NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: TBD

Region: Fayetteville Regional Office
County: Cumberland
NC Facility ID: 2600106
Inspector's Name: Taijah Hamil
Date of Last Inspection: 07/20/2022
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): DAK Americas, LLC - Cedar Creek Site

Facility Address:
DAK Americas, LLC - Cedar Creek Site
3216 Cedar Creek Road
Fayetteville, NC 28312

SIC: 2821 / Plastics Materials And Resins
NAICS: 325211 / Plastics Material and Resin 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, .0515, .0516, .0521, .0524, .1100, .1111, .1806
02Q: .0317, .0512
NSPS: Subparts Dc, DDD
NESHAP: Subparts ZZZZ, JJJJJJ, VVVVVV
PSD: Major source
PSD Avoidance: SO_2
NC Toxics: 02D .1100
112(r): No RMP required
Other: n/a

Contact Data

Facility Contact	Authorized Contact	Technical Contact
James Perez Safety, Health, & Environmental Manager (910) 433-8274 3216 Cedar Creek Road Fayetteville, NC 28312	Matthew Hendrickson Operations Director (910) 433-8285 3216 Cedar Creek Road Fayetteville, NC 28312	James Perez Safety, Health, & Environmental Manager (910) 433-8274 3216 Cedar Creek Road Fayetteville, NC 28312

Application Data

Application Number: 2600106.22A
Date Received: 07/28/2022
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 04319/T25
Existing Permit Issue Date: 02/08/2019
Existing Permit Expiration Date: 03/31/2023

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	0.2700	28.81	18.80	35.57	7.00	8.57	4.47 [Acetaldehyde]
2019	0.2300	22.45	16.31	30.47	6.03	7.20	3.23 [Acetaldehyde]
2018	0.2600	22.86	18.05	32.31	8.14	8.43	3.75 [Acetaldehyde]
2017	0.2500	21.54	19.36	32.59	8.32	9.35	3.71 [Acetaldehyde]
2016	23.43	23.57	20.66	30.51	8.21	6.35	2.17 [Acetaldehyde]

Review Engineer: Russell Braswell

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

Comments / Recommendations:
Issue 04319/T26
Permit Issue Date: TBD
Permit Expiration Date: TBD+5 years

1. Purpose of Application:

DAK Americas, LLC - Cedar Creek Site (DAK; the facility) currently operates a factory in Cumberland County under Title V air quality permit 04319T25 (the existing permit). The existing permit is set to expire on March 31, 2023. DAK submitted this application in order to renew the existing permit. In addition to renewal, DAK requested changes to the permit allowed by 15A NCAC 02Q .0523 "Changes not Requiring Permit Revisions" (a.k.a. a 502(b)(10) change).

Because this application for permit renewal was received at least six months before the expiration date of the existing permit, the existing permit will remain in effect, regardless of expiration date, until this renewal application is approved or denied.

2. Facility Description:

This facility is a factory that manufactures polyethylene terephthalate (PET) for use in plastic bottles and film products. The raw materials for PET are terephthalic acid, ethylene glycol, and isophthalic acid. The factory broadly consists of two PET production processes: a continuous line that produces bottle PET and a batch process that produces film PET. Through various reactions in the initial product formation, the final polymer chains are formed, heated under vacuum, cooled with water to a solid, then mechanically cut/chipped into granules. The dried polymer is further processed into a crystalline state in the Solid State Polycondensation (SSP) operation. Polymer chips are eventually crystallized and sent to a polycondensation reactor that drives the product to the final, desired intrinsic viscosity in the presence of nitrogen.

This facility also operates sources that support the PET production processes, such as storage tanks, wastewater treatment, and boilers. Note that emissions from the wastewater treatment system are routed to the "Dowtherm" heat exchangers.

The current Title V permit originated from several facilities with different permit numbers that were eventually combined into a single permit under one facility name:

- Facility ID 2600106 – This facility was formerly owned and operated by the Monsanto Company. At one time, the facility included an herbicide manufacturing operation and a Service Complex with three large boilers and a wastewater treatment operation. In 2004, Monsanto Company shutdown its herbicide manufacturing operation. The Service Complex was sold to DAK Americas, and the boilers and wastewater treatment operations were permitted and operated under Air Permit No. 04319T18 issued to DAK Resins, LLC. on January 30, 2004. Subsequently, the neighboring DAK Resins Cedar Creek Site (FAC ID 2600063), which included a continuous PET manufacturing operation, was combined with the Service Complex with the issuance of Air Permit 04319T19 on June 2, 2008. The combined facility currently operates as DAK Americas, LLC.

- Facility ID 2600063 – This facility was formerly permitted as E.I. du Pont de Nemours and Company, DuPont Cedar Creek Site. In 2000, the site was separated into two facilities – a batch PET plant and a continuous PET plant.
  - The portion of the facility encompassing the continuous PET manufacturing operations remained as E.I. du Pont de Nemours and Company, Dupont Cedar Creek Site, with Facility ID 2600063. The Dupont Cedar Creek Site was purchased by DAK Resins and was permitted as DAK Resins Cedar Creek Site on July 31, 2000. The facility was classified as a synthetic minor. As noted above, this site was combined with the DAK Service Complex with the issuance of Air Permit 04319T19 on June 2, 2008. The combined facility currently operates

under Facility ID 2600106 as a Title V facility. Facility ID 2600063 is no longer active, and the associated air permit has been rescinded.
  - The batch PET plant became DuPont Teijin Films when separated and began operating under Facility ID 2600198.

- Facility ID 2600198 – The facility was formerly owned and operated by DuPont Teijin Films. The facility, which includes a batch-PET chemical manufacturing facility, is classified as a synthetic minor facility. In 2013, DAK Americas purchased the facility. The facility previously operated as DAK Americas – Cedar Creek Site with Air Permit No. 08907R06 issued on July 17, 2013. Facility ID 2600198 was then combined into this permit in 2014. Facility ID 2600198 is no longer active.

3. Title V Permit Modifications Following the Previous Permit Renewal:

- April 3, 2018 Permit T24 issued. This action renewed the Title V permit and made changes to the control devices for permitted emission sources.

- February 8, 2019 Permit T25 issued. This action was a minor modification of the Title V permit that added a new bagfilter to the list of insignificant activities.

4. Application Chronology:

- July 28, 2022 Application .22A received. In addition to this application, DAK submitted a letter requesting an off-permit change.

- September 2, 2022 Email sent to James Perez (SHE Manager for DAK) asking for clarification regarding No. 6 fuel oil at the facility and the fuel capacity of the catalytic oxidizer CD 00-15.

- September 6, 2022 Response received to the September 2 email. DAK stated that references to No. 6 fuel oil should be removed from the new permit. DAK confirmed that there is no supplemental heat input for the catalytic oxidizer CD 00-15.

- September 7, 2022 Email sent to James Perez asking if DAK wanted to pursue the "oil curtailment" option under GACT Subpart JJJJJJ.

- October 10, 2022 Response received to the September 7 email. DAK stated that they would consider the curtailment option at a later date.

- October 11, 2022 An initial draft of the permit and application review were sent to RCO staff for comments. Comments were received on this draft on October 17, 2022.

- October 19, 2022 An updated draft of the permit and application review were sent to FRO staff, SSCB staff, and DAK staff for comments.

- XXXX The Public Notice and EPA review periods began.

- XXXX The Public Notice period ended.

- XXXX The EPA Review period ended.

- XXXX Permit issued.

5. Changes to the Existing Permit:

a. 502(b)(10) change under 15A NCAC 02Q .0523

Per 15A NCAC 02Q .0523(a), DAQ allows in some circumstances applicants to make changes to a facility without modifying the Title V permit. Such changes are referred to as "502(b)(10)" changes. Per 02Q .0523(a)(3), such changes must be incorporated into the Title V permit the next time the permit is revised.

In a letter received on the same day as this application, DAK requested to change the ratio of production in the continuous and batch PET processes. The letter states that there are no production limits incorporated into the permit, and this change will not cause an exceedance of any limits in the permit:

> "Central to the site's continued status as a minor source of hazardous air pollutants (HAP) is compliance with permitted emission limitations to HAP, namely to 10 tons/yr of any HAP and 25 tons/yr of any combination of HAP. There are no explicit limits to production, in either unit.
>
> DAK intends to increase its production of specialty polymers in the batch unit using already permitted equipment. There will be no addition of equipment or control devices, meaning there is no need for a permit to construct or modify the plant.
>
> Our analysis of emissions shows that this increase in production will not result in emissions exceeding the limits to HAP emissions stated above…The increase in production is effected without any changes to the physical plant and does not revise any portion of the current permit…"

An applicant must confirm that a proposed 502(b)(10) change meets the definition in 02Q .0523(a) by filling out a checklist provided by DAQ. Although DAK did not fill out the checklist, the letter does adequately enumerate each point on that checklist. Table 1 examines each entry on DAQ's checklist:

Table 1: 502(b)(10) Checklist

502(b)(10) Qualification Checklist	Disallows 502(b)(10)?	Notes
This change does not violate any existing requirement in the current Title V air quality permit.	No	• This facility is subject to MACT Subpart VVVVVV, NSPS Subpart DDD, a HAP avoidance limit, and modeled TAP emission limits. Changing the ratio of continuous and batch PET is not expected to violate or exceed any emission limit in the permit.
This change does not cause emissions allowed under the permit to be exceeded.	No	

502(b)(10) Qualification Checklist	Disallows 502(b)(10)?	Notes
This change does not require a case-by-case determination (e.g. BACT)	No	• Changing the ratio of continuous and batch PET will not cause an increase in emissions above the SER for any criteria pollutant. Note that DAQ has previously calculated potential emissions for these sources as each approximately 20 tpy.[1]
This change is not a modification under Title I of the federal Clean Air Act.	No	
This change does not alter (modify or add to) any existing monitoring, reporting or recordkeeping provisions in my current permit.	No	• DAK currently demonstrates compliance with MACT Subpart VVVVVV and NSPS Subpart DDD by using control devices and work practices. Changing the ratio of continuous and batch PET will not change the compliance method for these rules. • DAK currently demonstrates compliance with the HAP avoidance limit by operating control devices and calculating facility-wide actual HAP emissions using DAQ-approved methods. DAK will continue to operate these control devices and calculate facility-wide HAP emissions. • DAK has previously modeled TAP emission rates at maximum potential emission rates. The permit does not include monitoring, reporting or recordkeeping for TAP emissions. Changing the ratio of continuous and batch PET will therefore not change any compliance method for this rule.
This change does not require a change to an existing permit term that was taken to avoid an applicable requirement. (e.g. PSD avoidance condition)	No	• The facility is already subject to a HAP avoidance limit. Changing the ratio of continuous and batch PET will not require a new avoidance limit; DAK will continue to comply with this existing avoidance limit.
This change does not require a permit under the NC Toxics program.	No	• DAK has previously modeled TAP emission rates at maximum potential emission rates. The permit does not include monitoring, reporting or recordkeeping for TAP emissions. Changing the ratio of continuous and batch PET will therefore not change any compliance method for this rule.

Based on the above analysis, DAK's proposal to change the ratio of continuous and batch PET production does qualify as a 502(b)(10) change.

b. Summary of changes

The following changes were made to Air Permit No. 04319T25:*

Page No.	Section	Description of Changes
Throughout	Throughout	• Updated dates and permit numbers. • Changed name to "DAK Americas, LLC - Cedar Creek Site" to reflect name on application. • Corrected typos. • Updated formatting to match latest DAQ standard. Corrections to formatting are not intended to impact the Permittee's compliance requirements.
5	1.	• Removed references to No. 6 fuel oil from ES-001 and ES-002 at Permittee's request.

[1] The potential emissions for this source were previously determined by DAQ, and there have been no substantial changes to these sources afterwards. See DAQ's application review for the T19 permit revision, page 16.

Page No.	Section	Description of Changes
15	2.1 E.	• Removed all references and requirements related to firing No. 6 fuel oil because no sources at that facility can burn No. 6 fuel oil.
16	2.1 E.5	• Updated condition for 40 CFR Part 63 Subpart JJJJJJ to match DAQ's standard wording for these types of boilers. This change is meant for uniformity across DAQ's permits, and is not meant to impact compliance requirements.
23	2.2 A.1	• Noted date of modeling approval.
24	2.2 B.1	• Noted date of modeling approval.
32	3. (new)	• Moved the list of Insignificant Activities to this new section.
33	4.	• Updated General Conditions to v6.0.

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

6. Regulatory Overview and Rules Review:

Under the existing permit, DAK is subject to the following State Implementation Plan (SIP) rules:

- 15A NCAC 02D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"
- 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
- 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" (40 CFR Part 60, Subparts Dc, DDD)
- 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" [state-enforceable only]
- 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (40 CFR Part 63, Subparts ZZZZ, JJJJJJ, VVVVVV)
- 15A NCAC 02D .1806 "Control and Prohibition of Odorous Emissions"
- 15A NCAC 02Q .0317 "Avoidance Conditions" (MACT avoidance, PSD avoidance)
- 15A NCAC 02Q .0512 "Permit Shield and Application Shield"

DAK's requirements under each of these rules are discussed below. In addition, a discussion of several non-applicable rules is also included below.

a. <u>15A NCAC 02D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"</u>

This rule limits particulate matter (PM) emitted from indirect heat exchangers. The limit is calculated using the following formula: $E = 1.090 \times Q^{-0.2594}$, where *E* is the emission limit in pounds per million Btu and *Q* is the combined heat input for all sources at the facility that are subject to this rule. Note that *Q* is calculated at the time an individual source is added to the facility, and as a result *Q* and *E* can be different for heat exchangers at the same facility. *E* and *Q* for an existing heat exchanger is not re-calculated if a new heat exchanger is added to the facility.

Table 2 lists the ID numbers, fuel types, and *E* for each subject heat exchanger at this facility.

Table 2: Emission Limits for 02D .0503

Emission Source ID	Fuel Types	Limit (lb/MMBtu)
ES 94-9a	NG, No. 2 oil	0.21
ES 94-9b	NG, No. 2 oil	0.21
DTH-1	NG, No. 2 oil	0.34

Emission Source ID	Fuel Types	Limit (lb/MMBtu)
DTH-2	NG, No. 2 oil	0.48
DTH-3	NG, No. 2 oil	0.39
ES-001	NG, No. 2 oil	0.22
ES-002	NG, No. 2 oil	0.22
ES-003	NG	0.21

Note that the boilers ES-001 and ES-002 could previously fire No. 6 fuel oil. DAK requested references to No. 6 fuel oil be removed from the permit with this permit revision.

In order to calculate PM emissions from the combustion of fossil fuels in heat exchangers, the emission factors published by EPA in "AP-42: Compilation of Air Emission Factors" (a.k.a. AP-42) can be applied. The published emission factors are not in units of pounds per million Btu, so the emission factor must be converted in each case.

- Natural gas (Chapter 1.4, Table 1.4-2 PM (total)):

$$\frac{7.6\text{ lb}}{\text{million scf}} \times \frac{1\text{ scf}}{1{,}020\text{ Btu}} = \frac{0.007\text{ lb}}{\text{million Btu}}$$

- No. 2 fuel oil (a.k.a. distillate fuel oil; Chapter 1.3, Table 1.3-1 filterable PM, and Table 1.3-2 CPM-TOT)): [2]

$$\left(\frac{2\text{ lb}}{1{,}000\text{ gal}} + \frac{1.3\text{ lb}}{1{,}000\text{ gal}}\right) \times \frac{1{,}000\text{ gal}}{140\text{ million Btu}} = \frac{0.02\text{ lb}}{\text{million Btu}}$$

Based on the AP-42 emission factors, compliance with each PM emission limit in Table 2 is expected without the use of any control devices.

The existing permit does not require any monitoring, recordkeeping, or reporting for PM emitted from fuel burning. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

b. 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"

This rule limits PM emitted from non-fugitive emission sources that are not subject to another PM emission limit. For each subject emission source, the PM emission limit is a function of the process rate of that specific emission source. The emission limit is calculated by:

For $P \leq 30$, $E = 4.10 \times P^{0.67}$
For $P > 30$, $E = 55.0 \times P^{0.11} - 40$

Table 3 summarizes the emission sources at this facility and any control devices used to comply with this limit:

Table 3: Emission sources subject to 02D .0515

Emission Source	Control Devices
Precrystallizer (ES 94-15)	Cyclones, bagfilter

[2] Table 1.3-1 has different factors for boilers (heat exchangers) with capacity greater than 100 MMBtu/hr and less than 100 MMBtu/hr. However, the factors for PM are the same regardless of boiler size.

Emission Source	Control Devices
Crystallizer (ES 94-16)	Cyclones, bagfilter
SSP Cooler (ES 94-18)	Dust filter
Isophthalic acid silo (ES 94-24)	Bin vent filter

Fabric filters (such as bagfilters) are generally very effective at reducing PM emissions. Therefore, the existing permit only requires DAK to perform regular inspections and maintenance of the particulate control devices. Records of control device maintenance must be kept and reported twice per year. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

c. 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"

This rule limits sulfur dioxide (SO_2) emissions from combustion sources that are not subject to another SO_2 limit under chapter 02D .0500. In all cases, the limit is 2.3 pounds of SO_2 per million Btu of heat input.

The heat exchangers ES 94-9a, ES 94-9b, and DTH-1 are not subject to this rule because they are subject to NSPS Subpart Dc. The sulfur content limit in 40 CFR 60.42c(d) constitutes an SO_2 emission limit, so 02D .0516 does not apply. Each of the other fuel burning sources at this facility is subject to this rule. See Section 6.e.i for a discussion of NSPS Subpart Dc requirements.

Fuel burning sources at this facility can consume natural gas and No. 2 oil. In order to calculate SO_2 emissions from the combustion of these fuels, the emission factors published by EPA in AP-42 can be applied. The published emission factors are not in units of pounds per million Btu, so the emission factor must be converted in each case.

- Natural gas (Chapter 1.4, Table 1.4-2 SO_2):

$$\frac{0.6\text{ lb}}{\text{million scf}} \times \frac{1\text{ scf}}{1{,}020\text{ Btu}} = \frac{0.001\text{ lb}}{\text{million Btu}}$$

- No. 2 fuel oil (a.k.a. distillate fuel oil; Chapter 1.3, Table 1.3-1 SO_2 with S=0.5):[3]

$$\left(\frac{[142 \times 0.5]\text{ lb}}{1{,}000\text{ gal}}\right) \times \frac{1{,}000\text{ gal}}{140\text{ million Btu}} = \frac{0.51\text{ lb}}{\text{million Btu}}$$

Based on the AP-42 emission factors and above calculations, compliance with this emission limit is expected without the use of any control devices.

The existing permit does not require any monitoring, recordkeeping, or reporting for SO_2 emitted from natural gas and No. 2 fuel oil firing. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

[3] Table 1.3-1 has different factors for boilers (heat exchangers) with capacity greater than 100 MMBtu/hr and less than 100 MMBtu/hr. However, the factors for SO_2 are the same regardless of boiler size.

The existing permit includes requirements that apply when burning No. 6 fuel oil, but these will be removed from the new permit because DAK requested all references to No. 6 oil be removed.

During the most recent inspection, DAK appeared to be in compliance with the No. 6 fuel oil sulfur limit. The new permit will not include continued compliance requirements for SO_2 emissions from the burning of natural gas and No. 2 fuel oil. Continued compliance will be determined with subsequent inspections and reports.

d. 15A NCAC 02D .0521 "Control of Visible Emissions"

This rule limits visible emissions (VE) from emission sources that are not subject to another VE limit under chapter 02D .0500. Generally, this rule is not applied to sources that are not expected to produce any VE (e.g., from a storage tank).

The VE limit for this rule depends on the construction date of the individual source in question. At this facility, the VE limit is 20% for each source subject to this rule. The rule allows for one exceedance of the 20% limit per hour, and four exceedances per 24-hour period.

For emission sources that burn natural gas and/or No. 2 fuel oil, no monitoring/recordkeeping/reporting is required to demonstrate compliance with VE limits. In general, well-operated combustion sources that burn these fuels are not expected to produce VE greater than the limit. DAQ has reviewed this analysis and agrees with this analysis, and continued compliance is expected.

For emission sources that burn No. 6 oil, the existing permit requires daily monitoring while those sources are burning No. 6 oil. This requirement will be removed from the new permit because DAK requested all references to No. 6 oil be removed from the permit.

For all other sources subject to this rule, the permit requires monthly observations of the emission points for VE above normal. DAK must initiate corrective action or conduct a formal Method 9 VE test to demonstrate the VE limit is not exceeded. DAK must keep records of VE observations and maintenance, and submit a summary report twice per year.

Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

Each specific condition for 02D .0521 in the new permit has been updated to reflect DAQ's new template for 02D .0521. This change is only for clarity, and is not intended to impact DAK's compliance requirements.

e. 15A NCAC 02D .0524 "New Source Performance Standards"

This rule incorporates the New Source Performance Standards (NSPS) rules into North Carolina's SIP (excluding those rules listed in 02D .0524(b)). There are two NSPS rules that apply to this facility: Subpart Dc and Subpart DDD. See Section 6.k for a discussion of NSPS rules that do not apply to this facility.

i. Subpart Dc "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"

This rule applies to steam generating units with a capacity between, or equal to, 10 and 100 million Btu per hour and were constructed, reconstructed, or modified after June 9, 1989.

Applicability:

- The two large boilers (ID Nos. ES-001 and ES-002) have a heat input capacity greater than 100 million Btu per hour, and therefore are not subject to this rule.

- The boiler ES-003 was constructed after the applicability date and has a heat input equal to 100 million Btu per hour. Therefore, it is subject to this rule.

- Three of the Dowtherm heaters (ID Nos. ES 94-9a, ES 94-9b, and DTH-1) are subject to this rule because they have been modified after the applicability date and they meet the definition of "steam generating unit" under this rule. That definition states in part: "Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium." Although the Dowtherm heaters do not generate steam, they do heat a heat transfer medium, and therefore meet the definition of this rule.

- The two Dowtherm heaters (ID Nos. DTH-2 and DTH-3) were constructed before the applicability date and have not been reconstructed or modified after that date. Therefore, they are not subject to this rule.

Emission limits: This rule includes emission limits for SO_2 and PM.

SO_2: For oil-fired boilers, the limit is 0.5 pounds per million Btu fired. As an alternative, limit the sulfur content of any fuel oil to less than 0.5% by weight (see 40 CFR 60.42c(d)). There are no SO_2 limits for natural gas-fired boilers.

PM: For oil-fired boilers, the limit is 0.03 pounds per million Btu fired. As an alternative, limit VE to less than 20% (see 40 CFR 60.43c(c)). There are no PM limits for natural gas-fired boilers. This rule also includes PM emission limits for boilers constructed after February 28, 2005 (see 40 CFR 60.43(e)). However, none of the boilers or heat exchangers at this facility have been constructed after that date.

Compliance requirements: DAK complies with the SO_2 emission limit by limiting the fuel oil sulfur content. DAK complies with the PM emission limit by limiting VE from the boilers. In order to demonstrate compliance with the VE limit, DAK conducts Method 9 tests according to the schedule in 40 CFR 60.47c(a).

Recordkeeping and reporting: DAK must keep records of all fuel fired in boilers subject to this rule. DAK must keep records of fuel oil certification and Method 9 tests. DAK submits a semiannual summary report of the monitoring and recordkeeping.

There have been no changes to the boilers and heat exchangers that would change the applicability of NSPS Subpart Dc. Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

ii. Subpart DDD "Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry"

This rule applies to several kinds of polymer manufacturing constructed after September 30, 1987. PET is one of the polymers specified by the rule.

Applicability: The continuous PET process at this facility (ID Nos. ES 94-2 through 8) is subject to this rule. Note that this rule specifically applies to continuous manufacturing processes (see 40 CFR 60.560(a)(3)); the batch PET process (ID Nos. ES 94-1, ES 94-24, and ES-13) is not continuous and therefore not subject to this rule. Also note that this rule explicitly does not apply to VOC emissions from equipment leaks from PET processes (see 40 CFR 60.560(a)(4)).

Emission limits: In general, this rule requires that affected facilities limit total organic compound (TOC) emissions from the continuous manufacturing operation and limit ethylene glycol concentrations in liquid effluent from the continuous manufacturing operation.

Compliance requirements: In order to comply with the emission limits, DAK operates chill water scrubber/condensers and maintains their temperatures below a threshold established by an initial performance test. DAK must also perform regular effluent sampling to verify the ethylene glycol concentration is below the limit. The initial performance test was completed in 2001, with the following results:

Table 4: NSPS Subpart DDD Initial Test Results[4]

Emission Source	Detected Emissions (lb/lb production)	Detected Emissions (kg/Mg production)	Allowable Emissions (kg/Mg production)
Raw Material Preparation **(ID No. ES 94-02)**	7.76E-06	0.008	0.04
Polymerization **(ID Nos. ES 94-4 and ES 94-08)**	1.54E-05	0.015	0.02

This rule does not have subsequent emission testing requirements.

Recordkeeping and reporting: DAK must keep records of temperature measurements, effluent sampling, and control device maintenance. DAK must submit a summary report of the monitoring and recordkeeping requirements twice per year.

There have been no changes to the boilers and heat exchangers that would change the applicability of NSPS Subpart DDD. Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

f. 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" [state-enforceable only]

This rule requires the facility to emit toxic air pollutants (TAP) such that the acceptable ambient limits (AAL) listed in 02D .1104 are not exceeded.

In order to demonstrate compliance with the AALs, NSC complies with the emission limits listed in the permit. The emission limits for acetaldehyde and 1,3-butadiene were previously determined using air dispersion modeling.

DAQ approved a modeling demonstration for Dupont Cedar Creek and Dupont Teijin Films (facility ID No. 2600198) on February 12, 1999, and that limit has been incorporated into this permit because those

[4] DAQ's previous reviews report these results, but no test reference number is available. See DAQ's application review for the T19 permit revision, page 6.

operations were consolidated into DAK. Additionally, DAQ approved a modeling demonstration for several other sources at this facility on May 8, 2008.

Table 5: Comparison of TAP Emission Limits in the Existing Permit and Reported Actual TAP Emissions

Pollutant	Emission Source	Allowable (Modeled) Emission Rate	Modeling Date	Facility-wide actual emission rate[5]
Acetaldehyde	Seal Pot Vent **(ID No. ES 94-02)**	1 lb/hr	May 8, 2008	8,935 lb/yr (1.02 lb/hr @8,760 hr/yr)
	Ejector Hotwell Vent **(ID No. ES 94-08)**	1 lb/hr		
	Wastewater handling system **(ID No. I-94-7)** and associated Dowtherm heaters **(ID Nos. ES 94-9a and ES 94-9b)**	40 lb/hr		
	Precrystallizer/Crystallizer **(ID Nos. ES 94-15 and ES 94-16)**	1,057 lb/hr		
	Esterification and Polymerization Process Vents, Steam Jet Ejectors, and Tank / Storage Vents **(ID No. ES-13)** and Wastewater lift station **(ID No. I-94-11)**	127.89 lb/hr	February 12, 1999	
1,3-Butadiene	Seal Pot Vent **(ID No. ES 94-02)**	2,703 lb/yr	May 8, 2008	238 lb/yr
	Ejector Hotwell Vent **(ID No. ES 94-08)**	2,231 lb/yr		
	Esterification and Polymerization Process Vents, Steam Jet Ejectors, and Tank / Storage Vents **(ID No. ES-13)** and Wastewater lift station **(ID No. I-94-11)**	1,444 lb/yr	February 12, 1999	

Based on the most recent emissions data, there appears to be a considerable margin of compliance with TAP emission rates.

In each case, DAQ has determined that no monitoring, recordkeeping, or reporting is required to demonstrate compliance with the modeled emission limits. There have been no modifications since the most recent modeling demonstration that required a new analysis of TAP emissions. DAQ has reviewed this analysis and agrees with this analysis, and continued compliance is expected.

g. 15A NCAC 02D .1111 "Maximum Achievable Control Technology"

This rule incorporates the Maximum Achievable Control Technology (MACT) standards under 40 CFR Part 63 into North Carolina's SIP. For the purposes of MACT applicability, this facility is an area source of hazardous air pollutants (HAP) because it does not have the potential to emit more than 10 tons per year (tpy) of any individual HAP and/or more than 25 tpy of total combined HAP. This facility has accepted an enforceable limit to maintain the status of area source (see Section 6.i.ii for a discussion of major source avoidance).

Rules that apply to major sources of HAP (e.g., the MACT standards for boilers under 40 CFR Part 63, Subpart DDDDD) do not apply to this facility.

[5] Data taken from DAQ's Emission Inventory Database for CY2021. This data is submitted by DAK. Additionally, the Inventory states that the facility was operating 24/7 (i.e., 8,760 hours per year).

i. 40 CFR Part 63, Subpart ZZZZ "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"

This rule applies stationary engines located at major sources and area sources of HAP.

Applicability: The emergency-use engine I-EG2 is subject to this rule. For the purposes of complying with this rule, this engine is classified as an existing, emergency-use engine located at an area source of HAP.

Emission limits: There are no specific emission limits for this classification of engine.

Compliance requirements: In general, the requirements for this classification of engine are:

- Change oil, belts, and filters on a regular schedule;
- Operate with good work practices according to manufacturer specifications;
- Keep records of maintenance activities and hours of operation; and
- Install a non-resettable hour meter.

Note that I-EG2 is considered "insignificant" per 15A NCAC 02Q .0503(8). In general, rules that only apply to insignificant activities are not included in the specific conditions in DAQ's Title V permits. Therefore, this permit does not contain a specific condition for MACT Subpart ZZZZ. DAK must still comply with the requirements of MACT Subpart ZZZZ.

ii. 40 CFR Part 63, Subpart JJJJJJ "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources"

MACT Subpart JJJJJJ applies to boilers installed at area sources of HAP. The requirements of the rule differ based on the size and fuel used in the specific boiler.

Applicability:

- This rule specifically defines a boiler as "an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water." The Dowtherm heaters (ID Nos. ES 94-9a, ES 94-9b, DTH-1, DTH-2, and DTH-3) do not heat water, and therefore do not meet the definition of this rule.

- The boiler ES-003 is only fired with natural gas. According to this rule, a "gas-fired boiler" is not subject to this rule (see 40 CFR 63.11195(e)).

- The boilers ES-001 and ES-002 are fired with natural gas and No. 2 fuel oil. These boilers are subject to this rule. According to this rule, these boilers will be "existing" and "oil subcategory."

Emission limits: This rule does not have emission limits for existing, oil subcategory boilers.

Compliance requirements: In general, for existing, oil subcategory boilers, this rule requires:

- An initial energy assessment,
- An initial tune-up,
- A subsequent tune-up every two years,
- Operate with good work practices

Recordkeeping and Reporting: DAK must keep records of maintenance and tune-ups on these boilers. All reporting requirements for this rule are met by complying with the Annual Compliance Certification required by all of DAQ's Title V permits.

There have been no changes to the boilers and heat exchangers that would change the applicability of MACT Subpart JJJJJJ. DAQ has reviewed this analysis and agrees with this analysis, and continued compliance is expected. Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports. The specific condition in the permit has been updated to match DAQ's standard permit condition for existing oil subcategory boilers; this change is only for conformity among DAQ's permits and is not meant to impact the facility's compliance requirements.

iii. 40 CFR Part 63, Subpart VVVVVV "National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources" (a.k.a. CMAS)

This rule applies to chemical manufacturing process units (CMPU) that are located at an area source of HAP and that process the specific HAPs listed in Table 1 to the rule, and in concentrations greater than those listed in 40 CFR 63.11494(a)(2). Each process associated with PET production at this facility is subject to this rule.

Per 40 CFR 63.11494(e), any facility subject to this rule that installs a control device in order to maintain "area source" status must obtain a Title V permit. DAK operates control devices on the CMPUs subject to this rule in order to maintain area source status (see Section 6.i.ii) and therefore is required to obtain a Title V permit regardless of actual or potential emissions.

All process vents have total resource effectiveness values (TREs) much greater than 1.0 and thus have no additional control requirements under this rule. DAK Americas has wastewater stream containing partially soluble acetaldehyde, which is subject to CMAS requirements. This stream is piped from the point of generation to an organic stripping column to remove the acetaldehyde and other VOCs. The stripped compounds are collected and burned as supplemental fuel in the Dowtherm heaters. The point of determination (POD) is the discharge of the stripping column. Following the POD, the wastewater is piped to the wastewater treatment plant for biological treatment and then discharged to the Cape Fear River.

Table 6 is a summary of DAK's requirements under this rule:

Table 6: Summary of MACT Subpart VVVVVV Requirements

Equipment	Standard	Monitoring/Recordkeeping/Reporting
CMPU	The facility will comply by equipping each process vessel with a cover or lid that is closed at all times when it is in organic HAP service, except for manual operations that require access.	Conduct quarterly inspections while the CMPU is operating to determine that process vessels are sound and free of leaks Repair any leak within 15 calendar days after detection of the leak, or document the reason for any delay of repair. Semiannually, report any leak not repaired within 15 days, the reason for the delay in the leak repair, and the date the leak was repaired.
Process vents	Continuous	Continuous Maintain records of all TRE calculations

Equipment	Standard	Monitoring/Recordkeeping/Reporting
	All continuous process vents have TREs > 4, and thus have no additional control requirements.	
Process vents	Batch Determine uncontrolled HAP emissions. If uncontrolled HAP emissions are greater than or equal to 10,000 lb/yr, comply with requirements in Table 2 of 40 CFR Part 63 Subpart VVVVVV.	Batch If HAP emissions are less than 10,000 lb/yr, maintain records of batch process vent emission calculations, the number of batches operated each month, and any updated emissions calculations, OR keep records of the worst-case processes or organic HAP usage. If HAP emissions are greater than 10,000 lb/yr, keep records of performance tests and records of the monitoring system and the monitored parameters.
Storage tanks	Not applicable – The combined facility will have no storage tanks containing Table 1 HAPs.	N/A
Wastewater systems	Because Table 1 HAP concentrations are < 10,000 ppmw at the POD, the combined facility only has to discharge wastewater streams to onsite or offsite wastewater treatment or hazardous waste treatment	Maintain records identifying each wastewater stream and documenting the type of treatment that it receives.
Heat exchange systems	The combined facility will have only "small heat exchange systems," which have a cooling water flow rate less than 8,000 gpm. The facility will comply by meeting one or more of the conditions in 40 CFR 63.104(a).	Semiannually, report any leak not repaired within 45 days, the reason for the delay in the leak repair, and the date the leak was repaired.

Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

h. 15A NCAC 02D .1806 "Control and Prohibition of Odorous Emissions" [state-enforceable only]

This rule requires that facilities not cause objectionable odors outside of the facility's boundary. In general, DAQ requires facilities that have caused substantiated odor complaints to implement some kind of control for odorous emissions.

There are no documented odor complaints for this facility. The facility has no specific requirements under this rule. Based on the most recent compliance inspection, DAK appeared to be in compliance with this rule. Continued compliance will be determined during subsequent inspections.

i. 15A NCAC 02Q .0317 "Avoidance Conditions"

This rule allows a facility to accept enforceable limits in order to avoid applicability of specific rules. DAK is currently avoiding the applicability of 15A NCAC 02D .0530 "Prevention of Significant Deterioration" (PSD) and 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (specifically, the applicability of 40 CFR Part 63, Subpart JJJ).

i. Avoidance of 15A NCAC 02D .0530 "Prevention of Significant Deterioration" (PSD Avoidance)

In general, for the purposes of PSD, a facility is a "major source" if it has actual emissions of a criteria pollutant greater than 100 tpy and activities at the facility are included in the list of source categories in 40 CFR 51.166(b)(1)(i). DAK is a "chemical process plant," and therefore 100 tpy is the major source threshold for this facility.

DAK has previously emitted criteria pollutants at rates above the 100 tpy threshold (as an example, based on data in DAQ's Emission Inventory Database, this facility emitted 250.75 tpy of SO_2 during CY2007).

DAK is avoiding triggering a major modification for PSD by limiting emissions of SO_2 from the boilers ES-001, ES-002, and ES-003 to less than 660.7 tpy. This limit was included in the permit with the T20 permit revision (issued June 2, 2008). In order to demonstrate compliance with this limit, DAK tracks the amount of fuel and the sulfur content of the fuels fired in the boilers. DAK uses this information to calculate the SO_2 emissions from these boilers on a monthly basis, and submits a summary report twice per year.

There have been no changes to these boilers that would change the applicability of PSD. DAQ has reviewed this analysis and agrees with this analysis. Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

ii. Avoidance of 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT Avoidance)

In general, a facility is a "major source" of hazardous air pollutants (HAP) if it has potential emissions of any individual HAP greater than 10 tpy or total HAP greater than 25 tpy. If a facility not a major source of HAP, it is instead an "area source" (see 40 CFR 63.2).

This facility has potential emissions of several HAPs greater than 10 tpy and combined HAP greater than 25 tpy. In order to avoid being designated a major source of HAP, the facility has accepted an enforceable emission limit to reduce potential HAP emissions to less than the major source threshold.

In order to comply with the HAP limits, DAK operates several control devices:

- Organic stripping column at the wastewater handling system (ID No. I-94-7) controlled by Dowtherm heaters (ID Nos. ES 94-9a and ES 94-9b). For the purposes of avoiding major source status, DAK is only required to operate the Dowtherm heaters such that the major source threshold is not exceeded.

- Esterification/Continuous Polymerization Operations (ID Nos. ES 94-02 and ES 94-08) controlled by the chilled water scrubber and condensers (ID Nos. CD 94-02 and CD 94-08). In order to take credit for HAP emission reduction from these control devices, DAK must operate these emission sources and control devices as required by NSPS Subpart DDD (see Section 6.e.ii).

- Solid State Polycondensation Operations (ID Nos. ES 94-15 and ES 94-16) controlled by the catalytic oxidizer (ID No. CD 00-15). For the purposes of avoiding major source status, DAK is only required to operate the catalytic oxidizer such that the major source threshold is not

exceeded. In order to take credit for HAP emission reduction from this control device, DAK must operate a continuous temperature sensor, verify that the catalytic oxidizer is operating at the appropriate temperature, and conduct regular maintenance on the catalytic oxidizer.

- Esterification and polymerization process (ID No. ES-13) using the natural gas fired-thermal oxidizer (ID No. CD-TO). For the purposes of avoiding major source status, DAK is only required to operate the thermal oxidizer such that the major source threshold is not exceeded. In order to take credit for HAP emission reduction from this control device, DAK must operate a continuous temperature sensor, verify that the thermal oxidizer is operating at the appropriate temperature, and conduct regular maintenance on the thermal oxidizer.

DAK must calculate the facility-wide HAP emissions on a monthly basis. DAK must keep track of temperatures and the periods of time each of these control devices were not operating. DAK must submit a summary report twice per year.

There have been no changes to these source or control devices that would change the applicability of MACT. DAQ has reviewed this analysis and agrees with this analysis. Based on the most recent inspection report, DAK appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

j. 15A NCAC 02Q .0512 "Permit Shield and Application Shield"

This rule allows DAQ to include specific conditions in a Title V permit that identify requirements that are not applicable to a specific source. DAQ has previously determined that the following rules do not apply to this facility:

- 15A NCAC 02D .0543: For a discussion of this rule, see Section 6.k.iii.
- 15A NCAC 02D .0614: For a discussion of this rule, see Section 6.k.i.

k. Nonapplicable Rules:

There are several SIP and Federal rules that could potentially apply at this renewal, but ultimately do not.

i. 15A NCAC 02D .0614 "Compliance Assurance Monitoring"

The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the act. Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards. An emission unit is subject to CAM, under 40 CFR Part 64, if all of the following three conditions are met:

I. The unit is subject to any (non-exempt, e.g., pre-November 15, 1990, Section 111 or 112 standard) emission limitation or standard for the applicable regulated pollutant.
II. The unit uses any control device to achieve compliance with any such emission limitation or standard.
III. The unit's pre-control potential emission rate exceeds 100 percent of the amount required for a source to be classified as a major source, i.e., either 100 tpy (for criteria pollutants) or 10 tpy of any individual/25 tpy of any combination of HAP.

CAM applicability for each control device at this facility is examined in Table 7 below.

Table 7: CAM Analysis

Control Device	Associated Emission Sources	Applicable Emission Limits	Triggers CAM?	Notes
Chill water scrubbers/condenser (ID No. CD 94-02), Controlling VOC, HAP, and TAP	Seal pot vent (ID No. ES 94-02)	0.04 $kg_{VOC}/Mg_{product}$ (NSPS Subpart DDD)	No	1
		HAP less than major source threshold (15A NCAC 02Q .0317)	No	2
		Various TAP limits (15A NCAC 02D .1100)	No	3
		Various HAP emission limits (MACT Subpart VVVVVV)	No	4
Chill water scrubber/condenser (ID No. CD 94-08), Controlling VOC, HAP, and TAP	Ejector hotwell (ID No. ES 94-08)	0.02 $kg_{VOC}/Mg_{product}$ (NSPS Subpart DDD)	No	1
		HAP less than major source threshold (15A NCAC 02Q .0317)	No	2
		Various TAP limits (15A NCAC 02D .1100)	No	3
		Various HAP emission limits (MACT Subpart VVVVVV)	No	4
Cyclones and Bagfilter (ID Nos. 94-15a, 94-15aa, and CD 1333-F01), Controlling PM10	Precrystallizer (ID No. ES 94-15) and Crystallizer (ID No. ES 94-16)	$E = 4.10 \times P^{0.67}$ (15A NCAC 02D .0515)	No	5
catalytic oxidizer (ID No. CD 00-15), Controlling HAP and TAP		HAP less than major source threshold (15A NCAC 02Q .0317)	No	2
		Various TAP limits (15A NCAC 02D .1100)	No	3
Dust filter (ID No. CD 94-18), Controlling PM10	SSP cooler (ID No. ES 94-18)	$E = 4.10 \times P^{0.67}$ (15A NCAC 02D .0515)	No	6
bin vent filter (ID No. CD 94-24), Controlling PM10	Isophthalic acid silo (ID No. ES 94-24)	$E = 4.10 \times P^{0.67}$ (15A NCAC 02D .0515)	No	6
Boilers (ID No ES 94-9a and b), Controlling VOC, HAP, and TAP	Wastewater handling system (ID No. I-94-7)	HAP less than major source threshold (15A NCAC 02Q .0317)	No	2
		Various TAP limits (15A NCAC 02D .1100)	No	3
		Various HAP emission limits (MACT Subpart VVVVVV)	No	4

Notes for Table 7:

1: These emission sources have pre-control potential VOC emissions of approximately 10 tpy. This rate is less than the major source threshold of 100 tpy. Therefore, this emission source cannot trigger CAM for VOC emissions per Condition III above.[6]

2: This limit is an emission cap approved pursuant to the rules of Subchapter 02Q. Therefore, this limit is exempt from CAM applicability per 15A NCAC 02D .0614(b)(1)(E) and Condition I above.

3: There is no major source threshold for TAP emissions. Therefore, TAP limits cannot trigger CAM per condition III above.

4: This is an emission limit proposed by EPA after November 15, 1990 and pursuant to Section 112 of the federal Clean Air Act. Therefore, this limit is exempt from CAM applicability per 15A NCAC 02D .0614(b)(1)(A) and Condition I above.

[6] The potential emissions for this source were previously determined by DAQ, and there have been no substantial changes to these sources afterwards. See DAQ's application review for the T19 permit revision, page 16.

5: These emission sources have pre-control potential PM10 emissions of approximately 20 tpy. This rate is less than the major source threshold of 100 tpy. Therefore, this emission source cannot trigger CAM for PM10 emissions per Condition III above.[7]

6: These emission sources have pre-control potential PM10 less than the major source threshold. Therefore, this emission source cannot trigger CAM for PM10 emissions per Condition III above.[8]

Based on the above analysis, CAM does not apply to any control device at this facility. Note that the existing permit includes a "permit shield" for CAM, as allowed by 15A NCAC 02Q .0512.

ii. 15A NCAC 02D .0530 "Prevention of Significant Deterioration" (PSD)

This facility is considered a major source for PSD applicability (see Section 6.i.i). Although this facility is a major source, the DAK has not made any modifications that meet the definition of "significant modification," and therefore DAK has no requirements under this rule.

In addition, DAK is avoiding triggering a significant modification by complying with a PSD avoidance limit.

iii. 15A NCAC 02D .0543 "Best Available Retrofit Technology" (BART)

DAQ has previously evaluated the applicability of this rule to this facility. DAQ has determined that this rule does not apply: "NC DAQ performed source-specific analyses of all potentially BART-affected sources to determine which sources cause or contribute to visibility impairment using the CALPUFF model. All sources that contributed less than 0.5 deciview (dv) of visibility impairment in all Class I Federal area were determined to be exempt from the BART requirements.

Based on the CALPUFF visibility analysis, this facility is not subject to 15A NCAC 2D .0543."[9]

iv. 15A NCAC 02D .0900 "Volatile Organic Compounds" and 02D .1400 "Nitrogen Oxides"

These rules apply to sources of VOC and NOx. The rules for Reasonably Available Control Technology (RACT) are included in these Sections.

The RACT rules apply geographically according to the lists in 15A NCAC 02D .0902(f) and 02D .1402(d). DAK is located in Cumberland County, which is not included in those lists. Therefore, none of the RACT rules apply to this facility.

In addition to the RACT rules, 02D .0900 and 02D .1400 include rules that apply statewide to specific sources of VOC and NOx. These rules are listed in 02D .0902(e) and 02D .1402(c). However, none of those rules apply to the emission sources at this facility.

[7] Ibid.
[8] Ibid., page 9.
[9] See DAQ's application review for the T19 permit revision, page 14.

v. 15A NCAC 02D .2100 "Risk Management Program" (a.k.a. §112(r), Section 112(r) of the Clean Air Act)

DAK stated that no RMP is required for this facility. Therefore, DAK has no increased requirements under 02D .2100. Note that DAK must still comply with other requirements of §112(r) (e.g., the General Duty Clause).

vi. 15A NCAC 02Q .0711 "Emission Rates Requiring a Permit"

This rule applies to facilities that make a modification that increases the emission rate of TAP. This facility emits several TAP, so this rule could potentially apply.

This facility has previously been subject to this rule. However, all references to this rule were removed from the Title V permit as part of the T22 permit revision because the sources of TAP are affected sources pursuant to 40 CFR Part 63 (see 02Q .0702(a)(27)(b)) and removing references to this rule did not pose an unacceptable risk to human health.[10]

Since the T22 permit revision was issued, DAK has not made a modification that triggers applicability of this rule. Therefore, 02Q .0711 does not apply to this facility.

vii. 40 CFR Part 60, Subpart Db "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units"

This rule applies to steam generating units constructed, reconstructed, or modified after June 19, 1984 and that have a heat input greater than 100 million Btu per hour. The boilers ES-001 and ES-002 have a heat input greater than the threshold, but were constructed in 1975.[11] The boilers have not been reconstructed or modified since the applicability date. Therefore, this rule does not apply.

viii. 40 CFR Part 60, Subpart IIII "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"

This rule applies to stationary internal combustion engines manufactured after April 1, 2006 (see 40 CFR 60.4200(a)(2)). The emergency-use engine I-EG2 was manufactured before this date.[12] Therefore, this rule does not apply to this facility.

7. Compliance Status and Other Regulatory Concerns:

- *Compliance status*: This facility was most recently inspected on July 20, 2022 by Taijah Hamil. DAK appeared to be in compliance with the Title V permit during that inspection.

- *Compliance history*: There have been no Notice of Violations issued to DAK since the previous Title V renewal.

- *Application fee*: Title V permit renewals do not require an application fee.

[10] See DAQ's application review for the T22 permit revision, page 21.
[11] See DAQ's inspection report for this facility (dated July 20, 2022), page 2.
[12] The exact date of manufacture is not available. However, this engine has been included in the Title V permit since at least the T17 permit revision, issued August 31, 2001.

- *PE Seal*: Pursuant to 15A NCAC 02Q .0112 "Application requiring a Professional Engineering Seal," a professional engineer's seal (PE Seal) is required to seal technical portions of air permit applications for new sources and modifications of existing sources as defined in Rule .0103 of this Section that involve:

  (1) design;
  (2) determination of applicability and appropriateness; or
  (3) determination and interpretation of performance; of air pollution capture and control systems.

  A PE Seal was not required for this Title V permit renewal.

- *Zoning*: A Zoning Consistency Determination per 15A NCAC 02Q .0304(b) was not required for this Title V permit renewal.

8. Facility Emissions Review

- The table on the first page of this permit review presents the criteria pollutant (plus total HAP) from the latest available approved facility emissions inventory (2021). The HAP emitted in the largest quantity from the facility is acetaldehyde.

- DAK is classified as a Title V facility due to potential emissions of SO_2 greater than the major source threshold (100 tpy). This permit renewal will not affect DAK's status as a Title V facility. Note that, regardless of actual or potential emissions, DAK is required to obtain a Title V permit as part of MACT Subpart VVVVVV (see 40 CFR 63.11494(e)).

- DAK is classified as an area source of HAP (i.e., not a major source) due to a facility-wide HAP emission limit. This renewal will not affect DAK's status as an area source of HAP.

- DAK is classified as a major source for PSD due to having had facility-wide SO_2 emissions greater than the major source threshold (100 tpy). DAK is avoiding triggering a PSD review by complying with a PSD avoidance limit. This renewal will not affect DAK's status as a major source for PSD or DAK's ability to avoid triggering additional PSD requirements.

9. Draft Permit Review Summary

Initial internal draft: An initial draft of the permit was sent to RCO Permits staff on October 11, 2022. The only comments received on this draft were typos to correct.

Subsequent draft: An updated draft of the permit and review were sent to RCO SSCB staff, FRO staff, and DAK staff on October 19, 2022. RCO SSCB had no comments on the drafts. DAK staff did not provide a response. FRO responded with one comment.

FRO Comment: (re: application review Section 2) "2600198 is no longer active. This facility was combined with 2600106 back in 2014. 2600106 now encompasses all three previously separate facilities: 2600063, 2600198, 2600106"

Response: The application review has been corrected.

10. Public Notice and EPA 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 is provided to the public under 02Q .0521 above. South Carolina is an affected state.

- The Public Notice and EPA Review periods began on XXXX
- The Public Notice period ended on XXXX
- The EPA Review period ended on XXXX

11. Recommendations

This permit application has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility appears to be complying with all applicable requirements.

Recommend Issuance of Permit No. 04319T26. FRO and DAK staff have received a copy of this permit and submitted comments that were incorporated as described in Section 9.