BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

W.R. GRACE & CO. - CONN.,	)	
	)	
v.	)	
	)	PCB 96-193
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	)	(Air Variance)

The following is a transcript of a hearing held in the above-entitled matter, at James Thompson Center, 100 West Randolph Street, Room 11-500, Chicago, Illinois, on the 25th day of October, 1996 A.D., commencing at the hour of 9:30 o'clock a.m.

BEFORE:
MS. DEBORAH L. FRANK, Hearing Officer.

Appearances:

Ms. Christine L. Archer
Assistant Counsel
Bureau of Air
Division of Legal Counsel
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276
appeared on behalf of the IEPA;

Ms. Katherine D. Hodge and
Ms. N. Ladonna Driver
Hodge & Dwyer
808 South Second Street
Springfield, IL 62704
Phone: 217/523-4900
FAX: 217/523-4948
appeared on behalf of the
W.R. Grace & Co. - Conn.

Also Present:
Ms. Casey Doyle for Board Member Meyer

Member of the Public

INDEX

EXHIBITS

GRACE EXHIBITS	FOR I.D.	IN EVIDENCE
1	7	28
2	6	28
3	6	28
4	12	28
5	12	28
6	13	28
7	15	28
8	16	28
9	50	76
10	57	76

GRACE EXHIBITS	FOR I.D.	IN EVIDENCE
1		29

HEARING OFFICER FRANK: Good morning and welcome to hearing in W.R. Grace versus the Illinois Environmental Protection. This is a air variance, PCB 96-193.

I'm Deborah Frank. I'm the Hearing Officer for this matter.

If you would go ahead and make your appearances on the record and introduce your witnesses.

I'll also note for the record that we have Casey Doyle here from the Pollution Control Board. She's the attorney assistant to Member Meyer, but we have no other members of the public present.

Okay. You want to make your appearance?

MS. HODGE: Good morning. My name is Katherine Hodge. I'm with the law firm of Hodge & Dwyer in Springfield, Illinois. We're here today representing W.R. Grace in this matter. With me is Ladonna Driver, who is also with our law firm.

And we will have three witnesses today. First is Rich Irelan. And Mr. Irelan is the Environmental Health and Safety Manager for the Chicago facility.

We will also have Aaron Abbott who is

the Associate Process Engineer with W.R. Grace, corporate.

And Mr. Robert Tragert who is the Senior Environmental Coordinator with W.R. Grace, again, with corporate.

HEARING OFFICER FRANK: Okay.

MS. ARCHER: Good morning. My name is Christina Archer. I'm an Assistant Counsel for the Bureau of Air, for the Respondent, the Illinois Environmental Protection Agency.

With me today is Mr. Brooke Peterson, who is a Legal Investigator in the Bureau of Air and Mr. Kevin Madison who is a Source Emission Test Specialist in the Bureau of Air.

HEARING OFFICER FRANK: Before we begin, I just note for the record that we had a conversation off the record about the briefing schedule.

The parties have requested expedited transcripts because they had requested expedited review by the Board and Grace has agreed to file their brief on November 8th and the Agency has agreed to file their brief on November 15th and mailed as filed.

So, you may want to get it to each other more quickly, since you're both in Springfield,

but you can put it in the mail to the Board.

MS. HODGE: We will do that.

HEARING OFFICER FRANK: Or Federal Express it.

MS. ARCHER: That's fine. The same for the Agency.

HEARING OFFICER FRANK: Do you have opening statements?

MS. HODGE: Yes, I do.

HEARING OFFICER FRANK: Okay. Go ahead and begin.

Is there any other point or preliminary matter that we need to cover?

MS. HODGE: No, I don't think so.

OPENING STATEMENT

BY MS. HODGE: On behalf of W.R. Grace, I want to thank both the Agency and the Board, especially Miss Frank, the Hearing Officer in this matter, for their assistance and cooperation in expediting the proceeding.

We urge the Board to grant the relief requested as soon as possible, and as we had discussed informally this morning, we would urge the Board to move ahead and make a decision by the December 19th board meeting, if at all possible, given the Board's

schedule.

And I would like to provide just a little background at this point just to kind of clarify how we got to this point and why we are here seeking the relief that we are today.

Back in March of 1995, the Board granted a variance to allow Grace and the Agency to work towards the installation of an appropriate control device for the VOM emissions from Grace's mixer loading activities at the Chicago facility and this was pursuant to Subpart QQ of Part 218 of the Board's Air Regulations, and that was in the matter of W.R. Grace versus IEPA. It was PCB 94-328, the proceeding. Under that variance, Grace obtained a construction permit for and installed a catalytic oxidizer meeting all, but one, of the milestones in the Board's variance order.

The milestone which Grace was unable to timely meet was in paragraph four of Board's March 16, 1995 Order, and we have brought exhibits with us today just, really, to aid the Board in its review of this matter so that you have all the documents in front of you.

And Miss Driver has copies of this.

And, Miss Frank, we have entitled

this Grace Exhibit 1.

(Whereupon, Grace Exhibit No. 1 was marked for identification.)

HEARING OFFICER FRANK: Okay. Thank you.

MS. HODGE: And the Grace Exhibit 1 is a copy of the Board's March 16, '95 Order in PCB 94-328.

This milestone was also incorporated into Special Condition 6(c) of the construction permit granted by the Agency for the oxidizer.

And this is Grace Exhibit Number 2.

(Whereupon, Grace Exhibit No. 2 was marked for identification.)

MS. HODGE: The same milestone was incorporated into the current operating permit for the facility, again, issued by the Agency.

And that's Grace Exhibit Number 3.

(Whereupon, Grace Exhibit No. 3 was marked for identification.)

MS. HODGE: The milestone at issue here required the submittal of results from any testing required by the Agency for the oxidizer by March 15, 1996.

Grace is requesting an extension to the testing requirement deadline as it pertains to the submittal of the capture efficiency demonstration for

the oxidizer.

When Grace filed its Petition for Variance Extension in March of this year, it sought a one-year extension to that deadline. As will be discussed today, Grace needed time to implement a permanent total enclosure in its solvent mixer room to accomplish the capture efficiency demonstration.

Grace has substantially completed those tasks when an explosion and fire occurred in the solvent mixer room on June 14, 1996.

The oxidizer was rendered inoperable by the explosion. In addition, the investigation into the oxidizer explosion revealed that several emissions and control option studies would have to be conducted before an oxidizer could again be safely used to control VOM emissions from the mixer loading activities.

And we do expect these additional studies, as will be discussed by the Grace witnesses later on, to take some additional time here.

Consequently, on September 9, 1996, Grace amended its variance extension request to seek a two-year extension to the testing deadline for the capture efficiency demonstration, as Grace believed the

capture efficiency testing would need to take place with an operating oxidizer.

Since the filing of the extension of the variance extension petition, Grace has discussed this issue with the Agency.

The Agency has indicated to Grace that the capture efficiency demonstration can go forward even without the oxidizer.

Grace has completed installation of the PTEs -- the permanent total enclosure -- and has submitted certification of the PTE to the Agency. Thus, a two-year extension to the testing deadline will not be necessary at this point in time.

Therefore, Grace requested the Board extend the testing deadline of paragraph four of the Board's March 16, 1995 order and Special Condition 6(c) of the Construction Permit issued by the Agency.

We ask that you extend this deadline out to November 15th, 1996. Grace further requests that this extension become effective retroactively on March 15th, 1996.

Additionally, Grace requests a variance from the emission control requirements of 35 Illinois Administrative Code Part 218, Subpart QQ, and

the recordkeeping and reporting requirements of 35 Illinois Administrative Code Part 218, Subpart UU and Section 9(b) of the act for its solvent mixer loading operations, as well as a variance from the requirements of the Board's March 16th, 1995 Variance Order and the Construction Permit issued by the Agency for the catalytic oxidizer.

Grace requested the variance from the emission control and recordkeeping reporting requirements for the solvent mixer loading activities begin on August 15th, 1996, and continue until May 15th, 1998.

This variance is requested due to the previously mentioned explosion which occurred on June 14th of this year.

After the explosion, Grace shut down its solvent process while it assessed the damage to the control equipment and building and began its investigation into the cause of the explosion.

On June 28th, 1996, Grace filed a request for provisional variance from the requirements of Subpart QQ and Section 9(b) of the Act to allow Grace to resume operation of the solvent mixer without air pollution control equipment.

We have a copy of our request for Provisional Variance from the Board, as well, and this is our Grace Exhibit Number 4.

(Whereupon, Grace Exhibit No. 4 was marked for identification.)

MS. HODGE: This provisional variance was requested for a period of forty-five days from July 1st, 1996, until August 14th, 1996, or until the oxidizer and ventilation system were repaired.

By letter dated June 28, 1996, the Agency accepted Grace's request for Provisional Variance for review. The Agency filed its recommendation with the Board on July 2, 1996,

The Board granted the Provisional Variance on August the 1st, 1996 allowing operation of the mixers without the oxidizer from July 1, 1996, until August 14th, 1996, or until such time as the oxidizer and ventilation system were repaired.

And the Board granted this relief in PCB 97-24. This was in the matter of Grace Container Products versus IEPA. And we have a copy of this as well. It's Grace Exhibit Number 5.

(Whereupon, Grace Exhibit No. 5 was marked for identification.)

MS. HODGE: On August 6th, 1996, Grace contacted the Agency to schedule a meeting to discuss the results of its investigation into the explosion and fire.

Grace was informed that the appropriate Agency representatives were unable to meet until August 21st, 1996.

Meanwhile, on August 13th, 1996, we filed a request for an extension of the Provisional Variance to allow Grace to continue operations without the oxidizer, while exploring whether the oxidizer could be repaired or redesigned to address new safety concerns identified during the investigation.

We have a copy of our request, Grace Exhibit Number 6.

(Whereupon, Grace Exhibit No. 6 was marked for identification.)

MS. HODGE: By letter dated August 20, 1996, the Agency accepted Grace's request for extension of its Provisional Variance for review.

On August 21st, 1996, Grace met with Agency representatives to discuss the results of the investigation into the explosion and held the results of that investigation implicated Grace's continued compliance with Subpart QQ.

It appeared from our discussions at the August 21st meeting, that Agency representatives understood that additional time would be needed for both Grace and the Agency to evaluate compliance issues raised by this situation.

During the meeting, the Agency suggested that Grace and the Agency may be able to enter into a compliance commitment agreement pursuant to the newly amended Section 31 of the Illinois Environmental Protection Act.

This agreement would have allowed the Agency and Grace to agree to a certain timetable in which investigations and discussions could take place regarding how Grace should approach compliance with Subpart QQ, the Board's prior variance order, and the Construction Permit, in light of what had been learned from the explosion investigation.

Immediately following this August 21st meeting, Grace representatives spoke with Agency personnel on virtually a daily basis regarding the compliance options for the mixer loading activities, including an equivalent alternative compliance plan and/or adjusted standard relief.

Grace provided for the Agency's

review and consideration a RACT demonstration and that's "Reasonably Available Control Technology" demonstration, that has been approved for solvent mixer loading operations at a Grace facility which is located in another state, like, this is for the Grace's Atlanta Georgia facility.

Thereafter, on September the 9th, the Agency informed Grace that a compliance amendment agreement would not be appropriate for this case. Thus, Grace decided to seek the necessary immediate relief from the capture efficiency testing deadline and the requirements to operate its solvent loading activities with the oxidizer with the control equipment by filing this amended petition for extension of the Board's prior variance order and a supplemental request for variance. This was filed on the same day, on September 9th, 1996.

Thereafter, on September 13th, the Agency issued a letter rejecting Grace's request for extension of its Provisional Variance.

And this is Grace Exhibit Number 7 and this is Agency letter from Joe Svoboda.

(Whereupon, Grace Exhibit No. 7 was marked for identification.)

MS. HODGE: The Agency's rejection was based upon statements made by Grace at the August 21st meeting, that due to the extensive damage to the oxidizer, as well as the information revealed by the explosion investigation about the types and duration of emission peaks occurring during the mixer loading process, it would not be possible to repair and restart the oxidizer in a manner that would safely control the emissions from the mixer loading activity within the forty-five day variance extension period.

Grace submitted a letter to the Agency dated September 20, 1996, which clarified this point. And this is Grace Exhibit Number 8 and this is just a letter of clarification from me back to Mr. Svoboda.

(Whereupon, Grace Exhibit No. 8 was marked for identification.)

MS. HODGE: Grace seeks the supplemental variance relief so that it may continue operations while working with the Agency to arrive at a technically feasible and safe means of long-term compliance with Subpart QQ.

Grace and the Agency have agreed upon a compliance plan to achieve this objective which Mr. Tragert will discuss in more detail this morning.

The compliance plan provides for evaluation of an alternative equivalent control plan, first. If that is not successful, then further study of retrofit controls will be required.

As will be shown during the testimony this morning, this explosion has revealed that much more study of the emissions from the mixer loading activities will be needed before control devices can be seriously contemplated here again.

Grace is in the process of retaining an outside consulting firm to perform the retrofit control studies and design any necessary control device equipment.

Both firms, which Grace is considering to assist them with this work, have indicated that it would take at least five months to properly study and reach dependable conclusions as to the nature of the mixer emissions.

Furthermore, the consultants have indicated that at least a year will be needed to achieve approval of a control device plan, order the equipment, and have it installed and tested, assuming that an appropriate retrofit control device can be identified.

Thus, if Grace is required to pursue a retrofit control, installation of such a device under the terms of the compliance plan will not be completed until April 1st, 1998.

We have only requested relief in our supplemental request for variance until August 14th, 1997. Due to Grace's agreement with the Agency as to the compliance plan for this variance and the time needed to conduct the items therein, Grace asks that the Board grant the variance from the emission control requirements of Subpart QQ and the recordkeeping reporting requirements of Subpart UU, and Section 9(b) of the Act.

For Grace's solvent mixer loading operations, as well as the variance from the requirements of the Board's March 16th, 1995 variance order, and the Construction Permit issued by the Agency for the catalytic oxidizer, from August 15th, 1996, until May 15th, 1998.

Richard Irelan, Aaron Abbott and Bob Tragert will offer testimony today.

Mr. Irelan will be providing some background information on the facility and the solvent process at issue here. He will also testify as to

Grace's efforts to meet the requirements of the Board's prior variance order, as well as Grace's permit requirements.

Mr. Irelan will further testify concerning the oxidizer explosion, including Grace's efforts to work with the Agency after the explosion to determine how the cause should be addressed.

Finally, Mr. Irelan will provide some information in support of the hardship Grace would suffer if the instant variance, extension and supplemental request for variance are not requested by the Board.

Mr. Abbott will explain Grace's efforts over the past few years to achieve compliance with Subpart QQ, as well as the specific feasibility and safety issues that have continually arisen during that process.

Mr. Abbott will further testify concerning the technical data that has been generated as to the cause of the oxidizer explosion and how that information impacts future efforts to use a control device for long-term compliance with Subpart QQ.

Mr. Abbott will also discuss the background of the capture efficiency demonstration

issue, as well as the steps Grace has undertaken to complete the capture efficiency demonstration most recently.

Mr. Tragert will explain the compliance plan that Grace and the Agency have agreed to for achieving ultimate compliance with Subpart QQ.

We believe that the testimony which will be offered today will show that Grace has made every good faith effort to comply with the requirements from which it is now seeking a variance from this Board.

As demonstrated by the compliance plan agreed upon with the Agency, Grace is committed to performing the activities required to achieve compliance with Subpart QQ.

If the requested relief is not granted, Grace would suffer an arbitrary and unreasonable hardship. Grace has now accomplished every step needed for the capture efficiency demonstration and has submitted certification of the same to the Agency.

Grace has displayed diligent effort in completing the capture efficiency demonstration, even after the control device was rendered inoperable.

If the request to continue operations without the oxidizer is not granted, Grace will be forced to shut down its solvent process at its Chicago facility.

Thus, we believe that based upon these facts, the hardship Grace would suffer by denial of the requested relief will outweigh the public interest in attaining compliance with the requirements at issue.

In addition, Grace has asked the Board to grant retroactive relief in this matter.

As stated in our petition that we filed back in September, and the amended petition, Grace was granted retroactive relief where unusual or -- as we say, the Board has granted retroactive relief where unusual or extraordinary circumstances were shown.

The testimony today will show that the oxidizer explosion delayed Grace's efforts to complete its efforts to demonstrate the capture efficiency.

Furthermore, the oxidizer explosion has created enormous complexities in attempting to use a control device for the mixer emissions and has,

therefore, precluded any short-term compliance with Subpart QQ.

The instant circumstances warrant a retroactive starting date for the variance extension request, as well as the supplemental request for variance.

At this point in time, I would like to have the Grace witnesses sworn in. And we're ready to proceed with the testimony, unless Miss Archer would like to give an opening statement.

MS. ARCHER: I would like to give a brief opening.

HEARING OFFICER FRANK: Okay.

OPENING STATEMENT

BY MS. ARCHER: W.R. Grace is a facility that's located in the Chicago Ozone Non-Attainment Area at 6050 West 51st Street.

Grace's facility, specifically the seven solvation mixers, are subject to 35 Illinois Administrative Code, Part 218, Subpart QQ.

Subpart QQ does require that sources with the potential to emit over 25 tons per year of volatile organic material, or "VOM," control and capture emissions of VOM by 81 percent overall.

Grace's potential to emit is around 75 tons per year, give or take. Actual emissions are approximately 19 tons per year.

I believe Miss Hodge has done a wonderful job going through the history. I won't belabor that point any longer.

Grace is seeking a variance to conduct the capture efficiency testing or the permanent total verification from March 15th, 1996, the expiration date of the Provisional Variance, until November 15, 1996.

Grace did submit to the Agency its PTE verification to the Illinois EPA on October 17, 1996. And, as testimony will show, the Illinois EPA is currently reviewing those results and hopes to have a decision on that by November 15th, 1996.

Grace is also seeking a variance from the requirements of Subpart QQ from August 15th, 1996, which is the expiration date of the Provisional Variance to either August 15th, 1997 or until May 15, 1998, depending upon the information submitted in the compliance plan that Grace and the Agency has substantially agreed upon.

I would like to clarify, the Agency

would ask the Board to only allow the variance for Subpart QQ to expire on April 1st, 1998. The Agency believes that for Subpart QQ, it's very important to have this expire before the 1998 ozone season.

With regard to Subpart UU, the testing requirements, the Agency would allow the variance -- would recommend the variance expire on May 15, 1998.

The Agency believes the oxidizer or any other control device that would be installed should be operational by April 1st, 1998, giving Grace an additional time to allow for shake down, minor things that would come up, and that.

So the Agency would ask that by April 1st, 1998 that Grace comply with Subpart QQ if it is determined that a control device is the appropriate mechanism.

And, of course, if an equivalent alternative control plan is acceptable, the Agency would agree to expedite Grace's amended "application" and issue that by August 15th, 1997.

The Illinois EPA concurs with Grace that variance relief is appropriate in this matter.

The Illinois EPA has reviewed Grace's

petition in accordance with the Board's procedural rules.

The Agency agrees that there would be no additional detrimental environmental impact from the granting of this variance.

As I stated earlier, Grace's actual uncontrolled emissions are around 19 tons per year. The Illinois EPA does not believe that this will be in any way undermining the Illinois EPA's efforts to achieve compliance in the Chicago Ozone Non-Attainment Area.

The Illinois EPA would urge Grace to continue to implement its process modifications under normal operating conditions and, also, urge Grace to continue to explore the water-based solvent.

The trend is toward water-based solvents in this area and that would further reduce the environmental impact during the term of the variance.

Regarding compliance with federal law, at the time of the Agency's recommendation in this matter, Subpart QQ had not yet been adopted by U.S. EPA into Illinois SIP.

However, on October 21st, 1996, U.S. EPA did publish its final rule approving Illinois'

generic RACT requirements of which Subpart QQ is part.

So, the Illinois EPA would amend its recommendation to submit the variance as a SIP revision to U.S. EPA.

And we do have copies of the "Federal Register" approving Subpart QQ.

The Illinois EPA further believes that it is an arbitrary and unreasonable hardship right now for Grace to comply with the requirements of Subpart QQ.

Since the explosion in June of '96, both the Illinois EPA and Grace have been actively exploring ways to comply with Subpart QQ.

There are legitimate safety concerns right now that both the Illinois EPA and Grace need to further evaluate before the appropriate means of compliance with Subpart QQ can be determined.

The Agency believes that if Grace is not allowed its variance, it might possibly be forced to shut down and that would definitely outweigh compliance with the rule currently.

The Illinois EPA also believes that retroactive relief is warranted in this case. Grace has demonstrated that there are unusual or

extraordinary circumstances in this case which would warrant retroactive relief. In support of that, Grace has worked very closely with the Agency, promptly notifying us of each new development and as Miss Hodge said, have been talking on virtually a daily basis since August.

Illinois EPA does believe that Grace has acted in good faith and they should be warranted retroactive relief.

The Illinois EPA also believe that the compliance plan agreed to by both parties in this case is concrete and it has specific milestones that both Illinois EPA and Grace shall meet.

I would like to ask that the Board would amend the compliance plan, just in the fact that all copies of progress reports, the outlines submitted, shall also go to the Field Section in Maywood, Illinois, as well as the Compliance Unit in Springfield.

And, once again, the only minor area for dispute that the Illinois EPA sees right now is that the Illinois EPA would ask that the variance expire on April 1st, 1998, for Subpart QQ and then Grace be given an additional forty-five days, until May

15, 1998, to comply with Subpart UU, if it is determined that an add-on control is the appropriate mechanism, to get Grace into compliance in this matter.

Once, again, the Agency's reasoning behind this is that the Agency does not want the variance to extend into the 1998 ozone season.

Thank you.

HEARING OFFICER FRANK: Before we go further.

Miss Hodge, did you wish to move Exhibits 1 through 8?

MS. HODGE: Yes, please.

I would move for the admission of those exhibits.

HEARING OFFICER FRANK: Is there any objections?

MS. ARCHER: No.

HEARING OFFICER FRANK: Okay. Then Grace Exhibits 1 through 8 are admitted into evidence.

(Said document, heretofore marked Grace Exhibits Nos. 1 through 8 for identification, were admitted into evidence, to wit, as follows:)

HEARING OFFICER FRANK: Did the Agency wish to Admit the Federal Register?

MS. ARCHER: Yes, it would.

HEARING OFFICER FRANK: Okay. And that will be Agency Exhibit Number 1.

(Said document, heretofore marked Agency Exhibit No. 1 for identification, was admitted into evidence, to wit, as follows:)

MS. ARCHER: Thank you.

HEARING OFFICER FRANK: Could you please swear the -- Do you want them all sworn?

MS. HODGE: Yes. I would like them all to be sworn today.

And before we move, I would like to note for the record we do have one more person who has joined us. Could we ask that person to identify himself?

HEARING OFFICER FRANK: Are you an interested member of the public?

MR. LEVIN: Sort of. I'm with the Cook County State's Attorney's office and my name is Mitch Levine, L-e-v-i-n.

MS. HODGE: Thank you.

HEARING OFFICER FRANK: Thank you.

Can you please swear the witnesses

then?

(The witnesses were sworn.)

HEARING OFFICER FRANK: Okay. Miss Hodge, how did you wish to proceed then? Did you have narratives or were you going to ask them questions?

MS. HODGE: No.

We do have narrative testimony and we would request that all three witnesses be allowed to offer this testimony this morning and then hold any questions from the Agency, the Board, or from the public, until the end of the presentation of all three.

HEARING OFFICER FRANK: Okay. More like an adjusted standard proceeding then.

MS. HODGE: Yes.

HEARING OFFICER FRANK: And then have them available to answer questions.

MS. HODGE: Yes.

HEARING OFFICER FRANK: Is there a objection to that by the Agency?

MS. ARCHER: No, there is not.

HEARING OFFICER FRANK: So, then if you could just have your witnesses identify themselves as they speak and proceed.

MS. HODGE: Mr. Irelan, would you proceed,

please?

(The witness was previously sworn.)

RICHARD M. IRELAN,

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

NARRATIVE

BY MR. IRELAN: Good morning: My name is Richard Irelan. I am the Environmental Health and Safety Manager for W.R. Grace & Company.

HEARING OFFICER FRANK: You're going to need to slow down and speak up for our court reporter.

MR. IRELAN: Okay. You might have to kick me a couple of times.

HEARING OFFICER FRANK: That's fine.

MR. IRELAN: With Grace & Company, Grace Container Products Division.

I've been with Grace for twenty-three years and I've been in my current position for six years.

The facility, we're talking about is located at 6050 West 51st Street, Chicago, Cook County, Illinois.

First, I would like to provide some information as to Grace's facility and the process at

issue.

Grace operates its facility pursuant to an air operating permit issued on September 27th, 1995 by the IEPA Bureau of Air. Grace's plant was established in 1940 and currently employs approximately one hundred people. We manufacture container sealants lubricant fluids, and concrete additives.

The container sealants are a rubber-based coating material used by the beverage food and other can coaters to form a seal between the ends of cans to the can body within the area where the two pieces are crimped together.

Grace's Chicago plant produces both solid-based and water-based sealants, while the trend in the can coating industry is towards water-based sealants. This demand is customer driven.

It is the production of these solvent-based can sealants that result in the greatest amount of emissions of VOM at the Chicago facility.

The sealant products are produced generally by mixing compounded rubber and other materials into solvent. All products are produced in batches. There are no chemical reactions involved in the process.

The process flows as follows: First, the rubber material is compounded batchwise on a dry basis in a Banbury mixer. The rubber is subsequently transferred to solvation mixers which have been charged with other materials and solvent pipe from storage tanks.

The compounded rubber and other materials are loaded into the mixer through access hatches in the mixer neck. This proceeding pertains solely to the emissions from the loading of the solvent compound mixers.

Actual emissions of VOM from the mixer loading activities are estimated at 18.4 tons per year.

Material recovery devices on the solvation mixers condense and return to the mixers the vast majority of solvent fumes generated during the mixing operation.

After the compounds have been mixed for the requisite period, they are pumped to blend/storage tanks where low speed agitation continues and, in most cases, additional solvent is added and the product is recycled through one of two homogenizers to attain and maintain product consistency.

Finished product is loaded into to tank trucks or other containers for distribution to customers.

I will now like to discuss Grace's historical efforts to comply with the requirements of Subpart QQ from which we are now seeking a variance.

Several years ago in anticipation of the 25 ton per year requirements and the Clean Air Act Permit Program, Grace conducted an intensive review of the regulatory status of its facility, particularly as to the scope of the requirements of Subpart QQ.

Determining appropriate and reasonable controls pursuant to Subpart QQ has been extremely difficult.

Emissions from the mixers occur in a complex and variable manner due to the batch nature of the process and are, therefore, challenging to safely and effectively capture.

Grace sought the variance which it filed in 1994 to continue discussions with the Agency as it developed the appropriate control mechanism for the emissions from the loading activities.

Installation of retrofit controls in this situation is costly endeavor, particularly since

demand for the solvent-based sealants is trending downward due primarily to the fact that our customers who use the solvent compound in their manufacturing process also experience regulatory pressure to reduce their emissions of VOM.

Grace examined a number of control alternatives and determined with the Agency that the most appropriate method of control was the installation of an oxidizer.

Grace felt it was important to explore in detail with the Agency the scope of the necessary control system, particularly as to its size and cost.

This could not be done before the compliance deadline of March 15th, 1995. Thus, Grace filed the original variance petition on November 16th, 1994, seeking relief from Subpart QQ, while it worked toward installation of the oxidizer.

Upon the Agency's recommendation, the Board granted the variance on March 16th, 1995 with the effective date of March 15, 1995. The Order contained several compliance dates and Grace met all of the milestones ahead of schedule, except that there was a misunderstanding regarding the capture efficiency

requirement.

Grace applied for its Construction Permit on February 25, 1995. Grace certified its installation of the capture system and issuance of a purchase order for the thermal oxidizer on June 12, 1996. Grace certified the initiation of installation of the thermal oxidizer on December 12, 1995. Grace certified the start up of the oxidizer on February 13, 1996.

The Agency issued the Construction Permit for the oxidizer on April 5th, 1995. Special Condition six of the Construction Permit requires tests for demonstration of overall destruction efficiency of the oxidizer to be performed in accordance with the method and procedures of Section 218.105 of Title 35 of the Illinois Administrative Code and that the results of these tests be submitted by March 15th, 1995.

Grace understood this provision to mean that only destruction efficiency testing was required, rather than both capture and destruction efficiency. Based on that assumption, Grace scheduled destruction efficiency testing for the control system for February 27th, 1996.

On January 24th, 1996, Grace notified

the Agency of the destruction efficiency testing date. It was than that the Agency informed Grace that both capture and destruction efficiency testing would be required.

Grace and the Agency then discussed potential options for the capture efficiency testing. As will be discussed more fully by Aaron Abbott, Grace felt there were feasibility and safety concerns inherent in each capture efficiency testing option.

As discussions with the Agency as to the capture efficiency testing continued, Grace performed start-up activities for the oxidizer. Because of the Agency's preliminary concerns with performing destruction efficiency testing without simultaneously demonstrating capture efficiency, as well as severe weather and difficulties in calibrating the testing equipment, the destruction efficiency test was not completed until March 12, 1996.

Destruction efficiency test results were transmitted to the Agency by the March 15th, 1996 deadline.

As the capture efficiency testing was not completed by March 15th, 1996, Grace filed its petition to extend the capture testing deadline in the

Board's variance order and the Construction Permit on March 14, 1996.

Following the filing of the variance extension request, Grace continued its discussions with the Agency as to the most appropriate avenue for demonstrating capture efficiency.

Grace determined that a permanent total enclosure, "PTE," was the most feasible option in meeting the capture efficiency demonstration requirements.

Grace began to implement the PTE and had substantially completed installation of the PTE when, in the early morning hours of June 14, 1996, Grace suffered an explosion and fire in its solvent mixing area. The fire sprinkler system activated immediately and extinguished the fire in less than one minute.

Fortunately, no one was injured since there were no employees present in the immediate mixing area at the time of explosion. However, the explosion resulted in significant damage to the catalytic oxidizer and the associated ventilation system.

The hood from the mixer in use at the time was blown out in the corners and the screen was

impaled against a conveyor belt. Each trunk from the main duct to the mixers was broken apart above the damper. Severe damage was also sustained to the rooftop duct work. One elbow of the duct work was thrown off the roof and into the lawn below.

The process exhaust fan was found on its side with the housing ripped open. The damper to the oxidizer was bent toward the process. And the damper from the process exhaust fan was bent toward the fan. Sections of the duct were ruptured. Inside the oxidizer the combustion air box was exploded with twisted baffles and shrapnel found inside. Flanges to the main combustion air were warped, as were several access panels.

The building in which the mixers are located was also damaged with windows and parts of the walls being blown out.

Repairs to the oxidizer are estimated at more than $125,000. Repairs to the building to date have cost more than $50,000. Grace ceased operation of the solvent mixing process immediately and notified the Agency of the explosion later in the morning on June 14th.

The following week, representatives

from the Agency came to Grace's facility to observe the damages sustained from the explosion and fire. Meanwhile, Grace had begun an investigation into the cause of the explosion and fire.

Grace assembled an investigation team which consisted of several Grace personnel, including three corporate engineers, four plan engineers and managers, and the corporate process safety engineering manager.

Grace also brought in external personnel to assist in investigating the explosion, including three engineers from TEC Systems -- that's the manufacturer of the oxidizer -- and four independent explosion experts from Factory Mutual, Industrial Risk Insurers, Marsh & McLennan, and Hazards Research.

Throughout the investigation, Grace continued to appraise the Agency of the data and preliminary conclusions that were being reached as to the cause of the explosion and fire. Grace resumed operation of its mixers without the oxidizer on July 1, 1996, under the terms of the provisional variance granted by the Board.

Immediately thereafter, Grace worked

its explosion experts to further investigate the cause of the explosion.

Aaron Abbott will explain the technical conclusions reached by the explosion experts, but, in essence, it was determined that the explosion was caused by a large emission peak from the mixers that occurred over a very briefly period of time, so brief, that no technology apparently exists for detecting such peaks. Thus, grace was concerned that the oxidizer could not be safely operated nor redesigned for safe operation.

On August 21st, 1996, Grace representatives met with several Agency personnel to discuss the results of the explosion investigation and the implications of same in assessing whether or not the oxidizer could be safely operated to control emissions from the mixer loading activities.

Grace's regulatory and process engineers presented the data that had been collected from the explosion experts' study of the projected cause of the explosion. The plant manager and I also presented our concerns about jeopardizing the safety of Grace's workers by resuming use of the oxidizer.

We thought from the Agency's

statements at the meeting that we could work out our problems with the oxidizer and our compliance status under Subpart QQ due the Compliance Commitment Agreement.

However, the Agency later determined that we could not use that agreement. Therefore, Grace seeks this supplemental request for variance so that it may continue operating while working with the Agency to determine how it should go about achieving compliance with Subpart QQ for its mixer loading activities.

As will be discussed further by Bob Tragert, Grace and the Agency agree upon a compliance plan for this process. Denial of the supplemental request for variance would constitute an unreasonable hardship to Grace, as Grace would be forced to shut down a solvent process indefinitely. Most of Grace's hundred employees would be displaced if Grace is not able to continue production without the oxidizer.

Grace has a substantial portion of the solvent-based can sealant market. Therefore, any sustained disruption of production would have a severe impact on the nation's food and beverage industry.

Grace's Atlanta plant was operating twenty-four hours a day, seven days a week, in an

effort to make up for that production shortfall at Grace's Chicago facility during the June shutdown. However, the Atlanta plant cannot operate in such a fashion indefinitely, as down time for maintenance and repairs would become necessary.

Grace's smaller plant in San Leandro, california is not able to increase production due to permit constraints. Moreover, certain products may only be produced in Chicago due to the location of dedicated equipment designed to avoid product cost contamination.

Therefore, any -- Grace's capacity to shift production to other locations is severely limited and is only a short-term option. Grace's only alternative to operation under authority of the variance is to return to a shut down.

Grace has experienced a loss of $50,000 per day in product sales from this facility during the last shut down and would likely incur the same losses in any subsequent shut down.

Aaron Abbot will elaborate as to the environmental implications of the variance, but as stated before, the level of VOM emissions is expected to continue to decrease as does demand for the

solvent-based sealant.

The trend in the solvent-based sealant market is towards use of solvents with continually lower volatility.

Thank you. I will be happy to answer questions after the testimony.

HEARING OFFICER FRANK: Okay.

MS. HODGE: Thank you, Mr. Irelan.

Before we move on to Mr. Abbott's testimony, there are just a couple points I would like to clarify with Mr. Irelan.

HEARING OFFICER FRANK: Okay.

DIRECT EXAMINATION

BY MS. HODGE:

Q. Mr. Irelan, you stated that Grace had certified its installation of the capture system and issuance of a purchase order for the thermal oxidizer on June 12, 1996, and I think that that date is really June 12, 1995; is that correct?

A. That's correct. Yes.

Q. And then another point and this regards the deadline for submittal of testing requirements in the initial variance in the Board's order.

I believe you stated that those

results were to be submitted by March 15th, 1996, and I believe the date is March 15, 1995; is that correct?

A. That's correct. Yes.

Q. Thank you very much.

A. Sorry.

Q. I'm sorry. The date you stated was March 1995 and it should have been March 1996?

A. Should be. Yes, I was looking at it here. You're right.

MS. HODGE: We just want to get these things clarified for the Board's record here.

HEARING OFFICER FRANK: Mr. Abbott, is that who's next?

MS. ARCHER: May I just ask a few questions of Mr. Irelan, first, before we go on, just to clarify?

MS. HODGE: I think that's okay to clarify testimony. That's fine.

HEARING OFFICER FRANK: Miss Archer, please go ahead.

CROSS-EXAMINATION

BY MS. ARCHER:

Q. Mr. Irelan, you stated that the trend is towards water-based sealants?

A. Correct.

Q. What percentage currently is made up of water-based sealants?

A. I believe it's around fifty-fifty, I believe.

Q. And could you give an estimation of the time frame that you would anticipate towards water-based sealants, when that trend would be complete?

A. Since it's customer driven, it's difficult to do. Do either of you have a --

MR. ABBOTT: No.

MR. TRAGERT: We couldn't make a guess that would be data.

THE WITNESS: Over the past few years it's been a single digit number as the decrease or the increase, however, for the past, say, five years.

BY MS. ARCHER:

Q. And currently it's around fifty-fifty?

A. That's around fifty-fifty.

MR. TRAGERT: It's reformulated to solvent-based compounds that have less -- The VOCs that are in them are -- We've gotten away from toluene.

We've gotten away from some of the hazardous air pollutants, so that has slowed down the

change.

BY MS. ARCHER:

Q. And what percentage of the market does Grace have currently?

A. In North America, it's 98 percent.

MS. ARCHER: That's all I have.

Thank you, Mr. Irelan.

HEARING OFFICER FRANK: Wow.

THE WITNESS: That's one of our problems is if we can't operate, then we've got a big problem supplying our customers.

HEARING OFFICER FRANK: Mr. Abbott?

(The witness was previously sworn.)

AARON G. ABBOTT,

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

NARRATIVE

BY MR. ABBOTT: Good morning. My name is Aaron G. Abbott. I'm an Associate Process Engineer with W.R. Grace & Company located in the Lexington, Massachusettes office. I hold a Bachelor of Science degree in Chemical Engineering from the University of New Hampshire. I received this degree in 1990.

I'm registered with the Commonwealth

of Massachusettes Board of Professional Engineers and Land Surveyors as having passed the Fundamental Engineering Subjects Examine in 1993.

Since joining W.R. Grace in August 1990, my duties have included new process evaluation, design and scale up, emissions estimation, measurement and modeling, process modeling, and permit development. My office is at the Grace Container Products divisional headquarters in Lexington, Massachusettes, as I mentioned. My work serves three plants in the United States and nineteen plants out of the U.S.

I have extensive experience in estimating emissions from Grace Container Products' solvent-based can sealing compound process.

Beginning in 1991, I worked on a one-year project to develop test methods for estimating fugitive emissions from solvent mixers to identify source reduction potential in our San Leandro, California project. The project led me to gain experience in air permitting and other compliance issues with the Bay Area Air Quality Management District.

I led a project to develop a Title V Synthetic Minor permit for the San Leandro site. I

have participated in the development of Title V permits for the Atlanta and Chicago plants.

Between 1995 and 1996, I was project manager of a project to perform an emissions inventory, source testing, and a control technology evaluation for Grace's St. Neots, England plant.

I would like to first provide some background as to the history of our search for an effective and safe control mechanism for VOM emissions from the solvent mixer loading activities.

As Richard Irelan stated, we began an intensive study of VOM emissions from the Chicago plant when the Board adopted amendments to Subpart QQ of 35 Illinois Administrative Code Part 218, which required Reasonably Available Control Technology, or RACT, for sources in the Chicago ozone non-attainment area, with the potential to emit 25 tons per year of VOM, or greater.

The emissions of VOM from Grace's Chicago facility have recently been estimated at about 32.4 tons per year, with approximately 18.4 tons per year from the loading of the solvent mixers.

Subpart QQ, Miscellaneous Formulation Manufacturing Processes, requires 81 percent control of

emissions from all miscellaneous emission units which are not exempted by the regulation.

Grace Exhibit 9 is a table summarizing the VOM emissions from the plant by process and regulatory classification.

(Whereupon, Grace Exhibit No. 9 was marked for identification.)

MR. ABBOTT: On this exhibit, the column denoted "SLC" refers to the emissions from the solvent process. At the plant, 10.5 tons of VOM emissions per year are applicable to and are in full compliance with Part 218 Subpart B. Also, 21.8 tons per year of VOM emissions are regulated by Subpart QQ. Of the 21.8 tons per year, 3.4 tons per year of VOM emissions from packaging, piping fugitives, non-bulk packaging and the actual solvent mixing process are exempt from Subpart QQ as they emit less than 2.5 tons of VOM per year, per emission unit, or 5 tons per year in combination. Thus, the remainder of the VOM emissions from Grace's Chicago facility, 18.4 tons per year, are attributed to the solvent mixer loading activities and these are the emissions that we determine must be controlled under Subpart QQ.

Finding an effective control for the

mixer loading emissions has been very complicated. Emissions from the mixers occur in a complex and variable manner due to the batch nature of the process and the fact that the vast majority of emissions are fugitive in nature and are challenging to safely and effectively capture.

The majority of the emissions occur at the mixers during two different activities. Loading and mixing.

Mixing emissions occur when the contents of the mixers are being stirred and passed through vent pipes after the access hatches are closed.

In-line condensers return to the mixers the vast majority of the solvent fumes generated during the mixing operation.

The loading emissions are fugitive in nature and occur through displacement when materials such as solvent, rubber, bags of solid materials, and products are loaded into the mixers through the mixer necks.

Since materials are added to the vessels intermittently rather than continuously, the emission profile of the process as a whole is characterized by emissions peaks and valleys.

The "peaky" nature of these emissions presented numerous challenges when we were working with the Agency in 1994 to design the control system to be installed at the Grace plant.

For example, carbon adsorption was not a viable option due to the static risks discussed more fully below and the technology's inability to handle the highly variable emissions that occur from mixer loading. Furthermore, than carbon adsorption would have presented disposal concerns for both the spent carbon and the recovered solvent which could not be reused in the process.

A flare was likewise not considered initially to be feasible due to the vast amount of natural gas that would have to be burned when emissions were low, making operation costs extremely high.

Furthermore, Grace's facility is located in a residential neighborhood which would have been incompatible with the installation of the flare.

As Mr. Irelan stated, we determined with the Agency in 1994 that the best choice for achieving the 81 percent emission control required by Subpart QQ was the oxidizer.

However, arriving at the proper

specifications for the oxidizer in this situation was difficult and I would like to review some of the challenges we dealt with at that time, as they are applicable to the dilemma that we currently face in attempting to resolve how Grace will now comply with Subpart QQ in light of what has been learned from the oxidizer explosion.

The maximum instantaneous emission rate which can occurred from mixer loading is much larger than the emission rate averaged over time. Because control equipment such as an oxidizer needs to be sized for maximum instantaneous conditions, Grace's unit had to be significantly larger than one would have to be sized for the average emissions of this process.

Thus, for two sources having the same daily emissions, but one having a "peaky" emissions profile and another having a more constant rate such as a coating operation, the source having the "peaky" rate will require a larger control device. Furthermore, that control device will have to handle continually fluctuating VOM inputs.

The cycling of the concentration of the fume stream would cause the unit to experience alternating cold and hot cycles within relatively short

periods of time.

During these cold cycles, the oxidizers would have to burn supplemental fuel to maintain efficient temperatures.

As the emission rate rises to its peak value, which occurs within seconds and is caused by the adding of materials such as rubber into the mixer, the oxidizer would have to quickly cut back on supplemental fuel as the fume stream will supply the heating value.

Our oxidizer vendor, TEC Systems, told us that they have no historical operational experience to predict the long-term effects on their systems of this cycling and other vendors shared this view.

The emissions from the mixers are caused by displacement of head space vapors during the addition of materials.

Materials can be added by operators at various stages of the process in accordance with individual batch formulas and there are many variations on the formulas. Therefore, it was very difficult to model the typical emission profile.

Since the emission's rate is variable

over time, source testing with conventional methods such as method 25A was feared to be inadequate to accurately quantify emissions.

Design of an oxidizer for the mixer loading emissions also presented several safety concerns.

The mixer neck headspace/workspace interface is potentially dangerous, as it is in the mixer region where an explosive concentration of VOM in air is most likely.

The room is built to explosion-proof building standards, but static discharge is always a concern in an area where solvents are handled.

The room is intentionally humidified during certain times of the year when there is a likelihood of static build up on materials and operators. Humidity reduces the chances of a static discharge that can cause a fire or explosion.

The designers of Grace's emission control system had to design the VOM capture ventilation at the neck openings with extra care. The capture system had to be designed for full operator access in loading materials, taking samples, and other activities.

With an oxidizer the end of the ventilation system, the design required the VOM concentration in the air stream inside the ventilation system at any time to remain below 25 percent of the lower explosive limit of the fume stream.

To maintain this safe level, air flow must be set appropriately. However, as extra fresh air is pulled into the capture ventilation to dilute the emission peaks, the air flow over the mixing vessel increases.

This extra fresh air will tend to dilute the concentration in the mixer neck region. This will have the potential effect of moving the flammable region of air into the mixer headspace. This is undesirable, as a potentially explosive region would be moved closer to the liquid solvent source. Thus, the design of the ventilation system had to minimize the extra air pulled from the mixer headspace while, at the same time, sufficiently capturing the emissions coming out of the mixers to prevent their escape into the atmosphere as fugitives.

Taking all of these concerns into account, we worked with the oxidizer manufacturer to derive specifications for the oxidizer that would

accommodate peaky VOM emissions and minimize the threat of sparks or explosions.

However, the explosion and fire that occurred on June 14th of this year revealed that there were emission conditions occurring at the mixers that were previously undetected.

As Mr. Irelan stated, we quickly assembled an investigation team after the oxidizer explosion. At the conclusion of the investigation, the team agreed upon preliminary determinations as to the sequence of events surrounding the explosion. A copy of one of the expert's reports, that of Hazards Research, is Grace Exhibit 10.

(Whereupon, Grace Exhibit No. 10 was marked for identification.)

MR. ABBOTT: The explosion originated in the combustion air box of the catalytic oxidizer, when a concentration of solvent vapors or a vapor pocket above the lower explosive limit entered from the process emission capture hood. The explosion flame front traveled back through the airhandler and duct work, damaging filters and dampers as it passed. Various components were bent, dislocated, or blown apart, depending upon their orientation and configuration.

When the flame front exited the only open ventilation hood, it ignited the solvent vapors present at the mouth of the mixer and started a small fire. This augmented the force of the explosion and blew out windows and portions of the walls in the solvent mixer room.

Just before the explosion, the last batch of processed rubber had been loaded into the mixer. The bottom agitator of the mixer was operating, but the top agitator had not yet been turned on.

Our theory on the root cause of the flashback is the following: Due to the lack of movement near the surface of the batch, a superheated pocket of compound formed around the vicinity of the bottom agitator. This boiling pocket began to form a bubble. The bubble volume continued to expand until it attained sufficient buoyancy to burst up through the surface of the batch, allowing a surge of solvent vapor to enter the duct work and reach the oxidizer.

The explosive concentration reached the air box in the oxidizer first, where the explosion was initiated. Thus, the explosion was caused by the ignition of a flammable vapor cloud by the gas-fired heater in the oxidizer. This ignition source is

present whenever the oxidizer is in operation.

Calculations were performed in an attempt to quantify the amount of flammable vapor that was present in the system.

The calculations were based upon the size of the fireball within the solvent mezzanine, which was approximately 7 to 8 feet in diameter, as well as the damage sustained in the mezzanine and penthouse.

It was determined that approximately one quarter of one pound or 114 grams of solvent was emitted over a one-second time interval from the mixer forming a vapor pocket that caused the explosion in the catalytic oxidizer. This determination was based on calculations of force and observation -- and the observation that less solvent would not have been sufficient to cause the explosion and more solvent or a step change in VOM concentration would have caused more damage to the duct work than was actually experienced.

The significance of the explosion experts' conclusions is demonstrated by the lack of reliable technology for detecting solvent emission peaks or vapor pockets. We have been unable to identify any mechanism that would be capable of

reliably measuring solvent emissions or vapor pockets that occur over intervals on the order of one second.

In fact, neither Grace nor the explosion experts consulted for this investigation are aware of any technology that can adequately monitor and reliably respond to solvent emissions peaks or vapor pockets that occur over less than a five-second time interval for the range of mixtures of VOC's possible in this case.

When Grace was examining its emissions for the design of the oxidizer, it analyzed emissions using data logging devices having a sample resolution of ten seconds per sample. Now it appears that emissions must be monitored on a second-by-second basis, or less, in order for the oxidizer to safely be characterized.

However, Grace does not believe that there is any device commercially available to accomplish such monitoring. For instance, Grace is not aware that any on-line gas chromatograph would be available to continuously speciate the VOC mixture.

Even if quick responding monitors were to be identified, they may not be able to differentiate between an explosive peak and one that

appears naturally as solvents and materials are added to the mixer.

Moreover, the explosion investigation concluded that given the current air flow and duct configuration, less than five seconds is available to sense explosive vapors. As stated above, Grace is not aware of any monitor that could adequately detect such vapors or peaks over less than a five second period for our conditions.

Temperature monitoring of the catalyst bed is a mechanism only for identifying a gradual increase in vapor concentration. It is not an effective safety control for moderate or rapid increases in vapor concentration and, therefore, would not play a role in preventing an explosion under these conditions.

In line flame arresters or rupture disks installed along the duct work would do nothing to prevent an explosion and fire, as their presence assumes an explosive or flammable situation will occur.

The information gathered from the explosion investigation reveals how difficult it is to use a control device, particularly an oxidizer or incinerator for emission control in this situation.

The viscosity of the material in the mixers, even with both agitators running, makes complete mixing of the batch difficult with the ability to accumulate pockets of vapor, both in the unagitated portions of the mixer, as well as in the area of the mixer blades.

As was determined by one of the outside explosion experts, the primary safeguard for the use of the oxidizer is to assure, up-front in the design phase, that process conditions do not create a vapor generation rate in excess of the allowable quantity. This is extremely difficult to do with our mixers as vapor pockets are not easily controlled or eliminated.

This reality, as well as the current state of the art for technology that detects solvent emission peaks, suggests that no catalytic oxidizer may be designed for control of emissions from Grace's mixer loading operations that will be free from risk of another explosion. The critical question at this point is what type of VOM emissions are occurring from the mixers second by second.

Unfortunately, there is no EPA method for measuring emissions such as these. Yet, there must

be a complete understanding of the magnitude and duration of the VOM emissions that are occurring from the mixers before any sort of retrofit control device is evaluated.

Therefore, Grace needs time to work with the Agency to determine how it will approach compliance with Subpart QQ for the emissions from the mixer loading activities.

Grace and the Agency have agreed upon a schedule of items that Grace and the Agency must complete to accomplish that goal, as set forth in the Compliance Plan in the Agency's recommendation. Bob Tragert will discuss this compliance plan.

Grace has also requested an extension of its variance and permit deadline for submittal of the capture efficiency demonstration. After Grace was informed that capture efficiency testing would be necessary, Grace and the Agency discussed potential options for the capture efficiency testing, as well as feasibility issues raised by some of those methods.

35 Illinois Administrative Code 218.105 contains the test methods and procedures to be used by owners and operators of VOM emission units subject to Part 218, when, in the opinion of the

Agency, it is necessary to conduct testing to demonstrate compliance.

The first option discussed was for the Agency to exercise its discretion not to require the capture efficiency testing for the oxidizer pursuant to 35 Illinois Administrative Code 218.991(a), and instead, to allow a compliance demonstration based upon engineering calculations. The Agency responded that a more formalized testing procedure would be necessary.

Pursuant to 35 Illinois Administrative Code 218.105(C)(1)(A), Grace would not have to perform capture efficiency testing if it could demonstrate that the emission units are equipped with or use a permanent total enclosure.

The Agency and U.S. EPA specifications for the determination of whether a device is a PTE are contained in Procedure T of Appendix B of Part 218.

Alternatively, Grace and the Agency could have derived an alternative testing method pursuant to 35 Illinois Administrate Code 218.105(C)(2), which must be approved by U.S. EPA.

Finally, Grace could have implemented

a temporary total enclosure, or "TTE," pursuant to the technical requirements set forth in 35 Illinois Administrative Code 218.105(C)(2).

Use of a TTE also implicates Procedure T of Appendix B of Part 218.

It was felt that modifying the mixer room to create a PTE may only exacerbate the above-referenced safety conditions potentially creating a fire hazard and inhibiting worker comfort and operability. The mixer room was designed to have a large inflow of air to ensure that the VOM concentration in the duct work is kept below the LEL. Thus, physically modifying the mixer room to create a permanent total enclosure is a complicated option both from a feasibility and safety perspective.

If creation of a PTE was to be required, Grace would have needed additional time to assess and resolve the safety issues raised by modifying the mixer room.

As for the development of an alternative testing procedure, due to the nature of the emissions and the design of the emission units and the mixer room, deriving a statistically reliable method of the capture testing in this situation would be

difficult. The Agency and Grace were, at the time of the original variance extension -- excuse me, at the time the original variance extension petition was filed, discussing a test protocol that would accomplish the objectives of Section 218.105(C)(2).

The Agency advised Grace that any alternative test method that is agreed upon between Grace and the Agency may have to be submitted to U.S. EPA for review and approval. It was unclear last March how long such a process would take, but it would have, nevertheless, precluded compliance with the capture testing deadline of March 15, 1996.

Evaluation of a TTE, magnify the same safety and feasibility issues as development of a PTE. In order to accommodate the piping, conduit and duct work, a flexible material would have to be used to seal openings and provide acceptable enclosure. Such materials as polyethylene or other plastics generate static which creates an explosion hazard, considering the amounts of flammable solvents that are used in the area of the mixers.

Because of the dimensions of this facility, construction of a TTE that meets all five of the U.S. EPA criteria would not be achievable.

Development of a TTE for an individual mixer or a series of mixers would not produce reliable data.

Due to the ventilation from the mixer hood and the additional ventilation in the room, the resultant ventilation rates in the TTE would create a sufficient level of turbulence such that the capture efficiency of the mixer hood would be reduced. Furthermore, a large opening in the TTE would be required to periodically transport raw materials to the mixers. This underscores the notion that a TTE was not a practical method of testing capture efficiency in this situation.

As Mr. Irelan stated, Grace decided, along with the Agency, that a PTE was the best approach for demonstrating capture efficiency and Grace moved quickly to make several modifications to the mixer room to implement the PTE. The modifications were conducted in accordance with the specifications set forth in Procedure T in Appendix B to Part 218.

Grace repaired the bottom section of the door in the northwest corner of the mixer room to create a tighter seal around the opening. All roof, wall and door penetrations, such as piping, were sealed. The spiral staircase at the north wall was

removed completely and a concrete floor was poured to seal the opening. The wooden overhead door on the north wall was replaced with a new metal door to make a tighter seal with the outside wall when closed. All process piping extending through the pipe chase to the mezzanine at the north wall was removed.

The meters and associated piping was relocated to the first floor and a concrete floor was poured to seal that opening. All controls located in the northeast corner area were removed, except for the agitator switch for the rak tank. The solvent pump switch, the meter and piping were relocated to the first floor and a concrete floor was poured to seal that opening. A new heater was installed at the northeast corner of the mezzanine. The areas around the rak tank were repaired and a concrete floor was poured to seal the openings. The exhaust fans were removed from the penthouse and the openings were sealed. The penthouse door was repaired so that it closes properly.

A new heater was installed at the east wall of the mezzanine, The stairwell opening in the southeast corner of the room was fully enclosed up to the ceiling with metal studs and one-half inch

gypsum inside and out. OSHA-approved safety stairs were installed.

The heater in the southeast corner of the room was relocated to facilitate installation of the new metal safety stairs to the mezzanine. All of these modifications were concluded before the oxidizer explosion on June 14, 1996. The only remaining item at that point was replacement of windows on the south and north walls. After the oxidizer explosion, the windows were replaced with screened sections that may be opened outward. These window sections may function as NDOs with area calculations based on 6,000 cubic feet per minute divided by 250 feet per minute.

Pursuant to discussions with the Agency, Grace conducted air flow testing on October 16th, 1996, to certify the requirement that all air flow through NDOs into the PTE is greater than 200 feet per minute inward during source operation. Grace submitted a letter certificating the PTE as meeting IEPA criteria on October 17, 1996. On October 23, 1996, Kevin Madison contacted Grace to request additional information, which we are submitting to Kevin Madison today.

Mr. Irelan spoke a little bit about

the environmental impacts from this variance and I would like to expand on that.

Grace has requested a variance from the Subpart QQ requirements so that it may conduct its mixer loading activities without the oxidizer. The environmental impact of the VOM emissions during the variance period should be minimal as the VOM emissions from the mixer loading activities are now estimated at only 18.4 tons per year.

Projected environmental impact from the variance extension for the capture efficiency testing requirements is negligible. Preliminary results from the destruction efficiency testing on March 12th, 1996, indicated that the catalytic oxidizer was achieving 96 percent destruction efficiency. Velometer testing in the mixer room showed an inward flow of air to the oxidizer hoods and ventilation system at all mixer room openings. The hood design calculations showed that the air flow across the mixer openings was three times that which was required. The velometer testing also demonstrated that the face velocity at the point furthest from the hoods, at the hopper loading area, show that the air flow is directed toward the hoods at a rate of 125 feet per minute.

Grace believes that the increased airflow in a room resulted in complete capture of VOM emissions from the mixers in the mixer room. Thus, the inward flow of air at all points in the mixer room created a negative pressure which, along with the overdesign of the hoods, created a potentially closed system for purposes of VOM emissions. Therefore, while the catalytic oxidizer was in operation from March 15, 1996 to June 14, 1996, Grace believes that it met the 81 percent overall destruction efficiency requirements of Subpart QQ.

Since Grace resumed operations without the catalytic oxidizer on July 1, 1996, actual uncontrolled VOM emissions from the mixer loading activities have been estimated at a rate of 18.4 tons per year.

Thank you. I'm willing to answer any questions.

HEARING OFFICER FRANK: Do you have any clarification for this witness?

MS. HODGE: No, I do not.

But I would request at this time that we take just a very short break before we proceed with Mr. Tragert.

HEARING OFFICER FRANK: Wait.

Miss Archer, do you have any questions for this witness?

MS. ARCHER: I have a few, yes.

HEARING OFFICER FRANK: I would like to get those taken care of first.

MS. HODGE: That's fine.

CROSS-EXAMINATION

BY MS. ARCHER:

Q. Mr. Abbott, you stated on your direct testimony that initially a flare was not considered as a control option. However, in the compliance plan that both the Illinois EPA and Grace have agreed upon, Grace is willing to look at an enclosed flare.

I guess my question is, had you looked at an enclosed flare initially or just a flare?

A. No. We had not specifically looked at enclosed flares.

Q. Okay. And, in your opinion, would you think an enclosed flare would have the same safety risk? You stated that Grace was in a residential neighborhood.

A. To evaluate whether or not an enclosed flare or any other retrofit control technology will be

appropriate, knowing what we know now about our emissions situation, will -- this work will be -- Sorry.

The environmental consultants that we are going to retain will work with us to determine whether or not such devices are appropriate.

Q. Also, along the same line of thinking, you talked about devices being able to measure vapor pockets that would occur in less than five-second intervals, flame arresters, FIDs, you've also agreed to study those in the compliance plan; is that correct?

A. We will also evaluate control instruments, monitoring and control instruments.

Q. And, one more question.

The three months that Grace operated with oxidizer from March 15, 1996 to June 14, 1996, do you have any idea what the actual emissions were during that three-month time period? If you were to extrapolate that three months into a year period, what the actual emissions would be, controlled, with the oxidizer?

A. I believe at this point they would be approximately 4 percent of 18.4 tons per year, whatever that works out to.

MS. ARCHER: Okay. Thank you.

HEARING OFFICER FRANK: Do you have anything further?

MS. ARCHER: No, I do not.

HEARING OFFICER FRANK: Ms. Hodge?

MS. HODGE: No, I do not.

HEARING OFFICER FRANK: Before we go off the record, in case our member of the public has to leave, do you wish to make a statement on the record?

VOICE FROM THE FLOOR: No. Absolutely not.

HEARING OFFICER FRANK: Then let's go ahead and take a ten-minute break and come back about eleven-fifteen.

MR. TRAGERT: Point seven four tenths.

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

HEARING OFFICER FRANK: Let's go back on the record.

And we need to, I guess, begin with Mr. Tragert.

MS. HODGE: Before we do that, Miss Frank, I would like to move for admission of the exhibits, Grace Exhibits 9 and 10 presented during Mr. Abbott's testimony.

HEARING OFFICER FRANK: Is there an objection to them?

MS. ARCHER: I'm sure there's not.

No, there's not.

HEARING OFFICER FRANK: It's the summary of emissions and the Hazardous Research report.

MS. ARCHER: No. No objection.

HEARING OFFICER FRANK: Okay. Then let's continue, please. And those are admitted into evidence.

(Said document, heretofore marked Grace Exhibits Nos. 9 and 10 for identification, were admitted into evidence, to wit, as follows:)

(The witness was previously sworn.)

ROBERT L. TRAGERT, P. E.

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

NARRATIVE

BY MR. TRAGERT: Good morning. My name is Robert Tragert. I'm the Senior Regulatory Coordinator with W.R. Grace and Company, Connecticut, Grace Container Products Division. I hold a Bachelor of Science Degree

in Civil Engineering from Norridge University. I received this degree in 1982. I am registered with the Hawaii Licensing Board as a professional engineer, having passed a professional engineering exam in 1992.

Since joining W.R. Grace in November 1991, my duties have included design and installation of process modifications and upgrades, permit development, emissions reporting, environmental auditing, and I have participated in the development of Title V permits for our Atlanta and Chicago plants.

My office is at the Grace Container Products divisional headquarters in Lexington, Massachusettes. My work primarily serves four plants in the U.S.

I would like to provide some information as to the compliance plan that has been agreed upon between Grace and the Agency. This compliance plan is in two phases, beginning with the pursuit of an equivalent alternative control. By December 15, 1996, Grace must submit an equivalent alternative control study to the Agency which is to provide for at least 81 percent control of VOM emissions from the solvation mixers, using process equipment and work practices, such as condensers,

cooling jackets, dedicated chillers, and knife gate hatch assemblies.

If accepted, the equivalent alternative control study will be implemented by the Agency and U.S. EPA as either a revision to the Illinois SIP or federally enforceable permit pursuant to 35 Illinois Administrative Code 218.108(b).

The Agency must either approve, request modifications to, or disapprove the equivalent alternative control plan by January 15th, 1997. In any event that Illinois EPA approves the equivalent alternative control plan with or without modifications, Grace shall submit a supplement to its pending Clean Air Act Permit Program, or "CAAPP," permit application, incorporating the equivalent alternative control plan by February 15, 1997.

The Illinois EPA will then have 180 days or until August 15th, 1997 to process the supplemented CAAPP application.

The other component of the compliance plan deals with pursuit of retrofit controls in the event that the equivalent alternative control plan is not approved.

Notwithstanding the challenges just

presented by Aaron Abbott, Grace agreed that it will submit detailed outlines by January 15, 1997, for studying other possible methods of compliance with Subpart QQ, including an enclosed flare or catalytic oxidation with VOM monitors, or a series of monitors in the duct work leading to the catalytic oxidizer; warning systems capable of diverting emissions that exceed the lower explosive limit to an emergency bypass stack; rupture discs and flame arresters in the duct work leading to the oxidizer; and a dilution box in the duct work leading to the catalytic oxidizer.

The Agency must complete evaluation and approval of each control device study outline no later than February 1st, 1997. In any event that Illinois EPA does not approve the equivalent alternative control plan, Grace is to submit the conclusions reached during the course of the control device investigations, including all supporting documentation, test methods and procedures to the Agency no later than July 1, 1997. Upon receipt, the Agency is to evaluate the conclusions based on the supporting documentation and either concur with or reject the proposed compliance method as expeditiously as possible, but, in any event, no later than July

15th, 1997.

In any event that Illinois EPA concurs with the proposed compliance method, Grace is to initiate control equipment purchasing by August 1st, 1997. This is only two weeks after the Agency approves the control equipment chosen by Grace. Accordingly, while the Agency's recommendation states that the purchase order shall be issued by August 1st, 1997, the Agency has agreed that the intent of that requirement is that Grace initiate the purchasing of the control equipment by August 1st, 1997.

Grace is to install control equipment and have it operational by April 1st, 1998. Grace fully intends to have the control equipment operating by April 1st, 1998, but the Agency has agreed that Grace may perform start-up and shake-down activities, as necessary, during the period from April 1, 1998 to May 15, 1998. Grace will conduct all necessary testing of the control equipment and submit the same to the Illinois EPA by May 15, 1998.

Grace must submit monthly progress reports documenting progress made on the control device studies, as well as monthly emission estimates.

In response to footnote one on page

four of the Agency's recommendation, pursuit of the retrofit control option will indeed require a variance period that extends to May of 1998. As set forth above, before any control system can be evaluated fully, Grace must further characterize the emissions.

Grace has met with two outside consulting firms to discuss preparation of the studies and design specifications for control devices. These firms have informed Grace that the above compliance plan for evaluation of the retrofit control option is very aggressive, particularly concerning the time needed to fully evaluate the VOM emissions and properly design equipment to safely control these emissions.

Thank you. I will answer any questions.

HEARING OFFICER FRANK: Okay. Miss Hodge, do you have anything you need to clarify?

MS. HODGE: Not with Mr. Tragert, no.

HEARING OFFICER FRANK: Okay. Miss Archer?

CROSS-EXAMINATION

BY MS. ARCHER:

Q. Mr. Tragert, isn't it true that if an add-on or retrofit control option is, indeed, the solution to compliance with Subpart QQ that this

retrofit control device will be operational by April 1st, 1998?

A. Yes.

Q. Also, in addition, the equivalent alternative control studies will be conducted simultaneous while preparing outlines of control -- retrofit control options?

A. Yes.

MS. ARCHER: Thank you.

HEARING OFFICER FRANK: Is there anything further?

MS. HODGE: I have just a few additional points of clarification on the conditions contained within the Agency's compliance plan. And these are matters that we've discussed with the Agency since the submittal of the recommendation and I just, again, would like to clarify for the record for the Board.

And the compliance plan and the Agency's recommendation starts on page 11.

And, first, in paragraph II, the Agency specifies the relief sought in the variance for the solvation mixers is that from 35 Illinois Administrative Code 218 Subparts QQ and UU, as well as Section 9(b) of the Act.

We point out that Grace has also sought relief from the requirement to operate the catalytic oxidizer, as contained in the construction permit for the catalytic oxidizer, as well as the Board's prior variance order. The Agency's concurred that it intends for relief from the reference Construction Permit, the current operating permit, and variance order requirements to be included in the supplemental request for variance sought for the emissions from the mixer loading activities.

And we'll, certainly, on behalf of Grace, clarify on this point in our final brief as well.

The next issue relates to the conditions in paragraph II(A)(3) on page 11 of the recommendation and paragraph four that appears on page 13 of the Agency's recommendation.

In both of those provisions, the Agency refers to a revised CAAPP application. Grace timely submitted its CAAPP application for its Chicago facility and would submit a supplement or an amendment to its pending CAAPP application to incorporate the equivalent alternative control plan.

The Agency has indicated that it does

not intend by its use of the term "revised," for Grace to lose its application shield due to its pending CAAPP application when it submits its supplement or amendment to the CAAPP application.

In paragraph II(B)(1)(a) which appears at the top of page 12, the Agency states that the catalytic oxidizer study shall include actual operational studies of the specified devices.

Again, upon consultation with the Agency after the filing of the recommendation, Grace understands that this phrase does not require actual installation and study of the devices at Grace's facility, but that information regarding the feasibility and safety of the devices is all that's required.

Grace also wishes to clarify the compliance dates in paragraph five on page 13 of the Agency's recommendation.

And maybe we're being redundant here, I know Miss Archer has covered this several times, but the Agency states that Grace shall comply with Subpart QQ by April 1, 1998, and Subpart UU by May 15th of 1998.

The Agency has indicated to Grace

that it intends, as set forth in paragraphs II(B)(5) (a) and (b) on page 13 of the recommendation, that emission control be implemented by April 1st, 1998, and testing be conducted by May 15, 1998.

However, Subpart QQ also contains a testing provision which appears at Section 218.948. That provision calls for testing of the equipment, when in the opinion of the Agency such testing is required. Based on that language, the Agency stated to Grace that it, indeed, intends that the testing deadline for the control equipment be May 15, 1998.

And just on the final point on the compliance plan in the Agency's recommendation. In VI, we have included a condition that's a little bit unusual and what we are asking the Board is, if the involvement of U.S. EPA in this matter renders any milestone dates impossible to meet, the Illinois EPA and Grace shall jointly petition the Board to issue a revised final order within this proceeding to incorporate new milestones as necessary.

And, as I stated, we know that this is an unusual request, but these are very unusual circumstances. We have a very, very aggressive schedule of milestones for both Grace and the Illinois

EPA to meet in this matter. We are both concerned about U.S. EPA's involvement as to the timing of some of the milestones and so that's why this condition is requested here.

We think it's certainly appropriate, given the unusual circumstances here, and we would urge the Board to issue the variance with this condition within it.

HEARING OFFICER FRANK: Miss Archer, do you have witnesses?

MS. ARCHER: Yes, I do.

If I just may point out one additional compliance plan agreement --

HEARING OFFICER FRANK: Sure.

MS. HODGE: -- that I believe Miss Hodge overlooked.

At the top of page 13 in condition (B)(5)(a), the Illinois EPA and Grace have agreed to change that language to initiate a purchase order for the control equipment by August 1, 1997.

MS. HODGE: Yes.

Thank you very much.

MS. HODGE: And one other clarification I'd like to make that I just noticed.

In condition 2(A)(1), when we are discussing the equivalent alternative control plan, to also be clear that an equivalent alternative control plan may also be submitted pursuant to Section 218.946(C), which is part of Subpart QQ, the Illinois EPA believes that Section 218.108(B) which was originally specified in the compliance plan would probably supercede Section 218.946(C), but just to be clear, both those sections would provide for an equivalent alternative control plan.

HEARING OFFICER FRANK: Okay.

MS. ARCHER: I would like to ask Mr. Kevin Madison be sworn.

HEARING OFFICER FRANK: Swear the witness, please.

(The witness was sworn.)

KEVIN MADISON

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

DIRECT EXAMINATION

BY MS. ARCHER:

Q. Mr. Madison, I just have a few quick questions on the permanent total enclosure verification for you this morning.

A. Okay.

Q. On October 17, 1996, did you receive the PTE verification from Grace?

A. Yes, I did.

Q. And have you reviewed that verification?

A. Yes, I have.

Q. Have you made a recommendation on that verification?

A. I have reviewed the October 17th, information and found one small minor omission of information, at which time I contacted Aaron Abbott of W.R. Grace and he has submitted that information to me today.

Q. Okay. And the additional information that Mr. Abbott provided you this morning, was that sufficient to correct the deficiencies you originally had noticed in the October 17th submittal?

A. Yes, it is.

Q. So, at this date and time is the PTE acceptable to the Illinois EPA?

A. It is acceptable.

MS. ARCHER: Thank you.

HEARING OFFICER FRANK: Is there anything further?

Miss Hodge, do you have anything further?

MS. HODGE: I have a follow-up to that.

CROSS-EXAMINATION

BY MS. HODGE:

Q. Mr. Madison, then, would you agree that Grace has met its obligations pursuant to the first condition contained within the compliance plan for the variance, and that is the submittal of the PTE closure verification to the Agency?

A. Yes, I do.

MS. HODGE: And, I think, perhaps in our brief, Miss Archer, we then can ask the Board to grant the relief for the PTE verification until today's date, instead of November 15th.

MS. ARCHER: That's fine.

HEARING OFFICER FRANK: Is there anything further?

MS. ARCHER: No.

HEARING OFFICER FRANK: Are there any other witnesses?

MS. ARCHER: No.

HEARING OFFICER FRANK: For the record, I found all witnesses to be credible and will issue a written

statement to that effect. I will also issue a written statement with the exhibits listed and the briefing schedule.

Grace is to have their brief done by November 8th and the Agency will have theirs done by November 15th.

Is there anything further at this time?

MS. ARCHER: I would just like to clarify that the Illinois EPA has moved to admit Exhibit 1 into evidence.

HEARING OFFICER FRANK: And it is admitted.

MS. ARCHER: Thank you.

MS. HODGE: Miss Frank, I have a very brief closing statement that I would like to make, as well.

HEARING OFFICER FRANK: Go right ahead.

CLOSING STATEMENT

BY MS. HODGE: We believe that the testimony offered today by both the Grace witnesses and by the Agency indicates that Grace has been faced with extenuating circumstances in its compliance efforts, not only with the feasibility and safety challenges, it is faced with certification of capture efficiency testing, but also with the oxidizer explosion.

Nevertheless, Grace has acted expeditiously to complete the capture efficiency testing, even with the explosion.

However, as stated by the Agency in its recommendation, Grace needs additional time to study whether a control device can be safely operated to control the VOM emissions from the solvent mixers.

Grace would suffer arbitrary and unreasonable hardship if the request of relief is not granted.

Grace has now accomplished every step needed for the capture efficiency demonstration and has admitted certification for same to the Agency.

Grace has displayed diligent effort in completing the capture efficiency demonstration, even after the control device was rendered inoperable.

As pointed out by the Agency in its recommendation and at hearing today, Grace and the Agency must be certain that all safety concerns are fully addressed before any control device is implemented to control the VOM emissions from the mixers.

If the request to continue operations without the oxidizer is not granted, Grace will be

forced to shut down its solvent process. Thus, Grace believes that based upon these facts, the hardship Grace would suffer by denial of the requested relief would outweigh the public interest in attaining compliance with the requirements at issue here.

Grace also believes that the unusual and extraordinary circumstances here merit the granting of retroactive relief by the Board.

The oxidizer explosion delayed Grace's efforts to complete demonstration of capture efficiency and has created enormous complexities in attempting to use a control device for the mixer's emissions.

As pointed out by the Agency in its recommendation, Grace has consistently acted quickly to address all compliance issues and has explored every viable alternative to the relief sought in this proceeding.

The instant circumstances warrant a retroactive starting day for the variance extension request, as well as the supplemental request for variance.

The Agency has agreed that the environmental impact during the term of this variance

will be minimal. Grace has implemented several process modifications and practices that have substantially reduced its VOM emissions from the solvent mixers.

Further, VOM emissions are expected to decrease as Grace's customers will continue to demand solvent products with lower volatility.

Grace has demonstrated all the required elements for the relief sought in its amended petition for variance extension and supplemental request for variance.

We ask that the Board grant the relief requested as soon as possible and we want to, again, thank the Agency for its cooperation and its guidance in this matter and to thank the Board and Miss Frank for expeditiously scheduling this hearing for us.

That's all we have today. Thank you very much.

HEARING OFFICER FRANK: Miss Archer, do you have any type of closing?

MS. ARCHER: Very brief. Thank you.

CLOSING STATEMENT

BY MS. ARCHER: The Illinois EPA does believe that Grace has met its burden and it is entitled to a variance in this matter.

The Illinois EPA believes that Grace has shown it would be an arbitrary or unreasonable hardship to operate with control devices currently.

The Illinois EPA also believes that Grace has taken many steps to minimize environmental impact during the term of the variance.

The Illinois EPA further believes that this variance will be in compliance with federal law as the variance will be submitted to U.S. EPA as a SIP revision to Subpart QQ.

And Illinois EPA also believes that retroactive relief is warranted in this case and Grace has worked diligently and in good faith with Illinois EPA in this matter.

Therefore, the Illinois EPA would ask that the variance for the permanent total enclosure verification would run from March 15, 1996, until October 25th, 1996, which is today, upon result -- submittal of the verification to the Agency.

The Illinois EPA further believes that the compliance plan negotiated between Grace and the Illinois EPA is concrete and it has specific milestones that both parties must meet.

If it is determined that an

equivalent alternative control plan will be the best solution, the Illinois EPA would ask that the variance expire, then, on August 15th, 1997.

Then if it is determined that a retrofit control is the appropriate means for compliance of Subpart QQ, the Illinois EPA would ask that the variance would expire on April 1st, 1998, the date that it has been testified that the control device would be operational in this matter.

The Illinois EPA understands that Grace has concerns with the start-up and shake-down of a retrofit control device, however, these concerns may be addressed in a Construction Permit that would have to be issued prior to April 1st, 1998.

The Illinois EPA believes that there would be no risk to Grace if the variance expired on April 1, 1998, before the start-up of the 1998 ozone season, as the Illinois EPA has indicated it's very important for their efforts to bring the Chicago Ozone Non-Attainment Area into attainment.

Thank you.

HEARING OFFICER FRANK: Is there anything further?

MS. HODGE: No.

HEARING OFFICER FRANK: Okay. Then the hearing is adjourned.

Thank you all.

MS. HODGE: Thank you.

MS. ARCHER: Thank you.

(HEARING CLOSED.)

STATE OF ILLINOIS)
) SS:
COUNTY OF C O O K)

Sally A. Guardado hereby certifies that she is the Certified Shorthand Reporter who reported in shorthand the proceedings had in the above-entitled matter, and that the foregoing is a true and correct transcript of said proceedings.

Certified Shorthand Reporter
Notary Public, County of Cook, State of Illinois