BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

VOLUME 7

IN THE MATTER OF:	)	
	)	
EMISSIONS REDUCTION MARKET	)	
SYSTEM ADOPTION OF 35 ILL.	)	R97-13
ADM. CODE 205 AND AMENDMENTS	)	(RULEMAKING)
TO 35 ILL. ADM. CODE 106.	)	
	)	

The following is a transcript of a rulemaking hearing held in the above-entitled matter, taken stenographically by LISA H. BREITER, CSR, RPR, CRR, a notary public within and for the County of DuPage and State of Illinois before CHUCK FEINEN, Hearing Officer, at the James R. Thompson Center, 9-040, 100 West Randolph Street, Chicago, Cook County, Illinois on the 10th day of March 1997, commencing at 9:00 o'clock a.m.

ILLINOIS POLLUTION CONTROL BOARD MEMBERS PRESENT:

MS. ELIZABETH ANN

MS. KATHLEEN HENNESSEY

MS. MARILI MC FAWN

MR. JOSEPH YI

MR. RICHARD MC GILL

MS. CLAIRE A. MANNING

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY MEMBERS PRESENT:

MS. BONNIE SAWYER

MR. RICHARD FORBES

MR. BHARAT MATHUR

MS. SARAH DUNHAM

MR. CHRISTOPHER ROMAINE

MR. RICHARD FORBES

MR. GALE NEWTON

MR. ROGER KANERVA

MR. GARY BECKSTEAD

OTHER AUDIENCE MEMBERS WERE PRESENT AT THE HEARING BUT NOT LISTED ON THIS APPEARANCE PAGE.

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HEARING OFFICER FEINEN: Let's go back on the record. I believe we continued this from the last date which was February 4th -- no, February 11th.

MS. DUNHAM: Right.

HEARING OFFICER FEINEN: It's March 10th now, and we're going to start out with the testimony of the agency witnesses concerning economics. At this time I'll turn it over to Mrs. Sawyer.

MS. SAWYER: Okay. Our first witness is Sarah Dunham. I have exhibits marked Exhibits 48 through 57. The first Exhibit 48 is a copy of Sarah Dunham's prefiled written testimony, and then 49 through 57 are overheads that she's going to use. There were copies available in the back of all of these.

HEARING OFFICER FEINEN: Well, let's get through her testimony and have her use all the stuff and then we'll actually move into evidence the exhibit at that time.

MS. SAWYER: Right. At this point we're ready to proceed with the testimony of Sarah Dunham.

HEARING OFFICER FEINEN: Can we hold on a second.

(Discussion off the record.)

HEARING OFFICER FEINEN: During the testimony you might want to hang on to these, Sarah, if you want to refer to the beginning of the slides and say these have been marked as exhibits.

MS. SAWYER: We do have a copy marked as each exhibit.

HEARING OFFICER FEINEN: I'll try to throw that into the record to reference which slide she's talking about as she goes along. I guess we would have the witness sworn.

(Witness sworn.)

MS. DUNHAM: To start, I'm a policy analyst in the environmental policy office for the Illinois EPA. I have a bachelor's of science in environmental biology from Yale University and a master of public policy from Harvard University.

I think this morning I'm just going to walk through how the agency approached its economic analysis. There's, I think, some confusion so I just wanted to clarify exactly the

approach we took. We started out by looking at sort of command and control basis and what if we took the command and control approach, how much that would cost the sources in the Chicago region.

The first one we looked at, this one Gary Beckstead talked about this a little bit in his office, which is application of the California VSE command and control rules to sources in the Chicago area.

MS. SAWYER: This is Exhibit 49.

MS. DUNHAM: Gary found that 155 facilities in the Chicago area would be subject to these requirements. 51 of o them are subject to the ERMS requirements. 6.82 tons per day in reductions, 776 tons per season with a total cost of somewhere between $11.6 million and $16.9 million, but $4.3 million of that total would be incurred by the ERMS sources.

Then we wanted to look at a couple of other command and control options that would achieve the same level of reductions that we're trying to get out of the ERMS program. The first is we looked at just those sources that are

targeted to be participants in the ERMS program and applied the 12 percent reduction to each of them without allowing trading.

The second one we took -- looked at what would happen if we only targeted some of the largest sources to achieve the same level of reduction, and we found that we could achieve this level of reduction that we needed from applying most stringent levels of control to only eight sources in the Chicago region.

And the third approach we looked at was taking those 59 sources that emit over 50 tons per season and looking only at the sources that could achieve most stringent levels of control most cost effectively, how many sources would we need to install those controls and still achieve the level of reduction we needed for the program.

MS. SAWYER: That's Exhibit 50. ?

MS. DUNHAM: The next overhead I'm using is just a summary, Exhibit 51, of some of the costs that we found using those three command and control approaches. We found that direct pollution abatement cost of $7.2 million from just using the 12 percent reduction across the board

without allowing trading. Just looking at the eight sources with the largest potential to reduce cost $15.7 million, and looking at the 12 sources you could reduce most cost effectively with most stringent levels of control would cost $12.6 million.

Using that as a starting point, we then wanted to look at where would there be potential for cost savings through trading? There's basically two ways in which facilities can gain from trading. This is Exhibit 52. The first one is facilities with high cost of control may avoid installation of expensive control equipment by purchasing ATUs. The second is that facilities with low costs of controlling emissions can sell surplus ATUs.

Then in order to get a better idea of exactly where those gains from trading might happen, we looked at 12 specific facility examples to figure out whether there really were opportunities for real sources in the Chicago area to benefit through trading. I'm just going to go through two of these examples to show you the approach we took.

The first one is a rubber and plastics facility that we looked at. It's seasonal emissions are 30.2 tons. They are in compliance with applicable RACT regulations, and to meet the 12 percent reduction requirement, they would need to install a thermal oxidizer at a cost of $279,300, or they could purchase 3.6 tons of ATUs from the market at a price of somewhere between zero and $10,000. The potential cost savings then range from $243,300 to $279,300.

MS. SAWYER: This is Exhibit 53.

MS. DUNHAM: The second example I just want to walk through in Exhibit 54, and that's an organic chemical manufacturer with ozone season emissions of 108 tons. They're currently operating at a control efficiency of 98 percent, and to meet the 12 percent reduction requirement, they can further increase their control efficiency to 99.5 percent at a cost per ton of $430.

Source would reduce emissions by 81 tons as a result of increasing its control efficiency at a total cost of $34,830, and then they can sell the surplus 68 tons to offset some of those costs. For the 12 individual facilities

we looked at, we found that about half of them fell into the first category of sources with high control costs, and the other half fell into the low category of low control costs.

This is just a sort of summary table up here. This is Exhibit 55, which walks through the facilities with high control costs, and you can see that as a result of a trading program or having trading as a compliance option for each of these facilities, the overall community of sources would save money -- save about $1.9 million. That's just from these six facilities.

On the other end, there's the group 2, facilities with low control costs. You can see that their cost per ton numbers range from zero dollars in example No. 9 up to $1,620.

MS. SAWYER: This is Exhibit 56.

MS. DUNHAM: So we did find that there were , of the facilities we looked at, about half had high control costs and could benefit through not installing expensive control equipment, and the other half did have options to reduce emissions at low control costs. And then finally

we wanted to run a trading simulation just to get some idea based on the information we had of what a possible market price might be.

This is just a simulation because we don't have specific information for all the facilities in the area as we do for those 12 facilities, but we used average aggregate control costs by SIC to simulate a trading scenario. And we found that average control costs per ton is $2850. Total pollution abatement cost was $3.2 million per year, which is about half that of the scenario we ran without trading.

MS. SAWYER: This is Exhibit 57. Is that it?

MS. DUNHAM: So just to summarize, the agency looked first at command and control basis, how much that would cost the sources in the Chicago area. Then we looked at whether there was a potential for trading and a potential for cost savings for trading in the area, and then we ran a trading simulation to estimate a possible market price.

HEARING OFFICER FEINEN: Can we go off the record for a second.

(Discussion off the record.)

MS. SAWYER: At this point the agency would like to move to have Exhibits 48 through 57 entered.

HEARING OFFICER FEINEN: What's been marked as Exhibit 48 is the prefiled testimony of Sarah Dunham that's been dated January 2nd, 1997. I'm assuming it's an accurate copy so forth and so on. If there's no objections, we'll move that into the record. Seeing none, that will be moved in as Exhibit No. 48.

(Document received in evidence.)

HEARING OFFICER FEINEN: What's been marked as Exhibit 49 was the application of California standards which was used in her testimony today, the slide. If there's no objections -- why don't I just go through all of them. Exhibit 49 is application of California standards, which was the first slide. Exhibit No. 50 was the alternative control approaches, which spelled out the three alternatives and has been marked as Exhibit 50.

Exhibit 51 is regional economic

impacts of alternative control approaches for the three alternatives. Exhibit No. 52 is two ways in which facilities may gain from trading. Exhibit No. 53 is the example of the rubber and plastic facility. Exhibit No. 54 is the example of organic chemical manufacturer. Exhibit No. 55 is group 1, facilities with high control costs. Exhibit No. 56 is group 2, facilities with low control costs, and Exhibit No. 57 is the regional economic impact of trading simulation.

If there's no objections to moving those into the record as exhibits, I'll do so. Seeing none, those will be moved into the record as Exhibits 49 through 57.

(Documents received in evidence.)

HEARING OFFICER FEINEN: Who do you want to call as a next witness?

MS. SAWYER: I'd like to thank Ms. Dunham for testimony, and at this point I would like to call Dr. Case. We're ready to have Dr. Cale Case sworn in as a witness.

HEARING OFFICER FEINEN: Would you swear the witness in, please.

(Witness sworn.)

MR. CASE: Good morning. My name is Cale Case, and I'm the president of my own consulting company, Case & Company. I have a doctorate in economics from the University of Wyoming. Actually the doctorate is in resource and environmental economics, and I received that in 1986. I have a fairly long history of being associated with trading programs in general and in fact this trading program.

I believe it was in May of 1992 that we released a pre-feasibility study of trading and the potential benefits of trading for the Chicago metropolitan region, and I was the principal author of that feasibility study under contract to the agency. I've also served on the design team that the agency established to initially evaluate the applicability of trading to NOx, and of course with the release of the Lake Michigan ozone study that showed that would be counterproductive, we switched to investigating trading for VOMs.

My profession, I basically specialize in utility or energy and environmental

economics. I've authored many papers in the area. I've taught college courses in the area. I'm a member of the American Economics Association, the International Association of Energy Economists. I'm very excited to be able to testify to you today because I've spent so much time on this project, I guess, and it's kind of wonderful to see the development of a concept that's really been heralded in the economics literature for almost three decades now, but to see it develop and move forward to implementation is very exciting.

The purpose of my testimony today is to show you that the IEPA's program is well grounded in economic theory, and it's supported by the very successful experience that we've had with emissions trading in this country to date. I'd also like to address some of the economic foundations of the program and review at a fairly high level the economic analysis that the agency did to support the program.

Before I really get started, though, I'd like to talk a little bit about the analytical framework that we're discussing here,

and it's very easy in this process to get into an apples and oranges type of comparison, and I think we should make a note that the economic evaluation that we've used traditionally for command and control type regulations doesn't fit very well in the new environment.

You know, traditionally we've evaluated command and control by focusing on compliance costs with the specific technology applied to a specific firm under specific production levels, for example. Now, we're trying to evaluate a market system and all of the accompanying dynamics, and really our principal focus is no longer technology based. It's more based upon evaluating the viability of the market. Does the program achieve its goals, and do we get indeed an overall reduction in pollution? It's really a very different type of analysis you would apply to the very static application of a specific technology of a specific type or a specific firm.

In regards to the economic justification for trading programs, it's important to note that trading programs have several

attributes that make them very well suited for addressing pollution problems. Trading is an innovative and a very resilient program. As an alternative to command and control regulation, it provides firms with the opportunity to benefit over the, say, level of expenses that they would have under command and control.

It doesn't guarantee that firms are going to do better off, but it gives them the opportunity to be better off, and in its application, if you're comparing trading with command and control alternative to reach the same level of control of pollution, no firm in that process would be worse off under trading than they would be under command and control. I think that's a very important conclusion.

Trading works because it harnesses the fact that firms are different and that firms have different costs of control, and trading provides a way for these costs of control to be equalized in the market or, in other words, where people who can control pollution very cheaply can do so, and firms where it's very expensive to control pollution can actually pay other firms to

achieve their reductions for them.

One thing that's important about trading is that it encourages firms to go farther than they have to to meet specific legal requirements. What trading does is if a firm can control pollution more cheaply than the market price for ATUs under this program, they will do so even if they exceed their requirements that would be applicable under a command and control framework. Trading is not totally new anymore. We actually have a considerable history of applying trading programs in the United States.

We have programs, of course, in California with respect to NOx. We have national programs with respect to SO2 and NOx as well. Under the Montreal protocol, we have a very successful program that worked with chlorofluorocarbons. We have had other types of trading programs such as new source review which had been effective for many years. Other forms of trading as it bubbles, netting and offsets all have been sort of the precursors to the formalized trading programs that we have now.

So by taking the step we are taking

here in Chicago, we are building on a very successful record of development of these programs, and it's not suddenly adopting something very brand new. Theoretically, trading is extremely well documented in the economics literature. In general the program is strongly supported by the economics profession. There's been literally hundreds of papers in the area.

There's been frequent situations including recently on carbon dioxide where the professional economists have recommended that trading be used as opposed to other command and control based policy alternatives. It's very well supported and strongly so. It's clear that emissions trading offers substantial benefits over command and control because it provides the opportunity to achieve pollution goals in a manner that costs society less.

These costs are reflected in lower costs for meeting environmental regulation, fewer job losses, better prices for consumers, greater viability of our business community. All these are achievable and improvements that are achieved under trading programs over command and control

alternatives, and it's important to note that we can expect the same results to happen in the Chicago area. We can expect the same positive outcomes.

Now, I've reviewed the economic analysis conducted by the Illinois Environmental Protection Agency. I've concluded that the analysis supports what we would expect from the theory. For example, I think it's quite clear that the individual source analysis that the agency did does provide a good picture of what we can expect from these sources, and I think, you know, the theory is confirmed by the analysis that the agency did.

I think clearly on the individual source analysis that was done that we can conclude that there are significant benefits to these firms from participating in a market-based program as proposed. The EPA's analysis clearly indicates that there are gains from trade. That is, these firms are different enough that they can benefit by interacting with each other to take advantage of these differences in control costs, and they can trade to a point where they can achieve

emissions reductions at a much lower cost to the Chicago economy.

I concur with the EPA's analysis -- the IEPA's analysis regarding the fact the trading would be beneficial to the Chicago economy in the region. Clearly the analysis shows that trading yields significant benefits to the Chicago region over the alternatives of command and control. I don't think these benefits are limited to the Chicago region either. They extend to the entire State of Illinois. It's important, though, that we put things in perspective a little bit and go back to the fact we talked about earlier about you have to be careful about apples and oranges in looking at these programs because one thing that the EPA's analysis doesn't do and cannot do is to capture the dynamic aspects, the stimulation that's going to occur by allowing these firms who know their processes better than anybody else, better than a regulator ever could.

If we allow the people within the firms to begin to make some of the decisions, there's going to be innovations, and that can't be captured in a static analysis, but clearly that

will occur, and that's one thing that means that, you know, at least in that area, the benefits of going to trading can be even larger than indicated so far. The EPA has taken measures to ensure the viability of the market. They've tried to develop and I think accomplish the development of a program that encourages flexibility and innovation, that very specifically yields to the firm, that entity that knows its costs of production and understands its process better than anyone else, yielded to that entity the freedom to choose the abatement technology that best meets their needs.

A couple of examples of flexibility embodied in the program are the fact that the transactions can occur without extensive approval by the regulator, specifically no pre-approval is needed. The program includes banking which has I think significant benefits because banking can build confidence in the trading program. Banking can yield a method to prevent wide variations in prices for ATU over time.

Banking provides sources with some degree of flexibility because they're going to be

trying things that are new. They're going to be trying some things that won't work. Banking provides the flexibility to that firm to be able to be innovative. If something doesn't work, banking can provide a way to get through that time, and as a consequence, we'll do better because we're going to experiment, and we're going to be innovative. Also, the fact that the agency has proposed an alternative compliance market account I think is significant.

This account will serve to support the viability of the market. It's a back stop. It may not be used very heavily, but it does improve market viability and I think builds confidence in the program. Also from the EPA's economic analysis, we can be confident that there is a very wide range of types of firms out there with large differences in costs, and the capability of trading with each other is very significant, and I think for all these reasons we can predict that the program as designed will be quite successful.

The agency has also been careful to consider the impacts to small businesses. This

is, I think, very important. I believe that the trading program will indeed provide benefits to small businesses and that the steps that have been taken in the design of the program are good ones. One step, for example, is the fact that if you have emissions of less than 15 tons per season, you would be able to opt out of the program. The other is, of course, the fact that there's a built-in cap on the amount of expenditures that a small business would be required to spend for compliance.

One thing that we also have to note is that the same factors that make emissions trading a good idea for big business works for small businesses. Small businesses are very resourceful, and they can take advantage of these cost differentials as well as anybody else. Another thing that is conceivable is that to the extent there are economies of scale and certain types of pollution control, that small businesses will be able to participate in those scale economies by purchasing ATUs from larger firms who have invested in the technology that enjoys the scale economies.

So it's a way to kind of transfer some of those scale economies to the smaller firms. In conclusion there's a few points I'd like to make. The first one is it's really not appropriate to compare trading with the status quo level of emissions control. That's not very realistic. We really have to compare trading with what will be required, what new and stricter level of emission regulations will be required. So a lot of people, I think, tend to look at trading and say, oh, look at this trading program that the IEPA has, look how it's going to affect us, and then they make a decision about the program based upon that.

The real question, I think, is if it wasn't for that trading program, what program would we face and how would that affect us? And that's the comparison to make. Another point is the trading is very resilient. It's going to work with a wide range of prices. It's going to be self adjusting, and most importantly, it's going to harness those differences in control costs between firms and between industries that will ensure that we achieve our overall environmental

goals at the lowest possible cost to our economy.

Trading places the decision-making power into the hands of those that have the very best information, the very best information, more than a regulator can ever have, and it permits flexibility and innovation among the emitters, and through its workings, it provides a way for those people that are flexible and innovative and come up with new ways of doing things, it provides a vehicle for them to benefit from that which is something we haven't had in our past programs.

Trading will encourage firms to control to stricter levels than command and control if it makes economic sense to do so, and I think really the final and perhaps most important conclusion is that the trading program is going to yield broad benefits to Chicago. Clearly the wide variety of trading partners in the area and the careful development of this program will work to ensure its success. Thank you.

MS. SAWYER: Thank you, Dr. Case. That concludes the agency's presentation of testimony. At this time we would call up some other agency witnesses who have already testified to begin the

questions.

HEARING OFFICER FEINEN: Off the record for a second.

(Discussion off the record.)

MS. SAWYER: I've marked the prefiled written testimony of Dr. Cale Case as Exhibit 55 -- or 58. At this point I would like to move to have the exhibit entered.

HEARING OFFICER FEINEN: What's been marked as Exhibit No. 58 is the testimony of Dr. Case which I believe was prefiled on February 3rd with the board.

MS. SAWYER: Uh-huh.

HEARING OFFICER FEINEN: If there's no objections in moving that into the record, I will do so. Seeing none, that will be moved as Exhibit No. 58, the testimony of Cale Case.

(Document received in evidence.)

HEARING OFFICER FEINEN: Let's go off the record.

(Discussion off the record.)

HEARING OFFICER FEINEN: Let's go back on the record, and Mr. Saines will start asking

those questions.

MR. SAINES: Thank you. Rick Saines for the ERMS coalition. Good morning. These questions are from our original prefiled questions starting on page 25, specifically pertaining to the testimony of Sarah Dunham. Question 1, regarding the chart on page 3 of the testimony, what are, "seasonal emission reductions," for each example?

MS. DUNHAM: The term seasonal emission reductions refers to the level of reduction that can be achieved by each source during the ozone season so is your question to walk through what that exact level of reduction is for each example?

MR. SAINES: Yes.

MS. DUNHAM: Okay. So I'm going to answer it dealing with trading as an option what they would actually reduce.

MR. SAINES: Okay.

MS. DUNHAM: For example A, they wouldn't reduce at all. Example B, that's the same. Example C and example D, both sources would not reduce. Example E, they would reduce by 27

tons. Example F, reduced by 165 tons. Example G, they reduce 200 tons during the season.

HEARING OFFICER FEINEN: When you are saying examples A through G, you are also referring to examples 1 through 7 which are on the table of your testimony?

MS. DUNHAM: No actually.

HEARING OFFICER FEINEN: No. So that doesn't correspond?

MS. DUNHAM: No, the numbers and letters don't correspond. I could go through.

HEARING OFFICER FEINEN: Could you go through and explain what example 1's seasonal emission reduction would come up with trading is since that's what your example is talking about.

MR. SAINES: Yeah. The page numbers aren't numbered in the testimony itself, but it's the third page of your prefiled testimony there's a chart that says summary of individual source analysis.

MS. DUNHAM: Right, I think that's what I just went through.

MR. SAINES: Example 1 through 7.

MS. DUNHAM: Oh, I see, okay. Yeah,

it's part of the prefiled testimony. It does match up.

HEARING OFFICER FEINEN: So A is example 1?

MS. DUNHAM: Yes.

HEARING OFFICER FEINEN: Example B is example 2 and so forth and so on.

MS. DUNHAM: For the prefiled testimony, yes.

MR. SAINES: Would you please run through that again, I'm sorry, corresponding to the chart.

MS. DUNHAM: 1 through 4, they wouldn't reduce at all. 5 is 27 tons. 6 is 165 tons, and 7 is 200 tons.

MR. SAINES: 200?

MS. DUNHAM: 200.

HEARING OFFICER FEINEN: And that is seasonal emission reductions using ERMS, is that correct?

MS. DUNHAM: Yes, yes, with trading as a compliance option.

MR. SAINES: Pertaining to the same chart on the same page of the prefiled testimony,

question No. 2, with respect to each type of facility, how many sources are in each example?

MS. DUNHAM: It's just one source. Each example corresponds to one source.

MR. SAINES: So the example is one source from that type?

MS. DUNHAM: Yes.

MR. SAINES: Question No. 3, what does "profit of" mean.

MS. DUNHAM: It just means beyond what the control equipment or control methodology would have achieved or would have cost. So if the control costs $34,000 and they can sell their ATUs for $100,000, then the profit refers to the difference between those two.

MR. SAINES: And it's not a specific number because it's unattainable at this time because we don't know what the ATU price would be?

MS. DUNHAM: Right.

MR. SAINES: Okay. Question No. 4, on page 5 of the testimony, what does a, "representative set of affected sources," mean?

MS. DUNHAM: It just means that the way

we did the analysis, we took the 1994 annual emission reports and identified the sources from that list who we thought would be ERMS participating sources. But it doesn't -- it's not necessarily the final list since we didn't go through '95 and '96 which reports we haven't gone through exactly which are going to be in the program, but if should be fairly representative if not exactly identical to the set of ERMS participating sources.

MR. SAINES: Just a quick follow-up. In selecting the sources, did the agency make it a point to use sources that had varying seasonal emissions over and above -- once they were potentially affected, to get the representative group, were there smaller sources, larger sources?

MS. DUNHAM: It's basically every source that we thought that would be subject to the ERMS provisions based on 1994 annual emission reports.

MR. SAINES: So it would be all the sources that are potentially affected?

MS. DUNHAM: Yeah, yeah.

MR. SAINES: Based on the 1994 data?

MS. DUNHAM: Right.

MR. SAINES: Question No. 5, what is a, "compliance decision model"?

MS. DUNHAM: The model that we applied to those 212 facilities to predict whether they would choose to trade or choose to reduce emissions or choose to not participate in the market at all.

MR. SAINES: Question 5A, where is such model discussed in the regulations?

MS. DUNHAM: It's not.

MR. SAINES: Question 5B, where is such model discussed in the technical support document?

MS. DUNHAM: Pages 127 to 132 go through the model that we used. It doesn't use that term.

MR. SAINES: Question No. 6, is it possible that the agency's, "estimated market price for ATUs," will not be accurate?

MS. DUNHAM: It's entirely possible that it won't be exactly the same number as what actually happens. It was merely a trading simulation that we used based on the information that we had available to predict what might be a

market price, but there's a lot of factors that we can't necessarily predict that would go into determining what the actual market price would be.

MR. SAINES: Could you elaborate on a couple of those factors you just mentioned?

MS. DUNHAM: The model assumes that the costs are based on add-on control equipment. I think there's -- as the individual facility examples showed, there's lots of opportunity there for voluntary reductions or process changes or control efficiency increases that would maybe provide lower cost control.

There's also we made lots of assumptions on who would trade and who wouldn't. There may be a lot of facilities that really just choose to reduce their emissions and not participate in the market, and we can't necessarily predict that, but that would definitely influence the market price.

MR. SAINES: How would you say that would influence the market price?

MS. DUNHAM: I think it could go either way.

MR. SAINES: Question No. 7, it's a

follow-up to question No. 6 which the answer to that is yes, so, if so, what is the cost per ATU that would make the ERMS rules no longer, "as cost effective as traditional regulatory control requirements"?

MR. CASE: If it's --

MS. SAWYER: Can we have Dr. Case answer this question.

MR. SAINES: Sure.

MR. CASE: There really isn't a price that will make trading less effective than command and control as long as we're sure that we're talking an apples and apples comparison. Trading to achieve the same level of reduction will work for a wide variety of prices and be a more resilient effective, cheaper policy of choice than command and control. There is no price where it's too high that command and control would be better.

MR. SAINES: If I can just ask a follow-up to that. I'm not sure I understand that. The agency identified only three alternatives, command and control alternatives to the ERMS trading program, two of which involves regulating the eight largest emitters with

greatest reduction potential, that was alternative 2, and the alternative 3 was identifying the 12 largest emitters that it would be most cost effective to reduce.

Both of those alternatives resulted in a number, a cost per ton figure that would be the cost as a command and control number, and again I don't necessarily understand the answer because it wouldn't -- if the ERMS program -- if the ATU price was greater than the cost per ton that was calculated based on the command and control alternatives, wouldn't that make the cost of the ERMS program greater than the command and control program.

MR. CASE: The problem I think that we're having here is that the market price that's derived has to do with the cost of control, specifically the equilibrium cost of control that firms have. So if we have a policy alternative under command and control where we require A, B, C, D levels of technology fixes on firms, we know that the regulator doesn't have the information that the firms have.

We know that the regulator in

choosing to implement those types of regulations doesn't optimize and doesn't have the information to be able to optimize and equalize control costs across all firms. Only the market can do that because markets encourage people to basically sell -- share information by offering for sale, you know, emissions credits. So in every instance, trading will be a better and have better prices and be cheaper than command and control.

There is no -- as long as you prescribe the particular command and control technology such as the EPA did in their report, there is no way a market price would be derived that's higher and would not be more efficient than the command and control alternative.

MR. SAINES: So you're saying there's no way that the ATU price under this program can exceed $10,828 per ton? There's no way that the market --

MR. CASE: I'm not sure that I'm specifying any particular number. I can't tell you off the top of my head where the $10,000 comes from. What I'm saying is that trading will be a more efficient mechanism than command and control

under all alternatives because suddenly it allows firms to trade with each other to equalize marginal control costs.

MR. SAINES: Okay. Question No. 8.

MS. SAWYER: Just quickly, we would like to have Mr. Beckstead answer question 8 through 11 just so you know.

MR. SAINES: Okay. No problem. Question No. 8, on page 6 of the testimony, why did the agency assume that any program other than the ERMS program for meeting ROP requirements would be a, "direct extension of the 15 percent ROP plan"?

MR. BECKSTEAD: In formulating the 15 percent ROP plan, the agency followed a rigorous procedure of evaluating all the various emission categories in search of potential VOM reductions. This procedure involved comparing the present Chicago non-attainment control measures with control measures other regions were adopting with future control measures mandated by USEPA such as NESHAPs and with any control measure that appeared to be technically feasible and economically reasonable.

This same procedure was also followed or "extended," if you will, in attempting to formulate a command and control scenario that would obtain the reductions needed to meet the 1999 ROP target levels. Thus, the approach used in compiling the 15 percent ROP plan was relied on and extrapolated further to the next level of control stringency in determining how any command and control scenario might meet the 1999 ROP requirements.

MR. SAINES: Question No. 9, what does, "direct extension," mean, further reductions from currently identified sources or reductions from additional sources not yet identified?

MR. BECKSTEAD: Direct extension refers to any possible scenario that might yield reductions from either currently identified or not yet identified sources.

HEARING OFFICER FEINEN: Where is that direct extension language? Is that still on page 6?

MR. BECKSTEAD: It all occurs on page 6.

MR. SAINES: It is on page 6, the first full paragraph.

Question No. 10, aren't there alternatives other than applying a, "direct extension of the 15 percent ROP plan," that would perhaps be less costly?

MR. BECKSTEAD: The agency is not aware of any other alternatives that are not direct extensions of the 15 percent ROP plan.

MR. SAINES: Question No. 11, what does the agency mean in the first paragraph on page 7 of the testimony?

MR. BECKSTEAD: The first paragraph of page 7 of Sarah Dunham's testimony describes the comparison of annual versus seasonal control cost estimates and the factors that influence the calculations. I further expound on these factors in my testimony. I refer you to Section 2.2, page 5 of my testimony and in particular table 1, annual versus seasonal costs for add-on controls, page 6.

Using USEPA methodology as presented in their cost control manual, the basic fact is demonstrated that control costs per ton is lower if the control equipment is used year-round rather than seasonally. This is a result of the

lower emission reductions during the ozone season and the fact that amortization of capital occurs year-round whether the equipment is used or not. Using control costs calculated on an annual basis, which is the methodology employed in the TSD, presents a more conservative comparison to ERMS.

Seasonal cost comparisons would demonstrate the advantages of ERMS to an even greater extent.

MR. SAINES: Question No. 12, on page 8 of the testimony, what is the difference between compliance option 1 and compliance option 2?

MS. DUNHAM: I'll answer that. One involves participating in the market and the other does not.

MR. SAINES: Question 12A, don't both merely involve the reductions of emissions at a facility?

MS. DUNHAM: Sure.

MR. SAINES: Question No. B, isn't the second compliance option merely a way to offset some of the costs of reducing emissions?

MS. DUNHAM: Yes, or more than offset.

MR. SAINES: Could you explain that last

answer, more than offset.

MS. DUNHAM: Well, if they have a -- they increase their control efficiency at $430 a ton, they can sell the tons at $3,000 a ton, they're going to make more than they cost.

MR. SAINES: Question 13, on page 10 of the testimony, upon what "environmental goal" is the agency basing its compliance decision model?

MS. DUNHAM: It's the 12 percent reduction. We used 1433 tons of seasonal reductions.

MR. SAINES: Question No. 14, upon whose "general economic theory" is the agency basing its compliance decision model?

MS. DUNHAM: That was probably a term I shouldn't have used, but it's really just sort of the area of emissions trading that's been the focus of hundreds of papers and lots of research. So the general body of literature that discusses emissions trading is what we relied on.

MR. CASE: I think it's pretty well supported.

MR. SAINES: Question No. 15, upon whose "specific knowledge" of what "source situations"

is the agency basing its compliance decision model?

MS. DUNHAM: Agency staff, both from air permit section and air planning section.

MR. SAINES: Question 16, upon whose "ideas of economies of scale" is the agency basing its compliance decision model?

MS. DUNHAM: That applies somewhat to the earlier question. That's one of the assumptions that goes into it. We basically in certain situations assume that larger sources may be able to reduce greater amounts more cost effectively than only reducing a smaller amount.

MR. SAINES: Question 17, isn't it true that the agency concedes that, "several additional assumptions may not accurately reflect true operating conditions for affected facilities" and that "sufficient information was not available to assume otherwise"?

MS. DUNHAM: Sure, yeah.

HEARING OFFICER FEINEN: I'm going to ask a couple of questions. Several additional assumptions -- I mean, you're quoting this from the agency's testimony here?

MR. SAINES: That's correct.

HEARING OFFICER FEINEN: And that's in the paragraph right above further assumptions. Can I have an example where I can find what those additional assumptions may be.

MR. SAINES: I'm trying to find it myself.

MS. DUNHAM: You're asking me?

HEARING OFFICER FEINEN: Yes, you --

MS. DUNHAM: These questions weren't on the original. Can we take a couple of minutes.

MS. SAWYER: Can we have a couple of minutes.

HEARING OFFICER FEINEN: Sure. In fact, why don't we just take a break for 10 minutes, 15 -- let's take a 15-minute break.

(Recess taken.)

HEARING OFFICER FEINEN: Note that Chairman Manning has joined us. Let's go back on the record.

We're waiting for a response to the follow-up question to question No. 17 of the prefiled which came from me about several additional assumptions. I asked for examples of

those assumptions.

MS. DUNHAM: Those assumptions are listed in my testimony. I'll just read through them here. The first one is that annualized capital costs begin with the 1999 season in our model, and it's more likely that many facilities will begin to control emissions prior to the 1999 season, and those incur control costs at an earlier date. This assumption, therefore, may cause the model to under predict the ERMS costs.

Another assumption we used was that we used only single estimates for facility costs, the costs of industrial category, and that might serve to under predict the total economic impact, mostly because that cost comes from add-on control equipment. So it might not reflect more cost effective reductions that sources in that category could achieve.

The third one is that additional facilities are likely to achieve voluntary reductions, and by not considering all those voluntary reductions, the analysis might have overestimated control costs. And then the fourth one is that many sources may choose to use

reductions achieved from intersector reductions or from emission reduction generators, and those reductions are not accounted for in the analysis, and therefore, compliance costs may be overestimated in the model.

HEARING OFFICER FEINEN: So when you mentioned several addition assumptions, the category of further assumptions was that?

MS. DUNHAM: Yes.

HEARING OFFICER FEINEN: Thank you. Mr. Saines.

MR. SAINES: Thank you. Question 18, on page 14 of the testimony it is stated that the REMI model predicts "impacts on jobs." Where is the data on the "impacts on jobs" in the economic analysis?

MS. DUNHAM: It's in appendix F of the technical support document which presents all of the summary from the REMI model.

MR. SAINES: If I could ask a follow-up to question 18 because not being an economist nor a computer expert, I looked at appendix F, and I simply cannot comprehend it.

MS. DUNHAM: Okay, do you want me to

just tell you?

MR. SAINES: If you could provide an overview what it basically does and says, that would be very helpful.

MS. DUNHAM: Sure. As far as the job impacts?

MR. SAINES: Yeah. I mean, where the specific numbers relevant to the job impacts are in the model and what they mean.

MS. DUNHAM: I can't tell you what page it is right now, although I can certainly come back to you with that, but it talks about employment decreases. There should be a table in the output. I'll just let you know that under the ERMS analysis that we ran, the model predicted there would be a decrease in 27 jobs. Under alternative No. 1, there's a decrease of 44 jobs. Under alternative No. 2, there's a decrease of 54 jobs, and alternative No. 3 was 48.

MR. SAINES: When you say decrease in those numbers of jobs, is that individual persons losing their job, or is that operations shutting down?

MS. DUNHAM: The model can't predict or

can't tie it to a specific cause. All it does is it predicts a forecast or a base case for the Chicago area, and then when you enter the effect of the policy, in this case the ERMS program, it gives you what the changes from that original base case or what would happen without the ERMS program.

In this situation under the ERMS analysis that we ran, the model predicted that there would be 27 fewer jobs under the ERMS scenario than there would be under the base case, but then you have to compare that number to the alternative command and control scenarios which were in all of the cases twice as much.

MR. SAINES: Forgive me if I'm not understanding you, but when you say 27 fewer jobs, are you saying that there are 27 people in the Chicagoland area that are no longer employed, or are you saying that there are 27 fewer types of jobs like, I don't know, technician at a particular plastics coating facility or something like that? I don't understand what jobs means.

MS. DUNHAM: It's the latter. Well, yeah, I mean, it refers to a specific job, one.

So 27 fewer people will be employed.

MR. SAINES: So it's the former.

MR. CASE: I think it's fairly important that when we evaluate -- once again we got to compare apples and apples because when they're talking about job losses to the computer trading program, that's not the story here. The fact is the trading program saves jobs because any other form of command and control regulation that would be required to achieve the same level of reductions is going to cost more jobs. That's really the important aspect.

MR. SAINES: I don't mean to ask non-prefiled questions, but I have another additional follow-up, if that's okay.

With respect to the job loss that the REMI model calculated, it calculated job losses from alternatives 1, 2 and 3, is that correct? And so in other words, the eight largest emitters reducing those through command and control, the REMI model predicted that there were 44 --

MS. DUNHAM: 54.

MR. SAINES: -- 54 jobs lost, and then

alternative No. 3, which was regulating the 12 sources that it would be most cost effective, the REMI model did its magic and then came out with a number that was -- what was the number again?

MS. DUNHAM: 48.

MR. SAINES: 48. So those are 48 individual jobs lost in the Chicagoland area based on those alternatives?

MS. DUNHAM: Yeah, again it's the Chicago region. It's not just from those specific facilities necessarily.

MR. SAINES: Okay. Question 19, on page 16 of the testimony, how does the agency define "small business"?

MS. DUNHAM: We didn't really for this analysis.

MR. SAINES: Question 19A, couldn't a business that has 50 tons of VOMs per season but that has only $60,000 per year in profits and only 10 employees be considered a "small business"?

MS. DUNHAM: Sure.

MR. SAINES: So when you refer to the additional safeguards that the ERMS program has implemented for small businesses, are those

safeguards applicable to the example that I just gave of a source that has 50 tons?

Specifically I'm referring to the 10-ton source being excluded from the program, the source can opt to limit its emissions to 15 tons and be exempt from the rules, and then I believe Dr. Case noted that there's a cap on the amount the small source would have to pay to refuse, and I believe that would be the ACMA, is that what you meant by that?

MR. CASE: (Nodding head.)

MR. SAINES: I don't see how those -- how are those safeguards applicable to a 50-ton source?

MS. DUNHAM: I agree with the first couple probably may not be, but ACMA is still available for that source. We still streamline the whole transactions process. They still have brokers available to them if they don't want to have someone in house to handle all of the transactions. So I think there's still a lot of the provisions in the rule that would make it easier for the source, even though you're right, that the 10-ton threshold would not apply.

HEARING OFFICER FEINEN: Before we move on, I'd like to note try to speak up and answer a little bit slowly. It's kind of hard for me to hear.

I have a follow-up question for the agency dealing with small businesses. You stated in your testimony that several provisions were included in the rule to assure that it did not have adverse impact on small businesses. I believe you answered Mr. Saines' question that you didn't define small businesses. I'm wondering how you define small businesses when you make that statement? I think -- do you understand my question? The question is you have to make a definition of small business to make that statement. So I'm wondering what that definition was.

MS. DUNHAM: I think what I was getting at is we didn't run an analysis specifically for a group of sources that we had defined as small businesses. What we did was put provisions into the rule to ensure that for small businesses, it wouldn't adversely impact them.

HEARING OFFICER FEINEN: So the

provisions in the rules are designed to help businesses not be impacted by the rule, and those provisions are designed or directed towards what were this undefined term as small business, is that correct?

MS. DUNHAM: Right. I think maybe what you're getting at is that we didn't run a specific analysis for a group of sources that we defined small businesses.

HEARING OFFICER FEINEN: Is there any more follow-up on that from the agency?

MS. DUNHAM: I think when we were talking about the provisions in the rule, they were targeted at small sources, not necessarily small businesses.

HEARING OFFICER FEINEN: Is there a question?

MS. ROSEN: Whitney Rosen from the Illinois Environmental Regulatory Group. Maybe to better clarify this, when you say small sources, maybe you can characterize that in terms of emissions or something so we can put it in perspective.

What do you mean by that in terms

of the emissions that a small source or a small business might have? Like is there a level of emissions that we could -- or are there a number of employees? How do you -- when you're using the term small business, can you give us an element that perhaps would better define it for us?

MS. DUNHAM: I think in terms of my testimony, it was aimed at the small -- the sources whose emissions are low.

MS. ROSEN: What do you mean by emissions are low? Is there a level that you can point to?

MR. NEWTON: Around the 15 ton a season level probably. So that the provisions could affect them, around 15 tons a season or in that area.

MS. ROSEN: Is there a greater -- like could you say from 15 tons to what outer limit?

MR. NEWTON: Probably 18 or 19 so that they could reduce enough to get below that 15-ton cutoff and be out of the program, if that's what they chose to do.

MS. ROSEN: Thank you.

MR. MATHUR: Let me add some

clarification. I'm Bharat Mathur with the agency. The Clean Air Act has defined the small business as one that does not need a Title V permit. So by keeping sources that do not require a Title V permit, I think the agency has already kept small businesses, as defined in the Clean Air Act out of this program.

Secondly, the provisions that Sarah referred to of allowing the small business or a business that could not otherwise be a small business but commits to maintaining its emissions at 15 is another level that the agency has provided the businesses on the borderline if they chose to out of this program.

MR. SAINES: Am I correct in stating that the third type of small business would be the small business that was identified by Ms. Dunham in response to my question 19A, I believe, or is that not an accurate definition of a small business?

MR. MATHUR: In a strict sense, your theoretical example, since I don't believe you identified exactly which business this is, a business that has 50 tons of emissions in the

season would not necessarily be a small business. It would not, under the Clean Air Act, be a small business. It would require a Title V permit.

On the other hand, if you wish to pursue that example, I'd like to know what small business puts out 50 tons of emissions and meets the other two parameters that you identified. From an air quality perspective, that's fast approaching a fairly large business.

MR. SAINES: Well, the point of the example is that irrespective of the ton emissions per season, there is also an element of the profit margin that the company experiences during the year, and the example is to show that while based on emissions, there may be, quote-unquote, more emissions than a small business would have, but based on profits, if small business is also taking into consideration the profit margin of the business, which is a question that I have, they may not necessarily be one and the same, and so therefore, the question was could a small business be a business with relatively large emissions but with a relatively small profit margin? That's the question.

MR. MATHUR: I think the agency is looking at a small business relative to emissions and relative to what program in the Clean Air Act it triggers.

MR. SAINES: Okay, thank you.

HEARING OFFICER FEINEN: I think we're going to move on then if there's no additional follow-up questions in that point to the February -- did I say February 6th filing of questions from the ERMS coalition?

MR. SAINES: Thank you. This is Exhibit 2 entitled the economic impact analysis.

Question A, how did the agency select the hypothetical command and control alternatives upon which it bases its economic impact analysis?

MS. DUNHAM: We selected three hypothetical scenarios that would achieve the same level of reduction as that required by the ERMS program. I think there's multiple ways we could have approached it, but we wanted to choose three that were fairly representative of the range that we would look at.

The first one, which just is the 12

percent reduction without trading, gives us a good basis to compare and estimate what the potential cost savings are from trading, and the other two look at just the pool of large emitters and helps us answer the question as how much would it cost if we did just look at those, that pool of sources.

MR. SAINES: I'll ask you one anyway. For clarification for the record, what are these three alternatives, and if you could just elaborate on alternatives 2 and 3.

MS. DUNHAM: Sure. The second one is applying the most stringent controls known to the fewest number of sources that would enable the agency to achieve its target emission reduction. The third one was applying the most stringent controls known to those sources with over 50 tons of emissions per season and increasing order of control costs until the target emission reduction has been achieved.

MR. SAINES: And the second alternative, how many sources did that ultimately result in?

MS. DUNHAM: Eight.

MR. SAINES: And the third one?

MS. DUNHAM: Twelve.

MR. SAINES: Are these alternatives different from the alternatives analyzed in the agency's technical feasibility study?

MR. BECKSTEAD: I'll address that question. As part of the technical feasibility study for ERMS, two control scenarios were evaluated. The first entailed imposing California standards on Chicago sources. It was determined that only 6.82 tons per day of the 12.64 tons per day of ozone emissions season reductions required by the 1999 ROP were available from this control scenario.

After establishing that this control option would not provide sufficient reductions, a second evaluation was undertaken to ascertain if in fact sufficient reductions to meet the 1999 ROP requirement were available from participating ERMS sources. This evaluation concentrated on the largest emitters, those with seasonal VOM emissions greater than 50 tons per season. This population of sources account for greater than 80 percent of the total emissions of all participating ERMS sources.

It was determined from this study that if the most stringent controls known to be available were applied to these larger sources, more than enough emission reductions would be available. From this study, 27.4 tons per day of emission reductions were identified. Thus, it was established in the technical feasibility studies as described in section 7.0 of the TSD that these two benchmarks bracketed the availability of emission reductions applying typical measures of Chicago area sources and that sufficient emission reductions are potentially available for the market to be viable.

In the analysis of the economic impact of ERMS, two hypothetical command and control alternatives were chosen based on the same population of larger sources. These alternatives were chosen because they represent the most logical choices for economic comparisons to ERMS. Due to the influence of economy of scale, they are expected optimums that command and control techniques would deliver from an economic impact perspective. The first is getting the reductions from the largest sources with the greatest

potential for reduction, and the second is getting the reductions from the largest sources considering cost effectiveness.

Further extension of command and control techniques cannot be expected to deliver better economic results than from these two hypothetical alternatives, and that is the reason they were chosen. As for the 12 percent across the board alternative wherein all ERMS sources with emissions greater than 10 tons per season are required to reduce 12 percent without trading, the required reduction to meet the 1999 ROP target are carried equally by all participants. Given that there are an infinite number of hypothetical alternatives that could be chosen, the agency chose three control scenarios that define the end points as well as an intermediate point for economic comparison to ERMS.

MR. SAINES: Thank you. At this point we'll withdraw question No. 3 as being asked and answered, at least answered, anyway. We'll withdraw question B and B1, asked and answered. Question B2 -- and I'll rephrase it since it I have to give it in context.

In alternative No. 2, you identified eight sources with the greatest emission reduction potential that would achieve compliance under command and control. Who are these eight sources?

MR. BECKSTEAD: The eight sources included in the second alternative are, 3M at Bedford Park, Sealed Air Products located in Hodgkins, Tenneco Packaging in Wheeling, Chicago Heights Steel in Chicago Heights, Edsel Manufacturing in Chicago, Coppers Industries in Stickney, OMC in Waukegan, Akzo Nobel Chemical in McCook.

MR. SAINES: Thank you. Question 3, what type of control would be required at the individual sources to meet the reductions necessary?

MR. ROMAINE: The agency's review targeted the process emission units at these sources as identified in the 1994 annual emission report with significant seasonal emissions for further control measures. In general if emission units were uncontrolled, it was assumed that a 98 percent efficient control device, usually an

afterburner, could be installed substantially reducing VOM emissions.

In addition other emission units with control devices with only moderate efficiency, say, in the range of 75, 80 or maybe 90 percent were identified as candidates for upgrade of the capture or control systems to reduce emissions to a fraction of previous levels.

MR. SAINES: Is it technically feasible to install the above-mentioned control at these sources?

MR. ROMAINE: Yes, it is. The agency evaluated the most stringent controls broadly looking at the source categories as well as very superficially looking at the individual sources. We certainly targeted afterburners on sources -- I mean process emission units where there were no controls, that is technically feasible, and we're certainly not aware of any technical obstacle to installation of better controls on process emission units that already have controls.

MR. SAINES: Question 5, who are the 12 sources identified in the third alternative at which it would be most cost effective to reduce

emissions and still achieve the ERMS reduction goals?

MR. BECKSTEAD: The 12 sources included in the third alternative are 3M, Bedford Park; Sealed Air Products, Hodgkins; Jefferson Smurfit, Carol Stream; Coppers Industries, Stickney; Akzo Nobel Chemical, McCook, Akzo Nobel Chemical, Morris; Clear-Lam Packaging, Elk Grove Village; American Decal, Chicago; Dow Chemical, Channahon; Alden Press, Elk Grove Village; Meyer Cord Company, Carol Stream; Shell Oil, Bedford Park.

MR. SAINES: What does "at which it would be most cost effective to reduce emissions" mean?

MS. DUNHAM: This phrase refers only to the pool of emitters whose emissions exceed 50 tons per season. This pool of sources is characterized by a range of control costs, and the sources at which it would be most cost effective to reduce emissions are those sources in this pool of large emitters whose control costs are lowest relative to the entire pool.

MR. SAINES: Relative to the entire pool?

MS. DUNHAM: Of large emitters.

MR. SAINES: Let me ask a follow-up to that. So it's not the cost relative to the amount of emissions reduced, it's the cost relative to the rest of the 50 or the group of 50-ton sources?

MS. DUNHAM: Each facility was assigned a cost per ton value essentially, and the sources with the lowest cost per ton value were selected.

MR. SAINES: So it's cost per ton?

MS. DUNHAM: Yeah.

MR. SAINES: Thank you. Question 7, what type of control would be required at the individual sources to achieve these reductions? And this pertains to the 12 sources.

MR. ROMAINE: Similar control measures are being contemplated, as already discussed, for the eight-source alternative. That is, addition of control devices, typically afterburners, on certain emission units that are not currently controlled and upgrade of capture and control devices, again usually afterburners, on certain other emission units.

MR. SAINES: Question 8, is it

technically feasible to achieve this control?

MR. ROMAINE: Yes.

MR. SAINES: Question No. 9, are any of these eight or twelve sources or any individual emission units at these sources already reducing emissions to the level identified which would meet the 1999 goals?

MR. ROMAINE: No. They were not at the most stringent level of control based on the agency's records. As discussed, the purpose of this evaluation was to identify further reductions. At one source the agency is aware that the capture systems had been ungraded to provide permanent total enclosure, but the control devices themselves had not been upgraded to the level of most stringent control.

At another source, control devices had been upgraded but not to the level of most stringent control. The emission reductions that have already been provided are less than 10 percent of the total reductions required for the 1999 ROP demonstration. These reductions would, of course, contribute to improved air quality and are improving or contributing to improved air

quality, but the other thing is that the ERMS is needed to facilitate reliance on these reductions in terms of demonstrating that we have met ROP goals.

MR. SAINES: Question C, did the agency analyze what control would be needed at the 50 largest sources potentially subject to the ERMS rules to achieve the exact reductions in emissions necessary to meet the 1999 ROP goals?

MR. ROMAINE: No, we did not. This is part of the reason that the agency didn't pursue the evaluation of the 12 percent across the board scenario. There's several technical reasons for this. Control measures come in steps, and there may be limited ability to achieve particular levels of intermediate control.

For example, various types of afterburners may be achieved between 95 and 99 percent control for a particular process. If the afterburner is the only available further control for the process, the only way to approach 12 percent control would be to operate the afterburner intermittently, 15 or 20 percent of the time perhaps.

In addition the principle of economy of scale generally suggests that, other things being similar, an afterburner or other control device would be most effective if applied to the greatest amount of emissions. Thus, if some control device is to be installed on a process, one will seek to control a process with the best mix of high concentration and high VOM emission rate and then attempt to maximize operation of the control system rather than simply targeting a 12 percent control for a process and then having to control more processes at additional expense.

Then finally, it's important to note that even with a 12 percent reduction just going for that target, sources would still have the ability to select only certain emission units that would be further controlled. Perhaps they would again select the most stringent controls for the emission -- those emission units so that the source would fulfill its obligation to reduce its VOM emissions.

MR. SAINES: Okay, if I could just ask a follow-up on the last point you just made. I'll

invoke a hypothetical. Let's say there are 10 emission units at a source. Applying the most stringent controls known to the source defined as the entire facility, would it hypothetically require some sort of add-on control that covers all 10 emission units? Is that accurate?

MR. ROMAINE: Yes, it is.

MR. SAINES: So if there was something less than the most stringent controls known, that was analyzed, wouldn't that perhaps not necessitate applying add-on controls to each one of those 10 units? Maybe do five of the ten as opposed to all ten.

MR. ROMAINE: That's possible, but it's just as likely that the alternative would be applying the most stringent controls to only five of those units and no controls to the other five units

MR. SAINES: Exactly, that's my point. Is that what you're sort of saying is a way to achieve something less than most stringent controls?

MR. ROMAINE: But that would be applying most stringent controls to certain emission units.

MR. SAINES: Correct, correct, but the facility as a whole then would not be controlled with the most stringent controls known because its emission reductions would be less?

MR. ROMAINE: Yes.

MR. SAINES: Is that correct?

MR. ROMAINE: That's correct.

MR. SAINES: I want to withdraw question C1.

Question C2, did the agency only assess the specific costs of reducing emissions at 8 and 12 sources of these 50 sources?

MS. DUNHAM: I want to make two points in response to this. The first one is that the agency used aggregate costs based upon industrial category, not costs specific to the individual sources, just to clarify that.

MR. SAINES: Okay.

MS. DUNHAM: And then the second one, which I think responds to you, is that the agency did assess the costs again based on aggregate estimates for each of the largest emitters so that we did have cost numbers for all 59 sources, but we only used the 8 and the 12 in the actual

analysis.

MR. SAINES: So I'll just ask question 3, is it correct that the agency did not determine the specific costs of reducing emissions at all 50 sources to a level sufficient to meet the 1990 goals? 1999 goals, it should be.

MR. ROMAINE: That is correct.

MR. SAINES: We'll withdraw question 3A and 3B as being -- well, I'll just withdraw those.

Question 3C, would it be technically feasible to install less than the most stringent control on these 50 sources, the sources that we've discussed?

MR. ROMAINE: Yes, it would be technically feasible to install something less than the most stringent control on these sources. As we've already discussed, there are many different alternatives, perhaps thousands of alternatives that theoretically could be applied to the sources. One has to consider the different combinations of individual emission units at these sources for application of further controls. Second, one would have to consider alternative

levels of emission controls for those individual emission units as an alternative to the most stringent controls.

The three alternatives evaluated by the agency, the 8-source, the 12-source, the 12 percent the trading scenarios were an attempt to show how the ERMS will be more cost effective than a command and control rule. This is the key point. The ERMS, by using market mechanisms, will facilitate lowest cost combination of measures that will reduce VOM emissions to meet the 1990 ROP requirement.

MR. SAINES: Question 4, in reaching its conclusion that controlling the largest 50 sources would reduce emissions well beyond the reductions needed to meet the 1999 ROP goals, did the agency assess if any sources currently control emissions to the level that would be required?

MR. ROMAINE: If I understand the question correctly, you're asking whether any of the 50-ton and above sources had installed most stringent controls?

MR. SAINES: That's correct.

MR. ROMAINE: As previously discussed,

the goal of the evaluation was to identify further reductions in emissions that could be achieved in the Chicago area. A handful of sources have already improved control measures, but not the level of the most stringent controls as already discussed. When looking at the total population, another source's VOM emissions have been reduced by the reclassification of acetone so that it is no longer classified as a volatile organic material.

These reductions do contribute to improved air quality, that is, reduced VOM emissions, but they are by no means sufficient to achieve the rate of progress requirement for 1999. In addition the trading program is necessary to rely on these reductions to show how the rate of progress target will be met.

MR. SAINES: You mentioned a handful. My question for you is if so, how many? Do you have a specific number?

MR. ROMAINE: Four.

MR. SAINES: Four.

MR. ROMAINE: Well, back off. The only one that may have gone all the way to the most

stringent would be this one source that has converted to acetone. The others have made some reductions and maybe four that have made some further reductions.

MR. SAINES: Okay. We withdraw question B, 4B, that is.

Question 4C, how many sources in Illinois comply with RACT requirements by add-on control?

MR. BECKSTEAD: You say here Illinois. Are you really referring to the Chicago non-attainment area, or do you want the State of Illinois?

MR. SAINES: Chicago non-attainment area, the area that is relevant to the current rules.

MR. BECKSTEAD: According to our inventory data through the end of 1995, there were 507 sources in the Chicago area with add-on controls that meet or exceed 81 percent average overall control efficiency.

MR. SAINES: And those are sources with add-on control, is that correct?

MR. BECKSTEAD: Yes, that's add-on

control.

MR. SAINES: Question 4D, how many source was add-on control exceed the control required by RACT? You said meet or exceed. Do you have a breakdown?

MR. BECKSTEAD: 502 in the Chicago area are exceeding RACT requirements of 81 percent average overall control efficiency.

MR. SAINES: Question 4E, how many of these 502 sources have obtained reductions beyond the RACT requirements after 1990?

MR. BECKSTEAD: 127 sources installed add-on control devices after January 1, 1990.

MR. SAINES: And those 127 exceed the RACT requirements?

MR. BECKSTEAD: I can't answer that question. That's not what I searched for. All I know is they added add-on controls beyond RACT. It would be 81 percent or greater, yes, yes.

MR. SAINES: Question D, are any of the units at the 8 or 12 sources discussed in the alternatives subject or will be subject to maximum achievable control technology regulations?

MR. BECKSTEAD: Well, in the 1997

through 1999 time frame, two of the eight sources identified in the second alternative will be required to comply with MACT regulations. The remaining six will be subject to MACTs that are scheduled for promulgation after 1999. No control requirement levels have been established for those MACTs.

Similarly, two of the 12 sources identified in the third alternative will be required to comply with MACT regulations in the 1997 to 1999 time frame. Of the remaining 10 sources, 6 will be subject to MACTs that are scheduled for promulgation after 1999. Again no control requirement levels have been established for these MACTs either. And as of this date, 4 of the 12 sources do not appear to be affected by MACTs currently being scheduled by USEPA.

MR. SAINES: We withdraw question No. 2. We withdraw question No. 3. Question D4, will the sources identified in the answer to my questions have to incur the costs of installing and maintaining MACT control regardless of the ERMS rules?

MR. BECKSTEAD: Yes. A source is

required to meet the MACT standards as mandated by the Clean Air Act, and it will incur a cost to control. The ERMS rule gives a source the incentive to route as many VOM laden streams to the MACT-required control device since the VOM reductions are creditable towards its 12 percent reduction, and any excess reductions can also be marketed. The cost per ton to control its HAPs and VOMs are thereby reduced and the environment benefits.

MR. SAINES: I didn't quite understand the answer to that. You're saying that the sources that have to comply with MACT, the ERMS rules gives an incentive for them to channel additions beyond the HAP?

MR. BECKSTEAD: Yes. Any VOM laden stream, it would be to their advantage to run it through the same control device, thereby reducing their cost to control, and if they exceed 12 percent, they have something to market off.

MR. SAINES: We withdraw question No. 5 being asked and answered.

Question 6, would compliance with the MACT standards by these sources prior to 1999

obtain reductions in VOM emissions?

MR. BECKSTEAD: Yes. The agency anticipates that compliance with MACT standards will also obtain VOM reductions as well as HAPs reductions. The ERMS rule allows the VOM reductions obtained from meeting a MACT standard to be creditable toward the facility's 12 percent requirement.

MR. SAINES: Question D7, has the agency determined what reductions would be achieved by these sources by complying with MACT rules before 1999?

MR. BECKSTEAD: As previously answered, the agency estimates that reductions resulting from the MACTs that have compliance dates falling between 1997 and 1999 will be approximately 1 to 1.5 tons per day for the entire population of ERMS sources. The estimated maximum MACT reductions from the eight sources of alternative 2 is eight hundredths of ton per day, and from the 12 sources of alternative 3, is .57 tons per day.

MR. SAINES: Let me ask one follow-up to that. Has the agency calculated the reductions that would be achieved post 1999? You mentioned

there were six additional sources that would be subject to MACT.

MR. BECKSTEAD: We don't know the level of control those MACTs will have so we cannot make those estimations.

MR. SAINES: Question E, how many Chicago area companies will the ERMS rules cause to shut down operations completely or relocate from the Chicagoland area?

MS. DUNHAM: First in response to that, the agency believes that the ERMS program is better than any other alternative control program for the participating sources, and the second point is that the analysis we ran does not specifically predict shutdowns. The only indicator of that that we have is the job decrease indicator which we discussed earlier. So that neither the model nor the agency can necessarily predict individual business decisions which are based on a lot of other factors besides just the effects of this emission reduction program.

MR. SAINES: I'll ask question F. How many sources with emissions under 50 tons per season will be forced to shut down as a result of

the ERMS rules?

MS. DUNHAM: Again, the model does not predict an individual company's decision. We can only look at the predicted job decreases.

MR. CASE: If I might add to that, thank you. The whole issue of shutdowns is -- again it's apples and oranges comparisons. We have to compare this choice via emissions trading against what other, more stringent controls are going to be required under command and control arrangement, and the theory predicts and their modeling shows that under those more stringent command and control arrangements, more people lose their jobs, and we can extrapolate from that that there would be more shutdowns. This program is a job-saving program.

Another thing that's not considered is the fact that trading makes those resources available for someone else. If there's any reduction in emissions, those are potentially available on the market for someone else, which means that new firms can find it easier to locate in the Chicago area. So I just -- it's probably not appropriate to go static isolated comparison

of this program with relation to job losses and shutdowns. You have to look at the bigger picture.

MR. TREPANIER: If I could follow up on that. In your theory where you're figuring out the job losses versus command and control, are you considering the effect of opportunity costs influencing firm's behavior, opportunity costs of being granted these pollution allotments?

MR. CASE: I think the answer is in general yes. I'm not sure to what extent the REMI model includes those opportunity costs, but I think the theory does include them.

MS. DUNHAM: To respond to that, I think the REMI model does not take into account the opportunity cost.

MR. TREPANIER: It does not?

MS. DUNHAM: No.

MR. TREPANIER: Quick follow-up to my question. When you say you understand the theory does include firms reacting to opportunity costs of having a pollution allotment, do you understand that that theory is that this opportunity cost gives the firm an incentive to partially shut down

or fully shut down their operations?

MR. CASE: I think I disagree with that aspect because there are opportunity costs involved in command and control devices as well, and I believe -- and I think the theory tells us and their modeling shows this -- that you're more likely to shut down under command -- I think nobody's modeling so far has looked at shutdowns, but we did look at job reductions.

Clearly everything that was looked at shows that there are more jobs lost under every type of command and control arrangement, and yes, those firms do realize opportunity costs under command and control as well as under trading.

MR. TREPANIER: When you say that under command and control a firm has an opportunity, are you referring to the opportunity cost that is affecting economic behavior because the corporation has now been given an asset that they either utilize or let sit idle?

What are you saying when you say there's an opportunity cost with command and control similar to an opportunity cost here? How are you defining the opportunity cost to say

that?

MR. CASE: When we do a barely static analysis of a firm complying with command and control, we need to realize that a firm doesn't have to comply with the command and control regulation by installing the add-on control equipment. The firm may shut its operations down or not produce that particular good that was getting them in trouble through that reduction process. Those are opportunity costs that the firm realizes in the command and control scenario.

MR. TREPANIER: If there would be an opportunity at the end for questions from the audience.

HEARING OFFICER FEINEN: Yes, there will be. Mr. Saines.

MR. SAINES: We'll withdraw question G as asked and answered.

Question H, if the agency required only the 8 or 12 sources to control emissions to the extent necessary to meet the 1999 goals, would any of the 8 or 12 sources be forced to shut down operations?

MS. DUNHAM: Again, the model that we used doesn't predict specific source shutdowns, and as a further point, we used aggregate control costs by SIC for this analysis, not cost data specific to these sources. So we can't necessarily predict that.

MR. SAINES: I'm sorry, the last?

MS. DUNHAM: So we can't predict whether any of these specific 8 or 12 sources would shut down.

MR. SAINES: We'll withdraw question H1.

Question H2 is, if not, why not, and I assume that's the answer you just gave.

MS. DUNHAM: (Nodding head.)

MR. SAINES: So thank you.

MS. DUNHAM: Yes.

MR. SAINES: Question I, how did the agency calculate the total statewide cost of $3.2 million set forth in paragraph 2(a) of the agency's analysis of economic and budgetary effects of proposed rulemaking?

MS. DUNHAM: I'll just walk through how we did that trading simulation, and if you have --

if you have follow-up questions to this one, I think this is where I was trying to -- where I was going to answer your earlier question.

Step one was we took the 1994 annual emission reports, and the agency identified the set of sources likely to be participating sources under the ERMS program. These sources and their emissions were then aggregated by two-digit SIC code.

Second step, air quality planning staff estimated average annualized control costs for each SIC code using accepted USEPA methodology. The SIC categories were then listed in order of increasing control costs. Third step, we simulated trading, and emitters with low control costs were assumed to over comply, when possible, and sources in categories with higher control costs were assumed to purchase ATUs for compliance.

The trading scenario produced sufficient total reductions from sources in SIC with estimated control costs at or below $2850 per ton. We then assumed that sources in categories above that value and for a couple of the sources

in categories below that value who did not reduce, they would all purchase ATUs at a price of $2850 per ton. We then had total control costs by SIC. If you add all those up, it came to $3.2 million.

MR. SAINES: So to the extent that any source you have identified in your hierarchy of control costs, any source that control cost is below $2,850 per ton decides not to over control but rather to buy from the market which is the choice available to them?

MS. DUNHAM: Right.

MR. SAINES: That will in effect -- won't that offset or affect the price of ATUs on the market?

MS. DUNHAM: Yeah, and we actually in our model did not assume that every source underneath that value would reduce so that there is some room in the model to take into account that concern.

MR. SAINES: Anything more specific than that? What percentage of those sources are under 2850 per ton?

MS. DUNHAM: I'm not sure I can give you a percentage, but we had one entire SIC category.

MR. SAINES: You had one that was below but --

MS. DUNHAM: But did not reduce.

MR. SAINES: Did not over control?

MS. DUNHAM: Right, out of six, I think.

MR. SAINES: Question J, is 1,363.4 tons per day the figure from which the agency has determined a 12 percent production is needed?

MR. FORBES: I'll answer that. No, the projected 1996 emissions level and the 1999 ROP target level of emissions determine the needed reduction amount. I refer you to table 2 of Bharat Mathur's testimony, Exhibit No. 6, which discusses these emission levels.

MR. SAINES: Thank you. Question K, is it possible that upon submission of all participating sources' baseline determinations, less than a 12 percent reduction in emissions will be needed from the overall baseline emissions to obtain the 1999 ROP goals?

MR. FORBES: Yes, it is possible, if the total final baseline emissions is much lower than the agency is projecting those baselines to be,

after all adjustments allowed for in the rule are accounted for, including BAT, MACT, and other exempt unit exclusions. However, the agency believes that it's more likely that the baseline would be higher than projected due to these adjustments. This makes the 12 percent reduction goal a little more significant as it provides some contingency for ROP.

MR. SAINES: Question K1, if less than 12 percent emission reduction is needed, is there a mechanism available by which sources may petition the agency or the board to amend the amount of reductions required by the ERMS rule?

MR. FORBES: Yes. Any person may submit a proposal to the board for adoption, amendment or repeal of the board's regulations pursuant to Section 28 of the Environmental Protection Act.

MR. SAINES: But there's nothing in the actual ERMS rules or proposal that articulates that availability?

MR. FORBES: Not that I'm aware of.

MR. SAINES: We withdraw question No. 2, K2, that is.

Question K3, if upon the agency's

determination of a participating sources' baseline emissions, less than a 12 percent reduction is needed overall, will the agency modify the 12 percent further reduction requirement?

MS. SAWYER: Object to this question. It's overly speculative.

MR. SAINES: I disagree. I mean, I think it's a proposed rulemaking. Everything we're discussing is speculative. The economic analysis is speculative.

MS. SAWYER: Well, obviously if we didn't think a 12 percent reduction is needed, this wouldn't be the rule we were putting forth. We've come up with estimates which are to the best of our ability to justify the 12 percent reduction. To suggest -- I don't think we could -- I mean, we're basing this whole proposal on the 12 percent reduction being required.

MR. SAINES: That's true. I'm just saying if it turns out that it's not required once you look at the data, are you going to modify the rule?

MS. SAWYER: Well, it's speculative because we think it is required.

HEARING OFFICER FEINEN: I think there's been prior testimony stating that there's going to be a review of the whole program and whether or not reductions are being met, and at that time the agency may require further reductions. I believe this question can be answered by the agency. I don't think it's speculative. I think it's a simple question that can be answered here.

MR. FORBES: I'll try to answer that, I guess. As explained in the agency's previous testimony, significant uncertainty exists at this time as to what the ultimate attainment level will be for Chicago and what this will require in terms of additional VOM reductions.

However, the previous testimony indicated that it does appear that additional reductions will be needed beyond the 12 percent reduction included in the proposed rule. This circumstance, along with the degree to which the baseline emissions are lower than projected, will be taken into consideration in any decision the agency makes regarding modification to the ERMS rule.

MR. SAINES: Thank you. We'll withdraw

question No. K4.

Question K5, if less than a 12 percent reduction is needed and hence less control would be necessary to achieve the required reductions, would less command and control be needed to obtain these reductions?

MR. FORBES: As explained in previous agency testimony, command and control requirements would take existing controls and extend them further. The agency did this in its review and application of California emission control standards to Chicago sources. Obviously applying half a control device does not make any sense, and the degree of control cannot be backed off to a level that would be less than that required by current regulations.

Consequently, the more likely scenario would be to reduce the number of sources affected by the tighter command and control requirements in such a way as to achieve the desired emission reductions. The agency would not view this as a lessening of command and control requirements.

MR. SAINES: In 5A, if there are less

sources subject to command and control, would less cost be incurred in obtaining the reductions via traditional regulatory control methods?

MR. FORBES: No. Based on my previous answer, since command and control would not be lessened, the costs of command and control would not be lessened. Only the number of sources impacted would be lessened.

MR. SAINES: Just so I understand, when you say the cost of control, you're speaking specifically to the cost of control the facility required to control?

MR. FORBES: Yes.

MR. SAINES: So you're not discussing the overall costs on the industry affected generally in the Chicagoland non-attainment area?

MR. FORBES: No.

MR. SAINES: The total costs of the program limitation.

MR. FORBES: No.

MR. SAINES: Question L, I believe this question has been asked and answered. I withdraw it.

Question M, why has the agency

dismissed all of the programs identified on page 139 of the technical support document to obtain reductions in emissions?

MR. NEWTON: These programs have been dismissed for the purpose of achieving the 1999 ROP target level because, as it says on that page there, extremely unpopular like the employee commute option. They are rather expensive and they fall far, far short of the necessary reductions.

MR. SAINES: When you say they're politically unpopular, would you just elaborate on that? Does that mean that they are fatally flawed, or do you mean that people don't like to get out of their cars?

MR. NEWTON: Well, I think in the case of the employee commute option, I think -- I'm not an expert on that, but I think the federal government was kind of pushing for it, and it was so unpopular that they dropped it completely, I think, or at least temporarily.

MR. SAINES: Question N on the last page of our questions, the agency has stated that "further reductions" beyond 12 percent may be

needed. If so, will the agency have to conduct a new economic impact analysis?

MS. SAWYER: This question has been asked. The question was asked and answered, the entire section N at page 587 of the transcript beginning at line 7 and continuing through 588, line 12.

MR. SAINES: Okay. So you're saying that includes N1, 2A, B and C.

MS. SAWYER: Yes.

MR. SAINES: Well, then we will withdraw questions 1, 2A, B and C as asked and answered. There are a couple of more questions from our original prefiled questions that we have deferred. I have them here, just a couple.

HEARING OFFICER FEINEN: Can we go off the record for a second.

(Discussion off the record.)

MR. SAINES: It's starting on page 8 of our section 5, pertaining to Section 205.140, general system description.

MS. SAWYER: Can we go over which ones they are just to make sure we're on the same page with this?

MR. SAINES: Yeah.

(Recess taken.)

HEARING OFFICER FEINEN: Go back on the record. Mr. Saines, please describe the section and the question number from your earlier ones.

MR. SAINES: Sure. These are questions that were contained in our original prefiled questions. It is Section 5 pertaining to Section 205.140 of the rules entitled general system description on page 8 of the prefiled questions and it starts at Section B which pertains to Section 205.140 (b)(2) entitled new participating sources.

Question 1, has the agency conducted any analysis as to how many -- excuse me, as to the ERMS -- how the ERMS rules will impact new business entering into the Chicagoland area?

MS. DUNHAM: The agency feels that the ERMS rules will make it easier for new sources to enter the area because of the market infrastructure that will develop. Under the existing federal requirements for new sources, they have to get offsets within a system that

doesn't have that market infrastructure supporting the ability to get offsets. Under ERMS sources will have an incentive to provide ATUs to new sources.

MR. SAINES: You stated -- sorry, you stated that the agency feels it will be easier, and has the agency conducted an analysis, is that what the analysis is or is that just a feeling?

MS. DUNHAM: Well, if you want a sort of analytical answer to it, the REMI model does show impacts from the baseline case which does take into account new sources entering the area or predictions on how many new sources will enter the area, so that impact is taken into account. It doesn't specifically link the impact on new sources with the outcome of the model, but they are taken into account.

MR. SAINES: What were the conclusions that the REMI model came to?

MS. DUNHAM: The same conclusions I presented earlier in that it's a lot less impact under the ERMS program than it would be under any of the command and control scenarios studied.

MR. SAINES: I don't mean to push the

point. It seemed that you were saying that it would provide an incentive for new business to come into Chicago, and I'm wondering whether or not the REMI model actually predicted that there would be an influx of new business entering Chicago as a result of the ERMS rule or any other regulation for that matter or whether it's just less of a negative impact by the ERMS rules.

MS. DUNHAM: I don't think the model can predict that there will be more new sources entering the market or at least you can't differentiate that.

MR. CASE: I think that's kind of beyond what the model is capable of showing. The key here is that we're going to have a program where it now becomes more flexible to site a new facility because the market will provide the ability to make ATUs available, and that's not available now. So this program can only make it easier to put new facility, new business, and for that matter, new jobs in Chicago.

MR. ROMAINE: Let me introduce some other thoughts as well. I think it's perhaps misleading to think that emissions from new

businesses don't have to be offset if they're minor. We have a budget in the Chicago area. We have to make reductions to get to attainment. If a source is excused from new source review and doesn't have to make its own emission reductions under the current program, that means other sources have to make up the difference.

What the trading program does by establishing a budget for this particular population is to make sure that those things are considered so that a new source coming into the area doesn't get a free ride at the expense of existing sources. What the economic analysis shows that in fact by forcing sources to consider that, it is better for the overall area.

MR. SAINES: Question 2, by not allotting ATUs to "new participating sources," isn't the agency significantly restricting the expansion of business in the Chicagoland area?

MR. CASE: Your name is on this.

MR. ROMAINE: No. When a business expands, it has many considerations that it has to work through. The Clean Air Act establishes certain requirements for new major sources that

have to be addressed and establishes requirements that have to be established for rate of progress, and the approach that has been taken to allocation of ATUs provides a reasonable approach to make sure that the ERMS is effective in meeting the rate of progress obligations.

MR. SAINES: Question No. 3, by not allotting ATUs to "new participating sources," is the agency prohibiting fair competition in the Chicagoland area?

MR. ROMAINE: No, it is certainly not. If the Chicago area is at a disadvantage, it's because it's a severe ozone non-attainment area. What the ERMS program does is allow the Chicago area sources to compete as effectively as possible with other areas that are in fact attainment or have better air quality for ozone.

MR. SAINES: The next questions are located on page 10 of the prefiled questions in what is our --

MS. SAWYER: Just to clarify, you are withdrawing questions 4 and 5?

MR. SAINES: Oh, yes, we are withdrawing questions 4 and 5 from that previous section.

The next questions are located on page 10 under our section 6 pertaining to Section 205.150 entitled emissions management periods starting at question 8.

Isn't it true that Illinois' current regulations do not require sources making non-major modifications to offset emissions at any ratio?

MS. SAWYER: I'm not sure we are on the same page at this point. I thought we were. Could I see the questions again.

Could you repeat where you are exactly.

MR. SAINES: Sure, we are on page 10, question C8. It's under Section 205.150 C and D, new major sources and major modifications.

MS. SAWYER: And you're on 8?

MR. SAINES: Question No. 8.

MR. CASE: We don't have the lead-in to that.

MS. SAWYER: We should be able to go ahead.

MR. ROMAINE: I think it's pretty obvious that there's no explicit requirement under

Illinois' new source review requirement at the present time that non-major modifications provide offsets. The point is that there are other requirements in terms of rate of progress -- and in fact we have an overall budget -- that do require that there be compensating emission reductions for non-major modifications.

So the change that's occurring here is to make facilities that are subject to this program to be responsible for their emissions, and if they want to increase emissions, they have to obtain sufficient ATUs to cover those emissions. They can either do that through reductions elsewhere at their own plant or by going to the marketplace.

MR. SAINES: If I could ask a follow-up, when you say you have a budget that allows you to address the ROP goals, are you saying that you have been allocated money for the purposes of establishing a new rule that requires sources making non-major modifications to offset?

MR. ROMAINE: No. When I'm using the term budget, we're using that term to refer to the fact that we only can tolerate so many emissions

in the Chicago area. I'm not using budget in a monetary sense. I'm doing it in a resource management sense, that we only have so many VOC emissions that we should allow into the area, and those can go to different places.

Now, as certain relationships to having a household budget, we only have so much income and you have to do certain things, you have to allocate it to different operations. If you spend more for entertainment, you may have less to spend for food. So many people don't make those choices. So it's similar here. If you have new sources coming in that emit more that haven't been accounted for by their own actions in terms of our rate of progress demonstration, we'll have to get further emission reductions somewhere else.

MR. SAINES: Somewhere else meaning sources other than those sources making non-major modifications under the currently existing rules?

MR. ROMAINE: That's correct.

MR. SAINES: Question 8A --

MR. ROMAINE: I'm sorry, that is at least initially correct. There is always the possibility that as part of those further

evaluations of rate of progress plan, we decide to revisit that source and require it to retrofit and roll back its emissions.

MR. SAINES: Irrespective of the ERMS rule?

MR. ROMAINE: That's correct.

MR. SAINES: Question 8A, has the agency conducted an analysis on the impact to existing business by requiring all emissions from any modification be offset?

MS. DUNHAM: The ERMS program is indifferent between emission increases for modifications or emission increases due to any other cause. So the analysis that we ran does take into account the fact that those emission increases have to be covered by ATUs.

MR. SAINES: Question 8B, has the agency conducted an analysis on how the requirement for offsetting all emissions from changes at an existing source regardless of whether the change is major will impact an existing source's ability to compete in the market outside of Chicago, particularly against other companies not subject to the same requirements?

MS. DUNHAM: The agency believes and the analysis supports that this program cost effectively achieves the necessary level of reductions relative to any other emission control scenario. Therefore, every source in this program is better off under our market system than it would be under any other scenario.

MR. SAINES: Let me ask a follow-up to that. The agency's alternatives that they've identified as being representative alternatives to their ERMS program identify 8 -- command and control in 8, command and control in 12 sources. So the statement that all sources are better off under ERMS than they would be under the alternatives to ERMS, I don't understand that statement.

A source that is not one of the 8 sources, wouldn't that source be better off under the alternatives than having to comply with ERMS because under the alternative they wouldn't have to comply with anything?

MS. DUNHAM: I think this alternative referred to was the 12 percent without trading. So for these sources subject to the requirements,

they are all better off when trading is allowed compared to when it's not.

MR. SAINES: When you say that all firms are better off under ERMS, you're only making that statement with respect to alternative 1 which is the 12 percent reductions across the board, no trading?

MS. DUNHAM: Well, you can go beyond that and say that the Chicago region is better off under trading than it is under any other scenario.

MR. SAINES: That's a different question. The question about ERMS, does that only relate to the first alternative?

MS. DUNHAM: Well, you're asking whether a specific facility is better off versus the regional economy as a whole, and I would argue that if the regional economy as a whole is better, then the individual sources in that economy are better off. But if you're comparing whether a source is subject to control requirements versus whether it's not, I mean, that's not the analysis that we did.

MR. SAINES: The next questions -- did I ask question 8B? I don't remember if I did or

not.

MS. MC FAWN: Yes.

MR. SAINES: Thanks. I'm on top of things. The next question is on page 15. It's under section 12. Specifically it is section 12 B5.

Isn't it possible that if a lesser amount of reductions in emissions is actually needed, that it may be less costly than the cost estimates provided in the economic impact study to control a limited number of sources than requiring reductions from all sources in the Chicagoland area?

MS. DUNHAM: Two points. The first one is if a lesser amount of reductions in emissions is actually needed, it probably would be less costly than the cost estimates provided in the economic impact study. However, the reduction in cost would not come from reducing the number of sources but from lowering the reduction target. In fact, with more sources the opportunities for cost savings increase under a market system.

MR. SAINES: The next question is under Section C. It is C-5A and B, and I believe we

have decided to defer this.

MS. SAWYER: Those questions were not ones we had on our list as being deferred at this point.

MR. SAINES: We'll defer them till after lunch, is that sufficient?

MS. SAWYER: Yeah.

MR. SAINES: That is questions 5A, B, and C. That concludes the prefiled questions.

MS. SAWYER: We have a couple of prefiled questions from Sonnenschein, Nath & Rosenthal and also one from Karaganis & White. I do not believe that they are present, but I believe their question has been answered already, and then a question that was prefiled from Tenneco Plastics and one question that was prefiled from Mr. Trepanier.

HEARING OFFICER FEINEN: Why don't we start out with Cynthia Faur and go to Tenneco and go to Trepanier.

MS. FAUR: Cynthia Faur, Sonnenschein, Nath & Rosenthal, and we have one question. It's from our prefiled questions filed on January 16th and it's No. 4. How exactly was the $2,850

pretend value determined? Was it by median means or otherwise?

MS. DUNHAM: That 2850 figure was the first of the estimated equilibrium price under the trading scenario simulated by the agency. The agency found that sufficient reductions could be achieved by sources from SIC categories with control costs either equal to or less than that figure.

Therefore, this price was derived from the point where the supply of ATUs equaled the demand under the agency's trading simulation.

MS. FAUR: Thank you.

HEARING OFFICER FEINEN: Question 5 sounds like a follow-up. Is that asked and answered?

MS. FAUR: That was either asked and answered or crossed off for some reason. Withdrawn.

HEARING OFFICER FEINEN: We'll show it withdrawn for now. Thank you.

MS. SAWYER: For Tenneco Plastics, we had the final question deferred to the economic section from your January 23rd filing.

MR. FORCADE: Bill Forcade with Jenner & Block for Tenneco Plastics. We are talking about our January 27th, 1997, submittal. Our final question is located on page 47.

A central aspect of the ERMS proposal is that a participating source may enter into a long term contract with another participating source or an emissions reduction generator to purchase ATUs for future years. Will the agency assure participating sources that it will not adopt new regulations which fundamentally alter the ERMS or change the value of ATUs without which assurances sources will not be able to make financially sound decisions?

MR. KANERVA: First of all, since we have the chairwoman of the board here today, I think we're going to make it clear that the agency wouldn't be the one adopting these regulations.

MR. FORCADE: We'll agree that's proposed instead of adopted

(Laughter.)

MR. KANERVA: I thought I would hear this for quite awhile if I didn't respond to that. The agency has no intention of changing the

basic program structure that we're putting in place for this market system. It would obviously be a tremendous disruption, for instance, to suddenly change and devalue the amount of tons that were associated with ATUs or what have you. So I mean, those fundamental components will stay the same.

What we've said in presenting our explanation of the system is that we fully expect to probably do some improvements to the system as we go along, and I would characterize those as fine tuning the system. For instance, the exact ACMA charges in later years or the way we allow access for new sources to the ACMA, or for that matter, the access compensation rate. We will learn things about some of those aspects of the program that may cause us to want to make some refinements, but that should not change the basic economic structure that's going to be in place.

MR. FORCADE: Thank you.

HEARING OFFICER FEINEN: Okay, before we move on to Mr. Trepanier's prefiled questions, I'm just going to read into the record the prefiled question that was skipped Dart Container, I

believe it was question No. 35.

MS. SAWYER: Right.

HEARING OFFICER FEINEN: On page 6 and that is, does the agency expect the burdens of the proposed ERMS to put some participating sources out of business? If so, has the agency estimated how many participating sources may have to close due to the burdens of ERMS?

I agree with the agency's statements earlier that it's been asked and answered. I wanted to get it in the record so people know what the question was, we're not just leaving it out. Let's move on then to Mr. Trepanier's questions or question that's been prefiled.

MS. SAWYER: Do you know which question I'm referring to?

MR. TREPANIER: No, I don't. I've got one that I could ask.

(Laughter.)

MS. SAWYER: Has the agency considered or have any forecast how or if to what degree the market system would tend to drive low profit VOM emitters out of business to serve the pollution

emission requirements of wealthy or high profit VOM emitters? That's the question we're referring to.

HEARING OFFICER FEINEN: I think it's question 19 of the printed, typed out questions that were prefiled on January 31st, 1997, with some handwritten additions to that. Do you want to ask that question?

MR. TREPANIER: Has the agency considered or have any forecast how or if to what degree the market system would tend to drive low profit VOM emitters out of business to serve the pollution emission requirements of wealthy or high profit VOM emitters?

MR. CASE: The ERMS proposal will permit firms to comply with environmental requirements in the least cost manner as possible. I think the firms that are most likely to benefit, at least to benefit the most perhaps, are those firms in which their control costs are the cheapest.

However, firms with higher control costs are also going to be able to benefit from having the option to purchase ATUs on the market at a lower price than their own control costs.

Therefore, the trading is going to allow capital flows.

Trading will allow capital to flow to firms having the most control potential regardless of the profit picture, and there's no reason to think that high profit firms are going to benefit more than low profit firms or vice versa. I don't think there's any ability to be able to say that.

MR. TREPANIER: I'd follow up on that. Would you say that -- are you familiar with the economic assessment that was done for the regional clean air initiatives market emissions trading program for Los Angeles. That was the -- that was the economic study or the study they did of their development by Mr. Johnson and Mr. Pecolade (phonetic).

MR. CASE: You know, I've looked at that study, but I think it was more than a year ago. Which part are you referring to?

MR. TREPANIER: I'm referring to that part of the study where they expound on the opportunity costs of granting these allotments free to the polluters, that this -- my

understanding of this study from California that this translates to the firm into a cost of doing business.

MR. CASE: I'm not aware of that particular aspect of that study. I can't recall it, but I don't necessarily disagree with what you're saying.

MR. TREPANIER: I didn't hear the end of your answer.

MR. CASE: I don't disagree with the conclusions that you have mentioned.

MR. TREPANIER: So you would agree that freely allocating pollution allotments to firms is going to increase their cost of doing business?

MR. CASE: No. I would argue there are different -- there are different ways this program could be developed. They all have distributional aspects and political economy aspects that are very different. For example, economists will tell you that you really can have three choices, that you can tax firms for their emissions or you can auction to everybody their ATUs or whatever we want to call it so that everybody has to pay for all of them from day one, or you can do something

like a CAAPP and allocate based on a baseline approach which is basically what we're doing here.

The distributional impacts of those may be somewhat different, but all those programs will lead to an efficient outcome and will be efficient. Economists can't say very much about which one you should use, but I think the political world has said very clearly that if I've been in business for a lot of years and that I should be allowed to remain in business and then allocating the ability to use the environmental resource, society should recognize that I've been in business for a lot of years.

That's sort of a different question. We can take all of these allotments and give them to one person and the outcome could be efficient in the end after the market works to translate them to the right places, you will still get a good deal. It's very political where we start out.

MR. TREPANIER: I'm not asking you for the political provision. The question I'm looking for is a comparison between trading and not

trading, not between different trading schemes. I mean, you see, I understand you were agreeing with the conclusion from California that by freely allocating the ATUs --

MR. CASE: And not allowing trading, sir?

MR. TREPANIER: Excuse me.

MR. CASE: Would you allow trading or not allow trading after you allocate the emissions levels?

MR. TREPANIER: You do agree that the opportunity cost that's involved in receiving the ATU is because the ATU has a value on the market.

MR. CASE: But only in a trading scenario, right?

MR. TREPANIER: Right, that's correct.

MR. CASE: Yes, sir, I think I agree with you.

MR. TREPANIER: So my question is if you forecasted to what degree the market system is going to tend to drive out low profit VOM emitters out of business to serve the needs of the high profit or wealthy emitters?

MR. CASE: You see, I don't see a

connection between the first part and the second part. In fact, I think if we are to, for example -- I just don't see a connection at all. There's no evidence that low profit firms have higher control costs, for example, and in fact if the problem under low cost, low profit firms has been a shortage of capital, now the market will work to provide capital for control technology, and that's good, and that can help them stay in business.

MR. TREPANIER: Are you familiar in Illinois with the process of a firm seeking a waiver to a command and control rule?

MR. CASE: Not specifically, no.

MR. TREPANIER: So you wouldn't be able to compare the impact of the trading system on a firm in Illinois versus the impact -- a firm in Illinois who has the opportunity to seek a waiver of command and control?

MR. CASE: I don't think so.

MR. TREPANIER: So would it be fair to say that you wouldn't have an ability to forecast what degree this market system would tend to drive out low profit VOM emitters?

MR. CASE: Excuse me. Sir, I'm not

saying that at all. I think that there's no way to say one way or the other what the impact's going to be. One thing we can say is that to the extent that these are capital short firms, they need capital to implement a control technology, this market can provide that capital. I'm not trying to compare this process of emissions trading to a process where there might be a waiver that releases them from all regulation.

That would be a great thing. We'd all like to be released from all regulation, but I don't think you can do that, and I don't think it's appropriate to compare emissions trading against a non-controlled situation. What we have to compare is emissions trading against the requirements that would be required. If all these firms that you're speculating on received waivers, maybe that's different, but I imagine some do and some don't, and there's waivers that go to other people for reasons, but I'm not an expert on waivers.

HEARING OFFICER FEINEN: Any more follow-up to that question 19, or is this just general questions?

MR. TREPANIER: I followed up question 19. I've completed the follow-up.

HEARING OFFICER FEINEN: I was thinking we could take lunch right now and come back and have general questions from people unless -- let's go off the record for a second

(Discussion off the record.)

(Lunch recess taken.)

HEARING OFFICER FEINEN: We will go back on the record. I think we will start with Mr. Saines' questions and finish up his and go to Mr. Trepanier. I believe you said that you had one follow-up possibly. Is that --

MS. FAUR: I don't need to follow up.

HEARING OFFICER FEINEN: Thank you. So whenever Mr. Saines is ready, we'll start out with his questions. If the agency wants to answer those two, we can start out with those, I guess.

MR. SAINES: We reviewed the prefiled questions that I was intending on asking, and those were -- upon review of those have already been asked and answered based on February 3rd transcript so we will withdraw the prefiled questions we were intending on asking, and I

believe those are pertaining to Section 205.400(b). It is our section 12, C-5A, B and C, we will withdraw those as being asked and answered.

HEARING OFFICER FEINEN: Thank you. That's page 15 and 16.

MR. SAINES: That's correct, 15 and 16.

HEARING OFFICER FEINEN: Then I believe you had one or so non-prefiled question.

MR. SAINES: I had one follow-up to Ms. Dunham's testimony. This refers to Exhibit 53 which was provided as part of her testimony this morning.

HEARING OFFICER FEINEN: Example -- Exhibit No. 53 was example rubber and plastics facility was the title of the slide.

MR. SAINES: If you would be so kind, I'd like to just kind of walk through it so we can get an understanding of what it's all about here. The first is ozone season emissions of 30.2 tons?

MS. DUNHAM: Right.

MR. SAINES: And that is a figure that pertains to the particular facility, is that correct?

MS. DUNHAM: Yes, yes.

MR. SAINES: And then all the other examples under that also apply to that particular facility?

MS. DUNHAM: Right.

MR. SAINES: If I could direct your attention to the last example on the page that reads potential cost savings in range of $243,300 to $279,300. If you could explain what potential cost savings as compared to what?

MS. DUNHAM: Right. That's a good question. The cost savings to that individual facility. So if they do not have to install the control technology, they are saving $279,300. That's the cost of that equipment.

MR. SAINES: So it's the cost savings of either A, installing add-on control or versus buying ATUs?

MS. DUNHAM: It's versus not installing it. So overall, just looking at this facility, if the facility does not install that equipment, the program's going to save $279,300.

MR. SAINES: The way they would do it would be by purchasing 30.6 tons of ATUs on the

market?

MS. DUNHAM: Yeah, right. This range that I put in there reflects the cost of that facility purchasing the ATUs. It's probably going to be somewhere between zero and $10,000.

MR. SAINES: As compared to the different alternatives that have been described by the agency, one being 12 percent reduction on all sources, two being controlling the 8 largest sources and alternative 3 being controlling the 12 largest sources where it's most cost effective to do so, would the potential cost savings as compared to alternatives 2 and 3 be the same for this facility?

MS. DUNHAM: For that facility? This is the point you asked about earlier. I think relative to no trading, which would be alternative 1, it would save that amount. Overall, the program will save more relative to the alternatives 2 and 3, but again you can't look at this particular -- it's a different analysis.

MR. SAINES: With respect to this facility that's described here, the ERMS program, does it represent a cost savings for this facility

as compared to alternatives 2 and 3 that the agency has proposed?

MS. DUNHAM: If we actually adopted alternatives 2 and 3, this facility probably wouldn't be included.

MR. SAINES: So the answer is no? The answer is the ERMS program does not represent a cost savings as to alternatives 2 and 3, is that correct?

MS. DUNHAM: You are comparing the wrong things. It's an individual source analysis. Basically, if the source was required to reduce more, it would have to incur the cost of $279,300. Under the ERMS program, it wouldn't incur that. If it were not subject to a reductions program, then it wouldn't incur the cost, but that's a separate issue.

MR. SAINES: Alternatives 2 and 3 of the agency's proposed alternatives would not require this particular source to add controls, is that correct?

MS. DUNHAM: By the way we define those alternatives, yeah.

MR. SAINES: Thank you.

HEARING OFFICER FEINEN: Anything further?

MR. SAINES: I have nothing.

HEARING OFFICER FEINEN: Any follow-up questions to Mr. Saines' question? Mr. Trepanier.

MR. TREPANIER: Good afternoon. I'd like to ask a question from -- regarding a table on page 3 of Sarah Dunham's testimony, and I know a little bit earlier you did address a question regarding the meaning of the words "profit of" in that table. My understanding, taking example 5, my notes say that you responded earlier that they had 27 tons available at that location of over control, is that correct?

MS. DUNHAM: Yeah, that's correct, surplus reduction of 27 tons.

MR. TREPANIER: Surplus reduction. In examples 1 through 4, when you were able to come up with a dollar figure there, did you use the $2850 figure that comes from page 10 of your testimony?

MS. DUNHAM: I did, yes.

MR. TREPANIER: Why don't you apply the $2850 figure to examples 5, 6 and 7?

MS. DUNHAM: I do.

MR. TREPANIER: What would that number then be? What's the profit?

MS. DUNHAM: It's that number of using a price of 2850.

MR. TREPANIER: Is the profit drived by the organic chemical company example by 2850 times 27?

MS. DUNHAM: It should be.

MR. TREPANIER: And then similar for example 6, the organic chemical company, their profit would be 165 times $2,850?

MS. DUNHAM: Right.

MR. TREPANIER: I have a question regarding the --

MS. DUNHAM: Oh, actually the profit represents the difference between what their control would cost and what they're receiving by selling the surplus ATUs. So the profit number here reflects that difference. I'm sorry.

MR. TREPANIER: For example 6, that would be 165 times 2850?

MS. DUNHAM: Minus the cost of the control.

MR. TREPANIER: Which is in example 6, that's $70,000, 7950?

MS. DUNHAM: Right, right, I'm sorry I confused you on that.

MR. TREPANIER: I have a question, and maybe it's on economics, and it's regarding the forecasting for the economic model. What if any impact -- is there an impact from -- scratch that.

Do you have a concern for the reliability of the emission data and does that have an impact on the economic forecast?

MS. DUNHAM: The emission data that we used was from the 1994 annual emission reports. So while those may not be exactly identical to what the eventual baselines are, I think they are fairly representative of that. If you have a -- is your question the sort of data accuracy underlying the annual emission reports, I think somebody else is probably better suited for that.

MR. TREPANIER: I wasn't particularly questioning the data but just asking for -- from the persons who are familiar with the model, what's the importance of that, the reliability of that emission data as to how this model has

predicted the results, economic results?

MS. DUNHAM: Well, it's important because it gives us a starting level, and then it's what we use to apply the control equipment to, but it doesn't -- if that changes, I don't think that changes the results of the analysis which shows that trading saves money.

MR. TREPANIER: So what I'm understanding you saying, the reliability that emissions data used in the model is not really a factor?

MS. DUNHAM: I think it's important in it would affect the end result, the actual numbers. The relative numbers would remain the same. The cost savings would still be there.

MR. TREPANIER: What impact would there be from, say, if it was the wrong -- say what if for the sources that you used that the number that was reported was actually only half like for a lot of the -- some of the facilities that their numbers from '90 to '94 quadrupled. What if between '94 and '96 again the reports show another doubling in the amount of emissions, what effect would that have on the model, the accuracy

of results?

MS. DUNHAM: Again, it wouldn't change the relative results. It might change the absolute numbers.

MR. TREPANIER: Maybe I don't understand when you are saying change the relative results. It's making a comparison between two things, I understand, but I don't know two things you are referring to.

MS. DUNHAM: Asking for the 12 percent reduction, allowing the trading of the compliance option compared to not allowing trading or any other command and control scenario.

MR. TREPANIER: How does the impact of the presence of cyclic emitters affect the market design or operation? I think this is more of a general question about how markets are designed, the economics of them.

MS. SAWYER: Could you explain what you mean by cyclic emitters.

MR. TREPANIER: We have discussed cyclic emitters earlier when the witness -- agency's witness from Environmental Defense Fund was on, and my recollection and what I am meaning now of

cyclic emitter is someone say like I read about recently that the oil business, the oil refining business, that this is a cyclic business. They've got years where production and emission levels are real high, and there may be several years in a row when emission levels are low so that would be an example, my example of a cyclic emitter.

MR. CASE: So your question then is what -- compare trading versus command and control?

MR. TREPANIER: I'm not looking for a comparison now. What I'm asking for is how does the impact of the presence of cyclic emitters within the pool of potential participants affect the market design or operation?

MR. CASE: I cannot think of a reason why their presence would affect market design or operations. In fact, virtually all businesses are cyclical to a certain extent, some more than others. I can't think of a reason why there would be special problems with cyclical emitters under a trading program under this design.

MR. TREPANIER: So this program there hasn't -- under this program that you assisted in designing, there hasn't been particular measure

taken to address the presence of cyclic emitters.

MR. KANERVA: Can I respond to that. One of the ways the program responds to that is through the way the baseline protocol is set, all right. The cyclical emitter will have to make a decision about what years are most representative for their emissions and provide us the justification why they're substituting if they're outside of the '94 to '96 time frame so they're factored in like anybody else. It's their judgment call and our review of what they propose.

MR. TREPANIER: Then are you saying that the market -- the market was designed to allow for cyclic emitters by allowing them to take an out year '94, '95, '96?

MR. KANERVA: Yep, I think that's what it is.

MR. ROMAINE: I think there's two aspects to this. One is how the program is set up to establish an appropriate allocation of sources going into the program. That's the issue that Mr. Kanerva described. The other issue is how is this program able to assure adequate reductions year by year, and there the response is that this

program establishes a cap on emissions and at the end of each seasons sources have to have enough ATUs for whatever they emit, and that means if a source doesn't emit very much in one of its low seasons, it may be doing okay.

If however it has a boom season, it's going to have to go out and get emission reductions from somewhere else to compensate for that. So cyclical production is also accounted for so far as the program has to meet its air quality levels as well, the back end as well as the front end going in.

MR. TREPANIER: When you say that the cyclic emitters are also -- that the market is designed for them in setting the baseline, I heard you just say that a cyclic emitter on one of their higher years would have to go out and purchase allotment.

Doesn't -- what Roger just told us that the program provides that the cyclic emitter can choose a year that is actually representative of their high production year, that they wouldn't need to go out and purchase other allotments? Their baseline is set at their high end in that

instance, is it not?

MR. ROMAINE: Their baseline is set at a representative level which may in fact go back to a higher operation in their cycle than a lower period, but they still would be required to provide 12 percent emission reduction from that level. That level will still be an average of two years. It will not be just the peak year so there will in fact be an obligation for that source to provide emission reductions.

One of the things that the trading program does is facilitate for that type of source. It may in fact allow that source to be able to do very little if in fact there is a year when it's not operating. That's probably another difference between command and control rule and a trading program. Command and control rule doesn't address whether further investment has to be made to reduce emissions in a poor year. If it operates a very low level, it simply says you have to provide a particular level further emission control, invest in certain capital improvements to the plant so that you can provide a particular rate of emissions.

The trading program will allow somebody to factor in exactly what is the amount that I'm contributing to the environment in a particular season and then have them take the appropriate actions to address that.

A cyclical emitter could also decide I want to control my emissions. That way they will provide a large surplus of ATUs and not quite as large a surplus of ATUs in the years when they are at high production and then a much larger surplus of ATUs in other years. So this issue of cyclical production I don't think is that critical to whether there's some sort of flaw in the design of the program.

HEARING OFFICER FEINEN: Let the record reflect that when people are referring to Roger, I think it's Mr. Kanerva so we have the record should reflect that. Thanks.

MR. KANERVA: I don't mind anonymous status.

HEARING OFFICER FEINEN: I do.

MR. TREPANIER: I have a question now regarding the economic forecasting model. Were the exempt sources that were listed in agency's

appendix D, how were these treated in the model? Were they treated as exempt sources?

MS. DUNHAM: Yes.

MR. TREPANIER: When they were modeled?

MS. DUNHAM: Yes.

MR. TREPANIER: Were the reductions, the 9 percent reduction, do you expect that the -- do the exempt sources total about 540 tons in appendix D?

MS. DUNHAM: I don't have that number.

MR. FORBES: I don't have the appendices with me, but it's totaled at the bottom on the very last page.

MR. TREPANIER: I only have six pages, but it doesn't have a total. I would suggest that the actual number is not operative in my question.

MR. FORBES: We can get it if that's important.

MR. TREPANIER: As a basis of my question, I looked through appendix D and roughly counted up to 540 tons of sources listed there as exempt burner sources. Now, are these sources, this 540 tons, is that 540 tons going to be subjected to a 9 percent reduction?

MR. FORBES: No.

MR. TREPANIER: Is the lack of these -- this segment of the stationery sources making no reduction, is that made up within the reductions -- the 12 percent reduction that's being required of those sources that are subject to the rule, are subject to the reductions required under the rule?

MR. FORBES: The reductions that the agency's asking for, the 12 percent reduction or 12. 6 tons per day is made up by the participating sources that are listed in I think it's appendix E and that's -- as we testified earlier that is sufficient along with the other reductions we're getting from area sources and local sources to achieve our 1999 ROP level.

MR. TREPANIER: This is a question for -- on economics. Will new facilities coming into the Chicago area have the effect upon the existing sources and even say an existing cyclic emitter to sell their excess ATUs, get them into use?

MS. SAWYER: Do you understand the question?

MR. CASE: The question is -- let me

read it back just slightly different and see if you agree with it. Would the ability for new sources to come into Chicago tend to raise the price basically of ATUs, is that what you're saying?

MR. TREPANIER: Well, I'm following up earlier you had said that as an advantage of this program, it's going to be easier for new sources to come into the area. Now, is that caused -- there's these excess ATUs available?

MR. KANERVA: The context that that answer was given in was that by adopting this program, we would be putting in place and having working an existing market people could relate to rather than the current situation where offsets -- there is no operating market that's there to encourage participation by people.

They've got to basically hunt down offsets in whatever fashion they can manage to do it. There isn't a market they're working for them to relate to. The new source doesn't get a new allotment. They have to find their ATUs in the marketplace, but the availability and the work-ability of that marketplace is an advantage

over the current situation.

MR. CASE: I would agree with that, and I don't quite understand how it should relate to the cyclical firm you mentioned earlier.

MR. TREPANIER: Would this be -- somebody coming into the market, a new emitter coming into the Chicago area, is there an economic force on the cyclic emitter to sell some of their ATUs in their off years?

MR. CASE: Well, they would certainly have that opportunity now that they wouldn't have before. They could only be, of course, temporary as opposed to offsets which tends to be a bit more permanent structure. Yeah, it would allow them to realize some value from that.

MR. TREPANIER: When you say they realize some value from that, that they're realizing value because their baseline is set higher than their actual emissions in some years?

MR. CASE: I don't understand the connection to baseline because that would be set on past periods. I'm not sure I understand your question with respect to the baseline.

MR. KANERVA: The reason they've got

ATUs to trade is because they're in the downside of that fluctuating emission level. It's no different than anybody else.

MR. TREPANIER: Thank you.

HEARING OFFICER FEINEN: Any other questions from the audience? Any questions from the board?

MS. ANN: My name is Elizabeth Ann from the Illinois Pollution Control Board. I have a question that was deferred from earlier in the summary of the technical support documents, and actually in Dr. Case's testimony, the agency states that small businesses are protected by an absolute cap, uncontrolled costs of $10,000 per ton, but it's not actually proposed in the regulation.

MS. SAWYER: You referred to that.

MR. KANERVA: Well, the reference was made to the thousand dollars per ATU or $10,000 a ton fee that would be charged for accessing and purchasing trading units from the ACMA. So if they're not able to get it in the market, then that's the set price that they would then fall back to to achieve what they need for their

compliance.

MS. ANN: It has nothing to do with any small business putting in control on their units and they can only spend no more than $10,000?

MR. KANERVA: Right, it's not that, right.

HEARING OFFICER FEINEN: I have a few questions. In the alternative methods, you talk about the 12 percent reduction by ERMS participating sources with trading. When you are talking about participating sources, that's a certain classification of sources. There's several other sources out there that can actually generate ATUs for trading, and I'm wondering if that would change the cost estimates for the savings between the trading program and your typical add-on control program. Because if you had people out there generating more ATUs to cost, raising supply would lower those ATUs and that would change the analysis between the other methods of meeting the 12 percent.

MS. DUNHAM: I think it would magnify the difference. There would be more savings.

HEARING OFFICER FEINEN: Was that

considered in this analysis?

MS. DUNHAM: We didn't consider any emission generators -- It is reflected in my testimony as one of the assumptions that might under predict the cost savings associated with the ERMS program.

MR. CASE: I think along the same line, trading allows all sorts of different alternatives to meet the same reductions. The process changes altering the production schedule. There's lots and lots of different things that over time should have the exact same effect, driving down the price of ATUs.

HEARING OFFICER FEINEN: My next question is on the table under summary of individual source analysis, example one says "rubber and," and I'm going to say that's rubber and plastics? If you look at your prefiled testimony, it says "rubber and."

MS. DUNHAM: Yeah, it should be rubber and plastics.

HEARING OFFICER FEINEN: On the next table, which is summary of regional economic impact analysis, you start talking about this

gross regional product being reduced by the different alternatives in ERMS. Did the agency calculate the reduction of the gross regional product if you just went with a straight 12 percent reduction?

MS. DUNHAM: That's alternative No. 1?

HEARING OFFICER FEINEN: That's alternative No. 1.

MS. DUNHAM: Without trading, yes.

HEARING OFFICER FEINEN: So that's the $69 million and $46 million?

MS. DUNHAM: Yes, correct.

HEARING OFFICER FEINEN: On -- well, I wrote down page 9, but it's on the compliance option model, the first bullet point says, sources may comply with the 12 percent reduction without participating in trading.

And correct me if I'm wrong, I thought if you were going -- if you're subject to the rule, the way you opt out would be an 18 percent reduction?

MS. DUNHAM: This isn't necessarily an opt out of the program. It's saying they may not participate in trading. They may still be subject

to all the provisions in the rule. There's nothing in the rule saying that somebody has to trade.

MR. KANERVA: They do their own compliance actions, whatever they are.

HEARING OFFICER FEINEN: Both Dr. Case -- I believe both -- I think you said in your testimony today and your prefiled that achieving the environmental goal is an aspect that has to be part of the trading program for it to work to make it, and one of the assumptions made by the agency or decision rules, made by the agency is that the program must reduce emissions of the ozone ceiling by 1433 tons, and we've heard a lot of testimony about it being off or not exactly meeting the necessary reductions.

What aspects of the viability of the trading program will be damaged by the fact that if those environmental controls is a sliding goal, let's say? I guess I'll ask you, Dr. Case.

MR. CASE: I certainly understand your point, and it is frustrating to have the data problems that we have, but I don't think that there would be any difference in the data problems

whereas if you were in a command and control situation and we were trying to evaluate how we did three years from now looking backwards.

MR. SAINES: Could you please speak up.

MR. CASE: I'm sorry. I was trying to explain that I don't think the data problem is inherent to the fact that we have a trading program. If we were reevaluating a command and control model that we were proposing today, in three years we would have to see how it stood up against the data problems that we have. I do think that one thing we can say about trading is that it is more resilient.

It works with a broader range of prices, and it tends to achieve the results at least cost or at a lesser cost than command and control. To the extent that we've gone out there and underestimated emissions by half, for example, that will come back to haunt us in the future just as it would with command and control.

HEARING OFFICER FEINEN: One last question. In your testimony you talked about how the ACMA is needed to control prices of the ATUs. It will give a maybe stabilizing effect on the

prices of ATUs. I was wondering if you could expand on that a little bit.

MR. CASE: I think ideally I would hope that account would never be used, that the ATU prices are always below that level and no one has an incentive to pay such a high price for an ATU. I think that's probably going to be the case. That's our rough estimate from the numbers that the agency has developed. I guess it may not be true so in that aspect, it's comforting to know that you have that upper bound, if need be, that you can dip into if you have to.

HEARING OFFICER FEINEN: Now, the account access to the ACMA, there's a set price for that, and that set price, I think, is based off the market price.

MR. CASE: Actually I'm not the best person to talk about that account.

MR. KANERVA: I can respond to that. There's a choice there. There's a fixed rate, but there's also an option to use an average from the market price if sufficient trade transactions have happened that we can calculate to a good average.

HEARING OFFICER FEINEN: So the fixed

price would definitely help fix the prices or stabilize the prices.

MR. CASE: It gives you have up and down.

MR. KANERVA: That gives you some at least certainty of what that is.

HEARING OFFICER FEINEN: I think those are all the questions I have at this time. Are there any other questions?

I guess while we're still on the record, I'd like to talk about the upcoming hearings that were set in April. I did put a Hearing Officer order out. It did contain prefiling dates for testimony and questions.

For all those who don't know, which I think pretty much all of us know, the next hearings are April 21st, 22nd, 23rd and 24th. I set the prefiled testimony for those hearings for April 4th with no mailbox. It has to be in the offices of the clerk of the board in Chicago on April 4th. It can't be mailed on April 4th. It has to be in the offices by April 4th.

Prefiled questions to the prefiled testimony has to be in my offices similarly by

April 14th. I'm going to ask for an expedited transcript for today's hearings so hopefully we'll have that either Friday or Monday. That gives everyone about two weeks to have the whole entire transcript, prepare for their testimony for that April 4th deadline.

The hearings are going to be in this room again for all four days. I'm going to check to make sure I'm correct in that because I have a hard time with these rooms. April 21st, 22nd, 23rd, 24th are all in these rooms. We have the room starting at 9:00 o'clock. I think we should start at 9:00 o'clock unless people have a problem starting at 9:00 o'clock on Monday. I think it's a Monday.

So we'll start at 9:00 o'clock then on April 21st with the prefiling dates. Is there any other matters we need to take care of? Board Member McFawn was wondering if there was going to be any -- if we know anyone is going to be prefiling testimony if we're going to have testimony for those dates. I see a few hands.

MS. MC FAWN: I was just curious.

HEARING OFFICER FEINEN: About four

hands went up for the record. Then I guess we'll continue it on the record until April 21st starting at 9:00 o'clock in this room with prefiled testimony being due April 4th and prefiled questions of the testimony being due April 14th in the clerk's office. Thank you.

(Whereupon, this hearing was continued.)

STATE OF ILLINOIS)
) SS:
COUNTY OF COOK)

LISA H. BREITER, CSR, RPR, CRR, being first duly sworn, on oath says that she is a court reporter doing business in the City of Chicago; that she reported in shorthand the proceedings at the taking of said hearing and that the foregoing is a true and correct transcript of her shorthand notes so taken as aforesaid, and contains all of the proceedings had at said hearing.

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