

December 9, 2019

Mr. Laurence Coyle  
Plant Manager  
Stepan Company  
951 Bankhead Hwy  
Winder, GA 30680

Re: Response to Letter Dated November 22, 2019, Regarding Ethylene Oxide Emissions and Testing

Dear Mr. Coyle:

The Environmental Protection Division (hereafter “Division”) has received your letter dated November 22, 2019, regarding the emissions of ethylene oxide (“EO”) from the Stepan Company facility in Winder, GA (hereafter “Stepan”). In the letter, Stepan proposed actions that will be taken to reduce, monitor, and calculate EO emissions from the facility. These actions are in response to modeling analysis conducted by the Division using US EPA’s updated risk calculations for EO. The modeling analysis confirms that risk from ethylene oxide concentrations in residential areas near the Winder facility do not pose an unacceptable risk, meaning that the modeled risk of developing excess cancers does not exceed 100-in-a-million for an individual if that person was exposed to that concentration continuously for a lifetime. However, the modeled annual concentrations are high enough to require a demonstration that the maximum degree of reduction in emissions of ethylene oxide has been implemented at Stepan.

Pursuant to Stepan’s letter, the Division requires additional information to further understand and evaluate the measures taken or to be taken at Stepan to further reduce ethylene oxide emissions.

Stepan indicated that it will be implementing an enhanced Leak Detection and Repair (“LDAR”) program. The Division requires more specific information related to this program. At a minimum, Stepan must provide specific details on what will be implemented with the enhanced LDAR program including the points that will be monitored, the procedures that will be used to perform the monitoring, the personnel that will be trained and authorized to conduct the monitoring, the records that will be kept, and the frequency of the monitoring. To fulfill this information request, Stepan must submit a written LDAR plan containing these elements to the Division for review and approval no later than January 31, 2020.

The letter mentioned above indicates that rupture disks will be installed under all pressure relief valves. The Division requires more information on the design and installation of the rupture disks. This information must include, at a minimum, the date when the rupture disks will be installed, a description of the disks being installed, the burst pressure rating of the disks, the pressure settings of the relief valves, changes made, if any, to address the change in relieving capacity, any other relevant design or modification details, and inspection and maintenance schedules and protocols for the new combined rupture disks and relief valves. This information must be submitted to the Division before the installation of the rupture disks but no later than January 31, 2020.

The letter mentioned above refers to emissions calculations, emissions totals, and the validation of operating conditions used in the calculation of facility EO emissions. The letter does not provide further detail on the bases and assumptions used in developing these calculations. The Division requires the submittal of a detailed emissions calculation that includes, at a minimum, the method used to calculate emissions, values used in that calculation method such as operational parameters or production values, emission factors used in the emissions calculations including their origin, and any assumptions made in the calculations. The calculations must also show the predicted benefit from each of the proposed control measures (e.g. LDAR, rupture disks, etc.). This information must be submitted to the Division no later than January 31, 2020.

The information due to the Division no later than January 31, 2020 shall also include an analysis of what actions can be taken to further reduce emissions from the storage tanks that contain ethylene oxide.

Stepan has committed to submit a plan for testing EO emissions from the facility's emission control device by February 29, 2020. The Division concurs with this commitment and timeline for the submittal of the test plan. Additionally, the Division requires the testing to be completed no later than April 15, 2020. If it is not technically feasible to complete the testing by this date, Stepan must inform the Division on the reasons the testing cannot be completed by this date and the earliest date the testing can be completed.

With the changes currently proposed at the facility, Stepan must submit a permit application that incorporates the changes that will be implemented. Specifically, the application must include the LDAR program as discussed above. Any additional modifications or changes that are planned or will be implemented at the facility must be included as well. The application shall be submitted no later than March 31, 2020.

The Division appreciates the measures being taken by Stepan to further reduce emissions of ethylene oxide. We will evaluate your response to this information request to determine if the maximum degree of reduction in emissions of ethylene oxide has been implemented at Stepan, or if additional controls are required.

If you have any questions or need more information, please contact me at (404) 363-7016 or via email at karen.hays@dnr.ga.gov.

Sincerely,

A handwritten signature in black ink that reads "Karen Hays". The signature is written in a cursive, flowing style.

Karen D. Hays, P.E.  
Chief  
Air Protection Branch