

ILLINOIS POLLUTION CONTROL BOARD  
June 19, 2007

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STATE OF ILLINOIS  
Pollution Control Board

IN THE MATTER OF:

STATIONARY RECRIPROCATING	)	
INTERNAL COMBUSTION ENGINES AND	)	RO7-18
TURBINES: AMENDMENTS TO 35 ILL.	)	(Rulemaking-Air)
ADM. CODE SECTION 201.146 AND	)	
PARTS 211 and 217	)	

REPORT OF PROCEEDINGS held in the above-entitled cause before Hearing Officer Timothy Fox, called by the Illinois Pollution Control Board, taken before Laura Bernar, CSR, a notary public within and for the County of Cook and state of Illinois, at the James R. Thompson Center, 160 North LaSalle Street, Chicago, Illinois, on the 19th day of June, 2007, commencing at the hour of 10:00 a.m.

1       A P P E A R A N C E S:

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3           MS. RACHEL DOCTORS  
4           Assistant Counsel  
5           Division of Legal Counsel  
6           Illinois Environmental Protection Agency  
7           1021 North Grand Avenue East  
8           P.O. Box 19276  
9           Springfield, Illinois 62794-9276

10          MR. JOSHUA R. MORE

          -AND-

11          MS. KATHLEEN C. BASSI  
12          Schiff Hardin  
13          6600 Sears Tower  
14          Chicago, Illinois 60606  
15          (312)258-5567  
16                 On behalf of the Pipeline Consortium

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1 HEARING OFFICER FOX: Good morning and  
2 welcome to this Illinois Pollution Control  
3 Board hearing. My name is Tim Fox, and I am  
4 the hearing officer for this rulemaking  
5 proceeding which is entitled Fast Track Rules  
6 Under Nitrogen Oxide Or NOx SIP Call Phase II  
7 Amendments to 35 Illinois Administrative Code  
8 201.146 and parts 211 and 217. The Board  
9 Docket Number for this rulemaking is RO 7-18.  
10 The Board received this proposal on April 6  
11 of 2007 from the Illinois Environmental  
12 Protection Agency and accepted this proposal  
13 for hearing on April 19, 2007.

14 Let me make some quick  
15 introductions of the persons who are present  
16 here from the board. To my left is board  
17 member Thomas E. Johnson and to his left at  
18 the end of the table is Anand Rao of the  
19 board's technical staff. To my far right is  
20 board member Nicholas Melas, and at my  
21 immediate right is Marie Tipsord who is  
22 assistant attorney to the board's acting  
23 chairman, Dr. G. Tanner Girard.

24 Member Johnson, did you have

1 any introductory remarks you wish to make?

2 MR. JOHNSON: Briefly I was going to  
3 welcome participants and the general public,  
4 but it appears I only need to welcome  
5 participants. I'm filling in for Andrea  
6 today. If, indeed there is a third hearing,  
7 I suspect she'll be back. So thank you for  
8 your participation, and I look forward to  
9 today's hearing.

10 HEARING OFFICER FOX: As member  
11 Johnson indicated, we are holding the second  
12 hearing in this rulemaking. The third  
13 hearing is now scheduled to take place on  
14 Monday, July 2, 2007 at 1:00 p.m. in  
15 Springfield. This proceeding is governed by  
16 the Board's procedural rules. All  
17 information that is relevant and that is not  
18 repetitious or privileged will be admitted  
19 into the record. Please note that any  
20 questions posed today by the Board or by its  
21 staff are intended solely to assist in  
22 developing a clear and complete record for  
23 the Board's decision and do not reflect any  
24 prejudice of the proposal. Under Section

1           28.5G2 of the Environmental Protection Act,  
2           this hearing, quote, shall be devoted to  
3           presentation of testimony, documents, and  
4           comments by affected entities and all other  
5           interested parties, unquote. The Board  
6           received prefiled testimony on June 8 from a  
7           single participant in this proceeding, a  
8           Mr. James McCarthy on behalf of the group of  
9           natural gas transmission companies. Under  
10          Section 28.5G, that prefiled testimony is  
11          admitted into the record without reading. So  
12          we will begin this hearing with his prefiled  
13          testimony and the questions that other  
14          participants may have on the basis of that  
15          prefiled testimony.

16                           As a last note for the court  
17          reporter who's, of course, transcribing our  
18          proceeding, I would ask that you speak as  
19          clearly as possible and avoid speaking at the  
20          same time as another participant so that she  
21          has as easy a task as possible in producing a  
22          transcript of this hearing.

23                           Are there questions at all  
24          about the procedures before we begin? Very

1 well. If we can begin, Mr. More, if you're  
2 prepared, we can have the corporate reporter  
3 swear in Mr. McCarthy. And if he wishes to  
4 make a brief statement, he certainly would be  
5 welcome do that, and we can proceed then with  
6 any questions that other participants may  
7 have.

8 MR. MORE: Josh More and Kathleen  
9 Bassi from Schiff Hardin on behalf of ANR  
10 Pipeline, Kinder Morgan, Incorporated,  
11 Trunkline Gas Company, Panhandle Eastern  
12 Company, Pipeline Consortium. We're here to  
13 present testimony from Jim McCarthy.

14 (Witness sworn.)

15 HEARING OFFICER FOX: Mr. More, if I  
16 may interrupt, I'm taking things out of  
17 order. Miss Bassi has handed me a copy of  
18 the prefiled testimony of Mr. McCarthy.  
19 Should I construe that as a motion to admit  
20 that into the record as Hearing Exhibit  
21 No. 3?

22 MR. MORE: Please.

23 HEARING OFFICER FOX: Is there any  
24 objection on anyone's part to the admission

1 of that prefiled testimony as Exhibit No. 3?  
2 Neither seeing nor hearing none, it will be  
3 so admitted and marked as Exhibit No. 3.

4 And, Mr. More, thank you for  
5 letting me interrupt you.

6 MR. MORE: We are not going to offer  
7 a summary of the testimony, so if you like,  
8 we can proceed with the questions.

9 HEARING OFFICER FOX: Very well. If  
10 there is anyone present who wishes to pose  
11 questions to Mr. McCarthy on the basis of his  
12 testimony, if they'd simply raise their hand  
13 to be recognized, and for the first time  
14 please state your name and your affiliation.  
15 Ms. Doctors?

16 MS. DOCTORS: Rachel Doctors from the  
17 Illinois Environmental Protection Agency. I  
18 do have one procedural question. I've got a  
19 number of questions of documents that have  
20 already been admitted into the record. Do  
21 you want me to -- I also have copies of them.  
22 We can readmit them as exhibits, or I can  
23 just refer to how they were in the Agency's  
24 initial proposal.

1 MS. BASSI: Are you planning to ask  
2 questions of our witness based on your  
3 documents?

4 MS. DOCTORS: It's documents he's  
5 referred to in his testimony.

6 MS. BASSI: Okay.

7 MR. MORE: I would ask then, it might  
8 expedite the process if you can just avail us  
9 with a copy.

10 MS. DOCTORS: Well, I was going to  
11 give copies. It's whether we wanted to mark  
12 them separately as exhibits or whether we  
13 just wanted to refer to them.

14 HEARING OFFICER FOX: For the sake of  
15 completeness of the record, if you've got  
16 copies, it probably would be best, if perhaps  
17 a little redundant, to admit them as hearing  
18 exhibits so that we're all precisely on the  
19 same page.

20 MS. DOCTORS: Are we ready to begin?

21 HEARING OFFICER FOX: Did you have a  
22 substantive question to pose?

23 MS. DOCTORS: Yeah, I've got  
24 questions.

1 HEARING OFFICER FOX: Please proceed,  
2 Ms. Doctors.

3 MS. DOCTORS: Good morning,  
4 Mr. McCarthy.

5 A. Good morning.

6 Q. Are you familiar with Attachment 1 to  
7 the Board's order of May 24, 2007, and appendix G to  
8 the Agency's regulatory proposal?

9 A. Just for clarification, Attachment 1  
10 is the current version of the rule?

11 Q. Yes, it is. And I have -- That's what  
12 I'm saying. I have copies of your board order. I  
13 just didn't know if you wanted me to pass them out.

14 HEARING OFFICER FOX: I think that  
15 would be helpful so that we're referring to  
16 the same document at the same time.

17 THE WITNESS: Yes. I'm familiar with  
18 the document.

19 BY MS. DOCTORS:

20 Q. I would ask to -- We also passed out a  
21 copy of Appendix G, which I think the Board fully  
22 intended to include as part of Attachment 1 but did  
23 not. I don't know. But this is the list of  
24 affected units under Attachment 1. So I'd like to

1 have these marked as Hearing Exhibit 4 and 5  
2 respectively.

3 HEARING OFFICER FOX: Hearing the  
4 motion to admit the hearing officer order  
5 dated May 24 of 2007 as Exhibit -- Hearing  
6 Exhibit No. 4 and to admit the copy of  
7 Appendix G as Hearing Exhibit No. 5, is there  
8 any objection to the admission of those on  
9 the part of any of the participants?

10 Neither seeing nor hearing  
11 none, they will be marked and admitted as  
12 such, Ms. Doctors.

13 BY MS. DOCTORS:

14 Q. Can you look at Section 217386 of  
15 Attachment A. It's on Page 5.

16 MS. BASSI: You mean Exhibit 4?

17 MS. DOCTORS: Yes. It's on Exhibit 4,  
18 but it's on Page 5 of Exhibit 4.

19 BY MS. DOCTORS:

20 Q. Would you read this section into the  
21 record, please?

22 A. Section 217386 applicability: A  
23 stationary reciprocating internal combustion engine  
24 listed in Appendix G of this part is subject to the

1 requirements of this Subpart Q.

2 Q. So the proposal before the Board today  
3 only applies to the units listed in Appendix G; is  
4 that correct?

5 A. Those are the applicable units under  
6 the rule. And I use that language because of  
7 provisions in the rule. It's possible that other  
8 equipment would be brought under the rule through  
9 emissions average.

10 Q. Do you know what size engines are  
11 included in Appendix G?

12 A. I am familiar with 25 of the 28  
13 engines that I have worked with the natural gas  
14 industry on this rule and some of the earlier  
15 versions of the rule. And 25 of the 28 engines are  
16 operated by companies that I have worked with. So  
17 I'm familiar with those 25 engines. They range in  
18 size from, I believe the smallest engine is 2400  
19 horsepower. The largest engine is -- It's over  
20 10,000 horsepower. I think it's either 10 or 12,000  
21 horsepower. But most of the engines are around 4 or  
22 5,000 horsepower in size.

23 Q. Is there anything in Appendix G that  
24 listed the threshold for regulatory applicability?

1           A.       Not a threshold, no. It just lists  
2 the affected engines.

3           Q.       So isn't it correct that the proposal  
4 before the Board today in docket R07-18 only impacts  
5 engines that emit one ton per day or more as  
6 identified in the NOx SIP Call Phase II?

7           A.       Yes. It's one ton per day or more  
8 based on the 1995 federal inventory.

9           Q.       I'm going to now ask you some  
10 questions about low emission combustion, technology  
11 LEC, L-E-C. Explain how LEC technology works.

12          A.       The pollutant we're concerned with is  
13 nitrogen oxides, NOx. NOx from natural gas  
14 combustion is formed from nitrogen that's in the  
15 combustion air, and NOx formation is strongly  
16 dependent upon the temperature of the combustion  
17 process. So what LEC does is, in simple terms, it  
18 adds additional air to the engine. That additional  
19 air lowers the combustion temperatures, and by  
20 lowering combustion temperatures it lowers NOx. So  
21 that usually involves turbo charging the engine, or,  
22 if the engine already has a turbo charger, it will  
23 involve many times enhancing the turbo charger.  
24 With the additional air, sometimes the fuel air

1 charge will have difficulty lighting. So often  
2 there's a requirement to change the ignition system,  
3 so you put more energy into the system to light the  
4 charge. And it also sometimes includes changing  
5 fuel injectors so that you get better mixing in the  
6 engine cylinder prior to lighting the charge. And  
7 what those different facets all are intended to do  
8 is lower peak combustion temperatures, thus lowering  
9 NOx.

10 Q. Are you familiar with the phase NOx  
11 SIP called Phase II Rule as it appeared in the  
12 Federal Register on April 21, 2004?

13 A. I am.

14 Q. I would like to offer this as, I guess  
15 we're at hearing Exhibit 6?

16 HEARING OFFICER FOX: That's correct.  
17 That's the next exhibit number.

18 MS. DOCTORS: It was Attachment A to  
19 the Agency's Statement of Reasons. I have  
20 six copies.

21 HEARING OFFICER FOX: For the record,  
22 Ms. Doctors has circulated copies of the  
23 Federal Register, Volume 69, No. 77 dated  
24 Wednesday, April 21 of 2004, which I would

1           construe as a motion to admit that as hearing  
2           Exhibit No. 6. Is that correct,  
3           Miss Doctors?

4                       MS. DOCTORS: Yes.

5                       HEARING OFFICER FOX: Is there any  
6           objection to the admission of that document  
7           as Hearing Exhibit No. 6?

8                               Neither seeing nor hearing any  
9           objection, it will be marked and admitted as  
10          Hearing Exhibit No. 6 in this proceeding.

11       BY MS. DOCTORS:

12               Q.       I'd like to direct your attention to  
13          Pages 21619 and 21620?

14                       MS. TIPSORD: Nineteen and twenty?

15                       MS. DOCTORS: Yes, the last two. I  
16          think it's longer. It may repeat somewhere.

17       BY MS. DOCTORS:

18               Q.       Isn't it true that U.S. EPA states  
19          that 3 grams per break horsepower, or horsepower  
20          hours, how they say it, is achievable for most  
21          reciprocating engines with LEC retrofits? It  
22          appears in the center column on 619 about midway  
23          through that column.

24               A.       I'm just looking for the specific text

1 saying most engines. My experience is that many  
2 engines can achieve three grams, but not all. So if  
3 you want me to read this and find that exact text, I  
4 can do that, but.

5 Q. Yes. Would you, please.

6 A. You said it's in the center column on  
7 21619?

8 Q. Yes. It's under the heading Response.  
9 I'm sorry. I'm referring you -- I'm sorry. I am  
10 mistaken. It's on 620. I'm being corrected here,  
11 and it's in the first column.

12 A. I see where they say that 60 of the 79  
13 tests that they had showed three grams or lower.

14 Q. Doesn't it also state that emission  
15 levels of 2.2 to 2.3 grams per break horsepower were  
16 found to be achievable?

17 A. For the specific engines and data that  
18 they looked at, they do show that 2.2 and 2.3 grams  
19 have been achieved.

20 Q. Then on Page 619, doesn't it state  
21 that the Interstate Natural Gas Association of  
22 America said that LEC retrofits are consistent with  
23 the costs identified by U.S. EPA's NOx SIP Call TSD?

24 MR. MORE: Are you asking him just to

1 confirm that that's what it reads?

2 MS. DOCTORS: Yes.

3 MR. MORE: Are you in the middle  
4 paragraph?

5 THE WITNESS: I'm just reading the  
6 introductory text leading to that bullet.  
7 Yes. The record does state that INGA  
8 indicates that LEC retrofits are consistent  
9 with technology and costs in the NOx SIP Call  
10 TSD.

11 BY MS. DOCTORS:

12 Q. Isn't it true that once LEC technology  
13 is installed that becomes an integral part of the  
14 engine operation?

15 A. Yes.

16 Q. So the only time it would be shut off,  
17 the LEC technology would be shut off, is when the  
18 engine is not running?

19 A. Correct. The technology can't be  
20 turned on and off. It's inherent to the engine once  
21 it's installed.

22 Q. What type of maintenance needs to be  
23 done on the LEC equipment?

24 A. I don't believe there's any specific

1 maintenance above and beyond the typical sort of  
2 attention that the natural gas companies pay to this  
3 equipment.

4 Q. Nothing extra?

5 A. Nothing specific comes to mind, no.  
6 You know, for example, if you install a turbo  
7 charger and you didn't have a turbo charger on the  
8 engine originally, obviously that's another piece of  
9 moving equipment on the engine that you would have  
10 to pay attention to. But I don't believe it changes  
11 anything in terms of frequency or how attentive they  
12 are to the engine.

13 Q. Are there any additional costs  
14 associated of running LEC during the winter months?

15 A. There would be costs associated with  
16 the compliance facet of running the engine, but  
17 running the engine in and of itself doesn't  
18 introduce additional costs.

19 Q. Could you explain what you mean by the  
20 compliance?

21 MR. MORE: I'm just going to object to  
22 this line of questioning. It goes really  
23 beyond the testimony that we're offering  
24 Mr. McCarthy. It's above and beyond. We

1 don't get into costs, we're not objecting to  
2 the applicability of the rule on an annual  
3 basis.

4 MS. DOCTORS: Oh, you're not? You're  
5 not objecting to the -- is that correct, that  
6 you're not --

7 MR. MORE: His testimony makes it  
8 pretty clear that we are not -- He says on  
9 Page 7, "In regard to the IEPA proposal under  
10 consideration at this hearing, the Pipeline  
11 Group does not object to the Subpart Q  
12 proposal under consideration at today's  
13 hearing."

14 MS. DOCTORS: So there's no objection  
15 to the annual applicability of the rule?

16 MR. MORE: That's correct.

17 MS. DOCTORS: Okay. Then we will skip  
18 these questions.

19 HEARING OFFICER FOX: Miss Doctors, if  
20 I may interrupt you briefly at this point. I  
21 want to note for the record that Exhibit 6,  
22 the Federal Register that you've circulated  
23 and admitted, does include some underlining,  
24 and at least on the top of Page 21620, a

1           handwritten reference, which is fine. I  
2           merely need to note for the record that those  
3           were not added by the board and do not  
4           constitute any board comments. So having  
5           made that statement, please proceed with any  
6           further questions that you wanted to raise.

7                       MS. DOCTORS: I'm sorry.

8                       MEMBER RAO: May I ask a follow-up  
9           question to your prior question?

10                      Mr. McCarthy, on Page 6 of  
11           your prefiled testimony, the second paragraph  
12           you state that, "Despite the lack of an IEPA  
13           rule, the affected natural gas companies have  
14           proactively initiated reduction programs and  
15           compliance plans for units in Appendix G of  
16           the proposal." Does that mean that all the  
17           25 units that you're familiar with already  
18           have this LEC technology implemented on those  
19           units?

20                      THE WITNESS: What it means is that  
21           for those 25 engines, LEC has either been  
22           installed or the companies have developed an  
23           averaging strategy where they're introducing  
24           either controls on those units or other units

1 to achieve reductions.

2 MEMBER RAO: And that could involve  
3 some costs to the affected companies?

4 THE WITNESS: Yes.

5 MEMBER RAO: And are those costs  
6 consistent with what the estimates have been  
7 shown in TSD?

8 THE WITNESS: We've not looked at that  
9 level of cost detail.

10 MEMBER RAO: Okay.

11 MS. DOCTORS: I'm sorry. Just --

12 HEARING OFFICER FOX: Mr. McCarthy, if  
13 you could repeat your last answer. I believe  
14 Ms. Doctors had trouble hearing you.

15 THE WITNESS: The question was  
16 regarding the costs. And my answer was we  
17 have not looked at, specifically, at the  
18 costs for activities underway with those 25  
19 engines relative to the information that's --  
20 We didn't specifically say which information,  
21 but relative to cost information in the  
22 record.

23 BY MS. DOCTORS:

24 Q. I'm just going to ask one follow-up

1 question. The reason -- I'll point out where the  
2 Agency's concern came from. It came from Page 7 of  
3 the testimony, the last sentence in the fourth  
4 paragraph that begins "second." Mr. McCarthy  
5 indicated that there was an additional burden  
6 because of the annual compliance requirement. So it  
7 is our understanding that you will not be filing an  
8 objection to the annual component of Attachment 1?

9 MR. MORE: That's correct.

10 MS. DOCTORS: Let me just look through  
11 what I have. All right.

12 HEARING OFFICER FOX: Ms. Doctors, do  
13 you or the Agency have any further questions  
14 for Mr. McCarthy?

15 MS. DOCTORS: Yes, we do. We just are  
16 trying to short-cut. Thank you.

17 HEARING OFFICER FOX: No worries.  
18 Please go ahead when you're ready.

19 BY MS. DOCTORS:

20 Q. We have some questions concerning SCR  
21 technology that was referenced in your testimony.  
22 On Page 7 of your testimony. At the bottom of  
23 Page 7, can you read the last sentence that begins  
24 "however," and then continues on to Page 8.

1           A.        "However, to date, SCR has not been  
2           successfully applied to gas transmission units, and  
3           U.S. EPA has acknowledged this limitation."

4           Q.        That's what my questions pertain to.  
5           Are you familiar with U.S. EPA's Alternate Control  
6           Techniques, ACT document, that was originally  
7           Attachment 11C to the Agency's proposal?

8           A.        Yes.

9           Q.        And what I'm handing out is just the  
10          portion that deals with control technologies, or  
11          Chapter 5. And this would be marked as hearing, I  
12          think we're at 6.

13                   HEARING OFFICER FOX: We are at 7.

14                   MS. DOCTORS: We are at 7.

15          BY MS. DOCTORS:

16          Q.        Okay. Can you please turn to Page 55.

17                   HEARING OFFICER FOX: Ms. Doctors, if  
18          you don't mind, let's formally admit that.  
19          I'll construe your distribution again as a  
20          motion to admit the U.S. EPA Alternative  
21          Control Technique's document NOx Emissions  
22          From Stationary Reciprocating Internal  
23          Combustion Engines as a motion to admit that  
24          document as hearing Exhibit No. 7; is that

1 correct?

2 MS. DOCTORS: Correct.

3 HEARING OFFICER FOX: Is there any  
4 objection on the part of any of the  
5 participants?

6 MR. MORE: I would have just one  
7 clarifying objection. It's just a portion of  
8 that document. I'd ask that the record  
9 reflect that.

10 MS. DOCTORS: Right. Let's clarify.  
11 It's just Chapter -- It's all of Chapter 5  
12 entitled NOx Control Techniques.

13 HEARING OFFICER FOX: I appreciate the  
14 clarification. And that is, in fact, what's  
15 beyond the face sheet of what you've  
16 distributed, Ms. Doctors. Beyond that  
17 clarification, Mr. More, was there any  
18 objection on the part of the Pipeline to  
19 admission?

20 MR. MORE: No objection.

21 HEARING OFFICER FOX: Very well, it  
22 will be admitted as described as Hearing  
23 Exhibit No. 7 and so marked, Ms. Doctors.  
24 Thank you for letting me interrupt you.

1 BY MS. DOCTORS:

2 Q. Are you familiar with this document?

3 A. I am familiar with it.

4 Q. Can you turn to Page 55.

5 A. Okay.

6 Q. Isn't it true that the ACT lists SCR  
7 as a feasible technology?

8 A. It lists SCR as a technology. I'm not  
9 sure if it -- how or if it passes judgment on  
10 feasibility.

11 Q. Isn't it true that Chapter 5 of this  
12 NOx technique lists a variety of control technology  
13 in addition to SCR?

14 MR. MORE: I'm going to just object.  
15 Are you asking him to tell you what the  
16 document says? The document speaks for  
17 itself. And I'm not sure that he's qualified  
18 to testify as to what it intends to say or  
19 what it infers or implies.

20 MS. BASSI: May I add to that  
21 objection? Moreover, he's testified that LEC  
22 has been -- is, has been, or is being applied  
23 to all of the engines that we're here  
24 speaking for or they're involved in an

1           averaging plan. We don't understand the  
2           whole line of this questioning.

3                   MS. DOCTORS: It goes to the statement  
4           in his testimony where he said SCR couldn't  
5           be used at the bottom of Page 7.

6                   MR. MORE: I think he stands by that  
7           statement.

8                   THE WITNESS: "Has not been  
9           successfully applied to gas transmission  
10          units." I stand firmly by that statement.

11                   MS. BASSI: It doesn't say all  
12          engines. It says gas transmission units.

13 BY MS. DOCTORS:

14           Q.       Why? Why do you feel that it hasn't  
15          been --

16           A.       To my knowledge, there is only one  
17          installation in the U.S. that has occurred, and that  
18          installation was taken out of service after a couple  
19          of years because it wasn't functioning properly.

20           Q.       Which installation was that?

21           A.       It's in the south coast jurisdiction  
22          in California.

23           Q.       What's the difficulty with SCR?

24           A.       The problems -- SCR is the technology

1 that was originally developed for very large utility  
2 scale applications like coal fired utility boilers,  
3 for example. And there's certain characteristics of  
4 those facilities that aren't necessarily the same  
5 sort of characteristics for a reciprocating internal  
6 combustion engine. One of the key technical  
7 requirements of SCR is that you finely control the  
8 amount of ammonia that you inject into the exhaust.  
9 You add ammonia into the exhaust to make reactions  
10 occur across the catalyst to reduce the NOx. So one  
11 of the difficulties that has been seen and that is  
12 forecast if additional installation should occur is  
13 that the control for ammonia feed is not -- has not  
14 been developed sophisticated enough for application  
15 to the way an engine NOx emissions vary in the  
16 exhaust. You need to match ammonia to NOx and the  
17 NOx variability can introduce difficulties with  
18 controlling the ammonia feed rate properly. That's  
19 one issue.

20 Q. So basically you're saying it's  
21 because of the variable load nature of the --

22 A. It ties to load variability. Because  
23 as the load changes or the operating conditions of  
24 the engine change, the NOx changes on an IC engine.

1 An IC engine is internal combustion engine.

2 Q. Besides the one place in California,  
3 are you aware of whether SCR has been employed on  
4 any other gas engines?

5 A. I believe there's a -- I'm not sure  
6 which state, but I believe there are one or two  
7 engines in the Eastern U.S. that have had SCR  
8 installed. I think one is in New Jersey.

9 MS. BASSI: Are those gas transmission  
10 engines?

11 THE WITNESS: They are not gas  
12 transmission engines. They're in different  
13 applications. And, anecdotally, I've talked  
14 to folks affiliated with those engines, and  
15 they found many difficulties in getting the  
16 SCR to work properly on those engines and  
17 questioned whether it will continue to work  
18 over time.

19 BY MS. DOCTORS:

20 Q. Now, is this also true for diesel  
21 engines?

22 A. I can't really speak to diesel and SCR  
23 because I've not worked closely with that  
24 application.

1 Q. Are you aware that HUGG has used this  
2 type of system at MIRATECH for gas pipeline?

3 MS. BASSI: Who?

4 MS. DOCTORS: HUGG, H-U-G-G?

5 THE WITNESS: I'm not, no. I have  
6 heard of HUGG and MIRATECH, but I'm not  
7 familiar with that application.

8 BY MS. DOCTORS:

9 Q. Isn't it true that the provisions of  
10 Attachment 1 do not require the installation of any  
11 particular type of control technology?

12 MS. BASSI: What is Attachment 1?

13 Exhibit what?

14 MR. MORE: Exhibit 4.

15 MS. DOCTORS: That's Exhibit 4?

16 THE WITNESS: That's correct.

17 BY MS. DOCTORS:

18 Q. Isn't it true that provisions of the  
19 proposal before the board today allow for the owner  
20 or operator to have discretion on the type of  
21 control equipment to install so long as the  
22 requirements of the rule are met?

23 A. That's true.

24 Q. So there's no requirement that anybody

1 install SCR?

2 A. Correct. But it is identified in the  
3 TSD for the rulemaking as a viable technology which  
4 is why it was mentioned in my testimony.

5 Q. Okay. Isn't it true, though, that  
6 when the TSD was written, it covered a broad range  
7 of engines besides gas transmission engines,  
8 pipeline engines?

9 A. Yes.

10 MS. BASSI: Can I ask a follow-up to  
11 that line, please?

12 MS. DOCTORS: You don't have to ask  
13 me.

14 HEARING OFFICER FOX: Miss Bassi.

15 MS. BASSI: Mr. McCarthy, are you  
16 familiar with types of engines that are at  
17 the Phoenix Chemical Company which is also  
18 part of Appendix G, Exhibit 5?

19 THE WITNESS: I'm not familiar with  
20 that company's engines.

21 MS. BASSI: Is it possible at all that  
22 they might require SCR or some other type of  
23 control technology than is being applied to  
24 the gas transmission engines?

1 THE WITNESS: Not knowing the engines,  
2 it's possible.

3 MS. BASSI: Thank you.

4 BY MS. DOCTORS:

5 Q. On Page 8 of your testimony, didn't  
6 you -- on Page 8, the last paragraph, you make the  
7 statement that this TSD indicates that 5,000 per ton  
8 is the basis used for IS engines under the NOx SIP  
9 Call; is that correct?

10 A. Yes.

11 Q. I'd like to refer you to Page -- This  
12 would be Hearing Exhibit 8. What I'm handing out is  
13 just a cover sheet from the Illinois EPA's Technical  
14 Support Document and a copy of Chapter 5 which dealt  
15 with cost effectiveness, and I'm marking it as  
16 Exhibit 8 and asking that it be entered, if there's  
17 no objection.

18 MR. MORE: No objection.

19 HEARING OFFICER FOX: We can certainly  
20 wait until it's circulated to assure,  
21 Mr. More, that you don't have any objection.

22 And Ms. Doctors has moved to admit  
23 as Hearing Exhibit No. 8, Chapter 5 regarding  
24 cost effectiveness of controls from the

1 technical support document that was initially  
2 submitted with the rulemaking proposal in  
3 this case on April 6. Is there any objection  
4 to the admission of that as Exhibit No. 8?

5 MR. MORE: No objection.

6 HEARING OFFICER FOX: Neither seeing  
7 nor hearing an objection, it will be marked  
8 and admitted as Exhibit No. 8, Ms. Doctors.

9 BY MS. DOCTORS:

10 Q. I'd like to refer you to -- at the  
11 bottom of the page it says 40, it's probably about  
12 the third page in, to Table 5-2. And there's also  
13 Table 5-3. Are these the tables you looked at when  
14 you were writing your testimony; is that correct?

15 A. My testimony is in reference to the  
16 paragraph on that page where it states U.S. EPA  
17 selected the \$5,000 per ton regulatory alternative  
18 as the basis for controlling rights.

19 Q. Isn't it true that the \$5,000 relates  
20 to U.S. EPA's evaluation of one of several  
21 regulatory alternatives under the first NOx SIP Call  
22 not under Phase II?

23 A. I wasn't familiar with that \$5,000 per  
24 ton cost threshold which was the basis for my

1 comment.

2 Q. Okay. Can I direct you to look at  
3 Table 5-2, the first column. What it is entitled --

4 A. Regulatory alternative.

5 Q. So in that column, doesn't it list a  
6 number of alternatives and costs associated with  
7 them?

8 A. Yes, it does.

9 Q. And isn't \$5,000 a ton the maximum?

10 A. It is the maximum in Table 5-2.

11 Q. And I'd like to refer you to Table 5-3  
12 and the last number -- Oh, looking at the last  
13 column, what is the last column, the title of the  
14 last column?

15 A. Ozone Season Cost Effectiveness,  
16 Dollars Per Ozone Season Ton.

17 Q. And what is the cost effectiveness of  
18 the \$5,000 a ton alternative?

19 A. In Table 5-3 it's 1,215.

20 Q. And what level of control is that --  
21 does that correspond to? What level of reduction of  
22 NOx?

23 A. I don't know the answer to that  
24 question. This is the Agency's table.

1           Q.       Okay. Well, I'd like to just refer  
2 you to the last sentence in the paragraph that you  
3 quoted.

4           A.       Okay. The last sentence in that  
5 paragraph says that that refers to an average  
6 reduction of 90 percent from an uncontrolled 2007  
7 baseline.

8           Q.       And isn't it true that the proposal  
9 before the Board today relates to an 82 percent  
10 reduction of NOx?

11          A.       That's true.

12                   HEARING OFFICER FOX: Ms. Doctors, I  
13 believe Miss Bassi has a question, if we may.

14                   MS. BASSI: Ms. Doctors, on these  
15 tables that you're referring so, there's a  
16 footnote -- or a reference to a Footnote 11.  
17 Is that included in the exhibit?

18                   MS. DOCTORS: I do not believe so.  
19 I'll have to --

20                   MS. BASSI: Well, it seems to me that  
21 what you're doing here is -- We don't know  
22 where these tables came from on the basis of  
23 your exhibit. And the statement that  
24 Mr. McCarthy is referring to in his testimony

1           says U.S. EPA selected the \$5,000 per ton  
2           regulatory alternative, and it appears that  
3           what you're doing is pointing to these tables  
4           to make some point about the \$5,000 per ton,  
5           but we don't know if these are U.S. EPA  
6           numbers, we don't know if they're your  
7           numbers, we don't know where they came from.

8                   MS. DOCTORS: I direct the Board -- I  
9           don't have an extra copy of the TSD, but --  
10          actually I'm being directed by -- Was that in  
11          Chapter 5? I can direct you to -- I mean he  
12          quoted it. Your witness quoted the table.  
13          So, therefore --

14                   MS. BASSI: My witness quoted a  
15          sentence.

16                   MS. DOCTORS: Right. Out of something  
17          that had a footnote, so you'd assume that he  
18          would --

19                   MS. BASSI: No. The sentence is not a  
20          footnote.

21                   MS. DOCTORS: Okay. In any case, the  
22          reference to where the numbers come from,  
23          Mr. McCarthy, I'd like to direct you to Page  
24          37 of Chapter --

1                   MR. MORE: I'm going to object on the  
2 grounds that you're -- It sounds like you're  
3 attempting to have Mr. McCarthy authenticate  
4 your document and lay a foundation for the  
5 accuracy of the information in here. Your  
6 witnesses could have very well done that.  
7 He's just regurgitating what the document  
8 says.

9                   MS. DOCTORS: But he's taking issue  
10 with it, so.

11                   THE WITNESS: I took issue with the  
12 quote of \$5,000 per ton as the U.S. EPA  
13 preferred alternative.

14                   MS. DOCTORS: Okay. Just for the  
15 Board's reference, from the TSD it was  
16 Reference 11 in the Agency's TSD which comes  
17 from regulatory impact analysis for the NOx  
18 SIP Call and Section 26 Petition Volume 1  
19 Costs and Economic Impact. It's Reference  
20 11 in the TSD itself. So it's part of the  
21 Board's record already, in any case.

22                                 We're ready to move on to some new  
23 questions.

24                   HEARING OFFICER FOX: When you're

1           ready, Ms. Doctors, please do.

2           BY MS. DOCTORS:

3           Q.       Are you familiar with the TSD that was  
4           prepared for the NOx SIP Call dated October 3rd and  
5           originally part of the Agency's submittal, TSD  
6           Reference 12, and I have copies. This would be --  
7           Are we at 9?

8                    HEARING OFFICER FOX: That would be  
9           the next exhibit number, yes.

10           MS. DOCTORS: It's the whole document,  
11           I believe.

12                    HEARING OFFICER FOX: Ms. Doctors,  
13           before addressing the admissibility, would  
14           you please clarify more specifically what  
15           this document is and which rulemaking docket  
16           it originated with?

17           MS. DOCTORS: It originated in RO7-18,  
18           and it was reference 12 in the technical  
19           support document.

20                    HEARING OFFICER FOX: You made a  
21           reference to CAIR.

22           MS. DOCTORS: I'm sorry. I misspoke.  
23           Excuse me. I'm getting -- the rules are  
24           merging.

1 HEARING OFFICER FOX: Thank you.

2 THE WITNESS: I am familiar with this  
3 document.

4 HEARING OFFICER FOX: Before we  
5 proceed with any questions, Ms. Doctors, I  
6 assume that your circulation of this document  
7 entitled Stationary Reciprocating Internal  
8 Combustion Engines Technical Support Document  
9 for NOx Sip Call dated October 2003 is a  
10 motion to admit that as Hearing Exhibit  
11 No. 9; is that correct?

12 MS. DOCTORS: Yes.

13 HEARING OFFICER FOX: Is there any  
14 objection to admitting that?

15 MR. MORE: Yes. The document appears  
16 to be incomplete. It is only even pages.

17 MS. DOCTORS: You're kidding.

18 MR. MORE: I suspect that's a function  
19 of double-sided --

20 MS. DOCTORS: Oh, no. Well, it is  
21 already part of the record. I do have a  
22 complete copy that I'm willing to share with  
23 the witness for the purpose of testimony.  
24 And I bet I even have an additional one. Do

1           you have one? I think we can come up with  
2           some more copies. I don't know that I have  
3           six, though.

4                        HEARING OFFICER FOX: What I would  
5           suggest is that since this was originally  
6           submitted and remains part of the Board's  
7           record in this docket, that if it's  
8           acceptable, Mr. McCarthy, to use the copy  
9           that Ms. Doctors has provided to you we can  
10          proceed to --

11                       MS. DOCTORS: We'll give you one, too.  
12          I can get more copies. So there is at least  
13          three.

14                       MR. MORE: I have no objection to this  
15          version being submitted.

16   BY MS. DOCTORS:

17           Q.        I just have one question. Please look  
18          at Page 34.

19                       HEARING OFFICER FOX: May I interrupt  
20          you, Ms. Doctors. Mr. More has indicated  
21          that there is no objection to admitting this  
22          as Exhibit 9. If I keep this as the Board's  
23          exhibit number, will I deprive you of a copy  
24          you need?

1 MS. DOCTORS: No. I have one.

2 HEARING OFFICER FOX: Hearing no  
3 objection and seeing no objection, it will be  
4 marked and admitted as Hearing Exhibit No. 9  
5 in this proceeding. And thank you for  
6 letting me interrupt you, Ms. Doctors.

7 BY MS. DOCTORS:

8 Q. Please look at Page 34. Isn't it true  
9 that the average cost for reducing NOx using LEC is  
10 approximately \$500 per ton, according to U.S. EPA's  
11 analysis?

12 A. Yes. This particular U.S. EPA  
13 analysis indicates the average cost of \$532 per ton.

14 Q. I have no further questions.

15 MS. BASSI: May we have a moment,  
16 please.

17 HEARING OFFICER FOX: Ms. Doctors, did  
18 you mean no further questions with regard to  
19 this --

20 MS. DOCTORS: No. I meant no further  
21 questions.

22 HEARING OFFICER FOX: Miss Bassi, in  
23 response to your question in speaking briefly  
24 with Miss Doctors before hearing, she wished

1 to go off the record to have a brief  
2 conversation with her personnel before we  
3 proceeded any further. So if we may go off  
4 the record for a moment and allow the  
5 participants a chance to speak with one  
6 another, that would be great. Thank you.

7 (Off the record.)

8 HEARING OFFICER FOX: If we may go  
9 back on the record, please. If the Agency  
10 has still completed its questions and there  
11 are no further questions it wanted to pose to  
12 Mr. McCarthy?

13 MS. DOCTORS: Not at this time.

14 HEARING OFFICER FOX: Very good. I  
15 know there are two representatives of the  
16 board who had a question that they wish to  
17 pose. The first of them, Board Member  
18 Johnson had a question, I believe, for  
19 Mr. McCarthy.

20 MR. JOHNSON: Mine will be brief. And  
21 I just want to sum up what I consider to be  
22 the most relevant statement in your testimony  
23 today and ask you if it's still the case. At  
24 the top of Page 7 you testified that, "In

1           regard to the IEPA proposal under  
2           consideration of this hearing, The Pipeline  
3           Group does not object to Subpart Q proposal  
4           under consideration at today's hearing." Is  
5           that still the case?

6                   THE WITNESS: That is still the case.

7                   MR. JOHNSON: Thank you.

8                   HEARING OFFICER FOX: Mr. Melas, Board  
9           Member Melas had indicated as well that he  
10          had a question. Mr. Melas?

11                   MEMBER MELAS: This is just primarily  
12          curiosity question of mine. When you started  
13          describing the LEC process, you mentioned  
14          that the purpose is to lower the combustion  
15          temperature. Now, is it not true that the IC  
16          engines that are utilized by the gas pipeline  
17          companies do their heavy work in the  
18          wintertime when there's a great demand for  
19          the gas as opposed to the summertime?

20                   THE WITNESS: That's true. Typically  
21          there's heavier load during the winter  
22          heating season than during warmer months.

23                   MEMBER MELAS: And when you're trying  
24          to utilize LEC because of -- particularly in

1 the dead of winter when you're bringing in  
2 air temperature at a much lower temperature,  
3 it would make the process a lot more  
4 efficient and further reduce NOx than if you  
5 were dealing with temperature -- air  
6 temperatures of 85 or 90.

7 THE WITNESS: That's true.  
8 Environmental affects -- temperature and  
9 humidity impact the emissions performance.

10 MEMBER MELAS: And that's the time  
11 when you're more concerned about reducing  
12 excessive amount of NOx in the -- when the  
13 engine is working harder.

14 THE WITNESS: The engines typically  
15 run more during the winter season.

16 MEMBER MELAS: So if global warming  
17 doesn't catch up to us, you would be more  
18 able to meet the NOx requirements during that  
19 period of heavy production or heavy usage?

20 THE WITNESS: Yeah. I just want to be  
21 careful of how I'm saying this, because some  
22 engines -- often what happens is you have  
23 multiple engines at a facility. So even when  
24 your load gas demand is lower, you still



1 on the record. What I would like to do first  
2 is verify that I believe that all of the  
3 board members and board staff have posed the  
4 questions that they wish to, the Agency has  
5 indicated that it has posed questions. Is  
6 there anyone else present who does have  
7 questions to pose to Mr. McCarthy on the  
8 basis of his testimony?

9 And seeing no indication that  
10 anyone does, I'd like to move on to address a  
11 few procedural issues before we can move to  
12 adjourn this hearing. In this Docket R07-189  
13 third hearing is now scheduled to take place  
14 on Monday, July 2, at 1:00 p.m. in  
15 Springfield, with a deadline of this Friday,  
16 June 22, for prefiling testimony. Under  
17 Section 28.5G3, quote, The third hearing  
18 shall be canceled if the Agency indicates to  
19 the Board that it does not intend to  
20 introduce any material, additional material,  
21 forgive me, closed quote. I had, as a  
22 procedural matter, spoken with Ms. Doctors  
23 about this very issue before hearing.

24 Ms. Doctors, did you have anything

1 to add to that issue at all?

2 MS. DOCTORS: The Agency does not  
3 object to canceling the third hearing.

4 HEARING OFFICER FOX: Is that a  
5 statement -- Is that a statement that you do  
6 not intend to introduce any additional  
7 material as the statute would allow you to  
8 do?

9 MS. DOCTORS: Correct.

10 HEARING OFFICER FOX: You would have  
11 no objection if the board, on the record and  
12 in a hearing officer order were to cancel the  
13 third hearing that's now scheduled to take  
14 place on Julie 2?

15 MS. DOCTORS: Correct.

16 HEARING OFFICER FOX: Very well. That  
17 clearly has been the Agency's intentions  
18 under 28.5G3 which have been plainly made  
19 clear on the record. The expedited copies of  
20 the transcript of today's hearing should be  
21 available to the Board by Thursday, June 21,  
22 and very soon after they are available to the  
23 Board the transcript will be posted to the  
24 Board's Clerk's Office On Line or COOL which

1 is accessible through the Board's web site at  
2 www dot IPCB dot State dot IL dot US.  
3 Section 28.5L of the Act provides that,  
4 quote, following the hearings, which conclude  
5 with the second hearing today, of course, the  
6 Board shall close the record 14 days after  
7 the availability of the transcript. Since  
8 this proves to be the final hearing in this  
9 proceeding, the Board will, of course,  
10 consistent with that language, keep the  
11 record open for comment for that 14-day  
12 period. And in order to make that absolutely  
13 as clear as possible for the participants,  
14 when that transcript is available and when it  
15 is posted to the Board's web site, I will  
16 issue a hearing officer order that will let  
17 the participants know precisely the date on  
18 which that 14-day period begins, and, of  
19 course, on which it ends. Participants may  
20 file written public comments in the meantime,  
21 of course, in this rulemaking with the clerk  
22 of the board and any comments or other  
23 filings may be filed electronically through  
24 COOL which I believe all of these

1 participants are familiar, and any questions  
2 about electronic filing should be directed to  
3 the Board's assistant clerk, John Therriault,  
4 who can be reached at direct number  
5 312-814-3629. Filings with the Board whether  
6 paper or electronic, must be served on the  
7 hearing officer and on those persons on the  
8 serving list. And before filing with the  
9 clerk, you may certainly check with me as the  
10 hearing officer, to ensure that you have the  
11 most recent version of the service list. And  
12 if anyone has questions procedurally about  
13 other aspects of this rulemaking, they may  
14 reach my direct line 312-814-6085.

15 Are there any other  
16 matters that need to be addressed at this  
17 time? Ms. Doctors?

18 MS. DOCTORS: The Agency would like to  
19 just indicate that they found -- that we have  
20 found and the Pipeline has identified and  
21 some other participants, including the  
22 Illinois Environmental Regulatory Group, have  
23 identified some typographical errors in the  
24 rule; and fairly shortly, maybe next week or

1 the week after, probably prior to receipt of  
2 the transcript, we'll be filing some kind of  
3 joint stipulation or a motion identifying  
4 these typos so the Board can work on final  
5 regulatory language.

6 HEARING OFFICER FOX: Very good. The  
7 14-day comment period, of course, has not yet  
8 begun to run since the transcript is not  
9 available. So we appreciate the notice that  
10 that may be forthcoming and certainly will  
11 get to the Board's attention in correcting  
12 any of those errors that you may highlight in  
13 that filing, Ms. Doctors.

14 Anything further on the part  
15 of any of the participants?

16 Before we do formally adjourn, I  
17 know I speak for the board members and the  
18 rest of the board staff in thanking you for  
19 your time, your effort, your appearance here  
20 today, your assistance in building a record.  
21 And we hope you travel safely, and thank you  
22 once again for all of your work and  
23 assistance. Thanks. We are adjourned.

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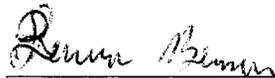
(Which were all the  
proceedings had.)

\* \* \* \* \*

1 STATE OF ILLINOIS )  
2 ) SS.  
3 COUNTY OF COOK )  
4

5 I, LAURA BERNAR, being a Certified  
6 Shorthand Reporter doing business in the City of  
7 Chicago, Illinois, County of Cook, certify that I  
8 reported in shorthand the proceedings had at the  
9 foregoing hearing of the above-entitled cause. And  
10 I certify that the foregoing is a true and correct  
11 transcript of all my shorthand notes so taken as  
12 aforesaid and contains all the proceedings had at  
13 the said meeting of the above-entitled cause.

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LAURA BERNAR, CSR

CSR NO. 084-003592

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