

In these proposed amendments, DEP has neither presented data showing that the NOx limits envisioned by the Chapter 129 and 145 amendments are technically feasible, nor countered previous statements of industry concerns about such technical feasibility. Industry presented concerns about technical feasibility of these limits in May 2002. The AQTAC has also asked DEP to address this area. The proposed amendments, however, are not accompanied by any technical data or analysis of technical feasibility, nor is the presumed control technology for compliance identified.

Our second point regarding the technical feasibility of the proposed NOx control levels is that these levels are significantly more stringent than any level that could be derived from EPA's assessments of engine NOx controls. As discussed above, we believe that because of the additional docket data, it is likely that EPA will select 3 g/bhp-hr or another number at the high end of the range as the average for NOx control effectiveness. This is significantly less stringent than the 1.5 g/bhp-hr number proposed by DEP. Secondly, as discussed previously, an average is not as stringent as an emission limit. The DEP NOx limits are therefore significantly more stringent than what will be required by the U.S. EPA.

Our third point regarding technical feasibility is that it is unreasonable to expect additional NO_x control when the control technology to be used is the same as that already installed on the affected engines. EPA has taken the position, with which we agree, that the lean-burn engine retrofit control technology to be used in the NO_x SIP Call is low emission combustion (LEC). This is the same technology that was used by most of the RACT-controlled engines in Pennsylvania. EPA has found that SCR technology, contemplated in the original NO_x SIP Call regulation in 1998, may work on diesels or constant-load modern engines used in electric generation, but that SCR has not been demonstrated on load-following pipeline engines. At this point there is no technical basis identified by DEP showing that existing pipeline engines can achieve 1.5 g/bhp-hr.

The central technical feature of IC engines NO_x control is the significant variability in the NO_x emissions between various engine subcategories, between various makes and models of engines, and even between similar engine models. This variability extends to both uncontrolled emission rates and the effectiveness of various NO_x control retrofits. Because of this variability, there is little technical basis for adopting a single stringent NO_x emission limit with the expectation that it can be achieved by all affected engines. This is the rationale for the flexible approach recommended by EPA.

We note that the Chapter 129 amendments set a single control level for spark-ignited gas engines, without differentiating between rich-burn and lean-burn engines. These subcategories require distinctly different control technologies.

In summary, we urge Pennsylvania not to attempt to adopt the proposed NO_x limits without further investigation as to their technical feasibility. We recommend that any additional engine control measures, if truly needed, adopt the flexible approach recommended by EPA, focus on reduction of NO_x tons rather than apply a single emission rate to all engines, and take into account pre-existing NO_x RACT controls on IC engines. If DEP does decide to propose IC engine NO_x limits, these should be based on an assessment of the control technologies to be used aligned with the principal engine subcategories to be controlled.

We also believe that final action now on these proposals, in the absence of the EPA regulation, would represent a violation of Pennsylvania's requirement that control measures be no more stringent than those required by the Clean Air Act.

I now turn to our last point: we feel that there are a number of the provisions in the proposed regulations which place an unnecessary compliance burden on the operators of stationary IC engines.

Our experience with natural gas transmission engines is that there is significant variability in the NOx emissions between various engine subcategories, between various makes and models of engines, and even between similar engine models. The variability extends to both uncontrolled emission rates and the effectiveness of various NOx control retrofit.

Because of this variability there is little technical basis for adopting a single stringent NOx emission limit with the expectation that it can be achieved by all affected engines. A single NOx limit for these rules is the principle source of unnecessary compliance burden in the proposed amendments.

The amendments proposed by Pennsylvania are inconsistent with recent EPA guidance related to state measures to reduce NOx from stationary reciprocating IC engines. In August 2002, EPA issued implementation guidance related to Phase II of the NOx SIP Call. This guidance recognized the difficulty in setting a single compliance target for the existing heterogeneous population of spark-ignited engines, and recommended that states focus on obtaining a NOx tonnage reduction rather than trying to make all affected engines achieve a single NOx limit.

EPA's memorandum stated that:

“...individual engines or engine models may respond differently to control equipment,”

Because of the inherent variability of engine NOx emissions, EPA encourages states to,

“Allow owners or operators of large IC engines the flexibility to achieve the NOx ton per season reductions by selecting from among a variety of technologies or a combination of technologies applied to various sizes and types of IC engines,”

The AQTAC also requested that DEP address the issue of flexibility. Our industry also urges Pennsylvania to incorporate this flexible approach in any additional measures for NOx control from IC engines. The DEP proposals as they now stand, however, would set a single NOx compliance level for all affected spark-ignited engines, whether or not the compliance level is actually achievable for that engine.

Another area of unnecessary compliance burden in the proposed amendments is the requirement in Section 145.114 that compliance using averaging must be demonstrated with a Continuous Emissions Monitoring System, known as a “CEMS”. This is in conflict with EPA’s August guidance letter, which states that periodic monitoring or predictive emissions monitoring can be sufficient to demonstrate compliance. Also, CEM systems are very expensive, and frequently unreliable. In rough numbers, the capital cost of a single CEMS is more than \$150,000, with operating costs greater than \$50,000 per year. We are not aware of any IC engines in Pennsylvania that are required to have CEMS, or of any other source category of comparable size to the IC engine category that has such a burdensome requirement. Further, at a recent presentation, DEP and the EPA categorically emphasized the fact that CEMs would not be mandatory for sources subject to the Compliance Assurance and Monitoring (CAM) rules. Rather, the DEP and EPA expect companies to ensure compliance through parametric methods. It should also be understood that the IC engines are not part of the Cap and Trade program and hence the use of CEMs for compliance demonstration would be unwarranted. Compliance can be demonstrated through alternate methods already established as part of

current RACT rules (Part 127) or established parametric methods employed by IC engine operators.

There are three other key areas of unnecessary compliance burden that need to be changed in the proposed amendments:

First, the uncertainty associated with the applicability criteria;

Second, permitting issues; and

Third, the schedule for compliance.

The language in Section 145.111 that an engine is included if it exceeded the NO_x tonnage threshold during the ozone season in 1995, *or during any year thereafter*, is a problem because it introduces uncertainty into a technical decision. To have the applicability base constantly changing would severely hamper a company's ability to strategically plan retrofit control activities. Also, the proposed rules do not specify the compliance deadlines for newly affected engines, and these deadlines may trigger this applicability criteria in some future year.

Retrofit NO_x control installations are not only expensive, but they also represent an administrative burden. Permitting requirements add months to the time needed to install controls. We urge Pennsylvania to streamline state permitting requirements for facilities that are required to install retrofit NO_x controls. As pollution control projects, these permit actions should also be exempt from EPA's major New Source Review. NSR review is expensive and can increase the time required to comply with emission reductions by more than a year. In its August 2002 guidance letter, EPA said that installation of combustion modification technology on natural gas-fired engines can be *presumed to be environmentally beneficial*, and therefore such a modification may exempt the engine from undergoing NSR review.

My final area of comment concerns the proposed compliance schedule. A compliance deadline of May 2005 would represent about a two-year period from the date that these

amendments would become effective. There are a number of reasons why this schedule is not realistic:

First, these retrofits are not "off the shelf" technology. In each case, the installation of retrofit controls requires site-specific engineering design followed by solicitation of bids.

Second, there is the inevitable time required to apply for and receive construction permits. Our experience with the regional offices is that the department is not meeting its money back guarantee program deadlines of six months for minor construction permits and two years for major modifications.

Third, there is the time needed to actually install and test the NOx control system and other needed modifications to the facility.

For natural gas pipelines there are also other industry-specific problems. First, during some periods of the year, demand for gas simply does not allow us to schedule units to be off-line. In addition, FERC and the PUC require pipelines to provide reliable service of clean burning natural gas for the gas-fired electric generating plants. Second, there are a limited number of experienced vendors capable of installing NOx control systems on older 2-stroke and 4-stroke integral engines. Our previous experience with RACT showed that a three- to four-year schedule is required for installing retrofit NOx controls.

Again, I appreciate the opportunity to speak to the Environmental Quality Board about the proposed amendments to Pennsylvania Code Chapters 129 and 145 regarding NOx emissions from natural gas-fired stationary internal combustion engines. I look forward to amplifying these remarks in a later submission of written comments, and to answering any questions you may have.

ENVIRONMENTAL QUALITY BOARD

IN RE: PROPOSED AMENDMENTS TO PENNSYLVANIA'S
AIR QUALITY REGULATIONS AND THE STATE
IMPLEMENTATION PLAN

* * * * *

COPY

PUBLIC HEARING

* * * * *

BEFORE: WILLIAM CHARLTON, Chair
Terry Black, Member
Dean Van Orden, Member

HEARING: Wednesday,
November 20, 2002
1:03 p.m.

LOCATION: DEP Southwest Regional
Office
500 Waterfront Drive
Pittsburgh, PA

WITNESSES: Steve Burkett

Reporter: Toni Dinardo

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P R O C E E D I N G S

CHAIR:

I would like to welcome you to this Environmental Quality Board Public Hearing on proposed amendments to Pennsylvania's air quality Regulations and the State Implementation Plan.

My name is William Charlton, and I am the New Source Review Section Chief for the Department of Environmental Protection in the Pittsburgh Regional Office. Due to the unavailability of any Environmental Quality Board member to attend today, I will be chairing this public hearing.

With me this afternoon from the Department of Environmental Protection are Dean Van Orden, Chief of the Stationary Sources Section with the Bureau of Air Quality, and Terry Black, Chief of the Regulation and Policy Development Section, also with the Bureau of Air Quality.

The proposed rulemaking upon which we will be hearing testimony today is a two-part rule that would establish additional ozone

1 season control requirements in Chapter 129 and
2 new ozone season requirements in Chapter 145 of
3 Title 25 of the Pennsylvania Code. The proposed
4 rulemaking would reduce emissions of nitrogen
5 oxides from small sources of nitrogen oxides in
6 Bucks, Chester, Delaware, Montgomery and
7 Philadelphia Counties and from large stationary
8 internal combustion engines and cement kilns
9 across Pennsylvania.

10 The proposed amendments for small
11 NOx sources in Chapter 129 are based on model
12 rules developed by the Ozone Transport
13 Commission to achieve and maintain the
14 health-based one-hour ozone standard. The
15 amendments are consistent with recommendations
16 of the Southeast Pennsylvania Ozone Stakeholders
17 Working Group and propose a compliance date of
18 May 1st of 2005.

19 The proposed amendments for the
20 large stationary internal combustion engines and
21 cement kilns in Chapter 145 are based upon
22 proposals and models developed by the
23 Environmental Protection Agency to reduce ozone
24 transport throughout the eastern United States
25 under the NOx State Implementation Plan Call,

1 commonly referred to as the NOx SIP Call. The
2 proposed rulemaking represents Pennsylvania's
3 fair share in reducing transported air pollution
4 and also proposes a compliance date of May 1st
5 of 2005.

6 The regulations, if approved, will
7 be submitted to the EPA as a revision to the
8 State Implementation Plan. The SIP, which is a
9 requirement of the Clean Air Act, is a plan that
10 provides for the implementation, maintenance and
11 enforcement of the National Ambient Air Quality
12 Standards in Pennsylvania.

13 Notice of the EQB's proposal was
14 published in the Pennsylvania Bulletin on
15 October 19th of 2002, with a public comment
16 period that is scheduled to close on December
17 26th of 2002. Notice of this proposed
18 rulemaking was also published in various
19 newspapers across the state. In addition to
20 this hearing today, a public hearing was held
21 last Monday in DEP's Southcentral Regional
22 Office in Harrisburg, and another hearing is
23 also scheduled for next Monday, November 25th,
24 in the DEP's Southeast Regional Office in
25 Conshohocken.

1 In order to give everyone an
2 opportunity to comment on this proposal, I would
3 like to establish the following ground rules. I
4 will first call upon the witnesses who have pre-
5 registered to testify at today's hearing as
6 included on the schedule of witnesses. After
7 hearing from these witnesses, I will provide any
8 other interested parties with the opportunity to
9 testify as time allows.

10 Oral testimony is limited to five
11 minutes for each witness. Organizations are
12 requested to designate one witness to present
13 testimony on its behalf. Each witness is asked
14 to submit three written copies of his or her
15 testimony to aid in transcribing the hearing.
16 Please provide your copies prior to presenting
17 your testimony.

18 Please state your name and address
19 for the record, prior to presenting your
20 testimony. We would also appreciate your help
21 in spelling names and terms that may not be
22 generally familiar so that the transcript can be
23 as accurate as possible.

24 Interested persons may submit
25 written comments in addition to or in place of

1 oral testimony presented here. All comments
2 must be received by the Environmental Quality
3 Board by December 26th of 2002. Comments should
4 be addressed to the Environmental Quality Board,
5 Post Office Box 8477, Harrisburg, PA, 17105-
6 8477. Comments can also be e-mailed to
7 RegComments, that's R-E-G-C-O-M-M-E-N-T-S,
8 @state.pa.us.

9 All comments received at today's
10 hearing and in writing by December 26th of 2002
11 will be considered by the Environmental Quality
12 Board and become part of a comment/response
13 document prepared for the EQB's review prior to
14 taking final action on this regulation.

15 Anyone interested in a transcript
16 of this hearing may contact the reporter here to
17 arrange to purchase a copy.

18 I will now call the first witness.
19 Is Dave Henzel present? Is Steve Burkett
20 present?

21 MR. BURKETT:

22 Here.

23 CHAIR:

24 Would you please present your
25 testimony to us at this time.

1 MR. BURKETT:

2 Thank you. My name's Steve Burkett
3 and I'm employed by Dominion Energy. Their
4 address is 625 Liberty Avenue, Pittsburgh,
5 Pennsylvania. The ZIP is 15241. I'm testifying
6 today on behalf of my company, Dominion
7 Transmission. In these comments I'm also
8 representing five other natural gas pipeline
9 companies, El Paso Corporation, Williams Gas
10 Pipelines, Duke Energy Corporation, National
11 Fuel Gas Supply Corporation and NiSource.

12 Our companies operate national gas
13 stationary reciprocating internal combustion
14 engines to pump natural gas through our pipeline
15 systems to residential, commercial, industrial
16 and electrical generation customers in
17 Pennsylvania and other states in the Northeast.
18 We appreciate the opportunity to speak to the
19 Environmental Quality Board today about the
20 proposed amendments to Pennsylvania Code
21 Chapters 129 and 145 that would mandate a second
22 route of retrofit NOx controls on the gas
23 pipeline engines we operate in Pennsylvania.

24 We have three main concerns about
25 the proposed amendments. First, there are

1 significant mistakes and other problems with the
2 DEP regulatory analysis that prevent it from
3 being acceptable as justification for the
4 proposed regulations. Second, based on our
5 experience with NOx control for gas IC engines,
6 we believe that the proposed NOx limits are
7 technically infeasible. And lastly, a number of
8 the provisions in the proposed regulations will
9 place an unnecessary compliance burden on the
10 operators of stationary IC engines.

11 First, I would like to discuss the
12 problems with the DEP regulatory analysis.
13 There are three serious mistakes in the
14 Regulatory Analysis Form prepared by the DEP.
15 First, it does not take into account that the
16 engines that will be impacted have already
17 installed retrofit NOx controls. This means
18 that there is little additional NOx reduction to
19 be gained from the proposed rules and that the
20 cost-per-ton estimates are wrong.

21 Second, the regulatory analysis for
22 the Chapter 145 proposal is premature in that it
23 is based on an EPA proposal, not a final EPA
24 regulation. Finally, the regulatory analysis
25 mistakes EPA's estimate of average control

1 effectiveness with a compliance emission limit.

2 Each of the 17 gas transmission
3 engines in the five-county Philadelphia
4 nonattainment area and Pennsylvania's ten large
5 engines listed by EPA in the NOx SIP Call
6 Inventory have installed NOx controls since 1995
7 under Pennsylvania's NOx RACT rules. As I will
8 discuss later in these comments, it is not
9 technically feasible for all engines to meet the
10 NOx emission levels proposed in these
11 amendments. But even if it were possible to
12 achieve the additional control, most of the NOx
13 reduction from these sources has already
14 happened.

15 For example, an engine that was at
16 27 grams per brake horsepower-hour in 1990 is
17 now controlled to around three grams per brake
18 horsepower-hour. There is little incremental
19 reduction available now in forcing the engine
20 down to 1.5 grams per brake horsepower-hour.
21 Such an incremental reduction would be about six
22 percent of the total reduction that's already
23 been achieved. For the Chapter 29 proposal,
24 this means that there is little potential
25 contribution from the engine population in

1 helping Pennsylvania meet the small NOx
2 shortfall in the Philadelphia nonattainment area
3 State Implementation Plan.

4 For the Chapter 145 proposal, the
5 presence of NOx controls on engines which EPA
6 counted as uncontrolled means that it is likely
7 that no additional statewide engine NOx controls
8 are necessary to meet EPA's requirements.
9 Finally, we questions whether it is reasonable
10 or equitable to require two successive rounds of
11 NOx controls for IC engines.

12 Our major point is that we believe
13 that it is both unwise and against
14 Pennsylvania's regulatory policy to justify the
15 proposed amendments to Chapter 145 with a
16 regulatory analysis based only on an EPA
17 proposal, rather than on an EPA final
18 regulation. DEP's regulatory analysis depends
19 only on the proposed issued by EPA in February
20 of 2002, and does not address two significant
21 actions that EPA has taken since publishing the
22 proposal.

23 To respond to the comments on its
24 proposal, EPA requested states provide
25 additional information on the effectiveness of

1 retrofit NOx controls installed on lean-burn
2 engines. This information has now been placed
3 in EPA's rulemaking docket. This information is
4 relevant to the number of EPA adopts for the
5 average control effectiveness used in
6 calculating the engine portion of state NOx
7 budgets. In its proposal EPA indicated that is
8 would select a number in the range of one and a
9 half to three grams per grams per brake
10 horsepower-hour. The docket material appears to
11 support a number at the higher end of this
12 range.

13 A second development is that in
14 August 2002, EPA issued a guidance memorandum on
15 the content of the state rules for engines
16 submitted to EPA as a part of the NOx SIP Call.
17 In the memorandum EPA states, where states
18 choose to regulate large IC engines, EPA
19 encourages the states to allow owners and
20 operators of large IC engines the flexibility to
21 achieve the NOx tons per season reductions by
22 selecting from among a variety of technologies
23 or a combination of technologies applied to
24 various sizes and types of IC engines.

25 Except for the provision for

1 limited averaging, the proposed amendments are
2 inflexible in requiring that all affected
3 engines meet a single emission limit. The
4 Pennsylvania proposal even removes the
5 flexibility in the OTC model rules, which
6 allowed emission trading.

7 Our final point of concern with the
8 regulatory analysis is that it mistakes EPA's
9 estimate of the average effectiveness of NOx
10 control for a NOx emission limit. EPA is
11 calculating a NOx budget, and not writing an
12 engine control regulation. The difference is
13 that for an average, roughly half of the engines
14 will be above or below the estimate. An
15 emission limit is far more stringent, in that
16 all engines will have to be below the number.
17 In this regard the EPA number is significantly
18 less stringent than the Chapter 145 proposal.

19 To sum up our comments about the
20 regulatory justification from the Chapter 129
21 and Chapter 145 proposals, at this point DEP
22 does not know the final NOx SIP Call Budget for
23 Pennsylvania. DEP does not know the average
24 percent NOx reduction from engines that will be
25 used by EPA in calculating the engine budgets.

1 DEP has confused EPA's average NOx reduction
2 figure with a compliance limit. And DEP has
3 proposed a program that is inconsistent with the
4 flexible approach advocated by EPA's recent
5 guidance.

6 I would like to turn now to the
7 second section of my comments, our concern that
8 the proposed NOx limits are not technically
9 feasible for all engines. In these proposed
10 amendments, DEP has neither presented data
11 showing that the NOx limits envisioned by the
12 Chapter 129 and 145 amendments are technically
13 feasible, nor countered previous statement of
14 industry concerns about such technical
15 feasibility. Industry presented concerns about
16 our technical feasibility of these limits in May
17 2002.

18 The Air Quality Technical Advisory
19 Committee has also asked DEP to address this
20 area. The proposed amendments, however, are not
21 accompanied by any technical data or analysis of
22 technical feasibility, nor is the presumed
23 control technology for compliance identified.

24 Our second point regarding the
25 technical feasibility of the proposed NOx

1 control levels is that these levels are
2 significantly more stringent than any level that
3 could be derived from EPA's assessments of
4 engine NOx controls. As discussed above, we
5 believe that because of the additional docket
6 data, it is likely that EPA will select three
7 grams per brake horsepower-hour or some other
8 number at the higher end of the range as the
9 average for NOx control effectiveness. This is
10 significantly less stringent than the 1.5 gram
11 per horsepower-hour proposed by DEP. Secondly,
12 as discussed previously, an average is not as
13 stringent as an emission limit. The DEP NOx
14 limits are therefore significantly more
15 stringent than required by the U.S. EPA.

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17 feasibility is that it is unreasonable to expect
18 additional NOx control when the control
19 technology to be used is the same as that
20 already in place on the affected engines. EPA
21 has taken the position, with which we agree,
22 that the lean-burn retrofit control technology
23 be used in the NOx SIP Call is low emission
24 combustion. This is the same technology that
25 was used by most of the RACT-controlled engines

1 in Pennsylvania. EPA has found that selective
2 catalytic reduction technology contemplated in
3 the original NOx SIP Call regulation in 1998,
4 may work on diesels or constant-load modern
5 engines used in electric general, but that
6 selective catalytic reduction has not be
7 demonstrated on load-following pipeline engines.

8 At this point there is no technical basis
9 identified by DEP that shows that existing
10 engines can achieve 1.5 grams per brake
11 horsepower-hour.

12 The central technical feature of IC
13 engines NOx control is significant variability
14 in the NOx emissions between various engine
15 subcategories, between various makes and models
16 of engines, and even between similar engine
17 models. This variability extends to both
18 uncontrolled emissions rates and the
19 effectiveness of various NOx control retrofits.
20 Because of this variability, there is little
21 technical basis for adopting a single stringent
22 NOx emission limit with the expectation that it
23 can be achieved by all affected engines. This
24 is the rationale for the flexible approach
25 recommend by EPA.

1 We note that in the Chapter 129
2 amendments set a single control level for
3 spark-ignited gas engines, without
4 differentiating between rich-burn and lean-burn
5 engines. These subcategories require distinctly
6 different control technologies.

7 In summary, we urge Pennsylvania
8 not to adopt the proposed NOx limits without
9 further investigation as to their technical
10 feasibility. We recommend that any additional
11 engine control measures, if truly needed, adopt
12 the flexible approach recommended by EPA, focus
13 on reduction of NOx tons rather than apply a
14 single emission rate to all engines, and take
15 into account pre-existing NOx RACT controls on
16 IC engines. If DEP does decide to propose IC
17 engine NOx limits, these should be based on an
18 assessment of the control technologies to be
19 used aligned with the principal engine
20 subcategories to be controlled.

21 We also believe that final action
22 now on these proposals, in the absence of the
23 EPA regulation, would represent a violation of
24 Pennsylvania's requirement that control measures
25 be no more stringent than those required by the

1 Clean Air Act.

2 I now to our last point. We feel
3 that there are a number of the provisions in the
4 proposed regulations which place an unnecessary
5 compliance burden on the operators of stationary
6 IC engines.

7 Our experience with natural gas
8 transmission engines is that there is
9 significant variability in the NOx emissions
10 between various engine subcategories, between
11 various makes and models of engines, and even
12 between similar engine models. The variability
13 extends to both uncontrolled emission rates and
14 the effectiveness of various NOx control
15 retrofit.

16 Because of this variability there
17 is little technical basis for adopting a single
18 stringent NOx emission limit with the
19 expectation that it can be achieved by all
20 affected engines. A single NOx limit for these
21 rules is the principal source of unnecessary
22 compliance burden in the proposed amendments.

23 The amendments proposed by
24 Pennsylvania are inconsistent with EPA's
25 guidance related to state measures to reduce NOx

1 from stationary IC engines. In August 2002, EPA
2 issued implementation guidance related to Phase
3 II of the NOx SIP Call. This guidance
4 recognized the difficulty in setting a single
5 compliance target for the existing heterogeneous
6 population of spark-ignited engines, and
7 recommended that states focus on obtaining NOx
8 tonnage reduction rather than trying to make all
9 affected engines achieve a single NOx limit.

10 EPA's memorandum stated that,
11 individual engines may respond differently to
12 control equipment. Because of the inherent
13 variability of engine NOx emissions, EPA
14 encourages the states to, allow operators of
15 large IC engines the flexibility to achieve the
16 NOx ton per season reductions by selecting from
17 a variety of technologies or a combination of
18 technologies applied to various types and sizes
19 of IC engines.

20 The Air Quality Technical Advisory
21 Committee also requested that DEP address the
22 issue of flexibility. Our industry also urges
23 Pennsylvania to incorporate this flexible
24 approach in any additional measures for NOx
25 control from IC engines. The DEP proposals as

1 they now stand, however, would set a single NOx
2 compliance level for all affected spark-ignited
3 engines, whether or not the compliance level is
4 actually achievable for that engine.

5 Another area of unnecessary
6 compliance burden is the proposed amendments is
7 the requirement in Section 145.114 that
8 compliance using averaging must be demonstrated
9 with a Continuous Emissions Monitoring System,
10 also known as the CEMS. This is in conflict
11 with EPA's August guidance letter, which states
12 that periodic monitoring or predictive emissions
13 monitoring may be sufficient to demonstrate
14 compliance. Also, CEMS are very expensive, and
15 frequently unreliable. In rough numbers, the
16 capital cost of a single CEMS is more than
17 \$150,000, with operating costs greater than
18 \$50,000 per year. We're not aware of any IC
19 engines in Pennsylvania that are required to
20 have CEMS, or any other source category of
21 comparable size to the IC engine category that
22 has such a burdensome requirement.

23 Further, at a recent presentation,
24 DEP and the EPA categorically emphasized the
25 fact that CEMS would not be mandatory for

1 sources subject to the Compliance Assurance and
2 Monitoring rules. Rather, the DEP and EPA
3 expect companies to ensure compliance through
4 parametric methods. It should be understood
5 that the IC engines are not part of the Cap and
6 Trade program and hence the use of CEMS for
7 compliance demonstration would be unwarranted.
8 Compliance can be demonstrated through
9 alternative methods already established as part
10 of current RACT rules, Part 127, or established
11 parametric methods employed by the IC engine
12 operators.

13 There are three other key areas of
14 unnecessary compliance burden that need to be in
15 the proposed amendments. First, the uncertainty
16 associated with the applicability criteria,
17 second, permitting issues and third, the
18 schedule for compliance.

19 The language in Section 145.111
20 that an engine is --- it states that an engine
21 is included if it exceeded the NOx tonnage
22 threshold during the ozone season in 1995, or
23 during any year thereafter, is a problem because
24 it introduces uncertainty into a technical
25 decision. To have the applicability base

1 constantly changing would severely hamper a
2 company's ability to strategically plan retrofit
3 control activities. Also, the proposed rules do
4 not specify the compliance deadlines for newly
5 affected engines, and these deadlines may
6 trigger this applicability criteria in some
7 future year.

8 Retrofit NOx control installations
9 are not only expensive, but they also represent
10 an administrative burden. Permitting
11 requirements add months to the time needed to
12 install controls. We urge Pennsylvania to
13 streamline state permitting requirements for
14 facilities that are required to install retrofit
15 NOx controls. As pollution control projects,
16 these permit actions should also be exempt from
17 EPA's major New Source Review. New Source
18 Review is expensive and can increase the time
19 required to comply with emission reductions by
20 more than one year. In its August 2002 guidance
21 letter, EPA said that installation of combustion
22 modification technology on natural gas-fired
23 engines can be presumed to be environmentally
24 beneficial, and therefore such a modification
25 may exempt the engine from undergoing New Source

1 Review.

2 My final area of comment concerns
3 the proposed compliance schedule. A compliance
4 deadline of May 2005 would present about a
5 two-year period from the date that these
6 amendments would become effective. There are a
7 number of reasons why this schedule is not
8 realistic.

9 First, the retrofits are not off
10 the shelf technology. In each case, the
11 installation of retrofit controls require site-
12 specific engineering design followed by
13 solicitation of bids.

14 Second, there is the inevitable
15 time required to apply for and receive
16 construction permits. Our experience with the
17 regional offices is that the department is not
18 meeting its money back guarantee deadlines for
19 six months for minor construction permits and
20 two years for major modifications.

21 Third, there is the time needed to
22 actually install and test the NOx control system
23 and other needed modifications to the facility.

24 For natural gas pipelines there are
25 also other industry-specific problems. First,

1 during some periods of the year, demand for gas
2 simply does not allow us to schedule units to be
3 off-line. In addition, the Federal Energy
4 Regulatory Commission and Public Utility
5 Commission require pipelines to provide reliable
6 service of clean burning natural gas for the
7 gas-fired electric generating plants. Second,
8 there are a limited number of experienced
9 vendors capable of installing NOx control
10 systems on older two-stroke and four-stroke
11 integral engines. Our previous experience with
12 RACT showed that a three to four-year schedule
13 is required by installing retrofit NOx controls.

14 I appreciate the opportunity to
15 speak to the Environmental Quality Board about
16 the proposed amendments to Pennsylvania Code
17 Chapters 129 and 145 regarding NOx emissions
18 from gas-fired stationary internal combustion
19 engines. And we look forward to amplifying
20 these remarks in a later submission of written
21 comments. And I'd be glad to address any
22 questions you have at this time.

23 CHAIR:

24 Is Steve Wright present?

25 MR. WRIGHT:

1 Yes, but I'm just here as an
2 interested party.

3 CHAIR:

4 Okay. Is there anyone else who
5 would care to give testimony present today?
6 Everyone pre-registered or present having had
7 the opportunity to testify and there being no
8 additional testimony to be offered, I hereby
9 adjourn this meeting at 1:32 p.m.

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11 * * * * *

12 HEARING CONCLUDED AT 1:32 P.M.

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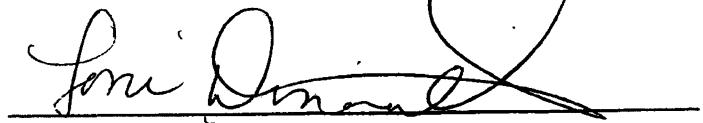
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