

Job No 2028 File

ETHYL CORPORATION

MANUFACTURING DEPARTMENT

March 15, 1977

PLEASE ADDRESS REPLY
TO: BOX 341
BATON ROUGE, LA 70821

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Howard G. Bergman, Director, Enforcement Division
U. S. Environmental Protection Agency
Region VI
First International Bank Building
1201 Elm Street
Dallas, Texas 75270

Dear Sir:

Re: National Emission Standard for Hazardous
Air Pollutants, Standard for Vinyl Chloride

We have studied your letter dated March 7, 1977, concerning our equivalency and waiver of compliance transmittals of November 24 and December 6, 1976. We assume it was your intention to comment on only a part of our equivalency and waiver requests in your March 7 letter. However, in the interest of insuring that nothing is overlooked, we are taking the liberty of listing below the requests which were included in our November 24 and December 6 transmittals but were not mentioned in your letter of March 7.

November 24 Transmittal

<u>Type of Request</u>	<u>Title of Request</u>
Waiver of Compliance	Emission Testing of Flare System Control Device

December 6 Transmittal

<u>Type of Request</u>	<u>Title of Request</u>
Equivalent Test Procedure	PVC Stripper Sampling
Compliance Waiver	Suspension Resin Reactor Opening Loss

Mr. Howard G. Bergman
March 15, 1977
Page 2

December 6 Transmittal (Continued)

<u>Type of Request</u>	<u>Title of Request</u>
Compliance Waiver	Suspension Resin Stripping
Compliance Waiver	Vinyl Chloride - Water Stripper for PVC Plant Waste Water
Compliance Waiver	Opening of Equipment Losses
Compliance Waiver	PVC Pilot Plant 200-Gallon Autoclave Pressure Degassing and Stripping
Compliance Waiver	Emission Testing
Compliance Waiver	Spare Waste Water Stripper for VCM Plant
Compliance Waiver	Hydrocarbon Area Acid Scrubber Discharge
Compliance Waiver	No. 4 Flare Seal Drum Water Discharge

Our comments concerning the action taken by the EPA on the items discussed in your March 7 letter are given below:

Items Relating to PVC Plant

Item 1: Equivalency and Waiver Request
Re: Section 61.65(b)(3)(iii)

This item concerns the denial by EPA of our request to continue using water flushed lantern ring packing seals as an equivalent to double mechanical seals for our Nash vacuum pumps. Your letter says that the double mechanical seal will provide freedom from periodic maintenance, can be used where abrasive solids are present, and is best applied when under substantial pressures. Of course, the seals of our Nash vacuum pumps are normally under vacuum and are never under substantial pressure. Also, we believe the use of double mechanical seals in this service, where solid PVC particles are frequently carried into the Nash pumps, will lead to an increase, rather than a decrease, in periodic maintenance to the seals. Our position on this question is backed up by experience in use of double mechanical seals which shows that they can be a substantial maintenance item. Since we are required

Mr. Howard G. Bergman
March 15, 1977
Page 3

by law to abide by the rulings of EPA on this matter, we plan to equip our Nash vacuum pumps with water pressurized double mechanical seals; however, we believe that this will result in an insignificant change in vinyl chloride emissions to the atmosphere and will probably lead to an increase in the frequency of seal failures. Reconsideration of this equivalency denial by the EPA is requested.

Item 2: Waiver of Testing Request
Re: Section 61.67

This item concerns our wish to submit emission testing conducted by Midwest Research Institute for our vinyl chloride incinerator stack instead of conducting new stack tests. You indicate agreement with this proposal, providing we submit information that allows you to review the adequacy of the test. The information requested is given below:

1. The feed rates to the incinerator during the period when the testing was being carried out are shown on two attached pages copied from our engineer's notebook. The maximum rated capacity of the incinerator is 780 pounds per hour of feed gas; however, the unit seldom runs at this maximum rate. We are not able to set or to maintain a specified feed rate to the incinerator since system controls are designed to allow all vinyl chloride vent gas which is not condensed in our recovered monomer condenser to flow to the incinerator. This method of control is necessary since the condenser vent rate depends on the concentration of non-condensables in the recovered monomer gas, a variable which is not subject to direct control. You will note that rates recorded during the test period varied from 160 to 560 pounds per hour, which covers the range within which the incinerator normally operates.
2. Six Tedlar bag samples were caught for subsequent analysis during the two days of testing. In addition, nine "on the spot" chromatograph analyses were run during the second day of sampling.
3. Fifty minutes were taken to fill the first two Tedlar bags on the first day of sampling. On the second day of sampling, nine "on the spot" analyses were run during a fifty-three minute time period. Also, on this day two of the Tedlar bags were filled during a one-hour time period and the other two were filled during a 45-minute time period.
4. The complete report of Midwest Research Institute is attached. It gives the testing procedures you requested. Please note that the feed rate to the incinerator on the second day of testing was almost two times that on the first day of testing and that the vinyl chloride concentration in the stack gas was no higher, and in some cases lower, on the second day than on the first day.

Mr. Howard G. Bergman

March 15, 1977

Page 4

Item 3: Equivalency for Continuous Monitoring Requirements
Re: Section 61.68 (a),(b)

This item concerns use of our temperature control records for monitoring vinyl chloride emissions from our vinyl chloride incinerator, rather than installation of a continuous monitoring (analyzer) system. Your letter says that our temperature records may be approvable as an alternate method of continuous monitoring providing we "can verify compliance with the Standard during those periods of maximum feed to the incinerator, resulting in maximum emission rates". As mentioned under item 2 above, the maximum feed rate to the incinerator during the testing by MRI was 560 pounds per hour, which is 72% of the incinerator design feed rate of 780 pounds per hour. However, as the MRI report shows, the vinyl chloride emission concentration was no greater at this incinerator feed rate than it was at a much lower feed rate on the first day of testing. Also, at all rates run during the MRI test, the vinyl chloride concentration was about one one-hundredth (1/100) of the maximum emission concentration allowed by the Standard. Because of this extremely low concentration of vinyl chloride in the stack gases for the range of incinerator feed rates tested, we believe it is inconceivable that the emission rates would go up by a factor of 100 to exceed the Standard when going from 72% to 100% of incinerator capacity.

While we believe retesting of the incinerator stack gases at 100% incinerator feed rate is totally unwarranted, we would be willing to perform such testing if this is necessary to get approval for use of our temperature control records as an alternate means for continuous monitoring of the system.

Item 4: Equivalency for Determining Reactor Opening Loss
Re: Section 61.67 (g)(1)

Your letter indicates that this item is still under review by the EPA.

Item 5: Waiver Regarding Automatic Emergency Vent System
Re: Section 61.64 (a)(3)

Your letter says that this waiver request will be approved by the EPA.

Item 6: Waiver Request Relating to Semiannual Report
Re: Section 61.70 (c)(2)(i)

Under this item you comment on the fact that we have not submitted a waiver request for time to install equipment to reduce the residual vinyl chloride concentration in dispersion resin below the 2000 ppm standard. The reason we have not done so is that we currently use existing plant equipment to routinely reduce the vinyl chloride concentration of this resin to

Mr. Howard G. Bergman
March 15, 1977
Page 5

less than 2000 ppm. However, as stated under item 7 in our waiver request on "Stripping of Dispersion Resin", facilities are not presently installed for taking the large number of samples required for individual batch sampling. For this reason, we are not able to demonstrate compliance with the Standard at this time and have submitted the compliance timetable shown in the waiver request.

Item 7: Waiver Request Relating to the Water Sealed Gas Holder
Re: Section 61.65(a)

Your letter says that this waiver request will be approved by the EPA.

Item 8: Waiver Request Relating to Installation of a Flare Stack
Re: Section 61.64(d)

Your letter indicates that the EPA will approve our schedule to install a flare stack to backup our existing vinyl chloride incinerator but that we will be required to demonstrate compliance of the flare with the Standard after it is installed. As pointed out in our waiver request entitled "Emission Testing of Flare System Control Device" included on page 31 of our November 24 transmittal to the EPA, we believe representative sampling of the combustion products from a commercial size flare stack is virtually impossible. However, we have operated a bench scale flare simulator which shows that vinyl chloride concentrations in the combustion products from burning vinyl chloride feed gases do not exceed $1.35 \pm .05$ ppm. Therefore, we are hopeful that the EPA will approve our request (page 31, November 24 transmittal) that testing of the bench scale simulator be declared an equivalent procedure for testing commercial size flare stacks. We will be glad to review our detailed test methods and results on the bench scale simulator with designated EPA representatives if this will help in the evaluation of our request.

If the EPA does not approve our equivalent test procedure for flare stacks (bench scale simulator), we ask that the EPA provide Ethyl with details on a testing method for commercial size flare stacks that they will approve for determining whether or not a flare stack meets the EPA emission Standard for vinyl chloride.

Item 9: Waiver Request to Install Rupture Disks
Re: Section 61.65(b)(4)

As requested, we are identifying the 31 safety valves we propose to equip with safety disks. Please see attached safety valve sheet.

Mr. Howard G. Bergman
March 15, 1977
Page 6

Item 10: Waiver Request for Submission of Semiannual Report
Re: Section 61.70

Your denial of our waiver on submitting semiannual reports during the period while equipment for compliance with the Standard is being installed is acknowledged. We will plan to submit the first such report on September 15, 1977; however, we have questions about certain information that would normally be included in this report. In the case of vinyl chloride content of suspension and dispersion resins, your letter says we are not required to report these values until equipment that will be needed for taking the related samples is installed.

In addition to this item, there are two other emissions which would normally be included in a semiannual report but which we are presently unable to measure. One of these is the vent from our vinyl chloride recovery system during times when the primary control device (incinerator) is down for maintenance or otherwise cannot handle the vent flow from the recovery system. After our backup for the incinerator is installed, this present atmospheric vent, which is the current incinerator backup, will be eliminated. For this reason, we saw no need to install instrumentation to monitor this atmospheric vent for the short time while the incinerator backup is being designed, purchased, and installed. If monitoring of this temporary atmospheric vent is required, we will be forced to request a waiver to allow time for purchase and installation of the appropriate instrumentation to do the job. Considering the time that would remain after installation of the monitoring system and before startup of our incinerator backup (when the atmospheric vent will be eliminated) it does not seem reasonable that we should be forced to include this emission source in our semiannual reporting.

The second emission source is the PVC reactor opening loss. In this case, we do not have the instrumentation that is planned for use in monitoring this loss. We expected that by the time we were in compliance with the Standard for this source that the necessary monitoring equipment would be available. If reactor opening losses must be included in our semiannual reports prior to bringing this source into compliance (see date in waiver request entitled "Suspension Resin Reactor Opening Loss"), then we will be forced to submit a waiver request to allow time for purchase of the necessary monitoring instrumentation.

In conclusion, we see no reason why we cannot submit semiannual reports, beginning on September 15, 1977, including all required information except for the one item mentioned in your letter plus the two items discussed above. Will you please advise whether we will be allowed to exclude the emission information discussed above from our reports until we are in compliance for the related sources or whether we should submit waiver requests to allow time to purchase instrumentation to begin monitoring these sources prior to final compliance.

Mr. Howard G. Bergman
March 15, 1977
Page 7

Items Relating to VCM Plant

Item 1: Equivalency Request for Labyrinth Seal
Re: Section 61.65 (b)(3)(iii)

Your letter says that this equivalency request has been approved.

Items 2: Equivalency Request for Single Mechanical Seals for Eight Centrifugal Compressors in VCI Service
Re: Section 61.65(b)(3)(i)

Your denial of our request to use a flushed single mechanical seal on centrifugal pumps in VCI service rather than double mechanical seals is acknowledged. We are proceeding with our previously submitted compliance schedule to install double seals on the eight subject pumps. We do this with some misgivings, however, since we feel there is a distinct possibility that periodic maintenance and frequency of leaks rather than being reduced, may be increased. This is because the double mechanical seal system is inherently more complicated than the single seal-throat bushing system with clean liquid flush and there are more parts of the system that are vulnerable to failure. Examples of these vulnerable parts are: the nitrogen regulator used to pressurize the oil pot, the nitrogen pressurizing tubing, the oil pot safety valve and the extra mechanical seal. More attention will therefore be required of the operators and mechanics using and maintaining the double sealed pumps to achieve comparable service than would be the case for the single seal-throttling bushing arrangement. For example, loss of nitrogen pressure due to a regulator malfunction, tubing leak or safety valve leakage will usually result in seal failure.

Our pumps have been "custom fitted" with seals over a period of years by our maintenance department and seal supplier to insure the best service life and minimum failures. This evolutionary process will now have to be repeated for the pumps requiring double seal installation changes before comparable service can be achieved.

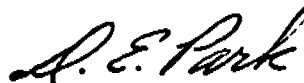
Two main benefits of the flushed seal are that solids in the process stream are swept away from the vulnerable seal faces and the flushing fluid provides cooling to seal faces, extending their life. We are working with the seal supplier in an attempt to achieve circulation and some cooling of the pressurizing fluid that will be used with the double seal installations.

Mr. Howard G. Bergman
March 15, 1977
Page 8

If you have questions concerning our comments on your March 7 letter, please contact the following individuals:

D. E. Park	(504) 359-2247
J. K. Presswood	(504) 359-2193

Very truly yours,



D. E. Park
Director of Environmental Studies

DEP:jht

Attachment

bcc: Mr. W. F. Armstrong
Mr. O. M. Brown
Mr. T. J. Callender
Mr. W. R. Cooke
Mr. S. A. D'Armond
Dr. P. C. Davis
Mr. E. W. Elmore
Mr. N. E. Garland
Mr. G. C. Gaeke
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Mr. J. E. Gonce
Mr. J. L. Griffin
Mr. G. A. Hinz
Mr. J. H. Huguet
Mr. J. L. Lee
Mr. B. J. Lentz
Mr. H. L. Loflin
Mr. F. W. Lawton
Mr. V. O. Mitchell
Mr. C. W. Montgomery
Mr. L. R. Parker
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