



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-1823J
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: January 26, 2015
Engineer Assigned: Mike Egnor
Fee Amount: \$300.00
Date Received: January 26, 2015
Complete Date: February 10, 2015
Due Date: March 7, 2015
Applicant Ad Date: January 27, 2015
Newspaper: *Parkersburg News*
UTM's: Easting: 442.31 km Northing: 4,346.8 km Zone: 17
Description: Addition of two hydrochloric acid storage tanks (T2ET and T2EU) at the Monomer production unit. These units are subject to 40 CFR Subpart NNNNN (HCl MACT) which includes requirements for equipment leaks under 40CFR Subpart H. The control device for these tanks will be the already existing packed bed scrubber T2ERC. There will be an increase of HCl emissions of 5.0 lbs/yr. Change of ID number from 107-00001 to 107-00182, change of Permittee name from 107-00001 and "E.I. du Pont de Nemours & Co." to "The Chemours Company FC, LLC.", and change of Facility name from "DuPont Washington Works" to "Washington Works". Changed the name in Attachment A, B, and C from "DuPont Washington Works" to "Washington Works."

INTRODUCTION

On January 7, 2015 and resubmitted on February 7, 2015, E.I. du Pont de Nemours and Company (DuPont) submitted a Class II Administrative Update for the proposed revisions to process equipment located at the Washington Works Plant, currently covered under permit R13-1823I.

On February 3, 2015, DuPont submitted an affidavit of publication indicating that the

required legal notice was run in the Parkersburg News on January 27, 2015, initiating the 30-day public notice period. DuPont also submitted the application fee of \$300 to meet the requirements associated with the Application for Modification Permit.

On February 2, 2015, WV DEP approved the transfer of ID number from 107-00001 to 107-00182, change of Permittee name from 107-00001 and "E.I. du Pont de Nemours & Co." to "The Chemours Company FC, LLC.", and change of Facility name from "DuPont Washington Works" to "Washington Works".

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.

Aqueous HCl is produced from anhydrous HCl, which is created as a byproduct of the manufacture of fluorocarbons. This acid is stored in FRP storage tanks until being loaded into railcars for sale. The HCl production unit is subject to 40 CFR 63 subpart NNNNN - the HCl Mact as an existing facility; it was started up prior to April 17, 2003. The HCl section of the unit has the capacity to produce hydrochloric acid. The subject equipment will include the portion of the unit at and beyond which aqueous hydrochloric acid is produced. The product acid is air-stripped to the fluorocarbon production, are vented to a thermal incinerator equipped with a primary recovery scrubber followed by a secondary caustic scrubber. Emissions from the air stripper, the storage vessel and loading operations are vented through a separate water scrubber system. The underflow of the scrubber is used for make-up in the process, so the collected material is recovered into the product. The unit also has potential emissions from equipment leaks.

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

The addition of two new hydrochloric acid tanks (T2ET and T2EU) have the capability of HCl emissions. These emissions are vented to the water scrubber (T2ERC). The increase of HCl emissions due to the addition of these tanks will be approximately 5 pounds/year after the 99+% treatment of the scrubber. Therefore the HCl limits of Condition 4.1.2 will not change.

Emissions Summary

The proposed changes addressed in permit application R13-1823J 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

Emission Source (R13-1823J)	Net Emissions Rate (pounds/year)
	HCl
T2ERE	5.0
Net Emissions (pound/year)	5.0
Net Emissions (ton/year)	<0.01

REGULATORY APPLICABILITY

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

45CSR7 "To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations"

45CSR7 may apply to vent streams from the proposed tanks prior to controls. Vents from both HCl tanks (T2ET and T2EU) will be captured by the water scrubber (T2ERC) to prevent particulate and/or visible emissions.

45CSR13 "Permits for Construction, Modification, Relocation, and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation"

The proposed changes to the existing permit, R13-1823J, result in emission points not previously permitted including HCl Aqueous Acid Tanks #1 and #2 (T2ET and T2EU). The resulting net emissions change in criteria pollutants and HAP emissions are less than the modification thresholds of 6 pounds per hour and 10 tons per year of criteria pollutants, and 2 pounds per hour or 5 tons per year of hazardous air pollutants. However, due to the fact that the proposed changes were associated with the 40 CFR 60 Subpart NNNNN HCl MACT, including the addition of new emission points, the application was submitted as a modification permit per this rule.

45CSR14 "Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration (PSD)"

The proposed change of any single pollutant does not meet the definition of "significant increase" per 45CSR14-2.46. and therefore, is not applicable to the requirements of this rule.

45CSR30 "Requirements for Operation Permits"

The facility in which the subject emission unit resides is subject to 45CSR30. The Company shall update their Title V permit to reflect the changes incorporated by proposed permit modification R13-1823J.

45CSR34 "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

HCl is a hazardous air pollutant (HAPs) identified as being present in the effected process. The facility is subject to 40 CFR 63, Subpart NNNNN HCl MACT.

40CFR63 "NESHAP: Hydrochloric Acid Production"

The existing HCl manufacturing system, which includes the aqueous HCl Storage Tank (T2ER) and process vents, is regulated under the HCl MACT, which requires Monomer to maintain 99% control efficiency of HCl at the North Tank Farm Scrubber (T2ERC), or a reduction the HCl outlet concentration to less than or equal to 20 ppmv. This same requirement applies to the two proposed HCl storage tanks (T2ET and T2EU). The installation and operation of the new tanks does not trigger additional requirements under the HCl MACT. The Permittee will continue to conduct the required performance testing under the HCl MACT to verify compliance with the emission standards.

40CFR63 "NESHAP: Equipment Leaks"

The Permittee has implemented a leak detection and repair (LDAR) program for fugitive emission equipment in HCl service (30% by weight or higher) under the heavy liquid requirements found in 40CFR 53.169. This program will be extended to the proposed HCl tanks (T2ET and T2EU).

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Hydrogen Chloride Exposure Limits

5 ppm OSHA TLV-C

5 ppm OSHA CEIL

2 ppm (ACGIH) TLV-C

5 ppm 15 min TWA, Skin - (DuPont) AEL

Potential Health Effects: The compound causes severe skin burns, and may cause corrosion with pain, ulceration or blisters, cracking or peeling of skin. The compound causes eye burns and is corrosive, may cause permanent eye injury if not promptly treated. It may cause blindness. The compound causes respiratory tract irritation. It may cause: nausea, fluid in the lungs (pulmonary oedema) with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness

of breath and bluish discoloration of the skin (symptoms might be delayed). If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Symptoms may be delayed. The compound causes adverse effects from repeated inhalation which may include: Altered lung function or difficulty breathing.

Target Organs: The target organ for this compound is respiratory tract lungs.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

AIR QUALITY IMPACT ANALYSIS

Due to fact that the emission limits of Condition 4.1.2 will not be changed, there will be insignificant impact due to the addition of the HCl tanks (T2ET and T2EU)

MONITORING OF OPERATIONS

There have been no proposed changes associated with the monitoring and record keeping requirements currently required and practiced under existing permit R13-1823J. The permittee shall maintain the following as required by R30-107-00001-2010 Conditions 7.2.3 and 7.4.4:

Monitoring

The Scrubber T2ERC will continue be required to monitor the scrubber base temperature, operating at or below 82 degrees Celsius; and fresh water make-up to the top section off the scrubber, measured with a flow meter, at or above 1,000 lbs/hr; or scrubber recirculation pump maintains power above 1.4 amps for recirculation of scrubber liquor.

Recordkeeping

The Permittee will continue to keep records of any malfunctions lasting in excess of 30 minutes as well as maintain records that support compliance with HCl MACT emission standards, including the data collected as referenced in the monitoring section above..

Reporting

The Permittee will continue to provide semi-annual compliance reports required under HCl MACT 40CFR§63.9050.

Testing

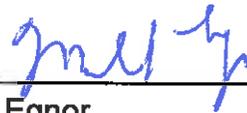
The Permittee will continue to conduct performance testing every 5 years as required by the HCI MACT in 40CFR§63.9015.

Changes to R13-1823J include:

1. Addition of HCI tanks T2ET and T2EU.
2. Update Permit Number to R13-1823J.
3. Change of ID number and Permittee name from 107-00001 to 107-00182, change of Permittee name from 107-00001 and "E.I. du Pont de Nemours & Co." to "The Chemours Company FC, LLC.", and change of Facility name from "DuPont Washington Works" to "Washington Works".
4. Changed the facility name in Attachments A, B, and C from "DuPont Washington Works" to "Washington Works".

RECOMMENDATION TO DIRECTOR

Permit application, R13-1823J, submitted by E. I. du Pont de Nemours and Company, 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