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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-1823K
Plant ID No.: 107-00182
Applicant: The Chemours Company FC, LLC
Facility Name: Washington Works
Location: Washington, Wood County
NAICS Code: 325211, 325120, 325222
Application Type: Class II Administrative Update
Received Date: May 21, 2015
Engineer Assigned: Mike Egnor
Fee Amount: \$300.00
Date Received: June 3, 2015
Complete Date: June 15, 2015
Due Date: August 14, 2015
Applicant Ad Date: June 5, 2015
Newspaper: *Parkersburg News*
UTM's: Easting: 442.31 km Northing: 4,346.8 km Zone: 17
Description: An increase of 6.09 pph and decrease of 0.013 TPY of VOC's for Emission Source T7JK. An overall decrease of 0.314 of VOC's from Emission Point T7XIE. The Permittee has switched from Methanol (a HAP/VOC) to Ethanol (a VOC) for Emission Point T7XIE. Limits and references to methanol will be removed from Condition 4.1.2 and 4.1.4. Changed the VOC emission limit in the Table in Condition 4.1.4 from 19.8 to 19.5 TPY. Revised emission limits for VOC's downward for Condition 4.1.1 For Emission Point T7XIE. Changed references to R13-2617 to R13-3223 in Conditions 4.1.24 and 4.1.25. Removed the reference "with a maximum of forty-five (45) days between consecutive readings." from Condition 4.2.1 to allow consistency throughout the facility. Removed Methanol Emission recordkeeping from Attachment E.

INTRODUCTION

On May 21, 2015 The Chemours Company FC, LLC (Chemours) submitted a Class II Administrative Update for the proposed revisions to process equipment located at the Washington Works Plant, currently covered under permit R13-1823J.

On June 12, 2015, Chemours submitted an affidavit of publication indicating that the required legal notice was run in the Parkersburg News on June 5, 2015, initiating the 30-

day public notice period. Chemours also submitted the application fee of \$300 June 3, 2015 to meet the requirements associated with the Application for Modification Permit.

DESCRIPTION OF PROCESS

The T1-T4, T7 area produces fluromonomers tetrafluoroethylene (TFE) and hexafluoropropylene (HFP); an intermediate, perfluorocyclobutane; and byproducts hydrogen chloride (HCl, aqueous) and calcium fluoride (CaF₂, solid). The production facility is divided into the following logical sections: T1-TFE Synthesis, T2-TFE Refining, T3-HFP Synthesis, T4-HFP Refining, and T7-Utilities.

Fluorocarbons are reacted by pyrolysis in T1 section and the products are separated to form crude TFE and recovered byproducts. TFE is refined in T2 section. In-process materials and intermediates are reacted by pyrolysis in T3 section to form crude HFP that is then refined in T4 section.

T7 section is comprised of several utilities, including refrigeration and cold brine supply, the unit vacuum systems for maintenance clearing of equipment, waste acid neutralization, and the thermal converter. The thermal converter combusts fluorine-containing byproduct gases from the other process sections (and from polymerization operations in C1, C2, and T6 sections) and two different non-hazardous fluorine-containing liquid streams to produce aqueous hydrogen fluoride (HF) which is reacted with slaked lime (calcium oxide or CaO) to form CaF₂.

Several pieces of equipment referenced within this permit application are maintained up to twice a year. In order to prepare some of these vessels for maintenance, they are cleaned with ethanol, in order to remove residual toxic chemicals. The resultant spent ethanol is transferred into a waste tanker truck and shipped off-site for proper disposal through incineration. Several pieces of equipment are no longer cleaned with alcohol, but with citric acid, which is transferred into a waste tanker truck when spent, and shipped off-site for proper disposal.

SITE INSPECTION

No site inspection was performed by the permitting engineer for this modification as the facility is well known to the DAQ and is frequently inspected by members of the DAQ Enforcement Section.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

- Revised Emission Calculations

Emission Point T7XIE has eight Emission Sources that have switched from Methanol (VOC/HAP) to Ethanol (VOC) for maintenance cleaning. Four emission sources has switched from Methanol (VOC/HAP) to Citric Acid for maintenance cleaning. There will be an overall increase of 6.09 pph for Emission Source T7JK and an overall decrease of 0.314 tpy of VOC's and elimination of Methanol (HAP's) for Emission Point T7XIE.

Emissions Summary

The proposed changes addressed in permit application R13-1823K shall result in the affected emission points undergoing a net emissions rate change as shown in the following Table 2 - Net Emissions Summary.

Table 2 - Net Emissions Summary

Source ID	Current state: VOCs (as Ethanol)		Former state: HAP/VOC (as methanol)		Change
	pph	tpy	pph	tpy	tpy
T1XG	46.1	0.024	54.1	0.028	-0.004
T4GK	3	0.028	6.1	0.04	-0.012
T4GM	17.05	0.031	24.05	0.039	-0.008
T4GS	17.05	0.034	24.05	0.043	-0.009
T4XK	17.05	0.03	24.05	0.038	-0.008
T7JK	7.22	0.007	1.13	0.02	-0.013
T7EI, T7XI	0.045	0.01	0.044	0.01	0
Citric Acid now used for the sources below:			MeOH (pph)	MeOH (tpy)	-0.054 subtotal
T1XD	N/A	N/A	70.6	0.036	-0.036
T2XJ	N/A	N/A	24.1	0.041	-0.041
T2XM	N/A	N/A	158.3	0.080	-0.080
T2XN	N/A	N/A	76.4	0.103	-0.103
					-0.260 subtotal
					-0.314 total

REGULATORY APPLICABILITY

The following State and Federal regulations were considered for applicability to the subject facility:

The following regulations apply to this production unit: West Virginia Regulations 7, 13, 21, 30 and US EPA MACT Standards for the Miscellaneous Organic NESHAP.

RACT

45CSR21-40.3.c requires RACT analysis on a case by case basis for those VOC emissions greater than 6 pph which are constructed, modified, or begin operation after the date 45CSR 21 becomes effective. Permit R13-3223 requires RACT analysis for any increase in VOC from sources listed in R13-3223. For only one source – T7JK, are we requesting an increase in VOC emissions; this source is not on the R13-3223 list. While the increase in emissions is estimated to be 7.22 pph ethanol, the emissions are from maintenance cleaning, and only yield up to 0.007 tpy VOCs. In the past, the T7 area had accounted for methanol emissions from the same cleaning operation. The T7 area has revised their procedure to use ethanol – a Non-HAP, rather than methanol – a HAP and VOC. In the past, methanol emission from T7JK were estimated to be 1.13 pph and 0.02 tpy. Therefore, although the ethanol emissions from source T7JK are higher from a pph perspective (because of the amount used at one time), emissions of HAPs and VOCs will be reduced.

This class II permit amendment application is being filed under 45CSR13 since a slight increase in VOC emissions from T7JK is being requested. Overall, methanol emissions will decrease by 0.478 tons/year and VOC emissions associated with the sources identified in this application will decrease by 0.314 tpy. Additionally, other Reg.13 and Title V language requests are being made to clean up both permits with the submission of the Title V permit renewal application for R30-10700182.

PSD

As of January 2, 2011, pursuant to actions taken by the USEPA, Greenhouse Gases (GHGs) became a regulated pollutant under the major NSR program. As such, an evaluation must be done for any increase in GHG emissions resulting from construction or modification to determine PSD applicability per 40 CFR 52.21. There are no new emissions of components listed in table A-1 of 40 CFR 98.2 therefore PSD for GHG does not apply.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Although it is not one of the 189 HAPs, ethanol is an air toxic and has been assigned a time weighted average Recommended Exposure Limit (NIOSH) and Permissible Exposure Limit (OSHA) of 1000 ppm each.

AIR QUALITY IMPACT ANALYSIS

Due to fact that there will be an overall decrease in HAP (Methanol) and VOC's due to this modification, there will be no impact on air quality.

MONITORING OF OPERATIONS

Removed the reference “with a maximum of forty-five (45) days between consecutive readings.” from Condition 4.2.1 to allow consistency throughout the facility. Methanol has been removed from Emission Point T7XIE from the recordkeeping

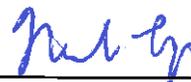
requirements found in Attachment E as it is no longer be used from those sources.

Changes to R13-1823J include:

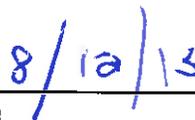
1. Removed Methanol recordkeeping for Emission Point T7XIE from Attachment E.
2. Update Permit Number to R13-1823K.
3. Changed the reference to the Rule 21/27 requirements from R13-2617 to R13-3223 in Conditions 4.1.24 and 4.1.25.
4. Added R13-1823K to condition 2.5.1.
5. Changed the VOC emission limit for T7XIE in Condition 4.1.1 from 2,795 pph and 34.14 to 2,440 pph and 33.83.
6. Removed Methanol from the Table in Condition 4.1.2 and 4.1.4.
7. Changed the VOC Emission Limit in the Table in Condition 4.1.4 from 19.8 to 19.5 TPY.
8. Removed the phrase “with a maximum of forty-five (45) days between consecutive readings.” from Condition 4.2.1 to allow consistency throughout the facility.

RECOMMENDATION TO DIRECTOR

Permit application, R13-1823K, submitted by The Chemours Company FC, LLC, for the administrative permit update of the production facility located at the Washington Works Plant in Washington, Wood County, WV, has been reviewed and determined to meet all applicable requirements, and is therefore, recommended for approval.



Mike Egnor
Engineer



Date