ILLINOIS POLLUTION CONTROL BOARD
March 16, 1995

W.R. GRACE & CO. - CONN.,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 94-328
	)	(Variance - Air)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

KATHLEEN C. BASSI APPEARED ON BEHALF OF PETITIONER;

BONNIE SAWYER APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by M. McFawn):

This matter is before the Board on a petition for variance filed by petitioner W.R. Grace & Co. - Conn. (Grace) on November 16, 1994. Grace seeks a variance from the air emission control requirements of 35 Ill. Adm. Code 218.106(c), 218.940(b), 218.946, 218.948, and the related recordkeeping requirements of 218.Subpart UU for its facility at 6050 West 51st Street, Chicago, Cook County, Illinois. Grace requests that the variance begin March 1, 1995 and end March 15, 1996.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 et seq. (1992).) The Board is charged therein with the responsibility of granting variance from Board regulations whenever it is found that compliance with the regulations would impose an arbitrary or unreasonable hardship upon the petitioner. (415 ILCS 5/35(a).) The Illinois Environmental Protection Agency (Agency) is required to appear in hearings on variance petitions. (415 ILCS 5/4(f).) The Agency is charged, among other matters, with the responsibility of investigating each variance petition and making a recommendation to the Board as to the disposition of the petition. (415 ILCS 5/37(a).)

Pursuant to 35 Ill. Adm. Code 104.180(a), the Agency recommendation was originally due December 15, 1994. On December 19, 1994, the Agency filed a motion for extension of time in which to file its recommendation, seeking an extension until January 12, 1995, which the Board granted by order dated January 11, 1995. The Agency filed its variance recommendation (Rec.) on January 13, 1995. Based on information contained in the petition for variance and information subsequently submitted to the Agency by Grace, the Agency agrees that an unreasonable hardship would be imposed on Grace in the absence of the requested relief, and recommends that the variance be granted, subject to certain conditions.

A hearing was held in this matter on January 18, 1995 before hearing officer June C. Edvenson. Kathleen C. Bassi appeared on behalf of Grace, and Richard M. Irelan, Environmental Health and Safety Manager for Grace's Chicago facility, and Aaron G. Abbott, Associate Process Engineer for Grace, testified on Grace's behalf. Bonnie Sawyer appeared on behalf of the Agency, and Christopher Romaine testified on the Agency's behalf. Grace filed its post-hearing brief on February 6, 1995, and the Agency filed its response brief on February 10, 1995. Grace filed a reply to the Agency response on February 16, 1995.[1] Additionally, Grace filed a motion to correct the transcript on February 15, 1995, which the Board hereby grants.

As presented below, the Board finds that petitioner has met its burden of demonstrating that immediate compliance with the requirements of 35 Ill. Adm. Code 218.106(c), 218.940(b), 218.946, 218.948, and the related recordkeeping requirements of 218.Subpart UU would impose an arbitrary or unreasonable hardship upon petitioner. The variance request is therefore granted, subject to certain conditions recommended by the Agency.

BACKGROUND

Grace operates a facility located at 6050 West 51st Street, Chicago, Cook County, Illinois. (Petition (Pet.) at 1-2.) The facility was established in 1940, and currently employs approximately 100 people. (Id. at 2.) At this facility, Grace manufactures container sealants, automotive products, lubricant fuels, and concrete additives. The container sealants are a rubbery coating material used by beverage, food, and other can coaters to form a seal between the ends of cans and the body of the can where the two pieces are crimped together. The plant uses both solvent-based and water-based sealants. (Id.)

Production of the solvent-based can sealant results in the greatest amount of VOM emissions from the Grace plant. (Id.) Grace asserts that the emissions from the other processes are insignificant, and subject to exemptions from control (Tr. at 14-15; *see* discussion *infra*.) The solvent-based can sealants are produced in a batch process by mixing compounded rubber and other materials into the solvent in a solvation mixer.

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[1] Pursuant to Section 101.241(c) of the Board's procedural rules, parties do not have the right to file a reply without leave of the Board. (35 Ill. Adm. Code 101.241(c).) Petitioner did not file a request for leave to file a reply; however, in the interests of judicial economy, the Board will accept petitioner's reply.

Grace's facility has a total of 9 solvent lining compound (SLC) mixers. (Pet. at 3, Tr. at 15.) The compounded rubber and other materials are loaded into the mixer through access hatches in the mixer neck either manually by operators or by conveyor belts. Solvent and other materials are piped from storage tanks into the mixer. The compounds are subsequently pumped to blend/storage tanks where low speed agitation continues. In most cases, additional solvent is added, and the product is recycled through a homogenizer to attain proper consistency. The finished product is then loaded into tank trucks, drums, or other containers for distribution to customers. (Pet. at 3.)

Because the VOM emissions from the solvation mixers are flammable, Grace has installed a Halon 1301 fire suppression system. (Petitioner's Post-Hearing Br. (Pet. Br.) at 4.) This system uses ultraviolet eyes to monitor the mixer necks for sparks or flame. (Tr. at 24.) Additionally, the solvation mixer room is highly humidified to reduce the potential for static electrical sparking. (Pet. Br. at 4; Tr. at 23.)

The majority of emissions occur at the mixers during two different activities: loading and mixing. The loading emissions are fugitive in nature, and occur through displacement when materials are added to the mixers through the access hatches. (Pet. Br. at 4.) These emissions are very "peaky" in nature. (Pet. Br. at 5; Tr. at 160.) The emissions rate rises to its peak value within seconds when materials such as rubber are added to the mixer (Tr. at 18), and the maximum emissions rate is much larger than the emissions rate averaged over time (Tr. at 17). Grace seeks the requested variance in order to develop and implement proper controls for these emissions.

Mixing emissions occur when the contents of the mixers are being stirred. The mixing emissions pass through vent pipes after the access hatches are closed. Material recovery devices condense and return to the mixers the vast majority of the solvent fumes generated during the mixing operation. (Pet. at 3.)

Grace estimates that emissions from this solvation process, when combined with the insignificant levels of emissions from the other processes, amount to potential VOM emissions of 98 tons per year (TPY). (Pet. at 2.) However, Grace estimates that actual total VOM emissions are approximately 35 TPY. (Id.)

APPLICABLE LAW

Subpart QQ requires sources with the potential to emit (PTE) 25 tons per year or more of volatile organic material (VOM) to reduce VOM emissions by 81 percent overall from each emission unit. (35 Ill. Adm. Code 218.946.) Compliance is required by March 15, 1995. (35 Ill. Adm. Code 218.106(c).) Since Grace's

facility has potential VOM emissions of 98 tons per year, these restrictions apply to Grace's facility.

Grace asserts that exemptions apply to emissions from its processes other than the loading emissions from its SLC mixers. Section 218.940 exempts emission units included in the VOC storage tank category under Section 218.940(b)(1)(B). Grace estimates that its emissions in this category are approximately 8.5 tons. (Tr. at 14.) Section 219.940(b)(2)(A) exempts from control requirements emissions units which are included in Subpart B, Organic Emissions from Storage and Loading Operations. Grace's emissions in this category have been estimated at approximately 3.3 tons per year. (Tr. at 15.) Finally, Section 218.940(d) provides an exemption which applies to the solvent process mixing activities, non-bulk packaging activities, piping fugitive emissions and non-bulk packaging activities of the Waterbased Can Sealing Compound and Can-Forming Lubricant processes, since they emit less than 2.5 tons per year per emission unit, or 5 tons per year in combination. The total emissions from this group of emission sources is estimated to be 4.6 tons per year. (Tr. at 15.) Therefore the petition only contemplates controlling the remaining emissions, estimated at 19.2 tons per year, which result from the loading activities at the mixers.

The Agency does not dispute the application of these exemptions to the described emissions. (Agency Recommendation (Ag. Rec.) at Section II para. 8-11.)

HARDSHIP

Grace has determined that the most appropriate method of control for its process is the installation of a thermal oxidizer and fume capture system. (Pet. at 4.) Grace estimates that the purchase and installation of such a system will cost approximately $500,000.00, with annual operating costs of approximately $100,000.00. (Pet. at 4-5.) However, Grace alleges that it will be unable to complete installation of the control device in a timely manner due to difficulties arising from the nature of its process and certain design limitations which must be met. (Pet at. 5.) Grace therefore asserts that meeting the March 15, 1995 compliance date would impose an arbitrary and unreasonable hardship on its facility. (*See* Pet. Br. at 12.)

Nature of Emissions

Grace asserts that its emissions occur in a complex and variable manner due to the batch nature of its process. (Pet. at 4.) There are many variations of formulas used in the batches, and modelling the typical emissions profile is very difficult. (Tr. at 18.) Grace asserts that the "peaky" nature of the

emissions stream presents challenges to those designing the control system. (Pet. Br. at 5; Tr. at 17.) This emissions profile requires that the control unit be significantly larger than one sized for the average emissions of the process, and requires that the thermal oxidizer burn supplemental heating fuel during non-peak periods to maintain an efficient temperature. (Tr. at 17.) The actuators which control the input of additional fuel will also undergo more frequent mechanical cycling than would normally be expected in this type of control device. (Tr. at 18.)

The Agency acknowledges that the "peaky" nature of petitioner's emissions may create the need for a larger, more sophisticated control device, but does not believe that this creates any undue hardship. (Ag. Rec. at XX.) The Agency points out that such fluctuations occur with many processes. In response to petitioner's assertion that the variety of compositions mixed in the emission units contributes to its hardship, the Agency acknowledges that this factor must be included in the control scheme, but does not believe that it creates any undue hardship.

Design Requirements

Grace has encountered additional difficulties in designing a VOM capture system that accommodates its operational needs and existing space constraints. Grace asserts that the available floorspace and headspace in the relevant area surrounding the mixers is very limited. Special care must be taken to design a system which allows full operator access to the mixer necks for dumping in materials, taking samples, and performing other activities, as well as allowing the addition of material by means of the conveyor belts. (Tr. at 21.) The system must also be designed so as not to interfere with the effectiveness of the fire suppression system. (Tr. at 25.)

Grace has encountered additional design difficulties in dealing with dust generated during the dumping of solid raw materials into the mixers. (Tr. at 21.) Because dusts could adhere to the oxidizer's catalysts, reducing the oxidizer's efficiency, the system must be equipped with air filters which separate out these dusts and prevent them from reaching the thermal oxidizer. (Tr. at 22.) However, the installation of such a filter presents further design difficulties, since the filter may become caked with dust, reducing the flow of air into the capture system. Grace asserts that many of the materials are sticky in nature and will tend to coat the catalyst bed. (Pet. Br. at 5; Tr. at 22.) Additionally, since the room is intentionally humidified, the high humidity level may exacerbate the caking of dust on filters. (Tr. at 23.) Grace must verify the effectiveness of the capture system and its filters prior to finalizing design of the thermal oxidizer.

The Agency believes that these circumstances create significant design challenges for installing control equipment, and establish a sufficient hardship to allow additional time for compliance as requested by petitioner. (Ag. Rec. at XVII - XIX.)

Testing

Grace also asserts that there will be difficulties in testing with conventional methods. Since the emissions rate is variable from second to second, methods such as Method 25A may be inadequate to accurately quantify emissions. (Tr. at 18.) The Agency's recommendation does not address this issue.

COMPLIANCE PLAN

In its petition, Grace estimates that it will take six months to define the scope of the appropriate control scheme, finalize design, specification, and process safety review for the control scheme, and place its order for the equipment. (Pet. at 5.) Grace estimates that it will take four months to build the unit, and another month to install it. (Pet. at 5.) At the request of the Agency, Grace submitted to the Agency a more detailed compliance plan, which included the following compliance milestones:

1. File a construction permit application for the control system with the Agency by March 1, 1995.

2. Complete installation of the capture system and issue a purchase order for the thermal oxidizer by June 15, 1995.

3. Initiate installation of the thermal oxidizer by December 15, 1995.

The Agency accepted and incorporated each of these milestones into its recommendation, and recommended that they be included as conditions in the variance. (Ag. Rec. at VIII.) Additionally, the Agency recommended that the following condition be added:

4. Petitioner shall start-up the thermal oxidizer by February 15, 1996.

(Ag. Rec. at VIII.)

In its recommendation, the Agency recommended that satisfying the requirements of these milestones be conditions precedent to the continuing validity of the variance. (Ag. Rec. at IX.) In its response brief, the Agency clarified its position on this issue, stating that the Agency intends that failure to satisfy any milestone would mean that Grace is in

violation of the variance and no longer entitled to a shield from enforcement based on the variance. (*See* Agency Response Br. Section II.)

Grace agrees to the inclusion of these milestones in the variance (Pet. Br. at 3), but objects to their satisfaction being conditions precedent to the continuing validity of the variance (Pet. Br. at 9). Grace asserts that the terms of the variance are subject to enforcement under the Act, and that it is unnecessary to void the variance based on failure to satisfy these conditions.

While we find that it is appropriate to include the milestones as a means of assuring compliance by the expiration of the variance, we find it unnecessary to treat them as conditions precedent to the continuing validity of the variance. The terms of the variance are enforceable as a Board order, and violation of the terms of the variance will subject its holder to enforcement in accordance with Section 42 of the Environmental Protection Act. (See Section 33(d) of the Act.) Under these circumstances, the existence of the variance will not shield the holder from enforcement against such a violation. However, the variance itself will not be voided. We will therefore include the milestones in the variance, but will also include language which properly defines the enforceability of the variance terms. (*See also* Auburn, Divernon, Girard, Pawnee, Thayer, Virden Water Commission v. IEPA, PCB 94-86 (May 5, 1994).)

Additionally, we note that the recommended March 1, 1995 compliance date for milestone number (1), requiring that petitioner file a construction permit application for the control system, has already passed. In order to avoid subjecting petitioner to this requirement retroactively, we will extend the compliance date for milestone number (1) to March 30, 1995.

ENVIRONMENTAL IMPACT

Grace asserts that the environmental impact of the requested variance will not exceed current levels. (Pet. at 6.) Grace indicates that the emission levels of VOM may actually decrease, due to additional process improvements and decreased demand for the solvent-based sealants. (Pet. at 4, 6.) Grace asserts that granting this variance will not impede the State's ability to demonstrate a 15% reduction in VOM emissions in the Chicago ozone non-attainment area by the end of 1996, as required by Section 182(b)(1) of the Clean Air Act, 42 USC 7411a(b)(1). (Pet. Br. at 10-11.) Grace further asserts that its emissions control at the end of the variance will exceed the emission reduction requirements of Subpart QQ by 16 tons annually. (Pet. Br. at 10.)

The Agency acknowledges that the requested variance will allow emissions during the 1995 ozone season. However, the Agency believes that the hardship Grace will suffer if timely compliance is required outweighs the environmental impact from allowing uncontrolled VOM emissions through the 1995 ozone season. (Ag. Rec. at VII.)

CONSISTENCY WITH FEDERAL LAW

Section 104.122(a) of the Board's procedural rules requires that all petitions for variance from the Board's air pollution regulations indicate whether the Board can grant the requested relief consistent with the federal Clean Air Act and the regulations adopted pursuant thereto. Furthermore, Section 218.108(a) of the Board's air regulations requires that all exemptions, variations or alternatives to the air emission control requirements, emissions limitations, or test methods be approved by the United States Environmental Protection Agency (USEPA) as a SIP revision before becoming effective. (35 Ill. Adm. Code 218.108(a).)

Grace asserts that the requested variance can be granted consistent with federal law. (Pet. at 7.) Grace states that under the currently applicable Federal Implementation Plan (FIP), only facilities which emit more than 100 TPY are subject to regulation. (Pet. at 8.) Furthermore, USEPA has not yet approved Subpart QQ of the State Implementation Plan (SIP). However, Grace concedes that the variance will ultimately have to be submitted to USEPA as a SIP revision, and Grace has requested that the Agency submit the requested variance as an amendment to the SIP once the SIP is approved. (Pet. at 8.) Furthermore, the hearing held in this matter satisfies the federal public participation requirements under the CAA and related regulations. (Pet. at 9.)

In its recommendation, the Agency does not dispute that the requested variance can be granted consistent with federal law. The Agency notes that granting this variance would allow Grace, as a major source in the Chicago non-attainment area, to emit uncontrolled VOM emissions beyond the May 31, 1995 deadline for implementation of reasonably available control technology (RACT). However, the Agency acknowledges that these emissions will only be significant during the ozone season.

The Board finds that petitioner has satisfied the necessary conditions for granting the requested variance consistent with federal law. The public hearing satisfies the applicable notice requirements, and Grace has properly requested the Agency to submit the requested variance to USEPA as a SIP revision.

CONCLUSION

In determining whether any variance is to be granted, the Act requires the Board to determine whether the petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or reasonable hardship upon the petitioner (415 ILCS 5/35(a) (1992)). The burden is on the petitioner to demonstrate that the claimed hardship outweighs the public interest in attaining compliance with regulations designed to preserve the environment and protect human health. (Willowbrook Motel v. IPCB (1985), 135 Ill.App.3d 343, 481 N.E.2d 1032.)

The Board hereby finds that immediate compliance with the requirements of 35 Ill. Adm. Code 218.106(c), 218.940(b), 218.946, 218.948, and the related recordkeeping requirements of 218.Subpart UU would constitute an arbitrary and unreasonable hardship for petitioner. Petitioner has made such demonstration based on the difficulties encountered in designing an appropriate control system under the existing space and process constraints. While there will be some impact to the environment from the uncontrolled emissions of VOM during the 1995 ozone season, the emissions will be no greater than those currently emitted, and there will ultimately be an environmental benefit due to Grace's over-compliance with the emissions reduction requirements of Subpart QQ. We therefore find that the environmental impact is outweighed by the hardship that would be imposed on petitioner by immediate compliance. We also find that petitioner has demonstrated that the requested variance can be granted consistent with federal law.

The Board therefore grants the requested variance, subject to the conditions contained in the order below. Language has been added to the variance order which clarifies that the terms of the variance are enforceable as a Board order in accordance with Section 42 of the Act. However, failure to satisfy the terms of the variance does not void the continuing validity of the variance.

While petitioner has requested and the Agency has recommended that the variance be effective starting March 1, 1995, the Board's well established practice is that the term of a variance begins on the date the Board renders its decision, unless unusual or extraordinary circumstances are shown. (*See, e.g.* DMI, Inc. v. IEPA, PCB 90-227, 128 PCB 245 - 249, December 19, 1991.) Given the complexity of factors which Grace must consider in designing its control system, and the fact that the regulations from which Grace is seeking a variance became effective March 15, 1995, the Board finds that the instant circumstances warrant a one-day retroactive start of the variance. The variance will therefore become effective March 15, 1995.

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

A. W.R. Grace & Co. - Conn. is hereby granted a variance from the air emission control requirements of 35 Ill. Adm. Code 218.106(c), 218.940(b), 218.946, 218.948, and the related recordkeeping requirements of 218.Subpart UU for its facility at 6050 West 51st Street, Chicago, Cook County, Illinois, subject to the following conditions:

1. The variance begins on March 15, 1995 and ends March 15, 1996.

2. Petitioner shall meet the following compliance milestones:

   a. Petitioner shall file its construction permit application for the control system with the Illinois Environmental Protection Agency (Agency) by March 30, 1995.

   b. Petitioner shall complete installation of the capture system and issue a purchase order for the thermal oxidizer by June 15, 1995.

   c. Petitioner shall initiate installation of the thermal oxidizer by December 15, 1995.

   d. Petitioner shall start-up the thermal oxidizer by February 15, 1996.

3. The catalytic oxidizer shall be fully operational by March 15, 1996, and in conjunction with the capture system, shall reduce VOM emissions by 81 percent overall, as required by 35 Ill. Adm. Code 218.946.

4. Petitioner shall conduct any tests requested by the Agency in the construction permit to establish compliance with Subpart QQ and submit the results of all such tests to the Agency as required in such permit but in no case later than March 15, 1996.

5. Petitioner shall not exceed its current level of VOM emissions during the variance period.

6. Petitioner shall promptly notify the Agency of attainment of each compliance milestone provided above. Notification shall be sent to:

Compliance Unit
Illinois Environmental Protection Agency
Bureau of Air
P.O. Box 19276
Springfield, Illinois 62794-9276

7. Failure to comply with the conditions of this Board order shall constitute a violation of this Board order and subject petitioner to the enforcement and penalty provisions of the Environmental Protection Act.

IT IS SO ORDERED.

If W.R. Grace & Co. - Conn. chooses to accept this variance subject to the above order, within 45 days of the date of this order, W.R. Grace & Co. - Conn. shall execute and forward the attached Certificate of Acceptance and Agreement to:

Bonnie Sawyer
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

Once executed and received, the Certificate of Acceptance and Agreement shall bind petitioner to all the terms and conditions of this variance. The 45-day period shall be held in abeyance during any period that this matter is being appealed. Failure to execute and forward the Certificate within the 45 days renders this variance void. The form of said Certification shall be as follows:

CERTIFICATION

I (We), _____, hereby accept and agree to be bound by all terms and conditions of the order of the Pollution Control Board in PCB 94-328, March 16, 1995.

_____
Petitioner

_____
Authorized Agent

_____
Title

_____
Date

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1992) provides for the appeal of final Board orders within 35 days of the date of service of this order. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246, Motions for Reconsideration)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 16th day of March, 1995, by a vote of 7-0.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board