NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Mooresville Regional Office
County: Rowan
NC Facility ID: 8000182
Inspector's Name: Amir Stewart
Date of Last Inspection: 08/20/2024
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Nouryon Surface Chemistry LLC - Salisbury Plant

Facility Address:
Nouryon Surface Chemistry LLC - Salisbury Plant
485 Cedar Springs Road
Salisbury, NC 28147

SIC: 2869 / Industrial Organic Chemicals,nec
NAICS: 325199 / All Other Basic Organic Chemical Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 02D .0503, 02D .0515, 02D .0516, 02D .0521, 02D .0524, 02D .0951, 02D .0958, 02D .1100, 02D .1111, 02D .1806, 02D .2100, 02Q .0317, 02Q .0711
NSPS: Dc, IIII
NESHAP: ZZZZ, VVVVVV
PSD: Yes
PSD Avoidance: VOC, NOx
NC Toxics: 02D .1100, 02Q .0711
112(r): RMP required
Other: RACT, HAP-Major avoidance, GACT 6J avoidance

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Jonathan Parker Site Director (704) 431-6006 485 Cedar Springs Road Salisbury, NC 28147	Jonathan Parker Site Director (704) 431-6006 485 Cedar Springs Road Salisbury, NC 28147	Rodney Skipper HSE&S Specialist 485 Cedar Springs Road Salisbury, NC 28147

Application Data

Application Number: 8000182.24C, 000182.20B, 8000182.22A, 8000182.23A, 8000182.23B, 8000182.23C, 8000182.24A, and 8000182.24B
Date Received: 11/08/2024, 11/25/2020, 10/19/2022, 03/27/2023, 09/20/2023, 10/02/2023, 07/15/ 2024, and 10/18/2024
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 09900/T17
Existing Permit Issue Date: 12/16/2021
Existing Permit Expiration Date: 05/31/2025

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	0.0600	13.79	56.60	8.39	0.3200	10.40	3.76 [Ethylene dichloride (1,2-dichl]
2022	0.0600	14.67	52.28	8.40	0.3300	9.91	3.94 [Ethylene dichloride (1,2-dichl]
2021	0.0600	18.61	65.51	8.28	0.3400	7.94	3.95 [Ethylene dichloride (1,2-dichl]
2020	0.0600	17.01	43.67	8.48	0.3500	6.74	2.53 [Ethylene dichloride (1,2-dichl]
2019	0.0600	16.24	42.80	8.46	0.3400	5.19	1.87 [Vinyl acetate]

Review Engineer: Betty Gatano

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 09900/T18
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

Nouryon Surface Chemistry LLC - Salisbury Plant (NSC) currently holds Title V Permit No. 09900T17 with an expiration date of May 31, 2025 for a chemical manufacturing facility in Salisbury, Rowan County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on November 8, 2024, or at least six months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

NSC also submitted the following permit applications, and these will be consolidated as part of this permit renewal:

- Permit Application No. 8000182.20B – The 502(b)(10) notification was received on November 25, 2020 to replace a condenser (ID No. CD-A2-2-MV3C-3) on a chemical reactor (ID No. MV3) in Area 2 with a functionally equivalent condenser. The new condenser will retain the same ID number.

- Permit Application No. 8000182.22A – The 502(b)(10) notification was received on October 19, 2022 to replace a neutralizer stripper vessel (ID No. S9V) in Area 2. The new vessel will retain the same ID number.

- Permit Application No. 8000182.23A – The 502(b)(10) notification was received on March 27, 2023 to replace the dry vacuum pump on the batch distillation vessel (ID No. S20V) in Area 2 with a new vacuum pump.

- Permit Application No. 8000182.23B – The 502(b)(10) notification was received on September 20, 2023 to replace an existing isopropyl alcohol (IPA) storage tank (ID No. TK63) controlled via condenser (ID No. V98-X1) in the Area 1: Firebird Process. A second 502(b)(10) notification dated September 21, 2023 requested to replace another existing IPA storage tank (ID No. T48) in the Area 1: Firebird Process. Both new tanks will retain the same ID numbers.

- Permit Application No. 8000182.23C – The 502(b)(10) notification was received on October 2, 2023 to replace an existing dichloroethane (DCE) storage tank (ID No. TK47) in Area 2. The new tank will retain the same ID number.

- Permit Application No. 8000182.24A – The 502(b)(10) notification was received on July 15, 2024 to replace a mixing vessel (ID No. R7) in Area 1. The new vessel will retain the same ID number.

- Permit Application No. 8000182.24B – The 502(b)(10) notification was received on October 18, 2024 to replace an existing allyl chloride storage tank (ID No. TK16) in the Area 1 tank farm.

2. Facility Description

NSC is engaged in the manufacturing of intermediate chemicals used in personal care products, such as specialty polymer products including glue used in hair mousse and other compounds (Area 1), sulfonated polystyrenes (Area 2), ultraviolet absorbing resin used in hair spray (Area 3), and monomers (Area 4). The facility is in operation 24 hours a day, 50-52 weeks per year.

Prior to 2008, the facility operated as National Starch and Chemical Company – Cedar Springs Plant ("National Starch"), under Facility ID No. 8000055. In April 2008, AkzoNobel SPG, LLC

("AkzoNobel") acquired some of the emission sources at the facility, and Indopco, Inc. dba Henkel ("Henkel") acquired the remainder of the facility. Facility ID No. 8000055 for National Starch was assigned to Henkel with Air Permit No. 05279R49 issued on October 7, 2008. Henkel became a synthetic minor under this permit. AkzoNobel became a Title V facility and was assigned facility ID No. 8000182 with Air Permit No. 09900T00 issued on October 7, 2008.

Henkel changed owners to Henkel US Operations under Air Permit No. 05279R56 issued on December 13, 2018.

AkzoNobel changed owners to NSC under Air Permit No. 09900T15 issued on September 27, 2019.

NSC is a Title V facility because potential emissions of volatile organic compounds (VOCs) exceed the threshold of 100 tons per year. The facility has taken an avoidance condition to remain a minor source of hazardous air pollutants (HAPs).

3. History/Background/Application Chronology

History/Background

06/06/2020	TV permit renewal issued. Air Permit No. 09900T16 was issued on June 6, 2020 with an expiration date of May 31, 2025. *(See Russell Braswell's TV review for permit No. 09900T16, dated June 6, 2020).*
12/16/2021	Air Permit No. 09900T17 was issued for a State-only application to replace the existing CERCLA air stripper (ID No. CERCLA-1) and the associated control devices [catalytic oxidizer (ID No. CD-CERCLA-1a) and packed-column scrubber (ID No. CD-CERCLA-1b)] with a CERCLA Groundwater Pretreatment System (ID No. CERCLA-3). The existing system could not remove iron and manganese present in the groundwater, resulting in potential exceedances of the facility's discharge limit to the local publicly owned treatment works (POTW). NSC expected an increase in toxic air pollutant emissions as a result of the upgrade. *(See Jeff Twisdale's TV review for permit No. 09900T17, dated December 16, 2021).*

Application Chronology

11/25/2020	Received permit application 8000182.20B for a 502(b)(10) change to replace a condenser (ID No. CD-A2-2-MV3C-3) on a chemical reactor (ID No. MV3) in Area 2 with a functionally equivalent condenser.
12/16/2020	DAQ issued a 502(b)(10) acknowledgement letter via e-mail for replacement of the condenser (ID No. CD-A2-2-MV3C-3).
10/19/2022	Received permit application 8000182.22A for a 502(b)(10) change to replace a neutralizer stripper vessel (ID No. S9V) in Area 2.
10/20/2022	DAQ issued a 502(b)(10) acknowledgement letter via e-mail for replacement of the neutralizer stripper vessel (ID No. S9V).
03/27/2023	Received permit application 8000182.23A for a 502(b)(10) change to replace the dry vacuum pump on the batch distillation vessel (ID No. S20V) in Area 2.

04/03/2023	DAQ issued a 502(b)(10) acknowledgement letter via e-mail for replacement of dry vacuum pump on the batch distillation vessel (ID No. S20V).
09/20/2023	Received permit application 8000182.23B for a 502(b)(10) change to replace an existing IPA storage tank (ID No. TK63) in the Area 1: Firebird Process. On 09/21/2023, NSC forwarded a second 502(b)(10) change to replace existing IPA storage tank (ID No. T48) in the Area 1: Firebird Process. Inadvertently, no notification acknowledgement was sent for the replacement of these tanks.
10/02/2023	Received permit application 8000182.23C for a 502(b)(10) change to replace an existing DCE storage tank (ID No. TK47) in Area 2.
10/05/2023	DAQ issued a 502(b)(10) acknowledgement letter for replacement of the existing DCE storage tank (ID No. TK47).
07/15/2024	Received permit application 8000182.24A for a 502(b)(10) change to replace a mixing vessel (ID No. R7) in Area 1.
07/18/2024	DAQ issued a 502(b)(10) acknowledgement letter for replacement of the existing mixing vessel (ID No. R7).
10/18/2024	Received permit application 8000182.24B for a 502(b)(10) change to replace an existing allyl chloride storage tank (ID No. TK16) in the Area 1 tank farm.
10/29/2024	Jeff Twisdale of the DAQ and Chris Fleming, former Environmental Manager for NSC, exchange a series of e-mails regarding storage tank TK16, which is not included on the air permit. Mr. Fleming explained that tank TK16 is included in the air emission inventory for NSC as "VOC Emissions from Storage Tanks," and no emissions are expected from this tank as it is controlled via a vent return and nitrogen blanket.
10/29/2024	DAQ issued a 502(b)(10) acknowledgement letter via e-mail for replacement of the allyl chloride storage tank (ID No. TK16) in the Area 1 tank farm.
11/08/2024	Received permit application 8000182.24C for TV permit renewal.
11/08/2024	DAQ issued an acknowledgment letter indicating that the application for permit renewal was complete.
12/27/2024	Betty Gatano sent an e-mail to Jonathan Parker, Site Director for NSC, requesting emission information on the 502(b)(10) notifications.
01/02/2025	Betty Gatano discussed the request for emission information via phone with Marco Salenda, Regional Environmental Manager of NSC. Mr. Salenda indicated the facility environmental contact is no longer with NSC and requested 60 days to provide the requested information due to timing conflict with end of the year reporting.
01/03/2025	Betty Gatano sent an e-mail to Jonathan Parker requesting clarification on the tank ID numbers in the 502(b)(10) notification received on October 2, 2023 (Application No.

	8000182.23C) and in the 502(b)(10) notification received on October 18, 2024 (Application No. 8000182.24B). Mr. Parker provided a response that same day.
01/05/2025	Betty Gatano requested updated permit conditions for the boilers and engines at NSC from Joseph Voelker, Permitting Supervisor, as per permitting procedures.
02/08/2025	Joseph Voelker provided the updated permit conditions for the boilers and engines at NSC.
02/14/2025	Betty Gatano participated in a call with Graham Donaldson, Consultant for NSC, to discuss information requested in the e-mail dated December 27, 2024. Mr. Donaldson reviewed how NSC calculates emissions from their various processes with Ms. Gatano during the call.
02/21/2025	Draft permit and permit review forwarded to Rahul Thaker, Permitting Supervisor, for review.
02/28/2025	Betty Gatano participated in a call with Graham Donaldson to discuss applicability of 40 CFR Part 63 Subpart VVVVVV (GACT Subpart 6V). In addition to the emission sources noted in the permit, Mr. Donaldson indicated the slow add tank ID No. SAT-2-3 is also subject to GACT 6V.
02/28/2025	NC DAQ has determined that per- and polyfluoroalkyl substances, also known as PFAS, may be emitted from facilities operating under SIC Code 2869, such as NSC. Betty Gatano forwarded a questionnaire to Jonathan Parker of NSC requesting information about PFAS usage at the facility.
03/03/2025	Jonathan Parker of NSC sent an e-mail confirming ID No. SAT-2-3 is also subject to GACT 6V.
03/24/2025	Jonathan Parker provided a response to the PFAS questionnaire to the DAQ. NSC's response is included in Attachment 1 to this document.
03/29/2025	Comments on draft permit and permit review received from Rahul Thaker.
04/02/2025	Betty Gatano forwarded an e-mail to Jonathan Parker requesting clarification on the 502(b)(10) notifications received on 09/20/2023 and 09/21/2023. Mr. Parker provided a response that same day indicating IPA storage tanks (ID Nos. TK63 and T48) were both replaced. Mr. Parker also provided the correct notification form for tank T48.
04/04/2025	Betty Gatano forwarded an e-mail to Jonathan Parker regarding feedback on minor issues with the draft permit.
04/07/2025	Jonathan Parker provided responses to the 04/04/2025 e-mail.
04/29/2025	Revised draft permit and permit review forwarded to Jonathan Parker of NSC, Samir Parekh of DAQ's Stationary Source Compliance Branch (SSCB), and Melinda Wolanin and Seth Hall of the Mooresville Regional Office (MRO).
05/02/2025	Samir Parekh indicated he had no comments on the draft.

05/6/2025	Marco Selenda of NSC requested an extension for comments until May 14, 2025. DAQ agreed with this request.
05/14/2025	Received comments for NSC on draft permit and permit review.
05/15/2025	Betty Gatano participated in a call with Marco Selenda and Graham Donaldson to discuss NSC's comments.
05/19/2025	Betty Gatano requested permit conditions for the insignificant emergency engines (ID Nos. IS-EG-02 and IS-EmGen) from Joseph Voelker, Permitting Supervisor, as per permitting procedures. NSC has requested to move these engines onto the body of the permit.
05/23/2025	Joseph Voelker provided the updated permit conditions for these engines.
05/28/2025	Second draft of permit and permit review forwarded to Rahul Thaker, Permitting Supervisor, for review prior to drafts going to public notice. Mr. Thaker provided comments that same day.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit as part of the renewal process. This summary is not meant to be an exact accounting of each change but a summary of those changes.

Page Nos.	Section	Description of Changes
Cover letter and throughout permit	--	• Updated all dates and permit revision numbers. • Changed Area II, II, and III to Area 1, 2, and 3.
4 – 11	Section 1 – Equipment Table	• Removed page numbers from table. • Updated capitalization for consistency. • Removed the first condenser in series (ID No. CD-A1-LDF-C1a) on the Littleford Dryer System No. 1 (ID No ES-A1-1) and modified the description of the dryer system. • Changed description of vessels (ID Nos. S9V and S11V) to "Neutralizing stripper vessel." • Updated capacity of surge vessel (ID No. TK63) to 2,500 gallons. • Moved the emergency generators (ID Nos. IS-EG-02 and IS-EmGen) from the insignificant activities list in Section 3 and changed their ID numbers (ID Nos. EG-02 and EmGen). • Removed storage tank (ID No. ST49). • Added the contents of the storage tanks (ID Nos. T16V, ST46, ST47, T30V, T18, T27, CP103, CP112, CP113, CP104, CP105, CP115, CP116, CP101, CP108, CP109, CP124, and CP102) to their emission source description. • Changed DCE to ethylene dichloride[1] on description of emission sources (ID Nos. S12, DCE-2, S23, S22V, and T13). • Moved the process development laboratory hood exhaust (ID No. HOOD) and the quality control laboratory hood exhaust (ID ES-EH2) to the insignificant activities list in Section 3. • Moved the lagoons (ID Nos. 1, 2, and 3) and the CERCLA groundwater pretreatment system (ID No. CERCLA-3) to the insignificant activities list in Section 3. • Added "GACT VVVVVV" label to ID No. SAT-2-3 is also subject to GACT 6V.
12	2.1 A – Equipment List	• Removed the first condenser (ID No. CD-A1-LDF-C1a) on the Littleford Dryer System No. 1 (ID No ES-A1-1). • Added the term "in series" to the control equipment configuration for the Littleford drying systems (ID Nos. ES-A1-1 and ES-A1-2).
15	2.1 A.3.c	Added a statement indicating the Permittee will be in noncompliance if records are not maintained.
15	2.1 A.3.d	Added a statement that all instances of deviation must be identified in the summary report.
16	2.1 B – Equipment List	Removed the lagoons (ID Nos. 1, 2, and 3), the CERCLA groundwater pretreatment system (ID No. CERCLA-3), the process development laboratory hood exhaust (ID No. HOOD), and the quality control laboratory hood exhaust (ID ES-EH2). These emission sources are insignificant activities.
18	2.1 B.3.b	Modified language to indicate the number of hours venting to the flare (ID No. MV2F) is an operating limit.

[1] Ethylene dichloride is a synonym for 1,2-dichloroethane (DCE).

Page Nos.	Section	Description of Changes
18	2.1 B.3.d	Added a statement requiring the Permittee to calculate and record the number of hours emissions from the reactor/process condenser (ID No. MV2) vented to the flare (ID No. MV2F) for the previous 12-month period. Also added a statement indicating the Permittee will be in noncompliance if the number of hours exceed the permitted limit.
18	2.1 B.3.e	Added a statement requiring the Permittee to calculate and record the NOx emissions from the flare (ID No. MV2F) for the previous 12-month period. Also added a statement indicating the Permittee will be in noncompliance if NOx emissions exceed the permitted limit.
19	2.1 B.3.f	Added a statement requiring the Permittee to report the monthly operating hours of the flare for the previous 17 months and the 12-month rolling operating hours of the flare for each of the six consecutive 12-month periods during the previous calendar half.
24	2.1 C.1.c	Added noncompliance statement.
24	2.1 C.1.d	Clarified noncompliance statement.
28 – 29	2.1 E.4	Updated permit condition for NSPS Subpart Dc.
29	2.1 E.5	Updated permit condition for avoidance of GACT Subpart JJJJJJ.
30	2.1 F – Equipment List	Added the term "in series" to the control equipment configuration for the Littleford drying system (ID No. LDF-3).
31	2.1 F.1.c and d	Updated monitoring, recordkeeping, and reporting condition for 15A NCAC 02D .0515 to reflect current shell language.
33 – 39	2.1 G	Added emergency generators (ID Nos. EG-02 and EmGen) throughout Section 2.1 G. These generators were previously included on the insignificant activities list in Section 3.
33 – 36	2.1 G.3	Updated permit condition for NSPS Subpart IIII.
36	2.1 G.4	Updated permit condition for GACT Subpart ZZZZ.
36 – 39	2.1 G.5	Added permit condition for GACT Subpart ZZZZ for the existing emergency generator (ID No. EmGen).
41	2.2 A.1.e	• Separated out the compliance statement from 2.2 A.1.d. • Added a statement indicating the Permittee will be in noncompliance if HAP emissions exceed the permitted limit. • Renumbered the permit accordingly.
42	2.2 A.4.b	Updated the permit condition for 15A NCAC 02D .1100 for the NC Air Toxics permitted limits.
43	2.2 A.4.e	Removed the condenser (ID No. CD-A1-LDF-C1a) from monitoring requirements under NC Air Toxics. This condenser is considered a process recovery condenser not a control device.
44	2.2 A.5	Updated the permit condition for 15A NCAC 02Q .0711 with most current permit language.
45	2.2 A.7.b and c	Modified the due date of the RMP.
45	2.2 A.8	Added a condition for "Disclosure of Information Relating to Emissions of Fluorinated Chemicals [15A NCAC 02Q .0308(a)(1) and 15A NCAC 02Q .0309(b)]." This requirement is state-enforceable only.
46	Section 3 – Insignificant Activities List	• Removed the emergency generators (ID Nos. IS-EG-02 and IS-EmGen) from the insignificant activities list. • Moved the process development laboratory hood exhaust (ID No. HOOD) and the quality control laboratory hood exhaust (ID ES-EH2) to the insignificant activities list in Section 3. • Moved the lagoons (ID Nos. 1, 2, and 3) and the CERCLA groundwater pretreatment system (ID No. CERCLA-3) to the insignificant activities list in Section 3.

Page Nos.	Section	Description of Changes
47 – 54	Section 4 – General Conditions	Updated TV General Conditions with most current version (version 8.0, 07/10/2024).

The following changes were made to the Title V Equipment Editor (TVEE):

- Updated capitalization for consistency.
- Updated capacity of surge vessel (ID No. TK63) to 2,500 gallons.
- Changed description of vessels (ID Nos. S9V and S11V) to "Neutralizing stripper vessel."
- Changed emergency generators (ID Nos. IS-EG-02 and IS-EmGen) from insignificant activities and changed their ID numbers (ID Nos. EG-02 and EmGen).
- Removed storage tank (ID No. ST49).
- Added the contents of the storage tanks (ID Nos. T16V, ST46, ST47, T30V, T18, T27, CP103, CP112, CP113, CP104, CP105, CP115, CP116, CP101, CP108, CP109, CP124, and CP102) to their emission source description.
- Removed the first condenser in series (ID No. CD-A1-LDF-C1a) on the Littleford Dryer System No. 1 (ID No ES-A1-1) and modified the description of the dryer system.
- Changed DCE to ethylene dichloride[2] on description of emission sources (ID Nos. S12, DCE-2, S23, S22V, and T13).
- Changed the process development laboratory hood exhaust (ID No. HOOD) and the quality control laboratory hood exhaust (ID ES-EH2) to insignificant activities and changed their ID numbers (ID Nos. IHOOD and IES-EH2).
- Changed the lagoons (ID Nos. 1, 2, and 3) and the CERCLA groundwater pretreatment system (ID No. CERCLA-3) to insignificant activities and changed their ID numbers (ID Nos. I1, I2, I3, and ICERCLA-3).
- Added "GACT VVVVVV" label to ID No. SAT-2-3 is also subject to GACT 6V.

5. 502(b)(10) Notifications

A discussion of the equipment changes and emissions associated with each 502(b)(10) notification is provided in this section, with the applicable regulatory review and compliance discussion included in Sections 6, 7, and 11 below.

- Permit Application No. 8000182.20B – The 502(b)(10) notification was received on November 25, 2020 to replace a condenser (ID No. CD-A2-2-MV3C-3) on a chemical reactor (ID No. MV3) in Area 2 with a functionally equivalent condenser. Like the existing condenser, the new condenser will have 250 square feet of surface area and a maximum outlet temperature of 122°F/50°C. Because the condenser will have the same performance specifications as the existing condenser, no change in emissions is expected with this replacement. NSC has requested to retain the same ID number (ID No. CD-A2-2-MV3C-3) for the new condenser.

- Permit Application No. 8000182.22A – The 502(b)(10) notification was received on October 19, 2022 to replace a neutralizer stripper vessel (ID No. S9V) in Area 2. The current vessel is controlled via a refrigerated vapor recovery unit (ID No. V-VRU1). The new vessel will be upgraded from 304 stainless to 316 stainless, with the intent of less maintenance and downtime for the processing unit. The throughput of the proposed vessel will be the same as the current vessel, but the operational capacity will drop slightly. The control configuration will remain the same, and no change in emissions is expected. NSC has requested to retain the same ID number (ID No. S9V) for the new

[2] Ethylene dichloride is a synonym for 1,2-dichloroethane (DCE).

neutralizing vessel. NSC also requested to correct the description, which is given as "neutralizer stripper vent," to "neutralizer stripper vessel."

- Permit Application No. 8000182.23A – The 502(b)(10) notification was received on March 27, 2023 to replace the dry vacuum pump on the batch distillation vessel (ID No. S20V) in Area 2 with a new dry vacuum pump. The facility will replace the existing hook and claw type vacuum pump with a screw style vacuum pump. The proposed change will not create any change to emissions, as all operational set points will be identical to the existing vacuum pump and the throughput of the distillation vessel (ID No. S20V) will remain the same after replacement. The vacuum pump is not noted in the description of the batch distillation vessel, so no change to the permit is required.

- Permit Application No. 8000182.23B – The 502(b)(10) notification was received on September 20, 2023 to replace an existing IPA storage tank (ID No. TK63) controlled via condenser (ID No. V98-X1) in the Area 1: Firebird Process. The operational capacity of the new tank will increase by 500 gallons to 2,500 gallons due to the difference in the bottom cone on the replacement tank. NSC indicated the throughput of the tank and the control configuration will remain the same. No change in emissions is anticipated. A second 502(b)(10) notification dated September 21, 2023 requested to replace an existing IPA test tank (ID No. T48) in the Area 1: Firebird Process. The tank is permitted at 10,000 gallons and has no controls. NSC indicated the capacity, throughput of the tank, and the control configuration will remain the same. No change in emissions is anticipated. NSC has requested that both new tanks retain the same ID numbers.

- Permit Application No. 8000182.23C – The 502(b)(10) notification was received on October 2, 2023 to replace an existing DCE storage tank (ID No. ST47) controlled via a refrigerated vapor recovery unit (ID No. V-VRU1) in Area 2.[3] The proposed tank size is 7,000 gallons, which is 3,000 gallons less than the current tank. NSC indicated the control configuration will remain the same, and no change in emissions is anticipated. NSC has requested to retain the same ID number (ID No. ST47) for the new DCE storage tank.

- Permit Application No. 8000182.24A – The 502(b)(10) notification was received on July 15, 2024 to replace a mixing vessel (ID No. R7) controlled with a condenser (ID No. R7C-1) in Area 1. As noted in the permit, control of this tank is voluntary (i.e., the condenser is described as "Condenser (150 square feet of surface area) (voluntary use only)"). The proposed mixing vessel will be 6,000 gallons and is described in the notification as "a direct replacement in kind as the current R7 mixing vessel (6,000-gallon capacity)." The throughput of the new mixing vessel and its control configuration will remain the same as the existing vessel, and no change in emissions is anticipated. NSC has requested to retain the same ID number (ID No. R7) for the new mixing vessel.

- Permit Application No. 8000182.24B – The 502(b)(10) notification was received on October 18, 2024 to replace an existing allyl chloride storage tank (ID No. TK16) in the Area 1 tank farm. The proposed storage tank will be 10,000 gallons and is described in the notification as "a direct replacement in kind as the current TK16 storage tank (10,000-gallon capacity)." Because no allyl chloride storage tank is currently listed on the permit, DAQ contacted NSC for clarification. In a response e-mail, Chris Fleming, formerly of NSC, explained the tank is not listed on the TV permit. It is located in the Area 1 tank farm, and the material in the tank is used as raw material in reactor (ID No. MV4) in Area 2. Mr. Fleming also included the following table in the e-mail. The table provides emissions from a few tanks included in the 2023 Air Quality Emission Inventory under emission

[3] The 502(b)(10) notification referred to the existing DCE storage tank as TK47. However, no such tank was listed in Permit No. 09900T17. In an e-mail dated January 3, 2025, Jonathon Parker of NSC confirmed the correct tank ID is ST47 as specified in the permit.

group G-130. The table shows no emissions are expected from the allyl chloride tank, as this tank is controlled with a nitrogen blanket and return vent.[4]

VOC Emissions from Storage Tanks
G-130 Tanks

Tank I.D.	Chemical	2023 Throughput (lb/yr)	Density (lb/gal)	Throughput (gal/yr)	Working Losses (lb/yr)	Standing Losses (lb/yr)	Total Losses (lb/yr)	Total Losses (tpy)	Comments
10A	DMDAAC	202,287	8.67	23,331.8	neg.	neg.	neg.	neg.	Negligible VOC
14	Wet Slurry ISOPAR E	1,012,302	5.99	168,998.6	98.38	16.66	115.04	0.058	Calculations assumes 90% isopar-e
15	ISOPAR E	1,100,230	6.8	161,798.5	104.66	26.70	131.36	0.07	
16	Allyl Chloride	72,786	7.79	9,343.5	-	-	-		Vent return and N2 blacket, no emissions.

6. Regulatory Review

NSC is subject to the following regulations. The permit was updated to reflect the most current permitting language as part of this permit renewal, where necessary.

- 15A NCAC 02D .0503, Particulate from Fuel Burning Indirect Heat Exchangers
- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial
- 15A NCAC 02D .0516, Sulfur Dioxide from Combustion Sources
- 15A NCAC 02D .0521, Control of Visible Emissions
- 15A NCAC 02D .0524, New Source Performance Standards (NSPS)
- 15A NCAC 02D .0951, RACT for Sources of Volatile Organic Compounds
- 15A NCAC 02D .0958, Work Practice Standards for Volatile Organic Compounds
- 15A NCAC 02D .1100, Control of Toxic Air Pollutants
- 15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT)
- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
- 15A NCAC 02D .2100, Risk Management Program
- 15A NCAC 02Q .0317, Avoidance Conditions
- 15A NCAC 02Q .0711, Emission Rates Requiring a Permit

NSC also requested to move the emergency generators (ID Nos. EG-02 and EmGen (new ID numbers)) from the insignificant activities list to the body of the permit, and regulations applicable to these emission sources will be discussed below when applicable.

A. 15A NCAC 02D .0503, Particulate from Fuel Burning Indirect Heat Exchangers – The natural gas/No. 2 fuel oil-fired boilers (ID Nos. B2, B3, B4, B5, B6, B8, and ES-A3-2-B7) are subject to 02D .0503. Allowable particulate matter (PM) emissions are determined from the following equation:

$$E = 1.090(Q)^{-0.2594}$$

Where
E = Allowable emission limit for PM in pounds per million Btu
Q = Maximum heat input in million Btu per hour

The allowable PM emission limits for these boilers are provided in the following table.

[4] E-mail from Chris Fleming to Jeff Twisdale of DAQ dated 10/29/2024.

Boiler ID Nos.	Heat Input of the Emission Source (mm Btu/hr)	Maximum Heat Input (mm Btu/hr)	Emission Limit (lbs/mm Btu)	Comments
B2 through B6 IB7 (hot oil heaters) IB8 (hot oil heaters) ES-A3-2-B7	12.5, each 4.2 5.76 16.3	88.76	0.34	• Boilers B2 through B6 and the hot oil heaters have been onsite since the mid 1970's. • Boiler ES-A3-2-B7 was constructed after 1989 and was first included on Air Permit No. 05279R27 to National Starch. • Other boilers/heaters were listed as insignificant activities on permits R27 through R34. • The initial TV permit (T35) issued to National Starch only included Boiler ES-A3-2-B7, and the other boilers/heaters were left off the permit. • Boilers B2 through B6 were subsequently incorporated into the permit with the issuance of Air Permit No. 05279T39, with the heaters included as insignificant activities.
B8	14.938	103.70	0.33	This boiler was permitted under 09900T06 issued to AkzoNobel on February 16, 2010.

Based on emission factors for natural gas and No. 2 fuel oil, the maximum PM emissions expected from the boilers are provided below:

- No. 2 fuel oil – 0.024 pounds per million Btu based on an emission factor for PM of 3.3 pounds per 10^3 gallons and a fuel heating value of 140,000 Btu/gallon.[5]
- Natural gas –0.00051 pounds per million Btu based on an emission factor for PM of 0.52 pounds per 10^6 standard cubic feet (scf) of natural gas and a fuel heating value of 1,020 Btu/scf.[6]

Because the expected PM emissions are less than the allowable emissions, no monitoring, recordkeeping, or reporting is required to ensure compliance for this rule.

B. 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – Allowable PM emissions are determined in accordance with the following equations:

E = 4.10 x P 0.67 For process rates up to 30 tons per hour
E= 55 x P0.11 – 40 For process rates greater than 30 tons per hour

Where: E = allowable emissions rate in pounds per hour
P = process weight in tons per hour

[5] Emission factor for No. 2 fuel oil is from the DAQ's "Fuel Oil Combustion Emission Calculator Revision G" (11/15/2012).
[6] Natural gas emission factor is from the DAQ's "Natural Gas Combustion Emission Calculator Revision N" (01/05/2017).

The following emission sources are subject to 02D .0515:

- Littleford drying systems No. 1 and No. 2 (ID Nos. ES-A1-1 and ES-A1-2)
- Littleford packout system (ID No. ES-A1-3)
- Fluid bed dryer with product received cyclone (ID No. A3FD)
- Spray dryer with two parallel product receiver cyclones (ID No. A4SFD)
- Crotonic Acid Pneumatic transfer system (ID No. A4CAHS)
- Littleford drying system (ID No. LDF-3)
- Packout station (ID No. ES-FBPO).

NSC complies with this rule by using fabric filters or liquid scrubbers to control PM emissions. For emission sources (ID Nos. ES-A1-2 through ES-A1-3, A3FD, A4SFD, and A4CAHS), the facility must conduct inspection and maintenance of the control devices, as well as conduct associated recordkeeping and reporting as necessary to ensure to ensure compliance with 02D .0515.

As specified in the permit review for the addition of the Firebird Process, potential PM emissions from the Littleford dryer (ID No. LDF-3) and the packout operation (ID No. ES-FBPO) are expected to be much less than the calculated allowable PM emissions under 02D .0515.[7] The facility only has to maintain production records under 02D .0515 for these sources.

No changes to the monitoring, recordkeeping, or reporting are required as part of this permit renewal, and continued compliance is expected.

C. 15A NCAC 02D .0516, Sulfur Dioxide from Combustion Sources – Emissions of SO2 from sources subject to 02D .0516 must not exceed 2.3 pounds per million Btu heat input. The following emission sources are subject to 02D .0516:

- Five natural gas/No. 2 fuel oil-fired boilers (ID Nos. B2, B3, B4, B5, and B6) when firing natural gas or No. 2 fuel oil.
- Two natural gas/No. 2 fuel oil-fired boilers (ID Nos. B8 and ES-A3-2-B7) when firing natural gas only. These boilers are subject to the sulfur dioxide (SO_2) emission standard under NSPS Subpart Dc when firing No. 2 fuel-oil.
- Ammonia Flare (ID No. MV2F) used as one control option for reactor with process condenser MV2C-1 (ID No. MV2)
- Diesel-fired emergency generators (ID Nos. EG-01 and EG-02)
- Natural gas-fired emergency generator (ID No. EmGen).

No monitoring, recordkeeping, or reporting is required when firing natural gas or No. 2 fuel oil because of the low sulfur content of the fuels. Natural gas and No. 2 fuel oil are inherently low enough in sulfur that continued compliance is expected, as shown by the emission factors below:

- No. 2 fuel oil – 0.5 pounds of SO_2 per million Btu. This value is based on a fuel heating value of 140,000 Btu/gallon for No. 2 fuel oil and an emission factor for SO_2 of 142S pounds per 10^3 gallons and the , where S is the % weight of sulfur in the fuel.[8] The sulfur content of fuel is assumed to be 0.5 weight percent sulfur as required by the NSPS Subpart Dc.
- Natural gas –0.00059 pounds per million Btu based on an emission factor for PM of 0.6 pounds per 10^6 standard cubic feet (scf) of natural gas and a fuel heating value of 1,020 Btu/scf.[9]

[7] Permit Review for 09900T05 by Jenny Kelvington dated 11/24/2009.
[8] Emission factor for No. 2 fuel oil is from the DAQ's "Fuel Oil Combustion Emission Calculator Revision G" (11/15/2012).
[9] Natural gas emission factor is from the DAQ's "Natural Gas Combustion Emission Calculator Revision N" (01/05/2017).

Also, no additional SO_2 is formed from the thermal oxidation of ammonia in the ammonia flare, because the only component of ammonia are nitrogen and hydrogen. No changes to the monitoring, recordkeeping, or reporting are required as part of this permit renewal, and continued compliance is anticipated.

D. 15A NCAC 02D .0521, Control of Visible Emissions –The following equipment was manufactured after July 1, 1971 and must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d).
   - Littleford drying systems No. 1and No. 2 (ID Nos. ES-A1-1 and ES-A1-2)
   - Littleford packout system (ID No. ES-A1-3)
   - Fluid bed dryer with product received cyclone (ID No. A3FD)
   - Spray dryer with two parallel product receiver cyclones (ID No. A4SFD)
   - Crotonic Acid Pneumatic transfer system (ID No. A4CAHS)
   - Littleford drying system (ID No. LDF-3)
   - Packout station (ID No. ES-FBPO)
   - Ammonia Flare (ID No. MV2F) used as one control option for reactor with process condenser MV2C-1 (ID No. MV2)
   - Five natural gas/No. 2 fuel oil-fired boilers (ID Nos. B2, B3, B4, B5, and B6)
   - Two natural gas/No. 2 fuel oil-fired boilers (ID Nos. B8 and ES-A3-2-B7)
   - Diesel-fired emergency generators (ID Nos. EG-01 and EG-02)
   - Natural gas-fired emergency generator (ID No. EmGen).

   No monitoring, recordkeeping, or reporting is required when firing natural gas or No. 2 fuel oil in the boilers (ID Nos. B2, B3, B4, B5, B6, B8 and ES-A3-2-B7) and emergency generators (ID Nos. EG-01, EG-02, and EmGen), because natural gas and distillate fuel oil are generally considered clean fuels with almost no or negligible ash content. Monthly visible emission observations are required for the other emissions sources listed above. Seth Hall of the MRO conducted the most recent compliance inspection at the facility on July 24, 2024 and observed that NSC was conducting the monthly visible emission observations as required by the permit. No changes to the monitoring, recordkeeping, or reporting are required as part of this permit renewal, and continued compliance is expected.

E. 15A NCAC 02D .0524, New Source Performance Standards (NSPS) – NSC is subject to the following NSPS:
   - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc.
   - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart IIII.

   More discussion of NSPS is found in Section 7.

F. 15A NCAC 02D .0951, RACT for Sources of Volatile Organic Compounds – The facility is subject to Reasonably Available Control Technology (RACT), which means the lowest emission limit a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. RACT may require technology that has been applied to similar, but not necessarily identical, source categories. More detail on RACT at NSC is discussed in Section 7.

G. 15A NCAC 02D .0958, Work Practice Standards for Volatile Organic Compounds – On November 1, 2016, amendments to 15A NCAC 02D .0902 were finalized to narrow applicability of work practice standards in 15A NCAC 02D .0958 from statewide to the maintenance area for the 1997 8-hour ozone standard. This facility is located in Rowan County, which is one such area.

Sources subject to this rule must handle VOC-containing material with good work practices, as specified in 02D .0958(c) and (d). To demonstrate compliance with 02D .0958, NSC must perform monthly facility-wide inspections to verify that the work practice standards are being implemented. Records of the monthly inspections must be kept and reported twice per year. No changes to the permit condition are required under this permit renewal, and continued compliance is anticipated.

H. 15A NCAC 02D .1100, Control of Toxic Air Pollutants – The facility has conducted air modeling to demonstrate compliance with 02D .1100 for several toxic air pollutants (TAPs). More discussion on NC Air Toxics is provided in Section 8.

I. 15A NCAC 02D .1111, Maximum Achievable Control Technology – As an area source of HAPs, NSC is subject to the following Generally Available Control Technologies (GACTs):
   a. NESHAP for Chemical Manufacturing Area Sources, 40 CFR Part 63 Subpart VVVVVV (GACT Subpart 6V).
   b. National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63, Subpart ZZZZ (GACT Subpart ZZZZ).

   More discussion on these GACTs is provided is Section 7.

   The facility has also accepted a source applicability limit to avoid applicability of National Emission Standards for Hazardous Air Pollutants (NESHAP) for Area Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63 Subpart JJJJJJ (GACT Subpart 6J), as discussed in more detail is Section 7.

J. 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – This rule is applicable facility-wide and is state enforceable only. No changes are required under this permit renewal, and continued compliance is anticipated.

K. 15A NCAC 02D .2100, Risk Management Program – NSC is subject to Section 112(r) of the Clean Air Act requirements because it stores three different regulated substances in quantities above the thresholds in 112(r). More discussion is provided in Section 7.

L. 15A NCAC 02Q .0317, Avoidance Conditions – The facility has accepted avoidance conditions for the following:
   a. 15A NCAC 02D .0530, Prevention of Significant Deterioration (PSD), for VOCs and NO_X.
   b. 15A NCAC 02D. 0531, Sources in Nonattainment, for VOCs.
   c. 15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT).
   d. NESHAP for Area Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63 Subpart JJJJJJ (GACT Subpart 6J).

   More discussion on these avoidance conditions is provided is Section 7.

M. 15A NCAC 02Q .0711, Emission Rates Requiring a Permit – The facility is subject for several TAPs as discussed in Section 8.

7. NSPS, NESHAPS/MACT, NSR/PSD, RACT, 112(r), CAM

NSPS

Applicability to New Source Performance Standards is discussed in this section.

NSPS Subpart Dc

The natural gas/No. 2 fuel oil-fired boilers (ID Nos. B8 and ES-A3-2-B7) are subject to the "Performance Standards for Small Industrial, Commercial, Institutional Steam Generating Units," 40 CFR Part 60 Subpart Dc. This subpart applies to boilers constructed, modified, or reconstructed after June 9, 1989 and have a maximum design heat input capacity > 10 million Btu per hour and < 100 million Btu per hour. The requirements for boilers subject to NSPS Subpart Dc vary based on the size of the boiler and fuel type fired. Because neither of these units fire wood, coal, or fuel oil that contains more than 0.50 weight percent sulfur, neither is subject to the particulate matter standards under this rule. Each boiler is less than 30 million Btu per hour so the opacity requirements under NSPS Dc do not apply to these boilers. The NSPS Subpart Dc boilers firing on fuel oil are subject to the SO_2 standards as discussed below:

- Sulfur Dioxide: This NSPS Dc includes an alternate SO_2 standard in the form of fuel sulfur limit. Under this alternate standard, the maximum sulfur content of any fuel oil received and fired in the boilers shall not exceed 0.5 percent by weight. To demonstrate compliance with this standard, NSC is required to retain copies of each fuel supplier certification, including the sulfur content of the oil (in percent by weight). The facility is also required to submit a semiannual report summarizing the monitoring activities (January 30th and July 30th).

Additionally, NSC must record monthly fuel usage for both subject boilers as required under NSPS Subpart Dc.

The NSPS Subpart Dc condition will be updated to the most current permitting language as part of this renewal, and continued compliance is anticipated.

The other natural gas/No. 2 fuel oil-fired boilers (ID Nos. B2 through B6) have been onsite since the mid 1970's and are not subject to the NSPS Subpart Dc, as this subpart applies to boilers constructed, modified, or reconstructed after June 9, 1989.

NSPS Subpart IIII

The EPA finalized amendments to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII) on August 30, 2024 to add electronic reporting provisions and to provide clarification and corrections to minor errors in the rule. The permit condition for NSPS Subpart IIII will be updated as part of this renewal to account for these changes.

The two diesel-fired emergency generators (ID Nos. EG-01 and EG-02) are subject to NSPS for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII. This regulation applies to owners and operators that commence construction of their compression ignition internal combustion engines after July 11, 2005, where the engines were manufactured after July 1, 2006, per 40 CFR 60.4200(a)(2)(ii).

These generators were permitted under Air Permit No. 09900T13 issued on January 22, 2015. To comply with NSPS Subpart IIII, NSC purchased emergency generators, certified to meet the emission standards for the same model year and maximum engine power in 40 CFR 89.112. NSC also uses only compliant diesel fuel, installed a non-resettable hour meter on each generator, and conducts

monitoring, recordkeeping, and reporting as required by the NSPS. The NSPS Subpart IIII permit condition will be updated to the most current permitting language as part of this renewal, and continued compliance is anticipated.

NSPS Subpart JJJJ
The Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ, applies to owners and operators that commence construction of their spark ignition internal combustion engine after June 12, 2006, where the engines were manufactured after the dates specified in 40 CFR 60.4230(a)(4)(i) through (iv). NSC also maintains a natural gas-fired emergency generator (12.5 kW) (ID No. EmGen). The natural gas-fired generator was constructed in 1978, and therefore, is not subject to NSPS Subpart JJJJ.

NESHAPS/MACT
NSC has accepted an avoidance condition to limit facility-wide emissions of HAPs to less than 10 tons per year of any individual HAP and less than 25 tons per year any combination of HAPs. To demonstrate compliance with the avoidance limit, NSC calculates individual and facility-wide HAP emissions on a monthly basis and reports HAP emissions semiannually. According to the facility's emissions inventory for calendar year 2023, the facility's largest HAP emitted was DCE at 3.8 tons, and the facility's total HAP emissions were 10.4 tons. These figures fall below the major source thresholds. Given the margin of compliance with the HAP emission thresholds, continued compliance is anticipated. No changes to the permit condition are required under this permit renewal.

GACT Subpart JJJJJJ
NSC is classified as an area source of HAPs. The natural gas/No. 2 fuel oil-fired boilers (ID Nos. B2, B3, B4, B5, B6, B8 and ES-A3-2-B7) are potentially subject to the "NESHAP for Area Sources: Industrial, Commercial, and Institutional Boilers," (GACT Subpart 6J) depending on the fuels fired in the boiler. NSC primarily fires natural gas and only fired No. 2 fuel oil during periods of curtailment. As a result, these boilers meet the following definition of "gas-fired boilers" under 40 CFR 63.11237:

> *Gas-fired boiler includes any boiler that burns gaseous fuels [which include natural gas and biogas] not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.*

Per 40 CFR 63.11195(e), gas-fired boilers as defined under 40 CFR 63.11237 are not subject to GACT Subpart 6J. The facility can only fire fuel oil under certain conditions as specified in 40 CFR 63.11237. If the facility should switch to firing liquid fuel outside these conditions, the facility becomes subject to GACT Subpart 6J as an existing source. NSC must notify the DAQ within 30 days of the fuel switch and be in compliance with GACT Subpart 6J within 180 days of the fuel switch. The avoidance condition in the permit will be revised to the latest permitting language as part of this permit renewal, and continued compliance is anticipated.

GACT Subpart VVVVVV
NSC is subject to NESHAP for Chemical Manufacturing Area Sources (CMAS), 40 CFR Part 63 Subpart VVVVVV (also called GACT Subpart 6V). This rule applies to chemical manufacturing process units (CMPUs) located at area sources of HAPs and that meet one or more of the criteria in 40 CFR 63.11494. One of the criteria is using a Table 1 HAP in any feedstock[10] at a concentration of 0.1% or greater. Ethylene dichloride (a.k.a. dichloroethane or DCE) is included in Table 1 to the rule.

[10] In 40 CFR 63.11502(b) under GACT Subpart 6V, feedstock means "any raw material, reactant, solvent, additive, or other material introduced to a CMPU."

DCE is used as a feedstock/reactant in the sulfonated polystyrene (SPS) production in Area 2 at an individual concentration greater than 0.1 percent by weight. As specified in permit review for 09900T14,[11] the following emission sources in Area 2 are subject GACT Subpart 6V:

- Reactor vessel (4,000 gallons) with process condenser MV1C-1 (ID No. MV1)
- Reactor vessel (4,000 gallons) with process condenser MV2C-1 (ID No. MV2)
- Three lacquer tanks (ID Nos. S4V, S7V, and S10V)
- DCE stripper (ID No. S12V)
- Neutralizing stripper vent (ID No. S9V)
- Neutralizing stripper vent (ID No. S11V)
- Neutralizer vessel (ID No. S25V)
- Five storage tanks (ID Nos. T16V, ST46, ST47, ST49, and T30V)
- DCE distillation column S23 bottoms receiver (wet receiver tank) (ID No. DCE-1)
- DCE distillation column with condenser/ overheads receiver (dry receiver tank) (ID No. S23)
- Batch distillation vessel (ID No. S20V)
- Distillate tank for S20V (ID No. S12)
- Four slow add tanks (ID Nos. SAT-1-1, SAT-1-2, SAT-1-3, and SAT-2-3)
- Two storage tanks (ID Nos. T18 and T27)
- Water/DCE storage vessel (ID No. S22V)
- Water/DCE flashing unit (ID No. T14)
- Distillate receiver for reactors (ID Nos. MV1 and MV2 when used as striping vessels) (ID No. RCV-1)
- Sulfonated polystyrene (SPS) stripper vessel (4,000 gallons capacity) with process condenser T20VC-1 (ID No. T20V)
- Sulfonation vessel venting to atmosphere/ reactor; 4,000 gallons with process condenser A2-1-1S5V-C (ID No. S5V)
- Two sulfonation vessels (ID Nos. S1R and S6V)

The affected source under GACT Subpart 6V at NSC is the facility-wide collection of CMPUs and each heat exchange system and wastewater system associated with a CMPU that meets the criteria specified 40 CFR Part 63 Subpart 6V. The affected source at NSC was constructed prior to October 6, 2008 and, as such, is considered an existing source under GACT Subpart 6V. Applicable requirements under GACT Subpart 6V and NSC's compliance status are summarized in the table below.

Regulation	Requirement	Compliance Status
63.11495(a)(1)	Equip process vessels with a cover or lid that is closed at all times when it is in HAP service, except for manual operations that require access, such as material addition and removal, inspection, sampling and cleaning.	Process equipment is already equipped with lids.
63.11495(a)(2)	Follow specific methods for the transfer of HAPs.	N/A – The facility does not transfer ethylene dichloride (Table 1 HAP) to tanks or railcars.
63.11495(a)(3) to (a)(5)	Conduct and maintain records of quarterly inspections of process vessels and equipment in HAP service and repair leaks within 15 days (or document reason for delay)	The facility is meeting this requirement.

[11] Permit Review for 09900T14 by Betty Gatano dated 11/17/2015.

Regulation	Requirement	Compliance Status
63.11495(b) and 63.104(a)(1)	Follow requirements for small heat exchange systems with a cooling water flow rate less than 8,000 gallons per minute (gal/min) and not meeting one or more of the conditions in 40 CFR 63.104(a)(1).	N/A – NSC meets requirements under 40 CFR 63.104(a) for its small heat exchange systems. Specifically, the facility operates its heat exchange systems with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side in accordance with 40 CFR 63.104(a)(1).
63.11495(d)	Operate and maintain any affected CMPU, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions	NSC meets the general duty requirements.
63.11496(a)	Comply with the requirements in paragraphs (a)(1) through (4). If uncontrolled organic HAP emissions from all batch process vents from a CMPU are equal to or greater than 10,000 pounds per year (lb/yr), comply with the emission limits and other requirements in Table 2.	The facility reported its uncontrolled emissions are less than 10,000 lb/yr. Per 40 CFR 63.11496(a), the facility records the number of batches that it processes each month.
63.11496(h)	Comply with the emission limits and other requirements in Table 5 for each surge control vessel and bottoms receiver containing Table 1 HAPs that meets the applicability criteria for storage.	N/A – NSC has no surge vessels or bottom receivers that meet the criteria in Table 5.
63.11497	Comply with the emission limits and other requirements in Table 5 for storage tanks containing Table 1 HAPs.	N/A – NSC has no storage tanks that meet the criteria in Table 5.
63.11498	Discharge wastewater streams to onsite or offsite wastewater treatment or hazardous waste treatment and maintain records identifying each wastewater stream and documenting the type of treatment that it receives.	The wastewater is discharged into the facility's onsite wastewater treatment plant. NSC also maintains the appropriate records for compliance.
63.11499	Comply with the emission limits and the compliance requirements in Table 8 for heat exchange systems $\geq$ 8,000 gal/min,	N/A - The condensers at NSC use cooling water at a rate of 8,000 gal/min or less.
63.11500	The facility may elect to comply with the requirements of the more stringent provisions, if the CMPU is subject to other rules under 40 CFR Part 63 or Part 60 (e.g., NSPS VV, DDD, III, NNN, RRR, or YYY).	N/A – The CMPU's subject to GACT Subpart 6V are not applicable to any other regulations under 40 CFR Part 63 or Part 60.
63.11501	Submit a NOCS that certifies the facility complies with 63.11495 to 63.11499; submit semiannual compliance reports identifying deviations, leak repairs, process changes, and malfunctions; and maintain records for 5 years.	The NOCS was received on June 4, 2013. The facility is in compliance with the semiannual reporting and recordkeeping as indicated in the most recent inspection report.

The compliance date for GACT Subpart 6V was March 21, 2013. The DAQ received a Notice of Compliance Status (NOCS) for GACT Subpart 6V from AkzoNobel (now NSC) on June 4, 2013, indicating the facility was in compliance with all applicable requirements. The US EPA has not updated GACT 6V, and no changes to the monitoring, recordkeeping, or reporting are required as part of this permit renewal. Continued compliance is anticipated.

Because many pieces of equipment have been replaced at NSC under 502(b)(10) notifications since the compliance date of this rule, the rule was reviewed to determine whether these replacements constitute reconstruction under 40 CFR Part 63, which is defined as the following:

> *Reconstruction, unless otherwise defined in a relevant standard, means the replacement of components of an affected or a previously nonaffected source to such an extent that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and (2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.*

An affected source under GACT Subpart 6V is the facility-wide collection of CMPUs and each heat exchange system and wastewater system associated with a CMPU that meets the criteria specified in paragraphs (a) and (b) of this section. A CMPU includes all process vessels, equipment, and activities necessary to operate a chemical manufacturing process that produces a material or a family of materials described by North American Industry Classification System (NAICS) code 325. Replacing a single reactor or storage tank would not exceed the 50 percent fixed capital cost threshold for replacing the "affected source" under the definition of reconstruction, and thus, these replacements do not constitute reconstruction under 40 CFR Part 63. NSC remains an existing source under GACT Subpart 6V.

It should be noted that not all equipment in Area 2 is subject to GACT Subpart 6V. Chemical reactors ID Nos. MV3, MV4, and S-13-V and slow add tanks ID Nos. SAT-2-1, SAT-2-2, and D14 and are not subject to GACT Subpart 6V because they do not use or produce the HAPs listed in Table 1 of the NESHAP and are not part of the SPS operations in Area 2.

No changes to the monitoring, recordkeeping, or reporting requirements are needed as part of this permit renewal, and continued compliance is anticipated.

GACT Subpart ZZZZ
The EPA finalized amendments to the NESHAP for Reciprocating Internal Combustion Engines (RICE) (40 CFR Part 63, Subpart ZZZZ) on August 30, 2024 to add electronic reporting provisions and to provide clarification and corrections to minor errors in the rule. The permit conditions for GACT Subpart ZZZZ will be updated as part of this renewal to account for these changes.

NSC is an area source of HAPs. The diesel-fired emergency generators (ID Nos. EG-01 and EG-02) are subject to the GACT requirements under 40 CFR Part 63 Subpart ZZZZ. These emergency generators are considered new sources under GACT Subpart ZZZZ because they commenced after June 12, 2006. Per 40 CFR 63.6590(c)(1), a new stationary RICE located at an area source of HAPs must meet the requirements of GACT Subpart ZZZZ part by meeting the requirements of NSPS Subpart IIII, for compression ignition engines. No further requirements apply for such engines under GACT Subpart ZZZZ. The MACT Subpart ZZZZ permit condition will be updated to the most current permitting language as part of this renewal, and continued compliance is anticipated.

The natural gas-fired emergency generator (ID Nos. ES-EmGen) is also subject to the requirements under 40 CFR Part 63 Subpart ZZZZ. It is an existing source under the GACT because it was constructed in 1978. Per 40 CFR 63.6603(a) and Table 2d in GACT Subpart ZZZZ, NSC must change the oil and filter on the generator, inspect and replace the spark plugs, and inspect all hoses

and belts in accordance with the frequency in the rule. NSC must also conduct recordkeeping and reporting as required by the GACT. The requirements for this generator will be added to the permit as part of this permit renewal. Continued compliance is anticipated.

NSR/PSD

NSC is located in Salisbury, Rowan County, which is currently in attainment for all promulgated National Ambient Air Quality Standards (NAAQS). This county was previously designated as non-attainment for the 1997 8-hr ozone standard on April 15, 2004. Rowan County has been re-designated in attainment/maintenance with the 1997 8-hour ozone standard since January 2, 2014 and has been in attainment with the 2008 standard, effective August 27, 2015. The county is also in attainment for the newer 2015 ozone standard.

Because the airshed is currently in attainment for all NAAQS, the PSD permitting program applies for major sources (and major modifications). NSC is a chemical processing plant, which is one of the 28 listed source categories with major source thresholds of 100 tons per consecutive 12-month period, under 40 CFR 51.166 (b)(1)(i)(a). NSC is a major source under PSD because potential emissions of VOC exceed 100 tons per year.

The facility has previously accepted avoidance limits under 02D .0530 and 02D .0531 to prevent previous modifications from being subject to NAA NSR or PSD, as applicable. The following table outlines the avoidance limits.

Emission Source	Pollutant	Limits	Comments
Littleford drying system (ID No. ES-A1-2)	VOC	40 tpy	Avoidance of 02D .0530 for the Littleford dryer (ID No. LDF-2) included in permit as far back as Air Permit No. 05279T26 to National Starch.
Ammonia flare (ID No. MVF2)	NOx Ozone	40 tpy for NOx from MVF2 and 6,400 hr/year from reactor (ID No. MV2)	Avoidance of 02D .0530 (NOx) and 02D .0531 (NOx as a precursor for ozone). The avoidance condition was added under Air Permit No. 05279T48 issued to National Starch. The initial condition required stack testing of the flare, which was conducted in April 2009. The operating hours for the reactor were added under Air Permit No. 09900T05 based on the 2009 testing. At the average NOx emission rate observed during the stack test (12.5 lbs/hr), limiting flare operation to 6,400 hours per year ensures that NOx emissions do not exceed 40 tpy.

The permit will be updated to require NSC to calculate and record the 12-month rolling totals of NOx emissions and hours of flare operation. Although the permit does not specifically require the totals to be calculated and recorded, NSC is currently submitting this information in their semiannual reports as shown in the table below. The reported values demonstrate compliance with the hourly operating and NOx emission limits.

Calendar Year	Highest 12-month Rolling Total Hours	Highest 12-month Rolling Total NOx Emissions (tons)	Month
2020	994	6.2	September
2021	1,295	8.1	December
2022	1,540	9.6	May
2023	560	3.5	January
2024	770	4.8	July

The permit will also be updated to clarify that exceedance of the NOx emission limit or hours of flare operation is an exceedance of PSD avoidance.

112(r)

NSC is subject to Section 112(r) of the Clean Air Act requirements because it stores three different regulated substances in quantities above the thresholds in 112(r) as shown in the table below.

Chemical	Threshold Quantity (lbs)	Maximum Inventory (lbs)	Program Level
Acrylonitrile [2-Propenenitrile] (107-13-1)	20,000	134,000	3
Sulfur trioxide (7446-11-9)	10,000	92,000	3
Vinyl acetate (108-05-4)	15,000	160,000	3

The facility submitted a Risk Management Plan (RMP) to EPA initially on June 17, 1999. Subsequent submissions have been made every five years with the most recent being May 11, 2020. The next submittal is required by May 11, 2025.

The most recent 112(r) inspection was conducted by Amir Stewart of the MRO of the DAQ on August 20, 2024. The facility appeared to be in compliance with 112(r).

CAM

The CAM rule (40 CFR 64; 15A NCAC 02D .0614) applies to each pollutant specific emissions unit (PSEU) located at facilities required to obtain Title V permits that meets all three following criteria:

- The unit is subject to any (non-exempt: e.g., pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- The unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source (i.e., 100 tons per year for criteria pollutants or 10/25 tons per year for HAPs).

CAM applicability was evaluated during the previous TV permit renewals in 2009, 2015, and 2020, and no emission sources were found to be subject to CAM. There have been no substantial updates to emission sources equipped with control devices at this facility since the Air Permit No. 09900T16 was issued under the 2020 TV permit renewal. Therefore, this rule does not apply to this facility.

RACT

NSC is located in Salisbury, Rowan County. This section of Rowan County has been in attainment/maintenance with the 1997 8-hour ozone standard since January 2, 2014. Effective August 27, 2015 this area is now in attainment for the 2008 standard. The area remains a maintenance area for this

standard; therefore, RACT continues to apply per 02D .0902 (f) and (g). The requirements for RACT requirements under 15A NCAC 02D .0900 remain applicable to the facility.

NSC is located in Salisbury, Rowan County, which is currently in attainment for all promulgated National Ambient Air Quality Standards (NAAQS). This county was previously designated as non-attainment for the 1997 8-hr ozone standard on April 15, 2004. Rowan County has been re-designated in attainment/maintenance with the 1997 8-hour ozone standard since January 2, 2014 and has been in attainment with the 2008 standard, effective August 27, 2015. The county is also in attainment for the newer 2015 ozone standard.

RACT was evaluated for the Firebird Process when it was initially permitted in 2009. RACT requires VOC emissions from the reactor, condenser, dryer, and solvent recovery system to be controlled by condensers with an outlet temperature not greater than 25 ºC. These requirements are consistent with "Enforceability Aspects for RACT for the Chemical Synthesis Pharmaceutical Industry" (EPA-340/1-80-016; January 1981). The permit review for 09900T05 contains a detailed discussion of RACT for the Firebird Process.[12] No changes to the permit requirements under RACT for the Firebird Process are needed under this permit renewal, and continued compliance is anticipated.

RACT was also evaluated for VOC emission sources permitted prior to the RACT compliance date of April 1, 2009 (i.e., existing RACT emission sources). The control technology guidance reviewed for the RACT evaluation prescribes condensers temperatures and efficiency depending on the vapor pressure of the material and the amount of VOC emissions per day. The existing systems at NSC used condenser systems for reactors, dryers, etc. and vapor-balance/conservation vents on storage tanks. Thus, NSC demonstrated to DAQ that RACT for existing VOC emission sources was no additional control beyond the permitted condensers. A permit condition specifying no additional controls for existing RACT sources was added to Air Permit No. 09900T08 issued on October 10, 2010. The review for this permit contains a detailed discussion of RACT for existing emission sources.[13]

A summary of the RACT requirements, including the date of the initial determination, is provided in the table below.

Source	RACT Determination	Comments
"Firebird Process" (sources listed in Section 2.1 F of the Title V permit)	• Use condensers with an outlet temperature of 25 °C or less; • Regular maintenance of condensers; • Keep and report records of maintenance and temperature;	Initially determined in Title V permit 09900T05 (issued November 24, 2009).
All other sources of VOCs	No additional controls.	Initially determined in Title V permit 09900T08 (issued August 10, 2010)

No changes to the permit condition for RACT are required, and continued compliance is anticipated.

Further, potential emissions of NOx from NSC are less than 100 tons per year. Therefore, Rules 15A NCAC 02D .1407 through .1409(b) and .1413, including the NOx RACT rules, do not apply to NSC, in accordance with 02D .1402(b).

[12] Permit Review for 09900T05 by Jenny Kelvington dated 11/24/09.
[13] Permit Review for 09900T08 by Charlie Yirka dated 08/10/10.

8. Facility Wide Air Toxics

When the National Starch facility was split, Henkel and NSC requested they be allowed to designate their combined property boundaries (the old National Starch boundary) as an "Industrial Park" and use the previous modeled toxic limits for demonstrating compliance with the AALs at the Industrial Park Perimeter. This request was allowed provided the facilities consider the other source's emissions when expanding. Therefore, the area within the combined property boundary is not considered ambient air for the purposes of demonstrating compliance with the AALs.

The previous National Starch permit established the toxic air pollutant (TAP) limits for ethylene dichloride, formaldehyde, ammonia, benzene, and methylene chloride. However, permitted emission limits for ammonia and benzene were subsequently updated after the site was divided. An air dispersion modeling analysis for ammonia dated May 12, 2009 was reviewed and approved by the AQAB on May 31, 2009. An air dispersion modeling analysis for benzene dated September 3, 2021 was reviewed and approved by the AQAB on October 22, 2021.

All of the ethylene dichloride, ammonia, and benzene emissions and most of the formaldehyde emissions result from processes owned and operated by NSC, while methylene chloride is emitted primarily from Henkel. Both Henkel and NSC are responsible for complying with the air toxic limits. However, the 02D .1100 permit conditions pertaining to the proper operation or monitoring of specific equipment were placed only in the permit that regulated the device. As such, NSC is solely accountable for the proper operation of the flare and condensers at its plant and for tracking the hours of operation for the CERCLA Groundwater Pretreatment System. The TAP permit limits are listed in the table below.

Pollutant	Emission Source	Allowable Emission Rate
Ethylene dichloride	Industrial Park-Wide	40,141.5 lbs/yr
	NSC Area 2: S5V	3,034 lbs/yr
	NSC Area 2: S1R	1,933 lbs/yr
	NSC Area 2: S6V	1,932 lbs/yr
Formaldehyde	Industrial Park-Wide	6.976 lbs/hr
	NSC Area 1	1.276 lbs/hr for each manifold
Ammonia	NSC Area 2: V-VRU1 (associated with MV1, MV2, S4V, S7V, S10V, S12V, S9V, S11V, S25V, T16V, ST46, ST47, T30V, DCE-1, S23, S20V, S12, SAT-1-1, SAT-1-2, SAT-1-3, SAT-2-1, SAT-2-2, SAT-2-3, D14, T18, T27, S22V, T13, RCV-1, and T20V)	1.0 lbs/hr
	NSC Area 2: MV2F (associated with MV2)	21.5 lb/hr
	NSC Area 2: MV4, T20V	0.1 lbs/hr
	NSC Area 3: V09	15.0 lbs/hr
	NSC Area 3: ES-EH2	0.002 lbs/hr
	Area 3: Fugitive Sources	3.0 lbs/hr
Benzene	Industrial Park-Wide	796.26 lbs/yr
Methylene chloride	Industrial Park-Wide	10.5 lbs/hr and 16,000 lbs/yr

To demonstrate compliance with the modeled emission limits, NSC must conduct the following:

- Maintain the condenser outlets below the specified maximum temperatures and continuously monitor the actual temperature.
- Perform regular inspections and maintenance on the condensers and the ammonia flare and maintain records of inspections and maintenance activities.

- Conduct monthly visible emission observations of the ammonia flare.
- Determine and record actual TAP emissions.
- Track operating hours of the hours of operation for the CERCLA Groundwater Pretreatment System.
- Submit quarterly reports of the monitoring and recordkeeping activities.

The 02D .1100 permit condition will be updated to clarify air dispersion modeling associated with the modeled permit limits, and continued compliance is anticipated.

The facility has also demonstrated emissions of maleic anhydride, ethyl acetate, n-hexane, sulfuric acid, toluene, trichloroethylene, vinyl chloride, and xylene remain below their Toxic Permitting Emission Rates (TPERs) per 15A NCAC 02Q .0711. The permit condition will be updated to reflect the current permitting language, and continued compliance is anticipated.

9. Facility Emissions Review

The facility-wide potential emissions have not changed because of this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the previous five years reporting periods are provided in the header of this permit review.

10. Review of Emerging Chemicals

DAQ has determined that per- and polyfluoroalkyl substances, also known as PFAS, may be emitted from facilities operating under SIC Code 2869 / Industrial Organic Chemicals,nec. DAQ sent a PFAS Questionnaire to Jonathan Parker, Site Director of NSC, on February 28, 2025, and a response was received on March 24, 2025. The facility's response is documented in Attachment 1 to this document. Based on the facility's responses, the PFAS disclosure condition will be included in this permit renewal.

11. Compliance Status

DAQ has reviewed the compliance status of NSC. During the most recent inspection, conducted by Seth Hall of the MRO on July 24, 2024, the facility appeared to be in compliance with all applicable requirements. The facility's Annual Compliance Certification (ACC) was received on February 8, 2024, and indicated compliance with all applicable requirements in 2023, except for the deviations noted in the ACC. No Notice of Violation (NOV) was issued for the noted deviations. Further, the responsible official for NSC certified compliance with all applicable requirements through the submittal of an E5 form along with their application for permit renewal.

NSC has had the following air quality violations within the last five years:

11/13/2024 DAQ issued a NOV to NSC for violation of Air Permit No. 09900T17 Specific Condition and Limitation No. 2.2.A.4.g.iii. for not performing the annual calibrations for the temperature gauges on the condensers. NSC responded to the NOV on November 21, 2024. The violation is considered resolved.

02/16/2022 DAQ issued a NOV to NSC for failure to report a violation of 15A NCAC 02D .0951 on the semiannual report received on January 20, 2022 and for operating a condenser above 25°C in violation of Specific Condition and Limitation No. 2.1.F.3.a. and 15A NCAC 02D .0951. NSC responded to the NOV on February 28, 2022. The violation is considered resolved.

12. Draft Permit Review Summary

The initial drafts of the permit and permit review were sent to NSC on April 29, 2025. Comments were received on these drafts on May 14, 2025 and discussed during a follow up call on May 15, 2025. An overview of NSC's more substantive comments and DAQ's responses is summarized below:

Comment 1

Comment: The draft permit forwarded to NSC on April 29, 2025 required the facility to conduct additional source testing of the ammonia flare (ID No. MV2F) to re-establish the NOx emission rate. The DAQ justified this testing because the previous testing was conducted in 2009, which is more than 15 years ago. In their comments, NSC requested that the proposed source testing requirement be removed and noted the following:

> *Nouryon believes that another stack test of the flare is unnecessary aside from being a significant burden on the facility. The source protocol and test were approved and witnessed by DEQ. The facility has maintained the flare according to manufacturer's specifications.*
>
> *While being over 15-years old, Nouryon's contention is that stack tests regularly used by DEQ that are included in AP-42 are much older and experience much less scrutiny.*

During the call with DAQ on 05/15/2025, NSC also provided more information on the difficulty and costs associated with the source testing of the flare.

Response: Betty Gatano discussed this request with Melinda Wolanin of MRO, and DAQ concurs with this comment. The proposed testing will be removed from the permit. NSC will continue to use the NOx emission rate of 12.5 pounds/hour established during 2009 source test to determine compliance with the PSD avoidance condition for the flare (ID No. MV2F).

Comment 2

Comment: NSC requested to remove the first condenser in series (ID No. CD-A1-LDF-C1a) on the Littleford Drying System No. 1 (ID No. ES-A1-1) as a control device. NSC has requested that this condenser be considered a process recovery condenser.

Response: The DAQ reviewed the permit history of this condenser and determined that the requirement to conduct to temperature monitoring does not appear to be required for air dispersion modeling for compliance with NC Air Toxics.[14] The DAQ will grant this request.

Comment 3

Comment: NSC requested to move the two emergency engines on the insignificant activities list (ID Nos. IS-EG02 and IS-EmGen) to the permit so that the requirements for complying with NSPS Subpart IIII and GACT ZZZZ will be incorporated into the permit.

Response: DAQ agrees to this request and will modify the permit accordingly.

[14] Permit Review for 05279T37 for National Starch by Booker Pullen dated 10/19/04 and Permit Review for 05279T39 for National Starch by Michael Brandon dated 08/31/05.

13. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. The State of South Carolina and the Mecklenburg County Local Program are affected programs within 50 miles of the facility and will be notified accordingly. However, the DAQ voluntarily sends the public notice and draft permit, including statement of basis, to all neighboring states for all Title V permitting actions (renewals, significant modifications, and reopener for cause), regardless of whether the state/local agency is deemed an "affected state" with respect to a particular facility.

14. Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application or any of the 502(b)(10) notifications.
- A zoning consistency determination is NOT required for this renewal application or any of the 502(b)(10) notifications.
- A permit fee is NOT required for this renewal application or any of the 502(b)(10) notifications.

15. Removal of Affirmative Defense from General Conditions

EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions[15]. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses[16] and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

---

[15] NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

[16] In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

16. Recommendations

The permit renewal application for Nouryon Surface Chemistry LLC - Salisbury Plant has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 09900T18.

Attachment 1
NSC's Response to DAQ PFAS Questionnaire

	Questions	Comments
1	Will your facility use any material or products in your operations that contain fluorinated chemicals? No If so, please identify such materials or products and the fluorinated chemicals they contain.	
2	Will your facility formulate/create products or byproducts (directly or indirectly) that contain fluorinated chemicals (across multiple media)? No If so, please identify such products or byproducts and the fluorinated chemicals they contain.	
3	Will your facility generate solid, liquid, or gaseous related emissions, discharges, or wastes/products containing fluorinated chemicals? Yes If so, please identify such waste streams or materials and the fluorinated chemicals they contain. Air emissions - possibly from HVAC refrigerant leaks (R134A, R410A, R22, R404A, AZ50 (R507))	
4	Do your facility's processes or operations use equipment, material, or components that contain fluorinated chemicals (e.g., surface coating, clean room applications, solvents, lubricants, fittings, tubing, processing tools, packaging, facility infrastructure, air pollution control units)? Yes, facility uses HVAC refrigerants: R134A, R410A, R22, R404A, AZ50 (R507) Could these processes or operations directly or indirectly (e.g., through leaching, chemical process, heat treatment, pressurization, etc.) result in the release of fluorinated chemicals into the environment? Yes, see #3 above for refrigerants.	
5	List the fluorinated chemicals identified (i.e., through testing or desktop review) above in your response under the appropriate methods/approaches? If one is not, are they on any other known US or International target lists? · OTM-45 (air emissions) · Methods 533 & 537.1 (drinking water) · SW-846: Method 8327 (water) · Draft Method 1633 (water, solids, tissue) · "Total PFAS" Draft Method 1621 for Adsorbable Organic Fluorine (wastewater) · Non targeted analytical methods · Qualitative approach through suspect screening See comments	* R134A: 1,1,1,2-tetrafluoroethane (CAS# 811-97-2) - 1,290 lbs * R410A: blend of pentafluoroethane (CAS# 354-33-6) and difluoromethane (CAS# 75-10-5) - 235 lbs * R22: chlorodifluoromethane (CAS# 75-45-6) - 356 lbs * R404A: blend of 1,1,1-trifluoroethane (CAS# 420-46-2), pentafluoroethane (CAS# 354-33-6), and 1,1,1,2-tetrafluoroethane (CAS# 811-97-2) - 25 lbs * AZ50 (R507): blend of 1,1,1-trifluoroethane (CAS# 420-46-2) and pentafluoroethane (CAS# 354-33-6) - 49 lbs https://www.epa.gov/chemical-research/pfas-chemical-lists-and-tiered-testing-methods-descriptions#1

Attachment 1
NSC's Response to DAQ PFAS Questionnaire

	Questions	Comments
6	Are there other facilities or operations in the U.S. or internationally engaged in the same or similar activities involving fluorinated chemicals addressed in your response to the above questions? Not Applicable If so, please provide facility identification information? In addition, are there any ISO (International Organization for Standardization) certification requirements? The facility currently is RC14001 certified.	
7	Do you plan to store AFFF on site, use it in fire training at the site, use it for fighting fires at the facility, or include it in a fire fighting system at the site? No	
8	Are other emerging contaminants (e.g., 1,4-dioxane, brome, perchlorate, 1,2,3-Trichloropropane) used in some capacity within your facility or operations? No	
9	Do you need technical assistance to answer the above questions? No In identifying any fluorinated chemicals or emerging contaminants in response to any of the above questions, please use CAS numbers (if available) and specify the relevant quantities of any such chemicals. If your answers to any of the above questions rely on assumptions or, if information necessary to respond to any of these questions is unavailable, please state. If any of the information requested is deemed a "trade secret" under N.C.G.S. § 66-152(3) and subject to confidential treatment under N.C.G.S. § 132-1.2(1) as required under the Public Record Act, please contact us to discuss proper designation of this information.	