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To: H. Garrison

From: M. G. Jakel
Date: March 2, 1985

interoffice
communication

Subject: REVIEW OF NESHAP 40 CFR WAIVER OF TESTING

VISTA

The following information provides a brief outline of the action taken by the Oklahoma City PVC Plant and correspondence with USEPA concerning the request for a waiver of testing for 40 CFR, Sections 61.64(a)(2) and 61.64(e)(1)(ii). These paragraphs require that reactor opening losses not exceed 20 pounds of VCM per million pounds of resin produced, that stripped slurry not contain more than 400 pounds of VCM per million pounds of resin produced, and that both of these criteria be met separately. Sampling of each batch for each parameter is also required.

An outline and summarization of correspondence/documents found in the plant files follows:

I. Promulgation of NESHAP

- A. Reference: Letter from EPA to Conoco dated 11/12/76
- B. Discussion: The EPA notified the plant that if the facility could not operate in compliance with NESHAP by January 21, 1977, a waiver of compliance should be requested.

II. Waiver/Equivalency Requests

- A. Reference: Letters to O W Lively (USEPA) from R.T. Farrell dated 12/8/76 and 12/13/76
- B. Discussion: The Source Report and Waiver Request required by NESHAP were submitted on 12/8/76. Programs and their timing to meet each part of NESHAP were included. Also, equivalencies for using different procedures and equipment versus the standard were requested. Included in requests were equivalencies to allow the plant to:
 - 1. Use operating procedures rather than analytical data to demonstrate compliance with the reactor opening loss and stripped slurry emission requirements of the VCM Standard, and
 - 2. Meet the combined total of the maximum allowable reactor opening loss emission (20 ppm VCM) and maximum allowable average daily stripped slurry emission (400 ppm VCM) rather than each one separately.

Based on an industry meeting held with the USEPA in Dallas on

11/17/76, the plant submitted to the EPA on 12/13/76, a proposal for combining the reactor loss and slurry stripping loss provisions of the VCM Standard.

III. EPA Response to Waiver/Equivalency Requests

A. Reference: Letter from Howard G. Bergman (USEPA) to R.T. Ferrell dated 3/9/77

B. Discussion: The EPA denied the plant's request to combine the reactor opening loss and stripped slurry provisions of the standard; however, Mr. Bergman stated, "It is the intent of the standard that once a resin has been stripped to the required levels that additional controls are not required. Under this provision VCM escaping from the resin after it has been stripped to acceptable levels is not counted as part of the reactor opening loss." Also, the EPA proposed the following alternative which they would be able to approve:

1. By the proposed procedure, demonstrate compliance with Section 61.64(e)(1)(ii) for residual VCM content of stripped resin slurry (400 ppm).
2. To demonstrate compliance with Section 61.64(a)(2), separately for "reactor opening loss", it will be allowable and acceptable by the proposed procedure to combine the standard requirement for reactor opening loss and residual VCM after stripping and show compliance by adding the total residual VCM in the slurry to the total left in the reactor, and compare that total with 420 pounds of VCM per million pounds of resin produced.

Regarding the equivalency for using operating records versus testing (EPA Test Methods 106 and 107), Mr. Bergman stated, "We have determined that your proposed equivalency is acceptable on the following basis: For both reactor opening and improved stripping, it is possible that the relationship between the emissions measured, and the corresponding operating procedure used to attain the emissions measured, can be established." He further stated, "Accordingly, we wish to inform you that the proposal discussed above can be approved as an alternative to Test Methods 106 and 107. However, we are not approving your proposal at this time, but are instead requiring that you respond to and comply with the following:

1. Submit adequate test data that correlates the operating parameters with compliance and demonstrates the required compliance for each given resin grade, and

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2. Any testing done to obtain correlation data demonstrating compliance, must be observed by EPA personnel as part of the performance testing demonstration relating to Sections 61.64 (a)(2) and 61.64(e)(1)(ii).

Upon satisfaction of these two requirements, we intend to approve your proposal to be an alternative to Test Methods 106 and 107."

IV. Resubmittal of Waiver/Equivalency Requests

- A. Reference: Letter from R.T. Ferrell to O.W. Lively(USEPA) dated 3/29/77
- B. Discussion: In response to Mr. Bergman's letter dated 3/9/77 which requested clarification of several of the waiver and equivalency requests, the Plant resubmitted an updated version. This resubmittal included a revision to the equivalency for combining the reactor opening losses and stripped slurry residual standard requirements as proposed by Mr. Bergman in his letter of 3/9/77.

V. Waiver Approval

- A. Reference: Letter from H.G. Bergman(USEPA) to R.T. Ferrell dated 6/17/77
- B. Discussion: The EPA granted a waiver of compliance to the VCM standard subject to the compliance schedule as set forth by the plant in the waiver requests submitted 12/8/76, 12/13/76 and 3/29/77. Compliance was to be demonstrated through emission tests which were to be conducted prior to the termination date of the waiver. Progress reports were to be submitted no later than 10 days after each increment of progress had been achieved.

VI. Amendments to Waiver

- A. Reference: Letter to H.G. Bergman(USEPA) from J. Friend dated 8/23/78
IOC to R.E. Lehmkuhl from J.E. Cearley dated 8/25/78
IOC to J. Friend from R.A. Frohreich dated 8/25/78
Note to J.P. Warner from J. Friend dated 11/30/78
- B. Discussion: Based on a phone conversation with Martin Brittain(EPA) the plant submitted the following amendments to the approved waiver:

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1. A waiver of testing (40 CFR Section 61.13(a)) be granted for Sections 61.64(e)(1)(ii) and 61.64(a)(2) of 40 CFR Part 61, Subpart F.
2. The termination date of the plant compliance schedules number 2(two), 9 (nine), and 10 (ten) be changed from September 1, 1978 to October 20, 1978.

The first amendment is related to the previous equivalency request for reactor opening losses. An apparent procedural change by EPA required a waiver of testing rather than an equivalency for the reactor opening loss proposal.

A meeting with the EPA (Martin Brittain) was held in Dallas on August 24, 1978, to deliver the waiver amendment. Based on the favorable verbal response from the EPA and comments by R.A. Frohreich and J.E. Cearley following the meeting, the plant proceeded with the amendments without any further response from the EPA.

This course of action was confirmed as appropriate by a telephone conversation between J. Friend and M. Brittain on 11/30/78.

VII. Data Submitted

- A. Reference: Letter to H.G. Bergman(USEPA) from J. Friend dated 10/16/78
- B. Discussion: Test data were submitted to demonstrate that the plant operating procedures do achieve compliance for the stripped slurry and reactor opening loss emissions. The correlation between operating procedures and emission levels is described in the graph attached. Also, to assure the defined operating procedures continue to provide compliance, the plant stated that sampling and analysis of stripped slurry from one batch per week per reactor would be conducted. On March 17, 1979, the plant determined that weekly sampling was not sufficient to detect on a timely basis when leakage of VCM occurred through the reactor VCM charge valve into the stripped slurry while the slurry as being dumped from the reactor. Therefore, the plant instituted a program in which slurry from each reactor is sampled and analyzed each day. These daily analyses provide a method for detecting on a daily basis whether any VCM charge valve has started to leak causing VCM contamination of the stripped slurry.

VIII. Waiver of Testing Status in Correspondence to EPA

- A. Reference: Emission Test Report to Diana Dutton(EPA) from J. Friend dated 6/8/81.

EPA Semi-Annual Reports from March 19, 1979 through September 10, 1984

- B. Discussion: The plant submitted the required Emission Test Report to the EPA for the sixth polymerization reactor(D-306) on June 8, 1981. In this correspondence the plant demonstrated by test data that reactor D-306 was in compliance with Sections 61.64(a)(2) and 61.64(e)(1)(ii) of the NESHAP VCM Standard through the use of standard recovery/steam stripping procedures. Also, the plant restated that compliance with the reactor opening loss and stripped slurry emission levels was demonstrated by the procedure proposed by the EPA in the letter from Mr. Howard G Bergman to Mr. R.T. Ferrell dated March 9, 1977.

In addition to the submittal of the sixth reactor Emission Test Report, the plant has twelve (12) semi-annual reports to the EPA since March 19, 1979. Each of these semi-annual reports have the following text within the body of the cover letter:

The Oklahoma City Chemical Plant uses a batch suspension polymerization process producing a single grade of PVC resin. The resin stripping operation takes place in the reactor and the reactor is opened after each batch. The Plant has applied for and has been granted an equivalency allowing the combination of emission standards for reactor opening loss and residual VCM in the slurry after stripping (Reference Mr. Howard Bergman's letter to Mr. R.T. Ferrell, dated March 9, 1977).

The plant has requested a waiver of testing for 40 CFR, Sections 61.64(a)(2) and 61.64(e)(1)(ii). Reference Mr. J. Friend's letter to Mr. Howard Bergman, dated August 23, 1978). The basis for this request is that operating procedures rather than analytical data can be used to demonstrate compliance to the reactor opening loss and stripped slurry emission requirement of the VCM standard. In John Friend's letter to Howard Bergman, dated October 16, 1978, data were submitted showing a correlation between operating procedures and emission levels.

As part of our waiver of testing request, sampling and

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analysis of slurry from each reactor on a weekly basis were proposed. On March 17, 1979, the Plant determined that weekly sampling was not sufficient to detect on a timely basis when leakage of VCM occurred through the reactor VCM charge valve into the stripped slurry while the slurry was being dumped from the reactor. Therefore, the Plant instituted a program in which slurry from each reactor is sampled and analyzed each day. These daily analyses provide a method for detecting on a daily basis whether any VCM charge valve has started to leak causing VCM contamination of the stripped slurry.

If you have any questions or need additional information, please let me know.



M. G. Jakel
Process Engineer