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ILLINOIS POLLUTION CONTROL BOARD

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Pollution Control Board

PEOPLE OF THE STATE OF ILLINOIS, Complainant,	)	
-vs-	)	PCB 00-211
TOYAL, INC. f/k/a ALCAN-TOYO AMERICA, INC., a foreign corporation, Respondent.	)	(RCRA Enforcement)

REPORT OF PROCEEDINGS taken before Tamara Manganiello, Registered Professional Reporter and Notary Public, at 375 West Briarcliff Road, Bolingbrook, Illinois, commencing at the hour of 9:00 a.m. on the 11th day of December, A.D., 2008.

ILLINOIS POLLUTION CONTROL BOARD
MR. BRADLEY P. HALLORAN, HEARING OFFICER
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A P P E A R A N C E S:

OFFICE OF THE ATTORNEY GENERAL
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69 West Washington Street
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Chicago, Illinois 60602
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BY: MR. CHRISTOPHER J. GRANT
MS. VANESSA VAIL

Appeared on behalf of the Complainant;

DRINKER, BIDDLE & REATH, LLP,
191 North Wacker Drive
Suite 3700
Chicago, Illinois 60606-1698
(312) 569-1000
BY: MR. ROY M. HARSCH
MS. YESENIA VILLASENOR-RODRIGUEZ

Appeared on behalf of the Respondent.

HEARING OFFICER HALLORAN: Today is December 11th, 2008. This matter is continued on record from yesterday, December 10th, 2008. Again, my name is Bradley Halloran. I am a hearing officer with the Illinois Pollution Control Board. I'm assigned to this matter entitled People of the State of Illinois, Complainant, versus Toyal America, Inc., formerly known as Alcan-Toyo America, Inc., a foreign corporation, Respondent. It's docketed under PCB-211. It's an enforcement proceeding.

Yesterday, the Complainant rested in its case in chief. The Respondent started in its case in chief. We're into the second witness. The Respondent has finished with his direct and the Complainant is about to cross the witness now on the stand. And I think what we'll do is swear Mr. Malmgren in again.

(Witness sworn.)

HEARING OFFICER HALLORAN: If there is no issues, comments or anything, Mr. Grant, you may proceed.

MS. VAIL: I'm Vanessa Vail, for the record, and I'll be doing the cross of Ray Malmgren.

WHEREUPON:

RAY MALMGREN

called as a witness herein, having been first duly sworn, was examined and testified as follows:

CROSS EXAMINATION

By Ms. Vail

Q. Good morning, Mr. Malmgren.

A. Good morning.

Q. Just to rehash what you told Mr. Harsch yesterday, you were hired at Toyal in 2000, correct?

A. July of 2000, correct.

Q. And you were hired as the engineering manager?

A. That is correct.

Q. And then how shortly thereafter did you become the safety, health and environmental manager?

A. In December of 2001, I believe.

Q. Okay. Now you testified that Toyal, I think, currently has 120 VOM emission sources?

A. It's a little over 120. It's about 129, I believe, is the actual count.

Q. Okay. Have all of the these 129 emission sources existed at the plant since 1995?

A. I can only speak since 2000. And at that time -- the emission sources that were present at that time were about that quantity.

Q. Okay. So in 2000 you were just under 129 or at 129 emission sources?

A. Right.

Q. Now when you started in July of 2000 the RCO was being utilized at the plant, correct?

A. Correct.

Q. And you testified that you -- upon when you started at Toyal you were brought up on all of Toyal's efforts to come into compliance with the VOM emission standards, right?

A. Yes.

Q. So you're aware that since the RCO's installation in 1998, not all of these emission sources had been ever connected to the RCO?

A. That is correct.

Q. Now you had mentioned yesterday that the RCO, for as long as you had known and based on

your history knowing the history at Toyal, never functioned properly, that it was, I guess, a financial burden?

A. I don't -- I can't attest to financial burden. But I can attest to the fact that a lot of letters were written by -- once we achieved compliance, a lot of letters were written to the State about maintenance breakdowns and what have you relative to the RCO. Prior to that there were maintenance issues, I'm sure.

Q. Okay. So when you were at Toyal in 2000 you testified that IEPA never liked the RCO?

A. That is what I was told by the then plant manager.

Q. Okay. And also that the RCO was shutting down a lot?

A. Correct.

Q. And as a result of these shutdowns, this was disrupting production?

A. After we received our operating permit under the FESOP, at that time part of that permit requires that we shut the plant down if the shutdown of the RCO exceeds 15 minutes. If it exceeds two hours, we're to notify not just the IEPA

district, but also we need to direct the State, we need to go directly to Springfield with our notice of shutdown. And, yes, we do have to shut the facility completely down once we exceed that two-hour period.

Q. Okay. But prior to being issued the FESOP when Toyal was using the RCO and not in compliance, it was shutting down a lot, correct?

A. Yes.

Q. And as a result of these shutdowns, was this disrupting production at all?

A. The RCO served as a means of ventilation for the operation. The ventilation of the processes -- many of the processes, when I started there, were tied into the RCO.

If the RCO shut down, the -- you know, I can only speak for -- and I really don't remember a lot, but I believe that for safety reasons at that time the safety manager would make the decision as to whether to shut down the operation.

Q. Okay. As a result of all these problems and the shut downs, you had to write a lot of reports, as well?

A. Only after I was moved into the position of safety, health and environmental manager and we had achieved a FESOP.

Q. Okay. So now today Toyal is using the CRO instead of the RCO?

A. Correct.

Q. And the CRO was installed in July of 2005?

A. Correct.

Q. Now you had testified yesterday and as we just -- well, that the reasons for replacing the RCO was due to these shutdowns, IEPA not liking them -- not liking the RCO?

A. The CRO was purchased and installed because of a lot of mechanical shutdowns, reports being written to the State, interruptions in production because many of the shutdowns caused exceedance of our permit as far as the timeline goes.

And, also, we purchased it because the RCO was as far as we could go relative to its ability to handle any kind of expansions.

Q. Okay. That's what you testified to yesterday. I wanted to ask you what was Toyal's

planning on expanding at that time?

A. Toyal has got a tremendous amount of acreage available and it was just -- at the time there was no discussions, to my knowledge, about anything specific for expansion purposes. But you always look towards the future, and as business people, we always look at the opportunity to expand our business.

Q. Now Toyal has Japanese and French operations, correct?

A. Correct.

Q. Now when Toyal is thinking about these future expansions is it true that as part of these future expansions they can include providing product or services to their French and Japanese operations?

A. Yes.

MR. HARSCH: Excuse me, can I ask to clarify? Would you please either refer to Toyal America, Inc., or if you're referring to the share owner, use the correct name of that share owner company, please.

MR. GRANT: Let's set it up for the record just so we --

MR. HARSCH: It's Toyal America, Inc.,

is the name of the Lockport facility.

MR. GRANT: Toyal, T-O-Y-A-L. Okay. That's Lockport.

MR. HARSCH: And should we use Toyo KK?

MR. VAN HOOSE: It's Toyo Aluminium KK.

MR. GRANT: Right, we talked about that yesterday. Toyo is T-O-Y-O and that's KK and that's the owner Toyal America.

HEARING OFFICER HALLORAN: Okay. We're still on the record, so if everybody can speak up because Tammi has to record this.

MR. GRANT: So for the record, it's Toyal, T-O-Y-A-L, is owned by Toyo KK and the French operation is Toyo KK or is that.

MR. VAN HOOSE: It's Toyo Europe.

MR. HARSCH: Mr. Van Hoose is under oath from yesterday.

MR. GRANT: We're just trying to, by agreement, come up with -- so that we make sure we're accurately reflecting it and Mr. Malmgren.

All of the Toyal, T-O-Y-A-L, companies are owned by Toyo KK.

MR. VAN HOOSE: The two, yes.

MR. GRANT: And Toyo KK is owned by --

HEARING OFFICER HALLORAN: I think it was explained yesterday, but explain it again.

MR. GRANT: This is just for the testimony with Mr. Malmgren so we know what we're talking about.

HEARING OFFICER HALLORAN: Correct. Mr. Van Hoose is still under oath.

MR. VAN HOOSE: Toyo Aluminium KK is our parent company, they're our shareholder. A hundred percent of our shares are owned by them.

Toyal Europe SASU is the French operation, similarly, 100 percent owned shares by Toyo Aluminum KK.

Toyo Aluminium KK is owned by Nippon Light Metals.

MR. GRANT: And the only hole I think we've got right now is that there's a similar plant in Japan?

MR. VAN HOOSE: There's a paste plant and a powders plant in Japan.

MR. GRANT: Who owns those guys?

MR. VAN HOOSE: Those are Toyo Aluminium KK.

MR. GRANT: Okay. So they operate those and then the -- for France and for the United States they do it under the T-O-Y-A-L name, correct?

MR. VANHOOSE: That's correct.

MR. HARSCH: Can I ask one follow-up question? The French operation and your operation are totally stand-alone corporations that have 100 percent ownership by Toyo Aluminium KK?

MR. VANHOOSE: Correct. Two Ks.

HEARING OFFICER HALLORAN: Let's go off the record for a second.

(Whereupon, a discussion was had off the record.)

HEARING OFFICER HALLORAN: We're back on the record.

BY MS. VAIL:

Q. Let's look at the CRO again. You

helped design the CRO, correct?

A. I was involved with engineering and the design concept and the selection of the pollution control device in my position.

Q. Okay. So did you help put together the proposal for Toyal's approval of capital required for the CRO?

A. No.

Q. So you testified that you helped in the engineering and design concept of the CRO?

A. I helped in the selection.

Q. In the selection. And when you put together this information, did you put it in a memo, did you memorialize it somewhere?

A. No.

Q. Okay. Can I ask then this information that you came up with, the engineering and design concept that you helped in the selection, there would be -- did you submit that to Toyal in any manner?

A. No.

Q. Okay. Are you familiar with Toyal's internal approval process?

A. Yes.

Q. Now are you familiar with the process that occurred for approval of the CRO?

A. Yes.

Q. Now based on the work that you did with choosing the CRO, would you agree that there is a lot of preliminary work that goes into getting a piece of equipment approved by Toyal?

A. That is correct.

Q. Now for Toyal to approve of the CRO, a proposal that they would look at would consist of the engineering plans, correct?

A. Correct.

Q. Proposed designs?

A. Correct.

Q. Estimates for equipment?

A. Correct.

Q. An assessment of several other alternatives?

A. Correct.

Q. Now the CRO, when this was submitted to Toyal, this proposal contained all of that information for the CRO, correct?

A. As far as I know.

Q. Okay. Now is it true that all of this

information that we just talked about, the engineering plans, the estimates, the assessments, they were able to be put together, assessed and submitted to Toyal's decision-making board and able to get authorization for the CRO and then install the CRO and get it operating, did this occur within one year? I'm sorry, that was a little disjointed there.

A. I cannot speak to the exact timing on it. It was more -- that would probably be something that you need to direct to the engineer manager, Mr. Debrodt.

Q. Would you be able to estimate the amount of time that it took from the initial decision to switch from the RCO to having that CRO being installed at the plant and operating?

A. Not specifically.

Q. Okay. Now after the CRO was installed and operating at the plant, this was a more economical piece of equipment compared to the RCO?

A. The word is more efficient.

Q. More efficient?

A. Uh-huh.

Q. And when you say more efficient, it

was more efficient in the use of gas?

A. Yes. And its destruction efficiency.

Q. Okay. And it had significantly or -- the shutdowns, were those affected, the number of shutdowns that occurred?

A. There were some start-up pains, yes. But other than that, since those have been straightened out, the unit has virtually been running continuously unless we choose to shut it down ourselves or mother nature.

Q. Okay. Now yesterday you had described where the Lockport plant is located?

A. Yes.

Q. Now this Lockport plant is located in an ozone non-attainment area, correct?

A. Correct.

Q. And this Lockport plant, during the period of noncompliance, which was 1998 through 2003 --

MR. GRANT: 1995.

BY MS. VAIL:

Q. -- 1995 through 2003, this area was designated as an ozone non-attainment area?

A. I don't recall.

Q. Now volatile organic materials, would you agree that they contribute to ozone?

A. Yes.

Q. Okay. I have one more question. During Toyal's eight years of noncompliance, did Toyal ever petition the Illinois Pollution Control Board for an adjusted standard pertaining to its emissions of volatile organic material?

A. I do not recall.

MS. VAIL: Thank you. I have no further questions.

HEARING OFFICER HALLORAN: Thank you, Ms. Vail. Mr. Harsch, redirect?

MR. HARSCH: Yes, I have a few.

REDIRECT EXAMINATION

By Mr. Harsch

Q. Mr. Malmgren, the State has asked a number of questions regarding the shutdowns that occurred with the RCO unit?

A. Correct.

Q. Are these shutdowns due to the -- were those shutdowns primarily due to the unit overheating and shutting itself down?

A. Yes.

Q. What caused the overheating?

A. In some instances, the units switching mechanism back and forth would malfunction. In other instances, the unit would not be able to handle the loading.

Q. And was the loading the primary cause of the shutdowns?

A. Primarily, yes.

Q. And what attributed to the -- by overloading, you mean that the unit saw too much VOM being directed to it?

A. That's correct.

Q. And was this one of the problems that Toyal had to correct as a result of the original design?

A. It was one of the problems. It required us shutting down certain aspects of the operation to reduce the loading.

Q. And I believe yesterday you may have testified that the existing ventilation system that was put in basically over -- provided too much airflow and was evaporating solvent?

A. That's correct. It had a tremendous amount of draw. It was literally evaporating the --

well, it overloaded from that.

Q. And in the absence of capture -- pulling air through that unit, those emissions would be less?

A. Yes.

Q. Pursuant to the FESOP that was ultimately issued for the unit, a number of shutdowns would have occurred that would have been less than 15 minutes in duration?

A. Yes.

Q. And those were simply due to the temperature alarm would shut the unit down, it would cool off and come back online?

A. It would shut it down and alert us to bring it back online, yes.

Q. So as soon as the temperature had decreased enough, you could put it back into service?

A. But in order to do that we'd have to locate the source of the reasons why it shut down. And in many instances we'd have to curtail certain parts of the operation to allow it to continue to run.

Q. And you're batch operations, are you

not?

A. Yes, we are.

Q. So it could be the -- one of the problems would be the widely varying VOM contents being fed to the RCO unit from these various batches?

A. That's correct.

Q. Toyal followed the same procedures for how it would respond to the RCO unit shutting down in terms of procedures? I mean, internally, the unit would shut down, you would isolate -- find out why it occurred, adjust the process and bring the unit back on line both before and after the issuance of the FESOP?

A. That's my assumption as far as when I -- before I came onboard, I can't speak for that time, but after I came onboard, yes.

Q. The only difference was the FESOP required you to go through this reporting. If a shutdown occurred greater than 15 minutes, send directly to Springfield a --

A. Shut the plant down after two hours, right.

Q. The RCO construction did not involve

any modifications to the permanent total enclosures or capture system that Toyal had in place at that time, did it?

A. No.

Q. So it was only the replacement of the control device itself that was involved in the construction?

A. There was ductwork associated with it, there was some controls for air intakes that were associated with it, there were some damper controls associated with it during the initial installation that I saw when I came onboard.

Q. So, basically, the RCO unit was constructed adjacent to -- installed and constructed adjacent to the RCO unit and through the damper and ductwork you just testified to?

A. Are you talking about the CRO?

Q. I'm sorry, the CRO.

A. Okay. That's where I'm confused.

Q. Let's go back and I'll withdraw the last couple of questions.

A. Okay.

Q. On the construction of the CRO unit, that project did not involve any changes to the

capture ductwork system and permanent total enclosures that had been installed and used at the time you demonstrated compliance with the RCO unit?

A. Initially, that's correct.

Q. So the unit was --

MR. GRANT: I'm going to object at this point to leading because I don't think this is so clearly established. I'd like to -- you're leading him through this testimony and I'd like to hear his answers.

BY MR. HARSCH:

Q. Where was the CRO unit installed?

A. Adjacent to the RCO.

Q. Was it necessary to install the ductwork and dampers prior to the CRO unit itself?

A. Just relocating it from the RCO to the CRO.

MR. HARSCH: Conclude.

HEARING OFFICER HALLORAN: Ms. Vail, your witness.

MS. VAIL: Thank you.

RECROSS EXAMINATION

By Ms. Vail

Q. Mr. Malmgren, it sounds as though then

the RCO was too small to handle emissions when it was purchased, correct?

A. It appears that way, yes.

Q. Thank you.

MS. VAIL: I have no further questions.

HEARING OFFICER HALLORAN: Anything further, Mr. Harsch?

RE-REDIRECT EXAMINATION

By Mr. Harsch

Q. Toyal successfully conducted a stack test, demonstrated compliance with the RCO unit and obtained a FESOP permit?

A. Correct.

MR. HARSCH: No further questions.

MS. VAIL: Nothing.

HEARING OFFICER HALLORAN: You may step down. Thank you.

MR. HARSCH: And at this point I will call Dennis Debrodt.

HEARING OFFICER HALLORAN: Off the record.

(Brief pause.)

MR. HARSCH: As a preliminary matter,

in a discussion off the record I think we've clarified that we have agreement that I do not have to ask the various witnesses to go through the fact that they've prepared their written testimony, that it was completed, that it's true and accurate and it is their testimony as part of our offer of proof process the questions that I asked Mr. Van Hoose, and that would apply to all of Toyal's witnesses for which we've tendered written testimony and which were accepted as an offer of proof.

HEARING OFFICER HALLORAN: Is that --

MR. GRANT: Yes, we agree. And we understand that all of the written testimony will be submitted into the record as an offer of proof.

HEARING OFFICER HALLORAN: That's correct. Thank you.

(Witness sworn.)

WHEREUPON:

DENNIS DEBRODT

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Harsch

Q. Would you please state your name and where you reside for the record?

A. My name is Dennis Debrodt. I reside at 6 South 361 New Castle Road in Naperville, Illinois.

Q. Mr. Debrodt, can you provide the Board with a brief description of your educational background?

A. I am a mechanical engineer with a degree from Purdue University. I've got about 34 years of service with various firms.

Q. In what capacity are you presently -- where and in what capacity are you presently working?

A. Presently, I am engineering manager for Toyal America.

Q. And what are your duties as engineering manager?

A. As engineering manager, I have several individuals that work for me, I have another engineer that works for me, I have a technician, I have a maintenance supervisor, I have eight

maintenance mechanics.

And our duties basically are to operate the utilities in the plant, oversee maintenance of the facilities and to do capital and expense projects for different projects, either environmental-, safety-, production-oriented.

Q. Can you explain in general terms how engineering projects are managed at Toyal?

A. Depending on how the project is set up, if it's a process project, generally we will develop most of the process projects.

However, because we have a fairly small staff, if there is additional help needed, we will utilize outside engineering firms and consultants to help execute those projects.

Generally, we will develop the process, put the P&IDs together for that process, develop estimates of cost, submit those in a project approval process that we have through the management group for approval. Once it's approved, then the engineering is executed, construction is executed and so forth.

It's a fairly large project if it involves things out of our expertise such as civil

engineering or structural engineering, which we don't have that expertise. If we need to have professional engineers sign off on, that will be done with an outside firm. And other -- you know, we utilize outside firms for drafting, support and things like that.

Q. Is what you described, based on your work experience, the norm for companies of your size?

A. I believe so. I have worked for a number of different firms, PPG Industries and BASF Wyandotte and Ball Corporation. And I've also worked for an engineering firm, ATSI Engineering. And in all those cases, depending on the nature of the project, as projects get larger and larger and the staff is not able to deal with all the complexities of the project, outside firms are used for that.

Q. When you joined Toyal and became the engineering manager in December of 2001 did you undertake to understand what efforts Toyal had made previously in its efforts at demonstrating compliance with the VOM rules?

A. When I started back with Toyal -- my

work experience with Toyal is from 1989 to 1995. I left at that time. I rejoined in December of 2001. And at that point, yes, I started to review the work that had been done from several aspects.

One, because I was charged with trying to keep the RCO operational, that was part of my duties and, secondly, was to try to bring it into compliance. And so we started the process to review all the previous work that had been done.

Q. At that point in time Toyal had stopped working with Woodward-Clyde; is that correct?

A. That's correct.

Q. And Toyal at that point in time was working with Chemstress Engineering?

A. They were, up until I started. And I ceased working with them, also.

Q. And why did you cease working with Chemstress?

A. The projects that they were working on were in final construction. They had been brought on board to work on these projects and then they were also doing project management on them on site. One reason, I didn't feel that I needed that

support. And in reviewing the work that they had done, I wasn't really that pleased with the work that they were doing on the projects they had going.

Q. What projects based on your review did Chemstress assist Toyal in beginning in the time frame 1999-2000 and up to the time you joined as engineering manager? Can you briefly summarize those?

A. In going through the drawings and the documentation and everything else for the projects, they basically were involved in what was called the B Unit expansion at that point. It was something like B Unit expansion where a new set of ball mills were installed. They had engineered that work and all the sundries around that. They were involved with the ongoing work with the RCO in trying to identify source points and engineer solutions to those.

They were also involved in the chiller vacuum system design and installation. And then they also had other projects that they had executed and were complete in a utility improvement project and that's all I can think of at the moment.

Q. Can you explain the manufacturing

processes in general terms at Toyal in the paste and flake manufacturing process?

A. The paste manufacturing is somewhat of a batch process. The whole system starts with combining powder and mineral spirits and a fatty acid in a charge tank, which is mixed, discharged into one of multiple ball mills.

The basic part of the process is the ball milling of that product from a round particle into a flat flake, that takes place over hours, at which point the mill is flooded with mineral spirits to discharge the slurry into a receiving tank.

From there, it is pumped to a screener system, multiple screeners, discharges into another tank, is pumped through a magnetic ferro filter to remove magnetic particles into another tank, pumped into a filter press where the solvents at that point are extracted to 75, 85 percent solids.

And then that product is manually cut out of that filter press and dropped into a mixer where it accumulates multiple batches and then is color matched to the product specifications.

In support of all that then is a series of tanks and pumps that move the slurries around that hold what we call process oils, which is essentially mineral spirits. That is reused over and over through the process until the contaminants build up in those process oils. So there's other sundry systems that support that.

There are also vacuum pumps that are used to extract mineral spirits from the oversize paste that are -- that is generated in the screening operation.

Q. What was your understanding of problems Toyal was facing in December of 2001 time frame in terms of being able to demonstrate compliance with the regulations?

A. In reviewing the system that was there and in discussions with plant personnel and the consultants that we were using at that point, the main issues were, one, was that the RCO was -- we were having trouble keeping it running because it would shut down from overheating and the fact that we had not identified a system or how to test the system for compliance. That was the main challenge out there.

There were also additional source points that were identified as needing to be hooked up to the system that the facilities were not in place to do yet.

Q. Who were the consultants that Toyal was utilizing at that time?

A. When I first started there we basically were using ARI, which is a testing firm that had done a lot of testing for us previous to that point and were doing ongoing testing at that point. Admiral Environmental was also on board at that point. And those were the two primary consultants we were using.

Q. When you said test the system for compliance, are you referring to the capture portion requirement of the rule or the destruction efficiency?

A. Well, when I started I wasn't really sure which of those I was interested in. What I was trying to understand was what it would take to make the system compliant.

And out of those discussions came the realization that, you know, the destruction efficiency of the unit wasn't necessarily an issue.

We felt that the unit was performing very well from that standpoint. The real problem was the ability to capture and quantify what was being captured.

Q. Can you describe the level of process data that was available at the time in terms of VOM concentrations, airflow rates or other parameters?

A. Well, when I first started we didn't have anything for flows other than what we could manually measure. We had an FID on the stack at that point. That was being recorded on an analog recorder that really did not give us much resolution, so there was very little.

And there was nothing that told us specifically what each of the hoods were doing at that point.

Q. Is it your understanding that -- in the absence of that data, had Toyal relied on engineering estimates on its permit applications to date?

A. That's what I would -- yeah, that's what I believe was done in putting the application together, that they were all estimates.

MR. GRANT: Can I ask, Roy, if you can clarify? I know he's talking about ARI and

Admiral and the sorts of things he's talking about now. Is it correct to assume that that was in a second stint?

MR. HARSCH: Yes.

MR. GRANT: That's the period you're talking about?

MR. HARSCH: I believe.

MR. GRANT: Thanks.

MR. HARSCH: The best person to ask is the witness.

BY MR. HARSCH:

Q. In this line of questioning you're referring to when you assumed the responsibility of engineering manager at the end of 2001?

A. That's correct.

Q. It's your understanding that Toyal had filed a request for a construction permit and that permit had been granted to replace the RCO -- RTO with an alternate control device as well as a construction permit to finish -- to install and operate the vacuum chiller?

MR. GRANT: Just, again, to clarify, did you mean replace the RCO? I think you said RTO.

MR. HARSCH: Yeah.

HEARING OFFICER HALLORAN: You did say RTO.

MR. HARSCH: Yes, replace the RCO with the RTO.

BY THE WITNESS:

A. In reviewing what was done and discussions with the plant personnel at that point there were a number of things on the table. My understanding was that we had a construction permit to do everything that we were doing, finish the construction on the B Unit and to complete the work on the RCO. That wasn't really my side of that project work. And part of that was discussions that the RCO may need to be replaced with or modified to an RTO.

And early on in my work I started to investigate what was required to be able to do that. I wasn't sure if it was actually necessary, but that was part of the, you know, multi-step investigation was to see what was required to do that. The way I pursued that was to go to the original equipment manufacturer and discuss modifying the unit to an RTO.

BY MR. HARSCH:

Q. And what were the results of your investigation?

A. Well, eventually, I came to the conclusion that I did not need to modify the RTO. But that was well into 2002 before I came to that conclusion.

Q. Did you request -- did you work with ARI to come up with a testing plan to generate additional data regarding the emissions from the various emission points that had to be captured?

A. In working with ARI, the -- we had a couple things going with them. One was they were helping us attempt to put a data acquisition system in to gather better data off of the RCO operation.

And the second part was this whole issue of, well, what is it going to take to make this thing compliant and to be able to do a compliance test and be successful at it.

ARI, in evaluating the system, was not able to put forth a program that I felt comfortable with that I felt would give us success and so at that point we started looking for someone else to help us with that.

Q. Had ARI given Toyal an estimate on a program?

A. I don't actually remember how far we got with them on that.

Q. That's fine. In 2002 did Toyal continue with its ongoing projects controlling emission points either totally enclosing them or venting them to the existing control device?

A. We did. You know, before we really got going on -- moving forward on that, though, was we brought Clean Air Engineering in to help us come up with a plan to do that. And so they were really one of the other players that came in to work with us.

Q. And together between Admiral and Clean Air Engineering did you develop a plan?

A. Yes, we did.

Q. Can you describe that plan?

A. What came out of our meetings with Clean Air and Admiral was the principle of using a permanent total enclosure hood for each of our source points. And up to that point we didn't really fully understand how that worked or what was involved in that and so we were able to develop that

criteria and a plan for executing it that way.

And that seemed like a workable plan for us, that we could take each source point and design a hood that would meet that criteria.

Q. And did you proceed to, in fact, do that?

A. That's what we did. And the basic criteria that was utilized was to be able to maintain a vacuum of greater than .007 inches.

Q. And am I correct that in all of the pieces of equipment that you described that are involved in your manufacturing process, that any place that there was an opportunity for emissions, that those had to be either enclosed totally or enclosed to meet the qualifications of permanent total enclosure and connected to the control device?

A. That's correct.

Q. Can you provide a description of one of the projects that would help the Board understand the level of effort that was required?

A. One of the areas that had not been addressed by Chemstress' work initially on the work on hoods was the capturing of emissions from the process tanks in the tank farm.

There are six different production units that utilize 12 tanks in that area. There is a fair amount of emissions generated at each of those points during the filter press drying steps. The problem is that all of those tanks are API-type tanks with pressure vacuum relief devices on them and connecting them to the RCO would impose a vacuum that could be varying and could potentially pull the tanks down too far from a vacuum standpoint.

So I needed to come up with some other mechanism to connect to them and still meet this criteria of a PTE. And the system that I came up with for that was to install a cyclonic tank that would act as a PTE hood itself and it would merely vent each of the API tanks within their prescribed working pressure ranges into this cyclonic tank and it would act as the hood to connect to the RCO.

It was kind of an indirect method of collecting from each of these source points without imposing any type of safety concerns on the API tanks themselves. So all of that equipment then had to be sized and detailed and constructed and then installed and all of that ductwork properly sized for flow and routed to the collection header

for the RCO. All of that work was done towards the end of 2002 into 2003 prior to us doing our compliance test.

Q. And you did all of that engineering work internally?

A. That's correct. I did the work internally and I used outside drafting services.

Q. Can you briefly describe what was required to control the emissions at the screener?

A. The screeners, much of that work had been developed by Chemstress prior to me coming on board. The hoods that were developed there were done at that time. But there were some -- they were very complex. They had multiple openings in these screeners and there are 46 different screeners and each one had to be -- they were actually partially considered a PTE in one portion of the screener, but then another portion where it discharged for oversizes in product were considered fugitive emission points.

And all of that was discussed both among all the consultants, Clean Air Engineering and Admiral, but also with the Illinois EPA to try to understand whether we had a workable design that

would pass compliance tests.

Q. Was a second FID installed at the facility?

A. Early on in the investigation of the unit, one of the problems we had was understanding what was going on with the RCO itself, was it overloaded, you know, was it undersized.

And to really understand that better, one of the things we did was to purchase a second flame ionization detector and install it on the inlet side of the RCO and that allowed us to track the loading coming into the unit. And at the same time we also installed flow monitoring instrumentation to allows us to actually totalize the level of VOMs going into the unit.

That allowed us to start assessing then whether the 39 hoods that were connected originally and the 129 at the end that would be connected, whether we would be able to do all of them. And once we started to get control of all of that and an understanding, we determined that we could capture all of the hoods and operate the unit.

Q. That's the existing unit that was in place?

A. That's correct, the RCO.

Q. Was that when you decided that it was not necessary to modify the unit?

A. That is correct.

Q. You mentioned the data acquisition system that ARI had been working on?

A. Uh-huh.

Q. Is that what you're referring to here?

A. It was initially and then later we actually changed that to another data acquisition system that I designed and put in that allowed us to gather more data and to do these totalizations of the VOM loading going in.

Q. When you got this data and were able to determine that it was not necessary to modify the control device, what decision did you make with respect to the necessity of utilizing the vacuum chiller unit?

A. The vacuum chiller, just in general, looking over that project when I came onboard, it just didn't look very comfortable to me. There was a lot of work yet to be done on it. It was going to be very complex to operate. It was remote from the rest of the process areas and it was going to create

logistical problems.

And as I started to evaluate all of the source points and what could be collected, I determined I didn't need to use that chiller vacuum system to capture all of the vacuum pump discharge points. And so discontinuing work on it at that point was a logical decision.

Q. If you replaced -- you had multiple, five or six vacuum units in the plant?

A. There are actually nine vacuum pumps in total.

Q. And do you recall how many of them were going to be replaced by the central unit?

A. Well, the engineering drawings didn't actually show me that but my understanding was certainly all the paste units were -- a lot of piping was already in place for those, but my understanding was that the flake drier vacuum pumps were also being connected to it. But none of that work was completed at that point.

Q. What happens to the process if a vacuum system goes down?

A. Well, basically, all the units depend on a vacuum system to operate for them to finish a

batch process. The -- all the paste units, if we can't dry the oversize coming off the screeners, the system basically backs up at that point.

In the flake drier system, if you don't have a vacuum, you can't dry the flake -- or dry the paste to flake form.

Q. If a vacuum system shuts down, you have to shut down production?

A. That's correct.

Q. Did you have any concerns regarding the replacement of individual vacuum units with a central vacuum system regarding reliability?

A. Looking at the design on the system, it was a very similar vacuum pump design to what we were using, which gave us many maintenance problems and it potentially would have done that, yes.

Q. On a project that had to be engineered to enclose -- satisfy the permanent total enclosure requirements, do those projects potentially hamper the ability to operate the equipment in terms of operator access or observation?

A. All of the hoods create some kind of an encumbrance in the operation, whether -- what you want to be able to do is get a window into the

process at different points along the way. Capturing all the emissions and maintaining the PTEs kind of works counter to all of that. And so, yes, it does make it difficult.

Q. And do all these hoods have to be ducted to properly-sized headers and ductwork?

A. Yes.

Q. And part of the efforts that you performed include revisions to those -- to that hood work and dampering systems?

A. On the original systems installed by Woodward-Clyde, they introduced dilution air very close to the hoods, each of their collection points on the hoods. And one of the problems with that is it made it very difficult to try to balance the system. When you have 129 hoods all going into one common collection system, each hood has to have a very specific flow rate to meet the PTE requirements and balancing all of that is very difficult.

So what we ended up doing was removing all that dilution air from the individual source points so that we could better balance the system. And for the RCO, we then introduced that closer to the RCO as one central point that we could

control. So, yes, we did modify all those.

Q. What were the changes that were necessary to be done in order -- that Toyal could proceed with the air stripping for solvent recovery process?

A. That was -- from my standpoint on this project, that was basically a matter of treating that as a source point and getting it connected to the RCO. So what I ended up doing for that was designing connection points in the solvent distillation system, which were the clean oil tank and the surge tank and there's an interface tank in the process, getting them connected to the RCO with properly-sized ductwork and getting that routed.

That process is somewhat removed from the tank farm, which is also somewhat removed from the paste building which is where all the main collection headers were. And so all of that had to be designed and worked out.

Q. And did you, in fact -- so only the tanks required connection, not the distillation or air-scrubbing system?

A. The air-scrubbing system is done in the clean oil tank.

Q. But it's the emissions from that tank that had to be connected?

A. That's correct.

Q. And those were ducted to the ductwork that was the last that was installed to pick up the tank farms that you previously testified to?

A. That's correct.

Q. And that was due to the physical layout of the plant?

A. That's correct.

Q. Do you recall the approximate cost of the initial round of work that was performed in 2002?

A. When I started working on the project my first goal was to try to understand the complexity of what I was dealing with and we put together a $75,000 project that was approved, which basically allowed us to start some modifications on the hoods, to complete our data acquisition system, to put our second FID in and to study the system and determine whether the RCO was going to be sufficient for -- as a control device.

Q. Once you made that determination that it was adequate, was a second project submitted?

A. Yes. And at that point then I put together a second project for $382,000 to basically design and execute the installation of the remainder of the hoods. A lot of that work -- a big part of that was the tank farm system that had to be designed and constructed and then, you know, completing the rest of the source point connections, the vacuum pumps and things of that sort.

Q. Can you explain for the Board from an engineering standpoint what difficulty or problems, if any, had to be overcome because of the concerns for the potential for fire and explosion at the facility?

A. Well, fires in the paste operation are always a major concern and we have a long-documented history of fires there. Everything that we design for that area is done from an electrical classification standpoint to a Class 1, Division 1, Group D classification, which is an explosion proof classification.

So it's always a concern. A lot of the processing we do, we're working with these mineral spirits in the 90 to 100 to 105 degree Fahrenheit range, which is very close to their flash

point and so you have to be very careful in the design of any of the process equipment or connections to that process equipment.

Q. Does that add complexity to the projects?

A. It always does.

Q. Does it add -- require additional time to resolve those complexities?

A. Well, it's certainly always got to be part of your progress in going through the project to evaluate those changes and make sure you're not going to create problems for anyone.

You know, we try to review all of these with people who are working out in the plant and the production side of the business before we move ahead with process changes because in some cases it can affect product quality but in some cases it can affect safety. And if the operator is interfacing with something, we've got to make sure that he can do that safely also.

Q. Did Toyal make improvements regarding its fire suppression system during the time that you assumed -- after you assumed the position of engineering manager?

A. Well, that was a whole other area of work that was ongoing at that time. Because there had been a number of fires prior to 2001, we were under a lot of pressure from our insurance underwriter and the local fire department to implement improvements to all of our fire suppression systems in the paste operation.

So during that same time period we executed two major projects in that area, one being to install fire suppression systems for all of our paste -- filter press hopper and mixer systems, so that was a fairly large project. It involved nine different systems that had to have suppression systems designed for them and all the controls associated with that.

And then the second major project we executed during that same time period was to tie all of our existing fire suppression and alarm systems into a centralized alarm system. So many of these processes -- for instance, building 2A has multiple zones of high pressure CO2 suppression systems, plus then we had these Metl-X systems we installed, all of those were connected to a centralized alarm system that would go directly to

the fire department. So all that work was ongoing at the same time.

Q. And that work had to be coordinated with the work that you were performing to improve the capture and modify the system for permanent total enclosure?

A. That's correct because in some of those cases some of those suppression systems are tied into that equipment and in some cases monitoring devices are installed on equipment for detecting high heat conditions.

Q. I think you previously testified that you've determined that the RCO had adequate capacity once the system was properly balanced and airflows were modified and the that enclosures were made; is that correct?

A. That's correct.

Q. Was your opinion subsequently upheld by -- when you conducted a stabbing test?

A. Yes.

Q. And I think you testified that you had -- that Toyal and its consultants had discussions with IEPA regarding the changes on the capture PTE work. Were those discussions with Kevin

Mattison?

A. Yes.

Q. And Mr. Eric Jones from the permit section?

A. I wasn't involved up front with Eric Jones, but they were with Kevin Mattison.

Q. And did Mr. Mattison come out for a pre-test visit and view the work that had been done prior to the stack test that was conducted --

A. Yes.

Q. -- in 2003?

A. Yes.

Q. Was he satisfied with the work?

A. We had a couple of points that needed to be modified per his input. But one of the reasons for having the sit-down with him was to understand ourselves whether we were on the right track and whether we felt that we had the system we needed to pass compliance test. And so he gave us some insight into a few of our source points and we actually incorporated those modifications prior to the stack test then.

Q. And IEPA has accepted that stack test and granted a FESOP permit?

A. That's correct. Kevin actually was on site for much of the testing.

MR. HARSCH: I have no further direct questions.

HEARING OFFICER HALLORAN: Thank you. Complainant, your witness.

MR. GRANT: Okay.

CROSS EXAMINATION

By Mr. Grant

Q. First, I have to ask where you worked at BASF Wyandotte because I worked there at one time, too.

A. Oh, really? I worked in Wyandotte.

Q. Did you? I did too.

A. Very good.

Q. You were probably doing real work in the plant. I was in the office.

A. I was working in the plant engineering staff.

Q. Which plant?

A. It was at the Wyandotte facility when they still had a chlorine caustic operation and when they still had a soda ash operation.

Q. Yeah, I remember those. I had to ask.

It's not called BASF Wyandotte anymore, is it? I don't think it is.

A. I may only be called BASF. It is still there, I know that. But many of those facilities are shut down at this point.

Q. Getting to this case, you mentioned I think when you came in in 2001 that there was an ongoing B Unit expansion?

A. That's correct.

Q. Do you know what the capital cost of that expansion was?

A. In total, it was in the $5 to $6 million range.

Q. I'm not an engineer. Your testimony regarding what we refer to as Phase II, which is what needed to be done to demonstrate compliance between 2002 and 2003, it sounds like -- well, first, let me ask I think you said that there were 39 hoods originally and 109 hoods finally?

A. One-hundred-twenty-nine finally.

Q. One-hundred-twenty-nine hoods finally. I was wondering what originally and finally was. Was originally when you came in in 2001?

A. The original installation was what

Woodward-Clyde had engineered.

Q. So that was the 1998 installation?

A. That's correct.

Q. Okay.

A. And then by the time I got there in December of 2001 additional hooding had been installed as part of the B Unit work and so there were, I believe, about 28 more hoods installed at that point. But more importantly what they had done was they had identified all the other source points and, you know, that was the road map that I kind of used to work to completion.

Q. So from 2001 until the stack test or demonstrating compliance in 2003 you installed more hoods?

A. That's correct.

Q. What I understood you to say is that you had a vacuum collection system and essentially you were collecting the emissions from the sources through hoods under a vacuum and then it was a matter of routing the piping, adjusting the airflow, getting rid of the -- it wasn't fugitive the term you used, but getting rid of the infiltration of air that was creating problems in the collection, those

sorts of things.

Now this is pretty standard engineering technology for a chemical facility, isn't it, to have things under vacuum and to have, you know, the piping and the routing the vapors, that sort of thing?

A. Certainly, capturing emissions is a standard part of chemical processing. Meeting the criteria for a PTE was a little bit more of an issue because, you know, there's very specific criteria for that that has to be met.

And early on one of the things we discovered was that with the 39 hoods that had been originally installed was that we were pulling a tremendous amount of VOM off of those systems and that was creating overloading problems on our RCO.

So getting those under control and still meeting the PTE, you know, it was a matter of what needed to be done to do that. And that was kind of just -- it was kind of on-site work you had to do. You have to do some kind of testing and you have to find out just what's involved in the capturing. It wasn't solely based on the emissions being generating by the production equipment, it was

more what would it take to meet that PTE criteria.

Q. So that was mostly engineering work --

A. That's correct.

Q. -- as opposed to technology itself?

A. That's correct.

Q. The technology itself being the hoods and the vacuum and the routing and that sort of thing?

A. Uh-huh.

Q. That sort of technology, in other words, the vacuum and the collection equipment itself, that was available early in the '90s, wasn't it?

A. The main header was.

Q. But as far as something like a fume hood, that sort of technology was available in the early the '90s, wasn't it?

A. Sure.

Q. And the same with the vacuum systems, they were equipment that was available in the early '90s, as well, too?

A. Sure.

Q. You mentioned the complications caused by fire issues and certainly we've had testimony

here that there were a number of fire problems and it's inherent, I think, in the process as Mr. Van Hoose explained.

Would your engineering -- would the installation of the control equipment that you did between 2000 and 2003 or from the time that you came in that you can testify to until 2003, would you have been able to complete that faster if you did shut the plan down and vented the vapors -- explosive vapors and then done the engineering work?

A. Actually, having the plant operating was essential in being able to size the equipment and understand what was going on with the equipment. You know, we needed to do the testing of the flow and the loading to understand whether or not our sizing was adequate or not. So from my standpoint, having the plant operating was very important.

Q. And I guess what I'm thinking about, I'm just trying to -- because Mr. Harsch was asking about the fire dangers you had to take into consideration while doing the work. That wouldn't have been for the measurement portion? In other words, you could measure the emissions and the flow without any additional threat of fire?

A. That's correct.

Q. So what he was talking about or what you really had to be concerned about was actual installation of the equipment?

A. Well, and to ensure that the equipment, once it was in place, did not create hazards for us.

MR. GRANT: That's all I've got.

HEARING OFFICER HALLORAN: Thank you, Mr. Grant. Mr. Harsch, your witness.

REDIRECT EXAMINATION

By Mr. Harsch

Q. You responded that fume hoods and vacuum systems, obviously, were available in the 1990s. Would a standard fume hood qualify, in your opinion, as a permanent total enclosure?

A. Well, every -- you know, all the source points, each one had to be looked at individually and to ensure that we could pass that criteria. So, you know, there are all kinds of standard hoods, but they all had to be custom fit to the specific equipment they're connected to. So it's not as simple as a standard hood for the criteria. They kind of all had to be done together.

Q. You didn't hear it yesterday, Mr. Malmgren testified about the modifications that were necessary on the screener hoods and qualified those as a permanent total enclosure. You're familiar with those?

A. That's correct.

Q. Would you call those a standard fume hood as the way they presently exist?

A. No. Those are actually very specially designed for that piece of equipment because the -- because there's a lot of the space constraints and there's process piping going through the middle of the hood to get the product to the screener. So those are very custom designed.

MR. HARSCH: Thank you. Nothing further.

MR. GRANT: Nothing.

HEARING OFFICER HALLORAN: Thank you, Mr. Grant. You may step down. Thank you so much. Let's take a five-minute break.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER HALLORAN: We're back on the record. We have taken a short break. I believe the Respondent is going to be calling its fourth witness.

(Witness sworn.)

HEARING OFFICER HALLORAN: Thank you. Mr. Harsch.

WHEREUPON:

STEVE ANDERSON

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Harsch

Q. Good morning, Mr. Anderson. Would you please provide the Board with a brief description of -- first, state your name for the record, where you reside, who you work for and a brief bit of background.

A. My name is Steve Anderson. I reside at 538 Lowell Avenue, that's L-O-W-E-L-L, in Glen Ellyn, Illinois.

I work for Admiral Environmental Services, Incorporated, as an environmental engineer. I've been with Admiral for 18 years.

Prior to that I worked for the Bruning Division of AM international as their environmental and safety compliance manager. That covered 11 manufacturing and warehouse facilities. I was responsible for their environmental compliance.

Prior to that I worked for Vulcan Materials, which was previously owned by BASF Wyandotte in their chlorine and caustic manufacturing facility in Wisconsin.

Q. Have you prepared a resume in this proceeding?

A. Yes, I have.

Q. If I direct you to what is marked as Toyal Exhibit 16, is this a copy of your resume?

A. Yes.

Q. Is it true and accurate to the best of your knowledge and belief?

A. Yes.

MR. HARSCH: I would move for the admission of Exhibit 16.

MR. GRANT: No objection.

HEARING OFFICER HALLORAN: Respondent's Exhibit 16 is admitted.

BY MR. HARSCH:

Q. Can you describe Admiral Environmental Services, Incorporated, in terms of what services Admiral offers?

A. We're an environmental consulting company that's been in business since 1971. We offer environmental services to almost exclusively industrial clients in the Chicagoland area. We only have one office.

Currently, we have three full-time engineers, one full-time chemist. There's a couple of technicians -- field technicians that we have, there's two part-time, one is an engineer, one is a consultant that are also employed there.

I'm a professional engineer registered or licensed in the state of Illinois. We also have another, the owner is a professional engineer. One of the part-time people is a professional engineer. I'm also a certified hazardous material manager at the master level, which is the highest level of certification.

Q. How many industrial clients does Admiral have?

A. In the past year we have provided

services to over 180 industry clients. Some of -- in years past, that's been up over 200. It fluctuates from year to year.

Q. And what type of industrial clients would be typical clients?

A. We do a lot of work for clients in the industrial manufacturing codes of between 20 and 40, which are the traditional manufacturing codes. We do work for fabricated metal industries, food industries, chemical industries, paper product industries, printers, coders, just a whole myriad of clients.

Q. Are you generally familiar with the VOM regulations the Pollution Control Board has adopted?

A. Yes. That's my specialty.

Q. Have you and Admiral prepared Title V permit applications?

A. Yes, we have. I'm directly responsible for the preparation of the Title V permits that Admiral clients have done. I also have been involved in the complicated FESOP permit applications. I do a lot of work with clients that have compliance issues that they need help on,

record keeping, how to set up their record keeping, that type of thing.

Q. Did you work on Title V applications in the first --

A. Yes.

Q. -- when they were due in 1995?

A. Yes, we did.

Q. Do you have -- was it uncommon or common for Title V permit applications to list noncompliance and include a compliance schedule?

A. I don't think any of our clients at the beginning stages could say they were in total compliance with the regulations in there. It was very common to have a noncompliance issue back in the '95-'96 time frame when these Title V permits were put together.

Q. As the Agency processed the Title V permit applications and sought additional information, was it common for changes to be made?

A. Absolutely. We didn't put in a Title V permit where we didn't make changes to it as it became better understood what the regulations required, as the Agency became better acquainted with what was really going on at the facilities. It

was a learning process for everybody involved.

Q. In many instances was this a cooperative effort between you, as the consultant, the client and the Illinois EPA?

A. It had to be, yeah. You weren't going to go anywhere if it wasn't.

Q. When did you first begin to provide services to Toyal?

A. Ray Malmgren called me in September of 2000. I had known Ray and worked with Ray in Ray's previous position at Sun Chemical. Admiral had provided services to Sun Chemical and Ray called me and said they needed help at his new position here at Toyal.

Q. Beginning with your initial visit in September of 2000 in, obviously, Admiral's retention, did you undertake efforts to understand what Toyal had done to date in terms of attempting to achieve compliance?

A. Yeah. I distinctly remember this in walking in and doing our first visit to find out what their issues were, how unique in plant was. I had been in a lot of facilities, a lot of different environments. This plant was unique in the number

of emission sources they had. It was unique in the regulations requirements. It is a catchall -- this Subpart TT of the Illinois regulations is a catchall regulation that involves a lot of different -- or could involve a lot of different sources on there.

They told me about the oxidizer and it was unique in that the word I got is the environmental -- or Illinois EPA didn't like it, didn't accept it, didn't want it. To me, in working with the EPA, that was unusual for the EPA to take such a stance. And it was clear to me that the facility didn't have a full understanding of the regulations and what exactly was required.

It took me a while to figure out what the processes were, how they worked, how they could interconnect between each other. It was a very complicated process and it was going to be very complicated to show compliance with the regulations.

Q. At the time you first started working with Toyal, a complaint in this matter had been filed, had it not?

A. That's correct.

Q. What was your understanding of the basic air pollution issues that existed between

Toyal and the State at that point?

A. In our first meeting they gave me the two counts, the air counts, that were in the complaint. And I read through those and it was clear to me the AG was concerned with the fact that they could not demonstrate 81 percent control from the units, VOM emission units, and that they were exceeding the VOM emission limits listed in the Subpart TT.

Q. Therefore, did you focus on the paste and flake portion of their production?

A. On our initial meeting I wanted an understanding of the entire facility to see -- just to get an understanding. I always like to do that. So we walked through the powder part of the facility but we didn't focus on that.

It's when we got to the paste and flake, that's where the VOM sources were and that's where it became very evident of how unusual this plant was.

Q. If you recall approximately, and based on your subsequent work, approximately how many emission units are at the facility?

A. Actual VOM emission units, there's

well over 200 VOM emission units.

Of those, 129 were actually tied into the afterburner or control device. We sorted through -- when we first initially started the project, we had to identify the emission units. When I came in the door, there were plans to change many of the emission units that were listed in the Title V permit application. I was shown the Title V permit application but told lots of these units are changing or are going to be changed.

So there were -- when we got doing it, there were well over 200. A hundred-twenty-nine were tied into the control units, there were 40, 50, 60, I don't know the exact number that were going to be fugitive emissions and then there were some that were open devices that were eventually closed so they became a non-emission source.

Q. Is this a batch or a continuous processing operation?

A. That became the big issue. This is several batch operations operating at the same time. If I can count in my head, A Unit, B Unit, C Unit, D Unit, E Unit, FX -- there were seven or eight or nine different batch units going on of which you

could have none of them operating or you could have all nine operating at the same time.

That's what became difficult in trying to determine how to approach the compliance testing on this.

We had issues with how do you -- in compliance testing you're required to test at the maximum peak operation. Each of these batch processes makes multiple different types of product. I think Ray said they have over 400 different products. So one of my main concerns initially was if you're going to demonstrate compliance, you have to be at maximum capacity, how are you going to tell if you're at maximum capacity, what products are you going to be doing, can you have all nine operations going at the same time, you know. What is exactly going to be needed to demonstrate compliance here.

So it was a major undertaking for me to be educated as to what their process was and then for them to be educated as to what Subpart TT required them to do, how they were going to show compliance.

Q. In a batch operation, does the processing time vary?

A. In this case, the processing time varies all over the map. It can be from several hours, two or three hours before the batch is done or it can be two or three days before the batch is done. And depending on the product being made, you really can't set up a regular operating time frame or system. You just cannot predict what is going on in the batch.

And then at different times during the batch you have various VOM emission rates, sometimes they get high or very high and sometimes there's none at all. So you're constantly being slugged by different emission units at different times during the day.

And part of the problem -- a major problem was there was no process data available -- I shouldn't say no. There was very little process data available to work with. We didn't know. We had some data that showed what the VOM concentration rate was, but not the flow rates. This would be airflow rates coming off the different units.

We had some data that was available from certain pieces of equipment, but we didn't know what product was being made while the

test was being run in there so we couldn't tell if this was maximum, normal or what. There was some data available but we couldn't pin it down to what exactly was going on while the data was collected.

Q. With the lack of data, how did you proceed to develop the construction permit application that you submitted in 2001 -- that Toyal submitted in January 2001?

A. We first see -- try to determine what it would take to get the data. And with that we talk to the stack testing company, ARI. And in order for them to collect the data or to demonstrate compliance, they would have to build temporary total enclosures.

At the time we came aboard in late 2000, to demonstrate compliance at that time would take -- it couldn't be done. They had to build temporary total enclosures around everything. It was going to be an extensive effort on the stack testing company, extensive efforts on Toyal to build these temporary total enclosures.

And in the end it was going to change anyway. The emission units were going to change. There was plans to change many of them.

Some of them you couldn't test without modifications to them. You had to do the modifications to get the capture devices in place.

So early on it became for me I had to identify what emissions units were in place. We started with what was identified in the CAAPP application, we identified which of those units were going to be modified, which were still in place, which were shut down. We had to go back through the plant and go one-by-one through each process and identify the emission points from there.

Then from that we identified how those pieces of equipment operated, what would be their maximum flow rates. That was key. And then we used what would be the maximum VOM concentration in the flow rates.

From those two key pieces of information we could determine what the actual pounds of emissions were either on an hourly basis or daily or yearly basis from there. But all of those were estimates.

The cornerstone of our permit application was the table. I think it was exhibit 200-1. It was in the first section of our permit

application. That was the cornerstone of the application.

Q. Did you have any meetings -- following your retention and prior to the time that you submitted the construction permit application in -- first submitted it in January of 2001 did you have meetings with the Illinois EPA?

A. In September and October of 2000 was spent in my learning the process and then Toyal people learning what was needed in the process. During that time frame we had a concept of what eventually turned out to be the FESOP application, what that application was.

We started off thinking it was going to be a CAAPP application because their emissions were going to be greater than 25 tons.

As we moved through the process of identifying sources and what really was needed as far as flow rates and VOM concentration, we saw that it was possible that we could put in a FESOP application, but we needed to -- once we saw this was possible, we asked for a meeting with the EPA to go over our concept.

That meeting was held -- actually,

it was a November 1st meeting in 2000, it was at the AG's office, where this concept was first presented to the AG and the Illinois EPA. What we needed from them was we explained that there were emission units that were going to be modified at the facility, that we needed to modify these emission units to actually show compliance, so we needed a construction permit to do this, why don't we roll everything into one construction permit which included the expansion project that they were doing, it included the modifications needed to show compliance, it included at that time we thought that based on our initial estimates that the RCO was undersized as far as flow rates go, it was max'd out, we didn't have a full understanding at that time of how much was dilution air versus how much was process air going to the RCO unit. We would later find out those numbers.

So we went into that meeting explaining all of that, asking the EPA if they were on board with us providing a construction permit for all of those issues.

Q. And subsequent to that meeting?

A. They gave approval.

Q. Did you, in fact, submit a permit

application in January of 2001 for both the modified sources and the installation of the replacement of the control device and the installation of the vacuum chiller?

A. One of the requests from Mr. Layman at that meeting was that we would identify specifically which emission units were going to be new emission sources, which emission units were going to be modified emission sources and which emission units were going to be the original sources that were included in the CAAPP application in '95 and we did that.

Q. And what happened with respect to that application in terms of actions by the Agency?

A. We submitted the application in January of 2001. We called several times. The permit engineer was Eric Jones, asking him if he had received it, reviewed it, had any questions. He said he has received it, he had not reviewed it yet, didn't have any questions. He would call Toyal if he did have any questions. That continued until the end of April, which was approaching the 90-day window.

Right at the end he denied the

permit because it was missing some minor information which we subsequent -- we provided to him. And they wanted to, they meaning the permit section of Illinois EPA wanted to have a site visit prior to them issuing the construction permit. That site visit took place in May. Mr. Harish Desai and Eric Jones came and visited the site. We showed them around, identified the units that they wanted to see. They came back and didn't have any issues after that and issued the permit at the end of May in 2001.

Q. And if I point you to what's been marked as Toyal Exhibit 17, is that a copy of the construction permit?

A. That was the construction permit issued May 30th, 2001, yes.

Q. That's the permit you're referring to?

A. That's correct.

MR. HARSCH: I would move for the acceptance of Exhibit 17 at this point.

MR. GRANT: I think it's already in evidence as one of our exhibits, so I have no objection to entering it.

HEARING OFFICER HALLORAN: Okay.

Respondent's Exhibit 17 admitted.

BY MR. HARSCH:

Q. And if you turn to Page 2 and Page 3, these are the delineations that show which units are modified units, existing units and where those units are going to be controlled; is that correct?

A. That's correct.

Q. And it shows that some of the units are going to be, on Page 3, controlled by the vacuum skid condenser?

A. Both pages show at least one unit being controlled by the vacuum skid condenser.

Q. And shows the remainder would be controlled by the replacement oxidizer?

A. Actually, all of the units are going to be controlled by the -- at this time we had a replacement oxidizer. The van skid exhaust was also going to be controlled by the RTO in this case.

Q. And why was that?

A. In development of the permit we had -- in this table we had calculated what the total emissions were going to be from all of the sources -- VOM sources at the plant. We had -- in order to qualify for a FESOP, we knew that the total

emissions from the plant had to be less than 25 tons.

In addition, we went through the regulations and identified what regulations were going to be applicable to each of the emission units. So as we went through, the idea was how many units were going to be controlled by Subpart TT and how many of the VOM emission units were going to be controlled by other VOM emission regulations. So things like storage tanks have their own regulations and were not part of Subpart TT in there.

Once we identified all of those, we had to identify how many fugitive emission sources there were because Subpart TT allows for some uncontrolled emission units. That was key in trying to piece together this whole permit and how things were going to be controlled.

There were certain emission units that it was going to be cost prohibitive or impossible to have hoods or collection devices put on them and for those we had to identify those immediately because if they could not be tested under Subpart TT and meet all the PTE requirements, we knew that we would have to go back to the Agency

and say it's impossible to show compliance with these emission units because it just can't be done and we would have to explain why that was. And in that case, we would be looking for relief from these regulations on there.

So as we went through the process, we identified which sources had to be controlled, which sources could be left as uncontrolled sources. When we got down to the vacuum skid condenser, we needed a little more extra controls in order to meet the 25-ton total facility limit on there.

So I advised Toyal that if they put the -- if they could, put the vac skid exhaust to the RTO, they would have enough controls to meet the 25 tons and therefore could go for a FESOP instead of a CAAPP application.

Q. Just kind of an aside, what is your understanding regarding the restrictions on fugitive emissions that don't have to be controlled under Subpart TT?

A. You can allow for -- emission units can have up to 2.5 tons per year of emissions from a single unit as long as you don't go over 5 tons a year overall for all the sources that are subject to

Subpart TT.

Q. And in demonstrating compliance, does the Agency require you to document what those emissions are?

A. That was a big issue as part of this regulation and part of this permitting process. We had to decide how we were going to determine what the fugitive emissions were from these sources.

And that's part of the uniqueness of this plant. I've never had to do this with another plant. We had to up front get okays from the Agency on the concept. They had not, as far as I know, seen this from other facilities.

And so my talks started with Eric Jones saying that the concept was that we wanted to apply an emission factor of which the facility was going to produce themselves. There were no emission factors available from US EPA or other published sources. So basically what we had to do was take the square foot openings of all the fugitive VOM sources and come up with an emission factor.

And the way we did that is we asked the Toyal R&D department to measure how much VOM came off of several beakers of their different

solvents over a period of time and what that rate was it gave us a pound-per-hour per square foot area emission factor and that's what we applied to all the fugitive emission sources.

So, for example, many of the sources were open drums, but a drum has a surface area or an open surface area of a certain amount. I forget what it is, but it's a between two and three square feet. We took two to three square feet and multiplied it by the emission factor that we had come up with and that determined how many pounds-per-hour of emissions came off of those fugitive emission sources.

Eric Jones came back and said we should run it by Kevin Mattison, which we did. Kevin and I had several talks about all the different aspects and all the different issues on how to demonstrate compliance with this facility. The fugitive was not the only issue, there were several others.

Q. Is that level of discussions with the permit review engineer and Mr. Mattison normal?

A. This is the highest that I've been involved in.

Q. So the construction permit application and then the permit that was granted was based on engineering estimates because you didn't have actual measurements at that time?

A. That's correct. In developing the permit, it was my recommendation that we go with worst case first and determine what the worst case emissions would be. And then if we needed some qualifying factors like reductions in the amount of hours allowed to operate, we would do that. But we would start off with the worst case scenario.

And for that we needed assistance from Chemstress. We asked them what the saturation rate is for the solvent that they were using. They gave us a part per million saturation rate, which is the maximum amount that the airflow rate would be able to handle.

And then we estimated airflows and we went around to the different emission units. Some of them had a lot of dilution air. And this is where the dilution air issue came up that did we really need all of this dilution air. That was beyond my expertise as to how to design the different emission units, but I could at least

direct them into the concept of what it would take to demonstrate compliance. And so Chemstress took that along with Toyal and designed or modified the emission units.

Q. At that point in time Chemstress had already recommended to Toyal the purchase of the skid van unit and Toyal had, in fact, already purchased it; is that correct?

A. That's correct.

Q. Were you able to move away from the use of engineering estimates and actually have specific engineering data to rely on?

A. If you're talking about the time period for which we prepared the construction permit application that was submitted in January of 2001, no, those were all based on engineering estimates.

Q. Following the granting of the construction permit in May of 2001?

A. Part of the construction permit would be -- and in installing the hoods or in modifications needed, we knew we needed to be able to adjust the airflow rates at these emission units. The emission units were being controlled by the afterburner and they had no way of controlling how

much air was being drawn from each of the units.

So part of this was to install some kind of valve system, a gate -- sliding gate valves in each of these emission points so that they could adjust how much was being drawn off from each of these units.

Once that started to be done and Dennis later on installed the FID on the inlet to the oxidizer, that's when we really started to be able to get useful data that would describe what's actually going on in the different emission units.

Q. Would you please explain the concept of permanent total enclosure versus I believe you referred earlier to temporary total enclosure?

A. That's complicated. Let me see. Permanent total enclosures are required because you need to demonstrate the capture efficiency part of the control requirements of Subpart TT. You actually need them for any control requirements.

A permanent total enclosure involves exactly what it says, you're installing a permanent device that will be used to capture the emissions from this. And there are certain standards by which a permanent total enclosure must

meet in there. There's a certain number of allowable, what they call natural draft openings that are allowed in a permanent total enclosure. You have to have the natural draft openings be a certain distance away from the emission source where the VOMs are coming from. There's a certain flow rate requirement required for permanent total enclosure. So it becomes very involved in how to design and operate a permanent total enclosure.

A temporary total enclosure is used when you cannot capture all of the emissions from a source, you're not going to have 100 percent capture.

It's more unusual to do temporary total enclosures because you have to put together or build a temporary device around your emission unit. There are different but similar restrictions on a temporary total enclosure. I think the natural draft openings is the same requirement.

But it's a complicated process for certifying a temporary total enclosure because you have to -- and I always have to call Kevin Mattison when we're involved with temporary total enclosures because he's really the only one that understands

fully what goes on.

But there's a requirement to have exhaust rates done during your testing of temporary total enclosures to simulate what the emissions would be -- fugitive emissions would be from that source. You're not capturing all the emissions. Some of the emissions will be fugitive. So the temporary total enclosure is designed to simulate that condition.

Q. During the time that you were working with ARI did they come up with a cost estimate and a plan for testing the units?

A. Early on we asked ARI, being the stack testing experts, what it would take to demonstrate compliance at the time. They said in most cases there were not sufficient permanent total enclosures in place, there would have to be temporary total enclosures put in, which would be the responsibility of Toyal to build.

But for ARI's purposes, they did give an estimate, a budget quote which said that it would take them 15 days worth of testing time and over $100,000 worth of their time to come up with compliance testing, basically what the capture and

control rate testing would require.

In that they cautioned that there would be a lot of meetings with Kevin Mattison, there would be a lot of pre-meetings about how things were to be done, how things were to be constructed. And I found that to be reasonable, that they were -- it was true, it was going to be a very complicated process.

Q. Was it after that that basically you recommended and Toyal proceeded down the path of permanent total enclosure?

A. We did. We actually looked at some of their competitors to see what their competitors were doing to try to figure out is there something out there that we could use to -- as a boilerplate for what to do.

And we did review some of their competitors. I think Mr. Van Hoose had said the Silberline facilities in Pennsylvania. We obtained what was available as far as permits through the Freedom of Information Act requests for those.

Each of those facilities are located in attainment areas for VOMs, so they had none of these restrictions and required no VOM

controls from what we could see.

We also looked at the facility -- I forget the name of the facility, but it was in New Jersey. That facility is in a non-attainment area for VOM. That had similar requirements for VOM control.

From what we could gather from the information we received from the state of New Jersey, that facility was under a similar violation notice. And by the time we received the information, we understood that that facility had closed down so we did not look further into that facility nor did it appear that they had any of the control requirements that we -- for the VOM controls here.

Later on we learned that they had another facility in Eckart -- or an Eckart facility in Louisville, Kentucky. We recently reviewed that information which is online and, again, that is in an attainment area for VOM and they have no restrictions and as far as I can tell they have no VOM controls required there.

Q. And it's standard for you as a consulting engineer to look at other facility's

permits?

A. Absolutely.

Q. So after you did that, did you recommend that Toyal proceed down the path of demonstrating compliance through the use of permanent total enclosures?

A. We said you needed to do -- in order to demonstrate compliance, you are going to have to put in permanent total enclosures or seek relief from the regulations.

Q. And what did Toyal do based on that?

A. From there they worked through -- each time there were certain key areas that we focused on and these were the big emission points and I stressed to Toyal and Chemstress that if we can't control these particular emissions, then we would not be able to demonstrate compliance and we would have to seek relief from the requirements of Subpart TT.

Examples of those would be the big emission points, the screeners, because of the number of screeners, they had dozens of screeners on site, none of them were controlled.

When I came aboard, that screener

was a particular challenge in how we were going to have a permanent total enclosure for the screeners and still allow the operators to do what they needed to do. And I think Ray had testified a little bit about those issues that came up for that.

The filter press, each of these operations A Unit, B Unit, C Unit, D Unit, each of the seven or eight different operations they have has a filter press involved in it and a filter press needs a lot of air to push the material through leaf filters. And what happens when a filter press is what they call blown down is there's a lot of air that gets forced through there. That air has a high concentration of VOCs and it is a major hurdle to be able to control those. Those were vented to the tank farm and at the time the tank farm was not tied into the control device.

We let Chemstress know that if that -- because of the emissions coming off of those would exceed five tons a year, if they would not be able to control the blow-down from the filter presses, it is our belief that they would not be able to demonstrate compliance with the Subpart TT.

So it came to Toyal and Chemstress

had to work through it and they told us that they thought they could -- at the time they were talking about using an economizer, which is essentially a condenser to condense those fumes, and that's what we put into the permit application on there.

So we had to work through all of those issues and identify what I would think would be drop-dead type of conditions. If you can't control these, then we can't demonstrate compliance and you have to look at it a different way of going through compliance. And that was going to be a legal process of asking for relief.

Q. When Dennis came on board as engineering manager, he previously testified that he basically -- the involvement with Chemstress was eliminated or terminated shortly thereafter. Did you then work with Dennis on the steps through 2002 to demonstrate compliance?

A. Our involvement at that time -- by that time, we had put in the permit application, the permit was granted and it was up to Toyal to implement what was in the permit at that time.

By that time now -- the permit was issued in May. When Dennis came aboard we were

approaching the time that the six-month time window for the construction permit was going to lapse. And about that time Ray had taken over from Rick Mattis on the environmental position. So our involvement at that time was if you ever come upon a condition where you cannot meet what we had set forth in the construction permit, you need to let us know because then we need to approach the EPA and say here's where we're having difficulty, we thought we could do this and we couldn't.

So in that respect, Toyal and Chemstress and later on it was Dennis and his people were in the actual design of the controls, the permanent total enclosures. We're not design experts so we had very little to do with that in the design of those. At that time we were mainly involved in the extension requests made by the Agency -- or I mean by Toyal.

Q. And those would be the extension requests that -- did Toyal contact you and tell you that they were going to need an extension to the construction permit?

A. Right. Toyal contacted us and said there were several issues going on that prevented

them from providing the full support that they thought they could provide and that had to do with the fires that they had. I know they were having issues with insurance companies. I think the fire -- local fire department wanted them to do things that just didn't make sense and was going to be -- they wanted to put sprinkler systems inside the buildings, which you never, ever want to do.

So Toyal was in an education process for those people that needed to be educated as to why they couldn't be done. It took a lot of time for them to get through that and that further delayed their ability to put in control devices.

So we advised Ray that he needed to -- and we contacted Eric Jones and said we don't think we're going to be done in time, we need an extension, what do you need from Toyal as far as asking for an extension. And Eric told us and we provided that. He had some follow-up conditions that were provided on there.

Q. And that would be the requests dated February 19th, 2002, the additional information, February 26th, 2002, that are Toyal Exhibits 9 and 10?

A. Yeah. Ray put those together and sent those in based on our recommendation that he do so, so yes.

Q. And the Agency extended the construction permit deadline?

A. That's correct.

Q. And that's Exhibit 11, the March 8th, 2002, revised construction permit?

A. That's correct.

Q. Subsequent to that did Toyal advise you that additional extensions were necessary?

A. Right. I think at the end -- the tough things to tackle were left toward the end. So they became more of an engineering challenge toward the end. They left the -- you know, they got the low hanging fruit at the beginning, the easy ones, and at the end, especially the tank farms was going to be a particular challenge.

And that was always a concern going throughout, whether they could actually have the tank farms be controlled. There were some major emissions coming off of those.

Q. And did Toyal, in fact -- did you talk to Mr. Jones about those problems and the need for

an extension?

A. Right. We needed an extension a second time. Eric expressed his concern that we couldn't go on forever doing these extensions. We told him we could outline exactly what was going on, we could give him that we were close, that we think another six-month extension we could get the stack testing done and explain to him exactly what had happened and what we think was going to happen in the future.

Q. And if I direct your attention to what has been marked and accepted as Toyal Exhibit 13 and Toyal Exhibit 12, are those the documents that you assisted Mr. Malmgren in preparing --

A. Yes.

Q. -- seeking extension?

And Toyal Exhibit 13 is the additional information that Mr. Jones, again, asked for?

A. Correct.

Q. Was that ultimately granted?

A. Yes.

Q. And is that the revised permit found at Exhibit 14?

A. Dated November 18th, 2002, yes.

Q. Was Toyal successful in its efforts at installing the required capture so it could conduct a stack test?

A. During their installation we were concerned with Kevin Mattison and him accepting some of the unusual engineering that had to be done on there. And so the meeting they had with Kevin prior to that was very key. I knew that we needed to get Kevin on board ahead of the stack testing schedule just so he would buy off on just the -- there were a myriad of issues that Kevin had to use his discretion on how to go forth and do that.

One of those was during the stack test when the stack testing company is sampling the air, they come back with the results and that result can be based on carbon atoms or propane atoms or what the specific solvent or VOC is in your air stream. And it makes a difference on how you report those emissions, what basically comes down to pounds-per-hour of emissions coming off your source.

I had several conversations with Kevin regarding how the stack testing company should be directed in conducting their tests and reporting

the emissions from that. And so we had some of those issues to go through. But, ultimately, Kevin was invited in, looked at what they had, gave them a thumbs up on it and the stack test was scheduled and performed.

Q. And what were the results of the stack test?

A. They passed. They completed the stack test successfully.

Q. Did the results of the stack test bear up your emissions projections so that you could qualify for a FESOP?

A. Yes and no. In our FESOP application we had estimated that the control device -- and by the time in 2003 when the stack test was scheduled we had determined that the RCO did not need to be replaced by an RTO. We had advised Mr. Jones at the EPA of that. We had submitted some documents to update our permit application showing that.

And in our application we had said that the control device was going to operate at 95 percent efficiency and that the maximum VOM concentration would be at the saturation level which happened to be 4500 parts per million in the air

stream.

What the stack test actually showed was that the RCO performed at 93.7 percent destruction efficiency, which was below the 95 we had estimated. However, we had overestimated what the intake to the RCO was going to be. We had said it was going to be at saturation, knowing that was a conservative overestimate of what it was. And it was actually somewhat less than that, I think it was in the 2500 to 3000 part per million instead of the 4500 part per million.

With those two conditions, our pounds-per-hour did not exceed what the permit application had put in.

And after the stack test was performed and we got the results back, I had several conversations with Eric Jones saying, look, here's what we're going to submit to you, the results of our stack test, we're going to submit to you our FESOP application, which we will incorporate a lot of the conditions from the construction permit but there are several ones that will be changed.

And so we worked through those issues of how we were going to do this and they

could still keep the FESOP, but ultimately the stack test performed showed that their emissions would be in compliance with Subpart TT.

Q. You testified that you had notified the Agency that modifications to the control device would not be necessary or its replacement. Did you also tell them that you were not going to be proceeding to utilize the vacuum skid unit?

A. Yes.

Q. And did you, in fact, submit a FESOP application?

A. Yes.

Q. And did the Agency grant that FESOP application?

A. They reviewed it and granted a FESOP for the facility.

Q. If I point you to what is marked as Toyal Exhibit 18, would you explain what that is?

A. This is a FESOP granted November 25th, 2003, which would have been their FESOP, which to us meant that they were in total compliance at that time, that they had met all the compliance conditions.

MR. HARSCH: I would move for the

entry of Exhibit 18.

MR. GRANT: No objection.

HEARING OFFICER HALLORAN: Okay.

Respondent's Exhibit 18 is admitted.

BY MR. HARSCH:

Q. There's been some considerable testimony regarding the fact that the RCO unit would shut down when it overheated. Is that accounted for in the allowable permit -- the allowable emissions that were in the FESOP application and covered by the FESOP?

A. Yeah. It became evident to me when we were -- when they had tested -- or in the latter stages of their permitting process and installing the permanent total enclosures they had refined the processes, they could control the emissions coming off of each of the emission units and they could actually tell by instruments that Dennis and his people had installed what was coming off of each of the units. And that is a process engineer's dream when you can start seeing what actually is going on at these different emission units.

I lost my train of thought now. What was your question again?

Q. Are there emissions that occur when the RCO shuts down because of the -- it overheats?

A. Yeah. The RCO was continuing to have performance issues in there. And we knew that once a FESOP -- an operating permit was being issued, that we would need to have conditions in that operating permit because of safety concerns for provisions for malfunction and breakdown.

So, again, I called Eric Jones ahead of time and I said, Eric, here's the deal, we need to have these conditions. At first, Eric was reluctant to put them in, saying we needed to prove that there were safety concerns in order for those conditions to be put into the permit, which we did, we provided him with the information for that. And that was part of our submittal for the FESOP application that was put in in 2003.

We had provisions in there for malfunction and breakdown and those provisions are accounted for. Any emissions that come off of a malfunction and breakdown are covered in the paste and flake allowances in their permit.

Q. So despite the fact that shutdowns continued to occur, those emissions were accounted

for and covered by the FESOP and, therefore, authorized by the FESOP?

A. Essentially, they can shut down and have emissions up to a certain point. And if they go over those points, then they're in violation. But they do have provisions to allow for the malfunction and breakdown.

Q. And the permit requires that those emissions be reported to the Agency?

A. Correct. When Dennis put in the second FID on the inlet to the unit, we could tell exactly how much emissions were coming out for the malfunction and breakdowns. And we went over that with the Agency and said, look, we can tell you exactly how much pounds an hour or pounds per day, whatever you want, that are being put out during these upsets. And they were satisfied with that.

And that's part of what Ray had said when he reports to the Agency, that's part of his report is an estimated amount of material or VOM that gets emitted during the upset in there. And, again, they're allowed a certain amount, they can't go on forever. They do have emission limits.

Q. Did you assist Toyal in submittal of a

construction permit application to replace the RTO?

A. It was a construction permit application for the replacement of the RTO as well as other emission units.

Q. And if I show you -- direct your attention to Exhibit 19, is that a copy of the construction permit?

A. This is a construction permit that was issued June 6th, 2005, based on our construction permit application.

Q. Did Toyal apply for, with your assistance, a revision of the FESOP permit to reflect the construction of the CRO and satisfactory stack tests that you previously testified to?

A. When the stack test was done for this portion -- once the RCO was replaced by the CRO, another stack test had to be done, which Clean Air Engineering performed.

Once that report was issued by Clean Air, that got submitted to the Agency and we submitted a request to the Agency to incorporate the construction -- the conditions of the construction permit into their FESOP.

Q. What's the status of that permit

request?

A. Their FESOP is up for renewal. We also submitted a renewal request for their FESOP application. It is currently under review from the EPA.

They have issued a draft FESOP renewal and that is currently out for public comment and we're waiting for that period to end.

Q. In 2001, the plans for the vacuum skid, did it include a condenser?

A. The vac skid included a condenser.

Q. Would you consider the vac skid unit to be a control device?

A. When we were going through the initial permitting process, we had to estimate the emissions. Like I said, we had some emission data from some emission units and others we had absolutely no emission data from.

One of the emission data types that we had was vacuum pumps. ARI had done some testing prior to our involvement. I think it was in the summer of 2000. They had done some testing on certain vacuum pump exhausts in the plant. We had seen the emission data from that.

I think they had done testing on three of the vac pumps. One of them had what we considered to be high emissions and two of the others were negligible or low emissions in there.

We didn't know why and nobody could explain why one of the vacuum pumps was high and the others were low. So knowing the number of vacuum pumps they had in the facility, we knew that the emissions would probably have to be controlled from the vacuum pumps.

And if all of the vacuum pumps in the facility were at the worst case emission level, we would require not only the condenser to control the emissions, but it would be required to have additional controls and that's why we said that they should think about putting the vacuum pump skid exhaust to the oxidizer.

Q. But it was in and of itself a control device?

A. It absolutely had condensers on there specifically to knock out the VOMs that were in the exhaust emissions.

Q. You worked with ARI, Clean Air and Chemstress directly in your involvement with Toyal;

is that correct?

A. I did, yes.

Q. Can you provide some assessment as to their competence?

A. ARI and Clean Air Engineering are easily one of the foremost stack testing companies in Illinois. We use them all the time. They're very common.

Chemstress, this was the first encounter I've had with Chemstress. I had not heard of them before but they seemed to be competent, at least the engineer that was involved in the Toyal facility.

Q. And are you familiar with Montgomery Watson?

A. Yes.

Q. And were they a competitor of yours in the development of the Title V applications?

A. Both Montgomery Watson and Woodward-Clyde -- I don't know if they both still exist. I know Montgomery Watson got bought out by URS or somebody like that.

But they were both well known. I believe they were both nationwide consulting firms

specializing in environmental consulting. We knew of them. We competed against them when we went up for Title V permit application work. So, yes, they were well known.

Q. Was it reasonable for Toyal to do the process engineering work internally for the improvements to the capture system and installations of the PTE?

A. Toyal had asked us if we had -- would do some of their engineering work and design work and it's just completely out of our expertise. There is so much concern over the flammability and explosion hazards in there. You really need a specialized firm to do that.

We looked around and they asked us if we knew of anybody. We really had a hard time locating somebody who had any kind of experience and this depth of experience needed at Toyal.

What it came down to is really the Toyal people knew best their facility, the hazards involved this their facility and ultimately how to comply or how to do the things that were needed to be done to show compliance. Once they understood what needed to be done, they did most of the legwork

and engineering work needed.

Q. So that was a reasonable choice?

A. Yes.

MR. HARSCH: I have no further questions.

HEARING OFFICER HALLORAN: Thank you, Mr. Harsch. State, your witness.

MR. GRANT: We've got -- it will take a while. That was an awful lot of direct for us to deal with at one time. I think it's getting pretty close to lunch. I'm wondering if maybe we can break for lunch now and do cross afterward.

HEARING OFFICER HALLORAN: Any problem with that, Mr. Harsch?

MR. HARSCH: No.

HEARING OFFICER HALLORAN: All right. We're taking a lunch.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER HALLORAN: We're back on the record from a lunch and it's

approximately 12:45. Thank you for being all so prompt.

Mr. Anderson is still on the stand. I believe Mr. Harsch has completed his direct.

MR. HARSCH: Mr. Halloran, that is correct, but I did note that I failed to move for the admission of Exhibit 19, the CRO construction permit, into the record. And I would so move if that's okay.

MR. GRANT: No objection.

HEARING OFFICER HALLORAN: Okay. Respondent's Exhibit 19 is admitted. I was going to get to that, Mr. Harsch. You beat me to the punch.

But in any event, it appears that Mr. Harsch has completed his direct. The Complainant will start its cross.

MR. HARSCH: Thank you.

MS. VAIL: Thank you.

HEARING OFFICER HALLORAN: Thank you.

CROSS EXAMINATION

By Ms. Vail

Q. Now you understand that this case is

about Toyal having violated Section 218.986 Subsection A, correct?

A. If Subsection A is the part that says there's 81 percent control, then yes.

Q. Okay. Correct. And that's exactly it, the regulation requires control of 81 percent of VOM emissions from each affected emission source.

A. Correct.

Q. Now you were hired in -- was it September of 2000?

A. Correct.

Q. And you were hired to re-engineer the plant and help with permitting and compliance issues?

A. No. We are not design engineers. There is no re-engineering of the plant. We were hired to advise them on what it takes to come into compliance with the environmental regulations.

Q. Okay. And what you advised Toyal to do in order to come into compliance was to switch from the existing RCO to the RTO, correct?

A. No. That decision was up to Toyal. It didn't matter to us what control device they used.

Q. Okay.

A. If they were having trouble with the RCO and keeping it up, then they needed to switch to another control device. What that device was was not our decision.

What it came down to is when we initially started the project, it was evident that -- if you know control devices, especially oxidizers, they are sized by the total CFMs, that is maximum cubic feet per minute that they can process.

And it appeared at the time when we came there, from the information we had, that they were at or near the maximum --

MR. GRANT: I'm going to object and ask the Hearing Officer to --

HEARING OFFICER HALLORAN: Excuse me, it's Ms. Vail's witness. Let's go from there.

MS. VAIL: Thanks.

BY MS. VAIL:

Q. Let me ask another question since you testified that you did not recommend that they switch necessarily from an RCO to an RTO, but that you advised them what it takes to come into

compliance.

A. Correct.

Q. Okay. I want to turn to Exhibit 17, which is the 2001 construction permit. Now this 2001 construction permit was for construction of the RTO and the vacuum skid condenser?

A. Amongst other things, yes.

Q. Can you identify what units from the special condition two of this permit were to be controlled by the vacuum skid condenser?

A. On Page 2?

Q. On Page 2, correct.

A. In Section 2 there?

Q. Right.

A. It's NSO-90.

Q. Okay. And can you identify what units from special condition three of the permit were to be controlled by the skid condenser?

A. According to this, it's MSO-17, MSO-20, MSO-32, MSO-47, MSO-48, MSO-52A, MSO-67, MSO-81.

Q. And was MSO-63, also?

A. MSO-63, also.

Q. Okay. So the skid condenser was

designed to control these nine emission sources?

A. We advised Toyal that they had to control these sources in order to meet the requirements for a FESOP.

Q. Okay. And I just want to clarify, though, under the permit it identifies that these sources were to be controlled by the vacuum skid condenser; isn't that correct?

A. The sources that you question are actually controlled by both the vacuum skid condenser and the control device. Remember, the vacuum skid condenser exhaust is to be directed to the control device, that's why the efficiency there is rated at much higher efficiency rate than what the -- the other emission units which are only controlled by the afterburner.

Q. Okay. Well, now of these nine units -- sources, rather, that you just identified, these were covered in the original CAAPP permit application, correct?

A. I don't know that. I assume they were, but I don't know that for a fact.

Q. Okay.

A. I don't have the CAAPP application

with me and I don't have it memorized or know what they meant.

Q. Do you know whether these nine emission sources were in compliance with Section 218.986 under that CAAPP permit?

A. The data we had, which was not conclusive -- the data we had showed that the emissions from some of the vacuum pumps were negligible, meaning very low emissions.

Q. Okay. I just want to know referring strictly to the CAAPP permit application were these nine sources identified --

MR. HARSCH: I'll object to the question. The witness has already answered that he does not have the CAAPP permit before him nor does he have it committed to memory.

HEARING OFFICER HALLORAN: I'll let the Complainant ask that question and the witness will respond, please. Thank you. Objection overruled.

BY MS. VAIL:

Q. Do you know whether these nine emission sources were in compliance with Section 218.986 in the CAAPP application permit?

A. We did not prepare the CAAPP application permit. We don't know. But I can tell you Subpart TT allows for certain emission units to go uncontrolled up to -- each emission unit has a limit of up to 2.5 tons or a total of aggregate of all of those emission units uncontrolled to be five tons. How you pick out those units that are not to be controlled is part of the permit application. How the CAAPP application was put together, I can't answer that.

Q. Okay. Do you know whether these nine emission sources were identified as being in compliance under this CAAPP application permit, just simply yes or no? If you do not know, that's fine.

A. If you're asking me today do I know, no. If you're asking me did I review the list that was in the CAAPP application for sources that -- in the CAAPP application they had a list that said some were in compliance and some were not?

Q. Correct.

A. I reviewed that list. I can't recall what that list said.

Q. Okay. But at the time you did. Okay. Let's got back to Section 218.986

Subsection A. Nothing in that section requires a company to get a FESOP permit, correct?

A. Correct.

Q. Section 218.986A only requires control of 81 percent of all affected emission sources, correct?

A. Say that again one more time.

Q. Section 218.986A only requires control of 81 percent of all affected emission sources?

A. Right. There's other conditions underneath, there's a B, C, D and E to that.

Q. Right.

A. Correct.

Q. Okay. And Toyal already had a CAAPP permit, correct?

A. No.

Q. Application?

A. My understanding is they had a CAAPP application submitted.

Q. Okay. And so applying for this FESOP operating permit was Toyal's decision and it was not required under Section 218.986A, correct?

A. You're going about it in a roundabout way. The regulations require you have an operating

permit. What that permit is depends on your processes and emissions that you have. So do any of the rules require you to have a FESOP or a CAAPP, that depends on your emissions that come off of your source.

Q. Okay. So then you would agree that Section 218.986A does not require specifically a FESOP permit?

A. You can say that about all the sections in there --

Q. Okay.

A. -- pretty much.

Q. And a FESOP permit is one of the permits that are not required under Section 218.986?

A. We always try to educate our clients in that there are permitting rules and then there are operating rules in the regulations. Some rules pertain to permitting and whether you need to have a permit and what type of permit you have and other rules are how you operate. The 218.986A is how you operate.

Q. Okay. Maybe this is a better question. Section 218.986 does not direct a permittee on how to go about coming into compliance

with that section, correct?

A. With which section now?

Q. 218.986.

A. Does not direct --

Q. The permittee on how it must come into compliance with that section?

A. With operating rules or permitting rules?

Q. With the permitting rules.

A. No. It doesn't have anything to do with permitting rules.

Q. Okay. And, also, Section 218.986 does not specify how to control these emission sources?

A. It doesn't say how. It just tells you what or to what level you must control.

Q. Thank you. Now in order to obtain a FESOP permit you have to prove emissions of 25 tons per year, correct?

A. In order to obtain a FESOP in the Chicagoland area in the non-attainment area, you're required to have your total facility emissions less than 25 tons on there.

I think there's some other very obscure parts that if you're in certain operating

conditions, like if you're a chrome plater or something like that, there are some other issues that you have to look at whether you're eligible for a FESOP or need a CAAPP.

Q. But as applicable to the Toyal plant, 25 tons is the applicable limit for it to receive a FESOP permit?

A. At that time, correct.

Q. So then all the efforts to control the compliance sources -- the emission sources under the CAAPP permit that were identified were for the purposes of obtaining a FESOP application?

A. Again, I don't know of a CAAPP permit. I can't really answer. I don't understand your question, first of all, and I don't know if I can answer that.

Q. Okay. Going back to Exhibit 17, the construction permit, referring specifically to those emission sources that you identified earlier, I guess they're identified with one asterisk, these sources were -- a FESOP was being applied for for these sources? These were some of the sources -- all of these sources were being -- would have been contained under the FESOP application, correct?

A. As part of the FESOP application, you are required to name all of the sources. Whether they're qualified for state exemptions or not, you're required to name all of those sources and account for those in the FESOP for that pollutant that you're under the FESOP for.

So in this case we had to list all of the VOM sources, even those that were part -- or would eligible for a state exemption, things like boilers, things like that, coal cleaners, those type of things. All of those had to be accounted for in the FESOP.

Q. And these were some of the sources that were accounted for under the FESOP?

A. By these, you mean the nine or the --

Q. Correct.

A. -- the ones with the single asterisk, yes.

Q. Thank you. You testified that you helped prepare the construction permit application that was submitted for the RTO, the skid condenser, correct, that was submitted in January 2001?

A. It was not only submitted for the RTO and the skid condenser, it was submitted for other

things. There were modifications on many emission units for that.

Q. Okay. And then Toyal was not able to start construction on the RTO or the skid -- I guess the vacuum skid condenser and the other units that they had listed under the construction permit until that permit was issued, correct?

A. Correct.

Q. And at the time that the construction permit was applied for, the RTO -- specifically, the RTO piece of equipment was not purchased at that time, correct?

A. Correct. It was never purchased.

Q. Okay. Now there are a number of extensions of time that were requested by Toyal to begin construction on the RTO and the vacuum skid condenser and the other units as well, correct?

A. Well, I would say there was a number of requests to -- actually, there were two requests to extend the construction permit.

In the construction permit they have a requirement that you must do the compliance testing within 180 days. It wasn't that we were asking for an extension to start the construction of

these. Once the construction permit is issued, you're allowed to start construction on it, there's no waiting.

What we asked for the extension was for the time for when the compliance tests needed to be completed.

Q. Okay. But during this time that Toyal had requested an extension of time under this construction permit application, the RTO had not been purchased, correct?

A. What I understand is the RTO -- you have to understand a little bit about the --

Q. I'm sorry, I just want to know whether the RTO was purchased?

A. The RTO, what happens for -- what was going to happen -- what we had planned to have happen, the RCO --

Q. Okay. I --

A. You take out the innards of an RCO and put in something different and it makes it an RTO. So you have basically the shell is there, but you take out the innards, you put in different innards and then it becomes an RTO.

Q. So now were the innards --

A. No.

Q. Thank you. Now IEPA granted these extensions of time?

A. Yes.

Q. Now isn't it true that Toyal never started construction on the RTO because it never purchased the innards as you identified them?

A. Correct.

Q. Now Toyal did purchase the permitted vacuum skid condenser, correct?

A. Correct.

Q. But it never operated this?

A. Correct. To my knowledge, they did not, never hooked up.

Q. Now when Toyal finally reached compliance with Section 218.986 in 2003, it did so with the same RCO unit that it had installed in 1998, correct?

A. Correct.

Q. And that compliance was demonstrated with the emissions that were to be routed through that skid condenser, correct?

A. The emissions from the units that were to be controlled by the skid condenser were routed

to the RTO.

Q. Okay.

MR. GRANT: You mean RCO?

THE WITNESS: RCO, I'm sorry.

MR. GRANT: Can we have one second, please?

HEARING OFFICER HALLORAN: Yeah. We can go off the record.

(Brief pause.)

HEARING OFFICER HALLORAN: Back on the record.

MS. VAIL: I have no further questions for Mr. Anderson. Thank you.

HEARING OFFICER HALLORAN: Thank you. Mr. Harsch, redirect.

REDIRECT EXAMINATION

By Mr. Harsch

Q. You testified in response to questions that the emission ceiling for a FESOP was 25 tons at the time we're talking about?

A. Yes.

Q. Has it now been raised to 100 tons?

A. Yes.

Q. All of the work that's been testified

to today and that you testified regarding the improvements to the capture system and improvements to the enclosure to qualify them as PTEs in your opinion would be necessary to demonstrate compliance?

A. Yes.

Q. And that's compliance with the operating rule, as you put it, not the permitting rule?

A. That's correct. You need to have the PTEs to show -- to demonstrate the 81 percent which is an operation condition.

Q. Alternatively, there would be the requirement to demonstrate compliance and there was problems that you testified earlier about the temporary total enclosures?

A. Correct. If you didn't have the PTEs, then you would have to do a TTE or temporary total enclosure. And it was difficult, if not impossible, to prepare temporary total enclosures from what we got from the stack testing company.

Q. In order to size and order the innards as you referred to in your questions, you would have to know the loading and the flow rates that would be

sent to that device; is that correct?

A. All oxidizers you need to know what's going to it, how much is going to it. So, yes, it's a very basic question for sizing and determining what control device or oxidizer you're using.

Q. So all of the testimony that we heard about today that talked about the efforts that Toyal went through to be in a position where it could know with certainty what the flow rates and loadings would be to the existing control device, those were necessary if you were going to probably order the new innards?

A. Correct.

Q. And it was that information that Toyal gathered that allowed it to make the decision that the innards weren't necessary?

A. Dennis would be better to answer that. But, yes, that's my understanding.

Q. And then in addition to the reliability problems that we've heard in testimony today regarding the use of a single vacuum chiller system versus the existing one, that information also allowed Toyal to make the decision that the vacuum skid system was not necessary as a control

device -- wasn't necessary to be installed as a control device?

A. Again, Dennis is better to answer that. But, yes, that's my understanding is they went through that decision process and made that decision.

Q. I guess the installation of the innards, using, again, the terms that were earlier talked about, and the installation of the vacuum skid system, you did apprise the Agency that that was not going to be done?

A. Yeah. We did several revisions, requesting Eric Jones every time we told him that we were making changes to the construction permit. He asked that we submit the appropriate forms to show what changes we're making and explain those and we did that. And ultimately they were incorporated into the FESOP that was issued.

Q. You anticipated my next question. There was never essentially a revised construction permit issued other than the extension of the deadline for doing the testing?

A. That's correct.

MR. HARSCH: I have no further

questions.

HEARING OFFICER HALLORAN: Thank you. Ms. Vail, recross.

MS. VAIL: Just one minute.

(Brief pause.)

MS. VAIL: We're fine. Thank you.

HEARING OFFICER HALLORAN: I'm sorry?

MS. VAIL: No more questions. Thank you.

HEARING OFFICER HALLORAN: Thanks, Mr. Anderson. You can step down.

I believe Mr. Harsch has one more witness?

MR. HARSCH: Mr. McClure.

(Whereupon, a discussion was had off the record.)

HEARING OFFICER HALLORAN: Okay. We'll go off the record for a second.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER HALLORAN: We're back on the record from a short break. We have, I

think, Mr. Harsch's fifth witness on the stand.

(Witness sworn.)

WHEREUPON:

CHRISTOPHER MCCLURE

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Harsch

Q. Mr. McClure, would you please state your name and address for the record?

A. My name is Christopher McClure, M-C-C-L-U-R-E, and I reside at 29 Dover Avenue in LaGrange, Illinois.

Q. And who do you presently work for?

A. Navigant Consulting.

Q. And what are your duties at Navigant?

A. At Navigant I'm a director in our disputes and investigations practice where I focus on a variety of forensic accounting investigations and also assist clients with different types of litigation.

Q. Can you briefly describe to the Board your educational background?

A. Yes. I received my BS in business administration with specializations in accounting and finance from Trinity University.

And then I received my master's degree, an MBA, with concentrations in finance and strategy from the Kellogg School at Northwestern University here in Chicago.

Outside of that formal education I'm also a certified public accountant, a CPA, and also a certified fraud examiner, a CFE.

Q. And can you describe briefly what your past work experiences are?

A. Yes. Currently at Navigant since 2004. Prior to that I was with another international consulting firm called LECG for two years where I also focused on accounting investigations and litigation. And prior to that for seven years I was at Arthur Andersen, which is an international accounting and consulting firm, where I focused on consulting and also corporate tax work.

Q. And can you describe succinctly who Navigant is?

A. Navigant is an international

consulting firm with approximately 2,000 professionals and we are publicly traded firm and we focus on consulting in a variety of industries in construction, healthcare, energy and a variety of industries around the word.

Q. Has Navigant Consulting been involved in economic benefit or we'll use the acronym BEN, B-E-N, cases?

A. Yes, we have.

Q. And have you specifically been involved in those cases in the past?

A. I have.

Q. Can you describe your involvement?

A. Yes. My involvement has been in a couple of different cases where I have been responsible for calculating the amount of economic benefit that our client might see as a penalty from a regulatory agency, from the EPA primarily.

Q. If I direct you to Exhibit 21 in the black book, can you explain what this document is?

A. Exhibit 21 is my resume.

Q. Did you prepare this resume?

A. I did.

Q. Is it true and accurate to the best of

your knowledge and belief?

A. It is.

MR. HARSCH: I'll move for its introduction.

MR. GRANT: No objection.

HEARING OFFICER HALLORAN: Thank you. Mr. Harsch, could you keep your voice up, please? Thanks.

BY MR. HARSCH:

Q. Can you describe the major components of your analysis and your conclusions regarding Toyal's economic benefit?

A. My analysis of the potential economic benefit penalty that Toyal would face consists of a few major components. And those components are specifically outlined in the EPA's guidance regarding how to calculate an economic benefit penalty.

The EPA's BEN user manual primarily specifically gives guidance to a practitioner as to how to calculate an economic benefit penalty.

The first major component of the analysis would be the benefit of delaying capital

expenditures. And that would be in the case where an entity, such as Toyal, was supposed to reach compliance by a certain date but ultimately reached compliance by a later date and by avoiding or delaying those capital expenditures, the company was able to essentially hold onto their funds for a period of time and would therefore enjoy an economic benefit retaining those funds for that period. So that's the first major component.

The second component would be the avoided costs and that consists of primarily the monthly costs associated with operating the system that the company completely avoided because during the period that they were not in compliance their compliant system obviously wasn't operating so they were not incurring those costs and those costs are completely avoided because they will never incur those monthly charges.

So I calculated those two major components to derive an amount of economic benefit that Toyal would have enjoyed from delaying and avoided the costs.

Q. Where did you obtain the necessary information for your analysis?

A. From Toyal personnel, primarily the capital expenditure information, the delayed costs, come from my discussions with the professionals at Toyal, and they provided substantial backup information, invoices, accounts payable information to support all of their expenditures.

And then the methodology or the approach that I take comes directly from the EPA, who promulgates the guidance. The EPA developed these penalties and they promulgated guidance as to how to properly calculate them.

Q. And where is that guidance listed?

A. The primary source of the guidance is the US EPA BEN user manual, which again provides specifically for how a practitioner should go about assessing the dollar amount of a potential penalty.

Q. As part of your efforts, have you reviewed Mr. Styzens' report that he presented?

A. I have.

Q. And do you agree with that report?

A. I do not.

Q. And why not?

A. Well, I find Mr. Styzens' report to be incomplete. The certain components that he

included, the delayed capital expenditures and portions of the avoided costs are generally correct and some of the methodology that he applied is somewhat correct, but my major concerns and issues that I would take with Mr. Styzens' report is that he failed to consider other aspects of the methodology or the approach that would potentially reduce Toyal's economic benefit penalty.

And there are other components and other considerations that are very specifically outlined in the EPA's BEN user manual that direct the professional who's conducting the analysis to consider the specific facts and circumstances of the case to see if these certain issues are present and I find that Mr. Styzens' report falls short of doing that.

Q. Did you review the supporting documentation that Mr. Styzens provided and relied upon for his report?

A. Yes.

Q. You were here when Mr. Styzens testified?

A. I was.

Q. And you were also present during

Mr. Styzens' deposition?

A. I was.

Q. On the stand Mr. Styzens recited a number of documents and reports that supported his conclusion that the foregone cost component should not be allowed for Toyal; is that correct?

A. He did.

Q. Have you reviewed the various documents he cited?

A. Yes. Primarily, the Federal Register and then a specific article, Leveling the Playing Field, I believe it was called, and also the Civil Penalty Policy.

Q. Are you familiar with these documents?

A. I am.

Q. And you've reviewed those documents prior to this engagement?

A. I have.

Q. Is there anything in these documents in your opinion that supports Mr. Styzens' assertions and conditions regarding adjustments to the economic benefit for foregone costs?

A. Absolutely not. To the contrary, the documents that Mr. Styzens has pointed out all point

to and provide additional discussion of the US EPA Ben user's manual, which is the first document that was written to describe how to calculate economic benefit penalties.

Those documents that he described, the Federal Register and the Civil Penalty Policy point the professional doing the analysis back to the EPA BEN user manual where it specifically prescribes that when you're doing the analysis you should consider the fact that when a company installs a compliance system, there's the potential that that compliance system could also generate some process efficiencies such as improved by-product recovery and other potential efficiencies. And these are specifically outlined in the BEN user manual.

The other documents that Mr. Styzens pointed to certainly do not contradict that but instead point the professional back to the BEN manual for guidance.

Q. If I direct you to Exhibit 22, can you explain what this document is?

A. Exhibit 22 is my report prepared on August 20th, 2008, which contains my analysis of the

potential economic benefit penalty that Toyal would experience.

Q. Is this a true and accurate copy of your report minus the backup materials?

A. Yes. It's the narrative with -- correct, it is.

Q. And now I'm going to provide you with two three-ring binders. Can you tell me what these binders are? One is entitled Economic Benefit Analysis, binder one. The second is Toyal-America Economic Benefit Analysis, binder two, Capital Expenditures.

A. These binders contain the support from the August 20th report. Binder one contains the report followed by Toyal's financial statements and the BEN user manual and other documents that I relied upon.

Binder two contains the invoice and accounts payable information that Toyal provided in support of the capital expenditures for their compliance system.

Q. So the report in what we've been referring to as the black binder is simply the narrative of the report that is contained in binder

one?

A. Correct.

HEARING OFFICER HALLORAN: Mr. Harsch, I'm going to, for the record, list Respondent's Exhibit 22, binder one, as Exhibit 22A and then binder two as 22B.

MR. HARSCH: That would be super.

HEARING OFFICER HALLORAN: Thank you. Sorry to interrupt. So there's two, it's 22A and a 22B.

BY MR. HARSCH:

Q. So 22A is all of the economic background material that you got from Toyal to support your August report?

A. These two binders contain the information, yes, with the exception of later information I received.

Q. The BEN user manual that you referred to a few minutes ago is contained in Exhibit 22A under a tab entitled BEN user manual; is that correct?

A. Correct.

Q. That's a true and accurate copy of the BEN user manual?

A. Yes.

Q. When you said the BEN user manual supported the cost savings component you testified to, what pages were you referring to?

A. Primarily Page 3-11 under the section regarding annual recurring costs.

Q. And does the BEN user manual contain -- provide guidance on specific case examples for how to calculate economic benefit?

A. Yes. The BEN user manual provides discussion of the methodology and it addresses each cost component that you should consider and then it provides specific examples afterwards of the types of issues that the practitioner might confront when performing the analysis.

Q. And is there such an example contained in the manual?

A. There's a couple of different references in the BEN manual specifically to operating efficiencies. Under the annual recurring cost of Page 3-11 it very specifically says that, note, the recurring costs may be negative if compliance increases efficiency. So very specifically points out that you need to take that

into account when you're conducting your analysis.

Later in the manual on Page 4-6 it gives another example where it says that the violator comes into compliance and finds that it's been saving money since it installed a new technology. So, again a very specific direction to the practitioner to consider that fact pattern when you're conducting a BEN analysis.

Q. And did you consider that fact pattern in your analysis?

A. Of course.

Q. And in your opinion and that of Navigant, is that the proper way to conduct an economic benefit analysis?

A. Yes, it is.

Q. And what was the conclusion of the -- strike the question.

What is the cost savings that you took into consideration for avoided costs that you factored into this report?

A. Well, during the discussions with personnel at Toyal regarding the BEN analysis, we looked at, again, the delayed capital expenditures and the avoided costs and then we discussed with

them the status of their situation since the new system had been installed.

And what we discovered was that the compliant system had the specific side effect or the specific result. It also allowed the company to recover solvents more reliably, as it was described in the testimony here yesterday, and that improved recovery resulted in a cost savings where the company is not required to purchase as much solvent.

So when we investigated this further with the company, we basically asked Toyal to prove that to us, that that was the case. They were able to provide some very specific data regarding their recapture and also the pricing of the solvents and we were able to include in our analysis an estimate of the dollar amounts that represented the cost savings that Toyal would have enjoyed had they had their compliant system in place at an earlier date.

And it's very clear that when you review the data, the recapture before and after the installation of the system is very different. When we conducted the analysis, we ended up calculating an amount of just more than a million dollars in

potential cost savings that Toyal would have enjoyed. So that's what we term a foregone benefit, something that the client would have enjoyed had they had it in place, but they did not. It's specifically the type of issue that's addressed here in the EPA BEN user manual that says that you should consider.

Q. And did you include in either of the binders, 22A or 22B, the background supporting information regarding solvent recovery?

A. Yes, we did.

Q. And that information was obtained from Toyal?

A. Yes, it was.

Q. And have you reviewed all of the supporting documentation you obtained from Toyal to determine if it's reliable?

A. Yes, I have.

Q. And what is your conclusion?

A. That it is.

Q. And that would include the information concerning capital costs as well as the recurring annual operating costs?

A. That's correct.

Q. And, finally, the solvent costs related to the solvents?

A. Yes.

MR. HARSCH: At this point in time I would move for the introduction of what have been marked as 22A and 22 B.

MR. GRANT: I have no objection provided that they're only used as the basis of Mr. McClure's opinion. In other words, I haven't had a chance to go through every single thing in there. If there's a fact in there that can be argued against liability, for example, as opposed to what his testimony is --

MR. HARSCH: Mr. Grant, these are the documents that were provided to you --

MR. GRANT: I understand.

MR. HARSCH: -- prior to the deposition. I don't know why there's any --

MR. GRANT: Let me explain. I have no objection provided that they're only admitted in evidence as the documents that he relied on in developing his opinion.

MR. HARSCH: I fail to see why any

qualification is necessary. It's his report and its supporting documentation.

The documents were previously provided to you. They were available to you at the time of cross examination.

He has testified they are the supporting documentation for his report. His report is contained in it and these are the documents he relied upon.

MR. GRANT: For that purpose, I have no objection.

HEARING OFFICER HALLORAN: I'm going to allow it in for any purpose. I'm going to trust my ruling regarding and addressing Section 101.626, evidence, the Hearing Officer may admit evidence as material, relevant and would be relied upon by prudent persons in the conduct of serious affairs unless the evidence is privileged.

So objection overruled to that extent. Exhibits 22A and 22B, they are admitted into evidence. What are we doing with 22, Mr. Harsch?

MR. HARSCH: Twenty-two is simply the

narrative at the beginning of 22A.

HEARING OFFICER HALLORAN: Thank you, Mr. Harsch. You may proceed.

BY MR. HARSCH:

Q. In your report did you make any references to -- and by "in your report," I'm referring to Exhibit 22A. Did you make any references to potential for revising that report for additional information concerning the vacuum chiller unit we've been discussing today?

A. Yes, I did.

Q. And what was that statement?

A. I specifically reserve the right to supplement my report. The specific paragraph that appears on Page 3 indicates that the analysis presented in this report is based on currently-available documents and information and is subject to change based on review of additional information that may be provided. Because the economic benefit component calculated here is negative and because further analysis is not warranted at this time, my calculations do not include other potential benefit and cost offsets such as decreased cost of solvent disposal,

additional capital expenditures for attempted compliance, et cetera, and I reserve the right to include these in future revisions, if necessary.

Q. And during the time of your deposition was it your understanding that an agreement had been reached where you were going to revise your report to include the cost of --

MR. GRANT: I'm going to object to the --

HEARING OFFICER HALLORAN: I'm sorry, Mr. Grant?

MR. GRANT: My objection is --

MR. HARSCH: Can I finish the question?

HEARING OFFICER HALLORAN: No. He objected, sir.

MR. GRANT: He's asking him to testify to his impression of an agreement which was reached and I think it's an inappropriate question, it calls for him to speculate or give his impression. He's here to testify to his opinion.

HEARING OFFICER HALLORAN: I don't think we have to go into that. Again, I made

my ruling yesterday. I wasn't privy to that agreement. And if you want me to rule again --

MR. GRANT: It sort of gets into what I think you said, that you'd accept the updated opinion as an offer of proof or something like that.

HEARING OFFICER HALLORAN: Right. I just thought it was an unfair surprise, especially in light of the numbers.

BY MR. HARSCH:

Q. I direct your attention to Exhibit 23. Can you explain what that document is?

A. In this binder?

Q. Yes. Can you tell me what this document is?

A. Exhibit 23 is my revised report that was issued on December 1st of 2008.

Q. That was the date of the initial draft?

A. That's correct.

Q. And that report was actually finalized last Monday?

A. That's correct.

MR. HARSCH: Mr. Hearing Officer, at this point in time, pursuant to your ruling, I would move Exhibit 23 for an offer of proof.

HEARING OFFICER HALLORAN: I will take it as an offer of proof, Exhibit 23, that's the December 1st, 2008 document. Thank you.

BY MR. HARSCH:

Q. And if I draw your attention to what has been marked as Exhibit 24, can you tell me what this document is?

A. Exhibit 24 are the schedules that support the calculation that's provided for in my December 1st, 2008 revised report.

MR. HARSCH: And, again, I would offer 24 under an offer of proof, Mr. Hearing Officer.

HEARING OFFICER HALLORAN: Thanks. Mr. Harsch. Based on my prior ruling, Mr. Grant?

MR. GRANT: No objection.

HEARING OFFICER HALLORAN: Okay. Respondent's Exhibit 24 is taken as an offer of proof.

BY MR. HARSCH:

Q. And if you look at Exhibit 25, tell me what that document is.

A. Exhibit 25 is a spreadsheet that shows the costs of the vacuum unit by date and by vendor that I received from Toyal.

Q. And it's the costs that you used in the revised report?

A. That's correct.

MR. HARSCH: I would move Exhibit 25, offer under an offer of proof --

MR. GRANT: No objection.

MR. HARSCH: -- at this time.

HEARING OFFICER HALLORAN: So admitted as an offer of proof, that's Respondent's Exhibit 25.

BY MR. HARSCH:

Q. If a company spends money on a capital project, be it pollution control or a pollution control capital project, whether it is used or not used, does the company have that money available thereafter for other investment purposes?

A. No. Once the dollars are expended, the company by definition loses the economic value

of retaining those funds.

And this type of situation, specifically the Toyal situation, is discussed in the BEN user manual presumably because the EPA sees this.

It indicates that the company spent the dollars in an effort to reach compliance. If they relied upon a consultant in good faith to try to reach compliance, even though they didn't, they've still lost the economic value of those dollars. So that should be considered when you're conducting the analysis.

Q. Did Mr. Styzens' report contain such an analysis?

A. It did not.

Q. And you sat here and heard him explain why he didn't include it?

A. I did.

Q. And do you eye agree with his conclusions?

A. I do not. I think that one very important distinction that has to be understood is that the EPA penalty policy is divided into two components. One is the economic benefit penalty

that I've been asked to calculate and Mr. Styzens was calculating and that we're discussing here today.

The other component is a gravity component, and that's separate and distinct. The BEN user manual and EPA guidance indicates that those are separate and distinct. The methods for calculating them are separate and they should not be mixed.

When you're considering the economic benefit penalty, you have to consider the variables and the facts of the case as they're presented and you have to consider all of them and you have to understand the delayed costs, you have to understand the avoided costs, you need to consider whether any of these efficiencies were available and you need to consider whether any other expenditures were made in good faith, but not necessarily required. And what you need to come to is an analysis of purely the financial aspects of this situation.

What I understood Mr. Styzens to discuss and the reasons that he didn't include a foregone benefit or any of these other costs is that

he talked about whether the company was making good management decisions and how much time they took and kind of other qualitative measurements that he used and he made the decision based on that not to include them. And those are gravity components that are inappropriate to apply to a purely economic benefit.

The fact that Toyal took X number of years to reach compliance, we make no judgment about that in the economic benefit analysis. That's simply a variable that goes into the timing of the discounting and the inflating of costs.

On the gravity side, then regulators may make a decision about that and they may factor that into their discussions. But on the economic benefit side you simply deal with these variables and you consider them all and you calculate the economic benefit or detriment to the company as a result of the situation.

The other's considerations should be held and considered separately for the gravity component.

Q. To clarify, did you utilize the BEN user manual or the BEN user model?

A. I utilized the BEN user manual. The BEN user model is a software program that the EPA created and has tried to improve over time to try to allow people to use it to accommodate these calculations. They've put it out for comments a number of times and I think they recognize that it's a big challenge for them to craft a software that will accommodate all of these issues.

So it's clear from the EPA's guidance that you can use your own software if you choose to, but that the approach that you use is the one that's promulgated in the EPA user manual.

Q. Do you have an opinion as to the appropriateness of utilizing the EPA's BEN manual for calculating economic penalty in Illinois pursuant to Section 42 of the Illinois Environmental Protection Act?

MR. GRANT: I'm going to object at this point just to separate the concept of economic benefit and penalty. Penalties is obviously an assessment of the Pollution Control Board.

I'm not saying you're trying to misrepresent it. It's just that I think we

need to draw a line between economic benefit of noncompliance and ultimate penalty. They're not identical.

MR. HARSCH: Will you stipulate that 42 provides economic benefit is one of the factors the Pollution Control Board has to take into consideration.

MR. GRANT: That's correct.

BY MR. HARSCH:

Q. So do you have an opinion as to whether or not the approach contained in EPA's BEN user manual is the appropriate approach that should be utilized in analyzing the economic benefit which is one component of the penalty the Board is to assess pursuant to Section 42 of the Illinois Environmental Protection Act?

A. Yes. I believe it is the appropriate methodology to use.

Q. Mr. Styzens testified regarding the appropriateness of using the BEN approach in settlement cases and, in fact, that it was used extensively in settlement cases by the Illinois EPA lawyers and the AG's office; is that correct?

A. He did.

Q. Do you have an opinion regarding the appropriateness of using the BEN user manual approach as to whether or not it is appropriate for contested trial proceedings?

A. My opinion is that it is the appropriate methodology to use. I believe that the EPA guidance indicates that initially the BEN approach was created and the model specifically was created for settlement, but that when you move to trial you should engage the services of an expert to help explain the variables and the calculations to the court but that the approach remains the same.

And that's consistent with the documents that Mr. Styzens produced yesterday, the Federal Register and the other documents that point to the EPA BEN manual as the proper approach.

Q. Can you look at Page 4-6 of the BEN user manual? Mr. Styzens testified to the meaning -- his view of the meaning of the phrase that starts out, beware of such negative results; do you see that clause?

A. I do.

Q. Do you agree with this interpretation of that?

A. If I recall correctly, he was indicating that he was pointing to this sentence as a reason why the negative results could never be achieved. And I don't interpret it that way at all.

Specifically, I take it as an indication that you should be aware of the facts and the potential for abuse in this area, but it goes on to specifically talk about legal competitive advantage and other types of issues that aren't in play in this case. And it's a warning to the practitioners to be aware of the types of things that they might see that might -- that certain people might try to fit under this provision.

But it doesn't negate this provision in any way. It simply says when you're analyzing this area, as you should with every area of the penalty analysis, you should be aware of all of the facts and make sure you've considered them.

Q. Have you -- apart from your report, can you generally describe what the impact would be if you analyzed the expenditure of $1.1 million for the vacuum chiller unit?

A. Yes. I did analyze those costs and I included them in the revised model that is attached

to my December 1 report. Basically, I included the costs as of the date of expenditure and throughout 2000, 2001 and the overall impact is that it reduces the portion of the penalty that relates to delayed capital expenditures.

Approximately, that number was $150,000 and it knocks it down to $46,000, so the overall calculation difference was $107,000 approximately. The overall calculation in my initial report, of course, is a negative and then that negative number comes down a little further.

Q. Apart from the issue of solvent recovery in the vacuum chiller unit, Mr. Styzens testified that the results that you obtained as set forth in the August 2002 report and the earlier versions of the Navigant report were basically similar to the results that he got; do you recall that testimony?

A. I do.

Q. Do you agree with that in terms of the overall bottom line figure?

A. I would say generally that's the case.

MR. HARSCH: Could I have approximately a two-minute recess?

HEARING OFFICER HALLORAN: Yeah. Let's take five. Off the record. Thanks.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER HALLORAN: We're back on the record. I believe it's Complainant's cross.

CROSS EXAMINATION

By Mr. Grant

Q. Mr. McClure, I'm Chris Grant with the Attorney General's Office. We've met before at the deposition in Springfield; do you recall?

A. Yes.

Q. You're being paid for your testimony here today, correct?

A. Correct.

Q. And your going rate is $450 per hour, correct?

A. Correct.

Q. Prior to your participation in this case, Mr. Pat McGrath from Navigant provided consulting work in this case, as well, correct?

A. Not prior to my involvement. In addition to my involvement, as I think as I've discussed with you before. From the time that the case came to Navigant in 2004, whenever we first started, I was involved on the initial analysis that was used for settlement purposes.

Q. Okay. I remember you testifying at your deposition that you worked with -- I think you said you worked with Pat in the case?

A. Correct.

Q. I didn't know to that detail. Mr. McGrath prepared reports of economic benefit on his own that you reviewed for this case? I mean, he provided reports, as well, didn't he?

A. I believe so, yes.

Q. How much money has Navigant Consulting billed so far to Toyal on behalf of Toyal America in this case?

MR. HARSCH: I'm going to object to these questions. I find them to be totally irrelevant.

HEARING OFFICER HALLORAN: Could you read the question back, Tammi?

(Whereupon, the requested portion of the record was read accordingly.)

HEARING OFFICER HALLORAN: Mr. Harsch?

MR. HARSCH: I have no idea what the relevance is of this line of questions to his opinion.

HEARING OFFICER HALLORAN: Mr. Grant?

MR. GRANT: This goes to bias for a paid expert witness. The fact that he's being paid for his testimony, the fact that they're being paid to develop the opinion in the case. It's clearly relevant with a paid expert witness.

HEARING OFFICER HALLORAN: I think I'll allow it, but let's --

MR. HARSCH: We'll stipulate that they're a consulting firm and they have to bill for their services to Toyal.

MR. GRANT: I'm a little amazed that they made this objection. I mean, it's a paid expert witness, bias for what they're being paid for their testimony is standard, allowable --

HEARING OFFICER HALLORAN: I've made my ruling. You can ask it and the witness will answer.

BY MR. GRANT:

Q. How much money has Navigant Consulting billed so far for its work on behalf of Toyal America, Inc., in this case?

A. I don't know that amount.

Q. Do you know what Mr. McGrath's billing rate was?

A. I do not.

Q. Do you know if it was higher or lower than yours?

A. I do not.

Q. You've testified that you're a director of Navigant Consulting, correct?

A. That's correct.

Q. Now are you telling me that you cannot estimate what your billings have been on this case for the last three years?

A. That's correct. I don't have that information with me. I'd have to look back at the billing information to understand what it is.

Q. Do you have any estimate that you can

give us today?

A. I do not.

Q. How many hours have you worked on this case?

A. I don't know that.

Q. How many hours did Mr. McGrath work on this case?

A. You would have to ask Mr. McGrath.

Q. How many reports have you prepared -- has Navigant prepared in this case?

A. I've prepared two and I'm not aware of how many Mr. McGrath prepared.

Q. How long did it take you to prepare the first report?

A. I'm not sure of the exact number of hours.

Q. Was it more than ten hours?

A. I believe it was.

Q. Was it more than 20 hours?

A. I believe so.

Q. Was it more than 40 hours?

A. I'm not sure.

Q. Was it more than 30 hours?

A. I'm not sure.

Q. How long did it take to you prepare the second report?

A. I'm not sure.

Q. Is it more than ten hours?

A. Possibly.

Q. Was it more than 20 hours?

A. Again, I'm not sure. It would probably be in that range.

Q. Thank you. And you were in -- you've been in the courtroom, I think, for the full day yesterday and then since about 10:00 this morning?

A. Correct.

Q. And are you billing for all that time?

A. Yes.

Q. I think you answered my next question, which is where you got the financial information you used in your opinion. But can you just -- you said from Toyal people, but who specifically at Toyal provided the financial information, you know, cost of the equipment?

A. Primarily, Mr. Stevens did.

Q. And in your opinion you used -- for delayed capital expenditures you applied the treasury bill rate, correct?

A. No. I'm sorry, which rate in particular?

Q. For delayed capital expenditures, which means trying to go back to the position the company would have been in had it spent the money?

A. Well, there are two rates that are involved. One is the PCI for the inflation, which equates dollars across time periods. The other rate is an estimate of risk-free rate, which would be the value of bringing the dollars forward in time.

Q. And you used that number in your opinion, the second one, the estimate of the risk-free rate?

A. Correct.

Q. Okay. Is it your professional opinion that companies are able to borrow money for capital expenditures from financial institutions at the risk-free rate?

A. It would depend on the circumstances.

Q. How many business organizations have you worked with that have borrowed money from financial institutions at the risk-free rate?

A. I couldn't give you an estimate. I'm not aware.

Q. I believe you were here for Mr. Van Hoose's testimony yesterday when he testified that Toyal borrows money from banks, correct?

A. Yes.

Q. But you didn't use the bank interest rate in your calculations, correct?

A. I did not.

Q. Wouldn't that have been more accurate if, in fact, that was their source of capital?

A. I think, if I understand your question, you're talking about the rate that we use and the argument or the discussion between whether you use the risk-free rate or a weighted average cost of capital, if that's what you're asking about. And that's an issue that's kind of an open one, that's out in sort of the financial community that's received a lot of debate. There's a lot of literature on both sides of it. There are court cases on both sides of it.

The information that I reviewed in this case and the literature that I found that supported the use of the risk-free rate or an estimate of the risk-free rate primarily focuses on

a couple of facts. One is that we're talking about past cash flows that don't have uncertainty around them. And, secondly, that when you use a weighted average cost of capital, you have to build up the cost of equity in there and one of the components that you use is a risk weighted adjustment that would apply for a risky investment. And in my judgment it doesn't apply in this circumstance.

And, again, that's been accepted by courts in the WCI case, a number of cases, and it's promulgated in literature and the EPA recognizes that argument, as well.

However, in this case, that's not a big factor because the bond rate that Mr. Styzens used is very similar to the risk-free rates. So there's -- the net impact on the numbers is minimal.

Q. I understand we're not talking about a huge difference, but considering that Mr. Van Hoose testified that for their capital purchases they borrow money from a bank yesterday -- and you were here when he said that, wouldn't your opinion have been more accurate if you used their actual borrowing rates rather than a hypothetical or, you know, a risk-free rate? That would have been more

accurate in trying to figure out the benefit that they accrued from not making purchases?

A. No. Because that's the -- you're applying the wrong theory.

Q. Well, my question is the cost of the money that they actually incurred, in other words, the interest that they pay on the money that they borrowed from the bank, that would be the appropriate one to use in figuring their economic benefit, wouldn't it?

A. No.

Q. So the money that they actually spent would not be the accurate figure to use; is that what you're saying?

A. Now you're asking a different question.

Q. Okay.

A. The money that they actually spend is listed on my schedules and in my report. The rate at which we would discount those dollars, as is prescribed in the methodology we use, is I've said subject to some debate, but the literature supports the fact that you can apply a risk-free rate and that it's not the company's cost of borrowing that's

relevant here. It's a risk-free rate that's applied because when you look at a company's weighted average cost of capital, you're imputing risk and other items that do not apply to past expenditures for environmental compliance.

Q. Did you ever request copies of bank records that showed Toyal's actual interest case during the relevant period, which is 1995 to 2003?

A. I did not because it's not relevant to me.

Q. And you didn't include any labor costs for maintenance of the control device in your opinion, either, correct?

A. Could you repeat that?

Q. You did not include any additional labor costs for maintenance of -- I've got it written as the RCO, but the control device that was used as part of your opinion, correct?

A. I did not impute an additional cost because in my discussions and with the personnel at Toyal and from their testimony it was not required.

Q. And, again, you were present during the testimony from a number of witnesses about the maintenance and the shutdowns related to the RCO,

correct?

A. They commented on those items yesterday.

Q. And today, as well?

A. Yes.

Q. Did you review the permit applications submitted by Toyal to Illinois EPA in developing your opinion?

A. I did not.

Q. Did you review the permits actually issued by Illinois EPA to Toyal?

A. I did not.

Q. Did you review Toyal's responses to the requests for admission of fact in this case?

A. Specifically which documents?

Q. I'm trying to decide -- I've got them -- is the white book up there? Why don't you turn to Exhibit 17? Did you review Complainant's Exhibit 17 prior to developing your opinion in this case?

A. No.

Q. Ms. Vail just said that I -- that she thought I failed to ask a question. I thought maybe I did. So I'll go back to the labor cost area.

I stated that you didn't include labor costs and I believe you agreed with that; isn't that true? And let me restate that.

I'm talking about additional labor costs for maintenance of the RCO, the control device, that that's not present in your opinion, correct?

A. Well, it depends on your definition of labor costs. There are --

Q. I think the way I asked it -- let me go back to the way I asked it. You didn't include any labor costs for maintenance of the RCO as part of your opinion? I think that's the question that I originally asked.

A. The expenditures that we have in the invoices include the billings from the consultants and labor required to create the system.

I did not multiply it by 10 percent or 20 percent or add a labor overhead, a generic factor. Is that what you're getting at?

Q. Yeah, that's exactly what I thought I had asked.

A. I did not, correct.

Q. What do you know about the regulation

the State alleges was violated in this case?

A. What aspect?

Q. Do you know which regulation the State has alleged is violated?

A. Subpart TT that we've been speaking of.

Q. Right.

A. I have a limited accountant's understanding.

Q. Do you know when it became effective?

A. The relevant period which I'm aware of is the period of '95 on.

Q. Now as a regulation in place affecting Toyal, if Toyal was affected by the regulation, they were required to comply with the law, correct?

MR. HARSCH: Object to the question. Calls for a legal conclusion. He's an accountant.

HEARING OFFICER HALLORAN: He can answer if he's able. Overruled.

BY THE WITNESS:

A. I don't have a legal opinion on it. Generally, you're required to comply with the laws if that's what you're asking.

BY MR. GRANT:

Q. You're not aware of any government regulation requiring Toyal to maximize the recovery of solvents, are you?

A. No.

Q. Or any government regulation requiring them to minimize their solvent cost, correct?

A. I am not.

Q. I was going to ask you a few technical questions, but basically you're not an engineer, correct?

A. That's correct.

Q. So the engineering part of Toyal's process is not a part of your opinion? In other words, you're not making an engineering opinion as to -- your written opinion doesn't include an engineering --

HEARING OFFICER HALLORAN: Can you speak up, Mr. Grant?

MR. GRANT: It's a bad question, that's why I'm talking softly.

BY MR. GRANT:

Q. There's no engineering analysis performed by you in your opinion, correct?

A. Correct.

Q. And you were not provided with information on the engineering of the solvent recovery system, correct?

A. Such as?

Q. I think I got this from the deposition. As far as the detailed engineering of the solvent recovery system, you're not familiar with that, are you?

A. Again, I'm not an engineer so...

Q. That's fine.

A. I did tour the facility and I did see the system in place and I got a general understanding as best as I could.

Q. Sure. That's fair. The information about the solvent recovery system, in other words, the device that you used for the foregone benefit calculations, that was all provided to you by Toyal, correct?

A. Correct.

Q. Are you aware of the civil penalties that can be assessed for violations of the Illinois Environmental Protection Act?

A. I'm aware of economic benefit and I'm

aware of gravity components.

Q. As far as the dollar value of -- or the dollar -- well, let me ask another question.

Are you aware that penalties of $10,000 per day per violation can be assessed against Toyal if they're found in violation in this case?

MR. HARSCH: And I'll object to the question, he's not an attorney.

HEARING OFFICER HALLORAN: He could be familiar with the regs in the Act. He may answer if he's able.

BY THE WITNESS:

A. I don't know the specifics.

BY MR. GRANT:

Q. So you didn't take that $10,000 per day figure into account in assessing whether or not the information provided to you was reliable, correct?

A. I don't understand your question.

Q. You didn't know -- I think you testified that you were not aware of the potential penalties of $10,000 per day, correct?

A. Correct.

Q. So you did not take that fact into consideration in assessing the reliability of the information provided to you by Toyal, correct?

A. Again, I'm not sure how the existence of a penalty regulation impacts the reliance of information. I don't understand the connection you're making.

Q. In judging the reliability of the information provided to you by Toyal, did you take into effect that they were subject to penalties of $10,000 per day?

A. Not specifically, no. And, again, I don't understand the question.

Q. Mr. McClure, in your opinion you accept the assertion that the solvent recovery system was linked to control of emissions in developing your opinion, correct?

A. Yes, that's my understanding from my discussions with the personnel at Toyal, that the system is for compliance.

Q. And neither you nor Navigant Consulting performed any independent investigation to determine whether Toyal's claim that one was tied to the other was, in fact, true, correct?

A. We're not engineers, so we would not perform an independent engineering assessment.

Q. And you did not in this case?

A. I'm sorry?

Q. You did not in this case?

A. Yes, I did not.

Q. If there's no direct connection between Toyal's engineering project to increase solvent recovery and their compliance with the regulations, then this opinion is incorrect --

A. Which opinion?

Q. -- is that right?

If there's no direct connection between the violation of the regulation and the costs savings -- potential cost savings related to operation of the solvent recovery system, then your opinion would be incorrect, wouldn't it?

A. If the facts change, I would have to reassess the facts of the situation.

Q. Do you recall discussing your experience with the economic benefit of noncompliance calculations at your deposition?

A. Yes.

Q. You mentioned a couple cases, but also

stated that you could not disclose the client, correct?

A. Correct.

Q. And at the time that you were working on those cases, those clients were in settlement discussions with the regulatory agency, weren't they?

A. Correct.

Q. And you did not know -- you do not know today what the eventual result of those cases was, correct?

A. That's correct. My understanding is they have not been resolved.

Q. And you've never worked on a matter where a court allowed a claimed foregone benefit to reduce a proven economic benefit of noncompliance, correct?

A. I'm sorry?

Q. Yeah. You have never worked on a case where a court allowed a claimed foregone benefit to reduce a proven economic benefit of noncompliance, correct?

A. I worked on cases where they're discussed in settlement, but have not yet progressed

to courts where some of which we have some offsets and other cases, you know, we do not. That wasn't part of the fact pattern.

Q. Besides the language quoted from the BEN model -- or manual, which those are the two pages that you reviewed with Mr. Harsch, you're not aware of any state or federal guidance documents which explicitly allow claimed foregone benefits to reduce economic benefit of noncompliance, correct?

A. Such as what?

Q. Are you aware of any state, any Illinois EPA or US EPA documents besides those two pages in the BEN manual that allow for the subtraction or supplement of foregone benefit from economic benefit of noncompliance?

A. The documents that we've discussed here that Mr. Styzens presented yesterday all direct you back to that language, so they don't repeat that language specifically but what all those documents, the Federal Register and the Civil Penalty Policy all indicate that you should calculate economic benefit following the BEN manual. And then when you look at the BEN manual, that prescribes for considering the fact that there are offsets to the

costs.

Q. So that's the whole support for the theory is as you just described it, correct?

A. The support for the theory is the US EPA's foundation and cornerstone of their penalty policy, yes.

Q. But you can't point to any document that says foregone benefits can be reduced from proven economic benefit of noncompliance, correct?

A. Once again, I can point you to the BEN manual which specifically describes it and I can point you to your witnesses' documents that point you to the BEN manual. They all funnel back to the same place.

Q. So it's really just in the BEN manual where -- that you're relying totally on the language in BEN manual for the conclusion?

HEARING OFFICER HALLORAN: I'm sorry, Mr. Grant?

BY MR. GRANT:

Q. You're relying totally on the language in BEN manual for that conclusion, correct?

A. Again, I'm relying on the BEN manual which prescribes the methodology and then I'm --

can -- you see that being used as the source in all the other documents that have been --

Q. That refer to that language, correct?

A. -- that have been submitted here.

And, you know, outside of the documentation, I've discussed it with the EPA, as well.

Q. I guess I'm trying to pin this down. The other documents -- I think this is what you're saying. The other documents refer you to the language in BEN manual that you used, correct?

A. The other documents that are provided here, the Federal Register and the Civil Penalty Policy specifically say that if you're going to do a benefit calculation, use the BEN manual. And then they stop there. They don't prescribe alternatives and they do not tell you not to include other things. They simply refer you to the BEN manual.

And BEN manual is the guidance. So when you go there, that's what it tells you is that these offsets are allowed because it reflects the economic reality, in some cases, of the corporation's situation. It's just a fact that it can happen.

Q. But those other documents don't include language saying that you can remove -- that you can credit a foregone benefit against economic benefit of noncompliance?

A. It's not the subject of other documents. They simply just have the reference to the BEN manual. They don't prescribe a set of directions because they're already in the BEN manual.

Q. Okay. I think that you were here when Mr. Styzens testified yesterday?

A. Yes.

Q. And you heard him state that he did not use the BEN model to calculate in the State's opinion on economic benefit of noncompliance in this case, correct?

A. Correct. The BEN model, yes.

Q. Therefore, wouldn't you agree that the BEN model has no relevance to this case?

A. No. There's a distinction between the manual and the model. The model is simply a software package that the EPA created in an attempt to help practitioners follow the approach in the BEN manual. But it's not a requirement that you have to

use that particular software spreadsheet. You can use your own to follow the approach that's in the BEN manual.

Q. I think Mr. Styzens testified also that he did not use -- except for consulting with the BEN manual, that he didn't strictly use the BEN manual; isn't that correct?

A. I don't know specifically. We'd have to look back through his testimony.

Q. If he did not use the BEN manual in coming up with his calculations, then the BEN manual has no relevance to this case, correct?

A. Absolutely not.

Q. If he did not use that procedure, how is it relevant to this case?

A. The BEN manual prescribes the methodology for doing economic benefit calculations. If the State chose not to use it, then they're following the wrong method and they need to go back and refer to it.

Q. Your opinion is based wholly on the assumption that the use of the BEN manual is mandatory, correct?

A. Not completely. The BEN manual

prescribes the guidance and you should follow that guidance as best as you can and try to observe the facts in your specific case, review the guidance and craft your analysis. That still requires a professional background in certain financial concepts and there's other requirements. But, generally, the BEN manual prescribes the methodology that the EPA set out for this type of penalty.

Q. When you say EPA, you mean the United States Environmental Protection Agency, correct?

A. That's correct.

Q. And you're aware that this case was brought, in part, by the Illinois Environmental Protection Agency, correct?

A. Yes.

Q. Do you have any basis for assuming that the policies of the United States Environmental Protection Agency are binding in this matter on the Illinois Environmental Protection Agency?

A. That sounds like a legal distinction to me that I couldn't make.

Q. Okay. The document you're using is a US EPA document?

A. Correct.

Q. And this case is brought by Illinois EPA, so why would Illinois EPA have to use a US EPA document?

A. The documents indicate that the US EPA strongly encourages -- I don't know if the word "requires" is appropriate in a legal context, but encourages the state to utilize that guidance because it creates some sense of uniformity and because the process is somewhat embedded by the experts at the EPA and it's an attempt to make sure that the appropriate financial theories are used when calculating these penalties, again, to create some sort of uniformity.

The discussion has been had a lot here about leveling the playing field and creating a deterrence by having these penalties. And so along with that goal they've prescribed a way to try to make sure that it's fair and that it's applied properly in all these different cases. So I would assume that the Illinois EPA would have the same goal and would use the prescribed methodology.

Q. So essentially what you're describing is it's a suggestion by US EPA that it be used, correct?

A. Again, there'd be a legal distinction there that I couldn't make.

Q. I think it's my impression of what your testimony is that they strongly recommend it and suggest it, but there's nothing in there that says that Illinois EPA has to use this method, is there?

A. I think it's really a legal question as to how those agencies interact. And what's required by which one, I really couldn't answer it that way.

Q. So is there anything that you've seen in the BEN manual that says that Illinois EPA must use this?

A. Illinois EPA is not mentioned in the BEN manual.

Q. Are you aware of any of Navigant Consulting's economic benefit opinions that have been accepted by the Pollution Control Board in any cases?

A. I am not.

Q. This is the first time that Navigant Consulting is presenting its theory on foregone benefits before the Pollution Control Board,

correct?

A. I don't know that to be the case. There could be others I'm not aware of.

Q. Okay. In your analysis did you take into consideration the deterrent effect of recovery of economic benefit of noncompliance?

A. I think that when you calculate the penalty, the process behind it or the thought process behind promulgating the penalty is a deterrent. The goal, as the EPA had stated it, is to make no financial advantage to a company that chooses noncompliance.

So when you are analyzing the facts and circumstances, you're trying to analyze a what-if scenario. They did not comply, but what if they had and what's the difference. So when I calculated an amount for delayed capital and an amount for avoided costs, those are penalty amounts that would create -- would be a deterrent. They're potential financial penalties.

In this particular instance in this particular case the company had a unique set of circumstances that also required that I consider a foregone cost savings that they would have had. But

I'm aware of the EPA literature that describes why they created both the economic benefit penalty and then separately the gravity penalty, both of which are deterrents to noncompliance.

Q. Your analysis shows that there's approximately a million dollars of foregone benefits over eight years of alleged noncompliance with regulations; is that a fair summary?

A. Could you repeat that?

Q. Your analysis shows that -- or it indicates that there was more than $1 million of foregone benefits in the form of solvent savings over eight years of alleged noncompliance, correct?

A. The foregone benefit that I calculated, that component of the analysis shows that the foregone savings was a little over a million dollars. And that's, of course, offset by the penalties for delayed capital expenditures and avoided costs.

Q. Getting back to the aspect of deterrence, if a regulated company could violate environmental regulations with the knowledge that they would be able to set off penalty by an after-the-fact calculation of foregone benefit,

there would be no reason to prioritize environmental compliance expenditures, would there?

A. Well, I think that there's a number of different concepts in there that are included in that question. In Toyal's case, we're coming after the fact that they've had all these huge expenditures over a very difficult time frame to get into compliance. And once they reach compliance, as we're looking at the state of their costs and their expenditures, then we realize that there's a solvent recovery aspect to this.

So it's not something that the company, at least in Toyal's case, would be planning out and then saying down the road when we get to this penalty phase we're going to offset it. It doesn't work that way. So it's mixing time frames and it really doesn't represent the facts of this case.

Q. For the offset to be effective, though, they would have to be absolutely linked; isn't that correct? In other words, in this case, specifically we're talking about expenditures for a control device to get their emission sources in compliance. And for an offset, that would have to

be absolutely linked to that decision, wouldn't it?

A. Well, it would depend on the facts and circumstances. The overall concept is that in an effort to reach compliance, but you were delayed in doing so, you have delayed capital expenditures, avoided costs. And then as you look back, you realize, oh, we would have saved certain dollars in solvent recovery. It's all part of the compliance effort. But the facts would dictate what you do in that specific case.

And, again, to respond I guess a little better to your question, there's a gravity component that's separate that looks at the time frame and it's considered separately. So I'm looking at the economic -- specifically, the economic benefit analysis here. So I just want to make sure that we're clear on the facts and the methodologies that apply here versus gravity.

Q. Were you aware that affiliated companies were using a solvent recovery system well before the Toyal Lockport operation installed it?

A. Can you tell me which companies?

Q. Sure. In developing your opinion that the foregone benefit should be offset, were you

aware that companies affiliated with Toyal located in France and located in Japan had been operating a solvent recovery system?

A. No. I believe I told you before in my deposition I was not aware of that.

Q. Mr. McClure, you heard Mr. Van Hoose's testimony yesterday, I think, admitting that they could have controlled VOM emissions without ever installing a solvent reclamation device, weren't you?

MR. HARSCH: Object to the question. I don't believe that was the testimony. Or I don't recall that as testimony.

HEARING OFFICER HALLORAN: I don't recall, but that doesn't mean it wasn't said. Mr. Grant?

MR. GRANT: I think what I asked Mr. Van Hoose was probably on direct questioning that you could have installed the emission sources to the control device without ever having a solvent recovery system and I believe his answer was correct.

HEARING OFFICER HALLORAN: Are you fine with that, Mr. Harsch?

MR. HARSCH: I don't recall that question.

MR. GRANT: Okay. Let me do it as a hypothetical.

HEARING OFFICER HALLORAN: Okay.

BY MR. GRANT:

Q. If a senior officer and vice president of Toyal America stated that they could have come into compliance with the regulation by hooking up emission sources to a control device without ever having installed a solvent recovery system at all, wouldn't that indicate that there's no reasonable link between the control device expenditures and the foregone benefit savings?

A. Again, if the facts and circumstances of the case I was working on changed, then I would reevaluate them. That's probably the best way I can answer.

Q. That would break the link between the two, wouldn't it, where one could be offsetting against the other?

A. Can you rephrase the question?

Q. Okay. This is a hypothetical. If a senior officer of Toyal America with knowledge of

the system stated that they could have come into compliance with the regulations by hooking up emission sources to a control device without ever having a solvent reclamation system, that would break the link between the two, wouldn't it?

A. Again, specifically, I'd have to evaluate all the facts and circumstances around it that's to make sure that we understood all the aspects, that we understood the timing and that we understood the system. So I couldn't say just generically that that would completely change the analysis.

MR. GRANT: That's all I have.

HEARING OFFICER HALLORAN: Thank you, Mr. Grant. Mr. Harsch, redirect, please.

REDIRECT EXAMINATION

By Mr. Harsch

Q. If you can possibly answer this, please do so. I think you testified that Navigant's estimates of the foregone costs and the -- excuse me, the delayed capital costs and the avoided operating maintenance type annualized costs were in the immediate ballpark of that which was calculated by Mr. Styzens; is that correct?

A. That's true as in my August report when we included the vacuum unit, our costs come down a bit. But, generally, that's the case.

Q. And can you say what the impact is if you were to have not used the risk-free rate and have used a rate similar to that Mr. Styzens used?

A. It would be very, very minimal because my rate was 5 percent, his rate on average would be somewhere between 4 and 5 percent. So it's a very insignificant fact. The theory is different but the practical application is very small.

Q. So we're talking a five, $10,000 difference?

A. Probably.

Q. I believe on response to one of the questions Mr. Grant indicated that you have had discussions -- various discussions with the US EPA regarding the use of the BEN users manual?

A. We have. Yes, I have.

Q. And is it your understanding that the BEN user manual, which you've attached to your report, is the recommended approach by US EPA for assessing economic benefit?

A. It is.

Q. And as an independent consultant based on the experience that you have and that of Navigant's, is it Navigant's and your opinion that the BEN manual is an appropriate means of guidance to calculate the economic benefit?

A. It is.

Q. If you look at the example in the BEN users manual, I think you have it in front of you, the language that you pointed to on Page 311 under annual recurring costs, the third paragraph, and then under the example, compliance is cheaper than noncompliance on Page 4-6, is the recovery of solvents specifically listed as an example in one of those two sections?

A. Page 3-11, Paragraph 3 indicates that any O&M offsetting credits should be considered in determining the incremental annual --

HEARING OFFICER HALLORAN: Mr. McClure, could you slow down and face this way?

THE WITNESS: I'm sorry.

BY THE WITNESS:

A. Page 3-11, under the heading of annually recurring costs, Paragraph 3, says the any

operating and maintenance, O&M offsetting credits should also be considered in determining the incremental annual costs. Such credits might represent actual O&M cost savings, heat recovery product or by-product recovery and so forth.

BY MR. HARSCH:

Q. Then also is it listed in -- anything listed in 4-6?

A. At 4-6 there is an example that says that the violator comes into compliance late and finds that it's been saving money since it installed the new technology. This may occur because the compliant technology allows the violator to recover materials and/or reduce operation and maintenance costs. BEN produces a negative result.

Q. Is it your understanding that the installation of the control device along with any improvements on the capture collection system allowed Toyal to recover solvents?

A. Yes.

Q. And is there any requirement that you're aware of in the BEN user manual that the recovery of such solvents has to be directly related to the requirement to achieve compliance?

A. It's not specifically listed here.

Q. So the requirement is that achieving compliance allows you to do the recovery?

A. Correct.

Q. Are you -- apart from the Illinois cases that Mr. Styzens referenced in his testimony that he participated in testifying for economic benefit, are you aware of any written policy by Illinois EPA as to how to calculate an economic benefit penalty?

A. No, I'm not aware that one exists.

Q. And you were present during Mr. Styzens' deposition when I asked him if one existed?

A. Yes.

Q. And his answer was?

A. Does not.

Q. You're a certified fraud investigator, are you not?

A. I am CPA and also a certified fraud examiner and I also have a certification in -- certified in financial forensics.

Q. When you were provided with the various information from Toyal to support all of

your work, including the solvent recovery estimates, did you ask for specific backup information?

A. Of course.

Q. And what was the purpose of that?

A. Well, I have to be certain that any facts that are asserted in the case are well supported by the appropriate documentation from the company. So I work with company personnel to make sure they have the right documentation. And then I'll put only put it in the analysis in the event that the documentation supports the conclusion.

Q. And based on your experience, was there anything in the documentation that you received from Toyal that gave you any reason to believe that that information was not true and accurate?

A. No.

Q. You were here when Mr. Styzens testified that he didn't even review that information; is that correct?

MR. GRANT: I object, that's hearsay. I don't remember that either.

HEARING OFFICER HALLORAN: I'm sorry, could you read the question back, Tammi?

(Whereupon, the requested portion of the record was read accordingly.)

HEARING OFFICER HALLORAN: Mr. Grant?

MR. GRANT: That's not the way that I recall it. He doesn't have a transcript here. I think it's collateral anyway, but...

HEARING OFFICER HALLORAN: You know, he can answer if he's able. I don't recall it either.

BY MR. HARSCH:

Q. Can you answer the question?

A. Generally, yes, that was -- my understanding was that Mr. Styzens testified that he, at a minimum, definitely did not consider any of the solvent information, any of the production data or pricing or any other information that we put together to support the foregone benefit and then I'm not sure specifically about the other information.

MR. HARSCH: Thank you. I have nothing further.

HEARING OFFICER HALLORAN: Thank you. Mr. Grant?

MR. GRANT: Just on that last point.

RECROSS EXAMINATION

By Mr. Grant

Q. Mr. McClure, Navigant reports were provided to Illinois EPA on numerous occasions prior to today, correct? Let me say -- numerous is kind of a weird word. I'll say at least three?

A. That's probably true.

Q. And the Navigant reports contained information on Toyal's solvent costs and other Toyal information, correct?

A. Generally, yes.

MR. GRANT: That's it.

HEARING OFFICER HALLORAN: Is that it?

MR. HARSCH: (Shaking head.)

HEARING OFFICER HALLORAN: You may step down, Mr. McClure. Thank you so much. We can go off the record momentarily.

(Brief pause.)

HEARING OFFICER HALLORAN: We're back on the record. The Respondent has rested in its case in chief. The Complainant has represented it's not going to have any rebuttal. Both parties have waived closing

arguments and reserve it for the post-hearing brief.

The parties are required to notify me hopefully within the next seven days regarding a post-briefing schedule. They will either leave me a voice mail or an e-mail.

I do want to say that on the issue of credibility, I find that there are no credibility issues with the witnesses who testified today or yesterday, December 10th. And I want to thank both parties for their professionalism, especially in light of the complexity of the matter.

With that said, have a safe trip home, happy holidays and be good.

(Which were all the proceedings had in the above-entitled cause on this date.)

STATE OF ILLINOIS)
) SS.
COUNTY OF WILL)

I, Tamara Manganiello, CSR, RPR, do hereby certify that I reported in shorthand the proceedings held in the foregoing cause, and that the foregoing is a true, complete and correct transcript of the proceedings as appears from my stenographic notes so taken and transcribed under my personal direction.

Tamara Manganiello

TAMARA MANGANIELLO, CSR, RPR
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