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Conoco Chemicals Company
Conoco Inc.
P. O. Box 91, New Highway 25
Aberdeen, Mississippi 39730

September 21, 1979

Director, Enforcement Division
United States Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, GA 30308

Dear Sir:

In accordance with Sections 61.07 in Subpart A of the National Emission Standards for Hazardous Air Pollutants, Conoco Chemicals Company, a Division of Conoco Inc., is submitting an application for approval of construction for a proposed expansion at Conoco Chemicals Company's PVC Plant located in Aberdeen, Mississippi.

The expansion entails the addition of two PVC polymerization reactors (one in each of the existing reactor modules) and a fluid bed dryer. This project will increase the plant's annual rated capacity of polyvinyl chloride (PVC) by 130 million pounds per year. The total plant's maximum daily operating design capacity after this expansion will be 1,370,000 pounds of PVC per day. The expanded plant will utilize the same suspension polymerization process which is currently employed in the plant; the volume of the new reactors will be 30,000 gallons each.

The existing recovery systems for unreacted vinyl chloride and associated emission control equipment, i.e. emission recovery system, water strippers, and incinerator, will be used to control the vinyl chloride emissions as prescribed by 40 CFR 61 Subpart F. The description of the equipment is outlined in this plant's "Emission Test Report" (refer to Mr. Douglas Michels' letter to Mr. Tommie A. Gibbs dated October 25, 1978) and this plant's "Compliance Manual" (refer to Mr. Douglas Michels' letter to Tommie A. Gibbs dated August 14, 1978). Since the plant employs a batch polymerization process, the instantaneous load on the existing recovery systems will remain the same even after the expansion. However, the frequency of operation of the recovery systems will increase because more batches will be produced with the addition of the reactor to each module. For example, each recovery system now normally operates (compressors and vacuum pumps actually running) fourteen hours per day. After the proposed reactors are installed the recovery system will normally operate eighteen hours per day. The incinerator which is the primary control device normally operates continuously with inerts and vinyl chloride fed to the unit at a low rate. With the installation of the new reactors, additional inerts will be generated and ultimately burned in the incinerator. This will

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result in a slightly higher rate to the incinerator. This feed rate will be less than the burning rate during the Emission Test in which the exhaust gas from the incinerator contained less than 1 ppm vinyl chloride. ("Emission Test Report", Mr. Douglas Michels' letter to Mr. Tommie A. Gibbs dated October 25, 1978). Thus the present incinerator is adequate to reduce the exhaust from the expanded plant to meet the requirement of the standard that vents contain no more than 10 ppm vinyl chloride.

The operating parameters and procedures for Section 61.64 of Subpart F are reported in the letter to Mr. Tommie A. Gibbs from Mr. Douglas Michels dated August 14, 1978. In reference to Section 61.65 of Subpart F, the operating parameters and procedures for the incinerator and waste water strippers will remain the same as those outlined in this plant's "Emission Test Report" (refer to Mr. Douglas Michels' letter to Mr. Tommie A. Gibbs dated October 25, 1978). The plant has a contingency plan for manual venting of gases, Section 61.65 (b) (5), in case the incinerator is out of service. If the incinerator is down for repairs, the plant vents the gases to empty VCM storage tanks (bullets). The bullets have sufficient gas containment volume to allow the plant to operate for several days without the incinerator. If the bullets become pressurized with vent gases, the plant will shut down to comply with the National Emission Standard for Vinyl Chloride rather than vent the gases to the atmosphere. After the incinerator is back in service, the gases are burned in the incinerator. The plant plans to install a second incinerator so that in case of a major problem with the existing incinerator it will not be necessary to shut the plant down. With the second incinerator installed the vents will be incinerated in the new unit if the existing unit is inoperable. As a result of the expansion off gas from the incinerator will be increased by about 3000 SCFH. At a concentration of 10 ppm vinyl chloride in the off gas from the incinerator increased vinyl chloride emissions from the incinerator will be about 45 pounds per year.

There will be only minor increases in fugitive emissions from pumps and compressors. New pumps to transfer vinyl chloride from the storage area to the process area will be equipped with double mechanical seals to minimize vinyl chloride emissions. All existing pumps and compressors in vinyl chloride service which will be used in conjunction with the expansion are presently equipped with double mechanical seals. The agitator for the new reactors will be installed with double mechanical seals. All of the relief valves on the new reactors will be installed with a rupture disc between the reactor and the relief valve. A new reciprocating compressor will be installed in the vinyl chloride unloading area with the expansion. The crankcase head of the compressor will be vented to the emission recovery system to minimize vinyl chloride emissions. Fugitive emissions from railcar unloading are estimated to increase by 48 pounds per year due to unloading of 722 additional railcars per year.

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If further information is required for approval of this application, please contact me at 601-369-8111, extension 239.

Sincerely,



R. A. Frohreich
Chief Process Engineer

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c: Wayne B. Anderson - Mississippi Bureau of Pollution Control