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NORTH CAROLINA DIVISION OF AIR QUALITY Application Review					Region: Mooresville Regional Office County: Catawba NC Facility ID: 1800419 Inspector's Name: Joe Foutz		
Issue Date: 7	Issue Date: TBD						Inspection: 03/19/2024 Code: 3 / Compliance - inspection
		Facility	Data				plicability (this application only)
Facility Jata Applicant (Facility's Name): Prysmian Cables and Systems USA, LLC Facility Address: Prysmian Cables and Systems USA, LLC 2512 Penny Road Claremont, NC 28610 SIC: 3229 / Pressed And Blown Glass, Nec NAICS: 327212 / Other Pressed and Blown Glass and Glassware Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V					 SIP: 02D: .0503, .0515, .0516, .0521, .0614, .1100, .2100 02Q: .0317, .0508(j) NSPS: n/a NESHAP: Subparts ZZZZ, DDDDD PSD: n/a PSD Avoidance: NOx NC Toxics: 02D .1100 112(r): RMP required Other: 112(g) avoidance 		
		Contact					Application Data
Facility ContactAuthorized CoMacrae WaltersSujeet RaoHSE ManagerIndustrial Exceller(828) 459-8668Senior Manager2512 Penny Road(828) 459-8668Claremont, NC 286102512 Penny RoadClaremont, NC 28610Claremont, NC 28		llence r 3 bad 28610	Technical Contact Macrae Walters HSE Manager (828) 459-8668 2512 Penny Road Claremont, NC 28610		Application Number: 1800419.24B Date Received: 06/03/2024 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 07334/T31 Existing Permit Issue Date: 02/29/2024 Existing Permit Expiration Date: 11/30/2024		
Total Actua CY	al emissions in SO2	n TONS/YEAR: NOX	voc	СО	PM10	Total HA	AP Largest HAP
2022	0.7700	303.97	31.72	3.04	11.28		
2021	0.7600	303.83	42.40	3.35	11.55	5 20.0	6 16.90 [Chlorine]
2020	0.7400	272.04	31.62	3.00	10.88	3 13.8	8 11.83 [Chlorine]
2019	0.6700	237.48	35.22	2.94	10.16	5 13.3	8 10.74 [Chlorine]
2018	0.6500	242.81	32.43	2.61	8.73	14.4	5 11.83 [Chlorine]
Review Engineer: Russell Braswell Review Engineer's Signature: Date:							/ Recommendations: ΓBD+5 years

1. Purpose of Application

Prysmian Cables and Systems USA, LLC (Prysmian; the facility) operates a factory in Catawba County under Title V permit 07334T31 (the existing permit). The existing permit is set to expire on November 30, 2024. In accordance with General Condition K of the existing permit, Prysmian submitted this application in order to renew the Title V permit. Consistent with 15 A NCAC 02Q .0512(b), because the application for Title V permit renewal was received more than six months before the expiration of the existing permit, the existing permit will remain in effect, regardless of expiration date, until DAQ issues a response to this application for permit renewal.

In addition to renewing the Title V permit, Prysmian has requested some changes to the existing Title V permit. Those updates will also be discussed in this application review.

2. Application Chronology

Date	Event
June 7, 2024	Application received.
June 17, 2024	Request for additional information sent by email. The following questions were asked:
	 Regarding the SCR: a. Were the SCR units ever installed?
	b. Does the recent PSD application include the lack of an SCR?2. Does the facility receive pre-made glass tubes, or are they manufactured on- site?
	3. The existing permit includes three nearly identical sections for boilers. These could be combined into one section for clarity.
July 15, 2024	Request for additional information sent by email, also a reminder regarding the June 17 request.
	4. Did the facility ever install and operate the NOx emission monitors in Section 2.2 A.1.g?
	5. Does the facility emit 1-bromopropane?
	6. Why is the size of engine I-ES-FP changing? Is it now subject to NSPS?
	7. Does the facility plan to eventually install scrubber 5WS?
	8. Does the facility plan to install the connection between ES-12 and 1DS?
	9. The application mentions 112(g), but no such condition exists in the permit. Should the permit include a condition for 112(g)?
	10. Does Prysmian intend to install additional CVD lathes (ES-1) in the future?
July 16, 2024	Response received to the June 17 and July 15 requests:
	1 a. They were installed but never "run in production."
	1 b. The SCR is not included in the PSD application.
	2. "The facility starts with a glass tube produced offsite"
	3. Prysmian is interested in combining the sections for the boilers.
	4. The NOx monitors were never in service.
	5. Prysmian does not believe that the facility emits 1-BP.
	6. The engine size in the permit is wrong. The change is a correction, not a new engine.
	7. "5WS Scrubber is scheduled to be installed by the end of 2024"
	8. "Not installed – potentially done in the future"
	9. "With the permit application for ES-13 (2021) emissions of chlorine were
	estimated at 9.9 TPY. DAQ did not add in a condition (or an avoidance
	condition) into the new permit. Prysmian is not adding any sources as a part of
	the renewal and as such just stated it would remain in compliance."
	10. "There is potential to add more lathes so we should keep it."
	With this information, DAQ deemed the application for renewal complete.

Date	Event
July 31, 2024	Request for additional information sent by email. The following questions were asked:
	Based on the .21A application (absent any undocumented adjustments or amendments), the sintering operation should be subject to an avoidance condition for 112(g).
	1. Are emissions of CL_2 , HF, and HCl expected to be constant while the process is active?
August 15, 2024	2. Are CL ₂ , HF, and HCl the only HAPs excepted from this process? Response received to the July 31 request:
August 15, 2024	Response received to the July 31 request:
	"Prysmian was requesting an avoidance condition for chlorine only as the total HAP is not near 25 TPY. The facility does have an average lb/hr rate for chlorine per OVD unit, and is tracking the number of units operating and hours of operation for emissions tracking."
August 23, 2024	An initial internal draft of the permit and this application review were sent to DAQ Permits staff for review.
October 3, 2024	Comments received on the September 6 draft.
October 8, 2024	Request for additional information sent by email. The following questions were asked:
	 When determining compliance with 02D .0516 for ES-9 and ES-9a (section 2.1 B of the current permit), what emission factor(s) and heat input rates do you use? What is the heat source for ES-9 and ES-9a?
October 15, 2024	Response received to the October 8 request:
000000113, 2024	"The overcladding units do not have an associated combustion unit, but rather a plasma burner. As such, we do not believe that 15A NCAC 2D .0516 is applicable to the either the primary scenario or alternative scenario in permit condition 2.1.A.1."
October 16, 2024	A revised internal draft of the permit and this application review were sent to DAQ Permits staff for review.
October 24, 2024	Comments received on the October 16 draft.
November 1, 2024	A draft of the permit and this application review were sent to DAQ SSCB staff, DAQ MRO staff, and Prysmian staff.
November 15, 2024	Comments received from Prysmian on the November 1 draft.
November 26, 2024	A revised draft of the permit and this application review were sent to Prysmian staff.
January 20, 2025	Comments received from Prysmian on the November 26 draft. In these comments, Prysmian requested to add 5WS as an optional scrubber to more emission sources. This request was originally included in Prysmian's application for PSD major modification.
January 23, 2025	Email sent to Prysmian staff explaining that the change to 5WS requested on January 20, 2025 is acceptable, but an updated application must be submitted to include this request.

Date	Event
February 20, 2025	A final draft of the permit and this application review were sent to Prysmian
	staff.
February 25, 2025	Comments received on the February 20 draft. In addition, Prysmian submitted
	the updated application forms requested on January 23.
February 27, 2025	Email sent to Prysmian staff regarding Prysmian's February 25 comments.
XXXX	Public notice / EPA review
XXXX	Public notice ends
XXXX	EPA review ends
XXXX	Permit issued.

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3. Facility and Application Discussion

3.1 Facility description

This facility manufactures optical glass fibers (a.k.a. fiber optic cables). The process begins with glass tubes purchased off-site (*i.e.*, there are no glass kilns at this facility). The glass tubes are coated, heated, and formed into thin optical glass fibers. This facility is a major stationary source under PSD and a major source of HAP under 40 CFR Part 63.

Note that Prysmian has submitted a separate application for a major modification under PSD. DAQ is processing that application separately from the Title V renewal application.

3.2 Title V permit history

Prysmian's Title V permit was most recently renewed on November 16, 2019. The table below summarizes the recent revisions to the Title V permit and applicability determinations issued by DAQ:

Permit revision (or determination #) (issued)	Application type	Discussion
T29	TV Renewal	This action renewed the Title V permit and also
(December 16, 2019)	(with minor modification)	made corrections to the permit. Also, added a new scrubber to the permit.
		1 1
T30	TV Significant Mod	This action added new sintering operations and
(May 18, 2022)	(Part 1)	deposition machines. Furthermore, added a new
		alternative operating scenario (AOS) that allowed
		for not using lime injection when the cladding
		lines are not using sulfur/fluoride containing
		materials. Also, added a requirement to submit a
		subsequent permit application.
T31	TV Significant Mod	This action satisfied the requirement to submit a
(February 29, 2024)	(Part 2)	subsequent permit application.

3.3 Title V permit renewal and requested changes to the Title V permit

The existing Title V permit has expired. However, before expiration, Prysmian submitted an application for permit renewal pursuant to General Condition K of the permit.

In addition to renewing the permit, Prysmian requested the following administrative changes to the permit:

• Remove the selective catalytic reduction system (ID Nos. 1SCR and 2SCR, associated with ES-9 and ES-9a)

In the application, Prysmian explains:

"These were originally permitted to ensure that [ID Nos. ES-9 and ES-9a] would not trigger PSD and remain under 250 tons per year of NOx. The SCR units were never operated at the site, as the market shifted prior to operation and the expansion was not completed. The site has operated sources ES-9 and ES-9A under the current 250 tpy limits without the SCR

controls since 2017. As such, Prysmian is requesting to remove these from the permit." (Application at 2-2)

In subsequent correspondence, Prysmian stated that the SCR systems were installed at the facility, but were never "run in production." Furthermore, the continuous NOx emission monitors associated with the SCR were also "never in service."¹

Broadly, the existing permit allows Prysmian to comply with the NOx limits mentioned above by calculating uncontrolled emissions (determined via regular emission testing) and controlled emissions from the SCR. Given that Prysmian has never operated the SCR, removing the SCR will not represent a change in actual emissions from the facility. Furthermore, because the NOx limits mentioned above will not change, removing the SCR will not represent a change in potential emissions from the facility.

DAQ will make this change. See Section 4.8 for a discussion of Prysmian's future compliance with NOx emission limits without the SCR.

• Correct Specific Condition 2.1 A.1 with clarified language

The application requested that Specific Condition 2.1 A.1 (which covers the primary and alternative operating scenarios for ES-9 and ES-9a) be clarified.

DAQ will make this change. See Section 4.6 for a discussion of this condition and the change in the renewed Title V permit.

• Correct Specific Condition 2.2 A.1.h.ii

The application states that this condition references "small and large torch groups" but the facility does not actually operate "small and large torch groups" (Application at 2-3). This language should be removed from the permit.

DAQ will make this requested change.

• Remove insignificant activities

The application requests the following insignificant activities be removed from the permit:

- o I-FBW
- I-ES-SCR-FGH1
- I-ES-SCR-FGH2
- o I-ES-A1H1
- o I-ES-A1H2

DAQ will make these changes.

• Correct insignificant activities

The application requests changing the capacity of I-ES-FP from 105 horsepower to 208 horsepower.

¹ Email from Macrae Walters (Environmental Sustainability Manager, Prysmian) to Russell Braswell (Engineer, DAQ) received July 16, 2024.

This source is a diesel-fired emergency generator. According to Prysmian, the value in the permit is simply wrong; 208 has always been the correct value. Therefore, this change does not represent a new or reconstructed engine.

DAQ will make this change. Note that I-ES-FP will remain an insignificant activity.

• Add scrubber 5WS as an optional control device for ES-1, ES-4, ES-14, ES-11, and ES-18.

In correspondence following the receipt of the application for Title V renewal, Prysmian requested that 5WS be added as an optional control device for these sources.

"We [Prysmian] have reviewed the [draft] permit and have no additional comments other than the request to add 5WS. We included this request in the PSD [application] as we assumed this was the fasted method for the update. Prysmian would like 5WS to added in this renewal if possible. As such can we just change this to a renewal with modification?"²

As Prysmian stated, this request was originally included in the application for PSD major modification. In that application, Prysmian included Form D5 "Technical Analysis to Support Permit Application" which included a P.E. Seal from Dana Norvell³ which certified the "entire application," and therefore covers Prysmian's request to add the scrubber 5WS to these sources.

This change is only to the routing of emissions from these sources, and is not expected to increase emissions from any of these sources. Therefore, this change is not expected to increase emissions from the facility.

DAQ will make this change. DAQ will add requirements to the permit regarding these sources and scrubber 5WS. See Section 4.2 for additional discussion on this topic.

3.4		Changes	to	the	existing	permit
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Page No.	Section	Description of Changes	
Throughout	Throughout	 Updated dates and permit numbers. Fixed formatting issues. Changes to formatting are only for clarity and conformity with DAQ's other Title V permits and are not intended to affect the Permittee's compliance requirements. 	

² Email from Dana Norvell (Manager of Consulting Services for Trinity Consultants, a firm representing Prysmian) to Russell Braswell (Engineer, DAQ), received November 15, 2024.

³ PE license #028884. According to the North Carolina Board of Examiners for Engineers and Surveyors' online lookup tool, this license is current through December 31, 2025.

Page No.	Section	Description of Changes
4	1	 Removed scrubber parameters from the descriptions of 3WS, 4WS, and 5WS. These parameters are enforceable, and are therefore referenced in the body of the Title V permit. Added 5WS as an optional control device for ES-1, ES-4, ES-14, ES-11, and ES-18 as requested by the Permittee in Application 1800419.24A. Removed the lime injection parameters from the descriptions of 1DS and 2DS for the same reason. Removed references to AOS and POS from ES-12 and ES-13. The AOS and POS are enforceable conditions defined in the body of the Title V permit. Removed the references to the following control devices as requested by the Permittee: 1SCR 2SCR As noted in the application for permit renewal, these control devices were never operated.
6	2.1 A.2	 02D .0515 condition Reformatted testing requirement for clarity. Added requirement to re-test ES-1 and ES-13 (and associated scrubbers) and ES-9, ES-9a, and ES-12 (and associated filters) every five years at a minimum. Note that this is the same schedule as the new 112(g) avoidance condition. Removed requirement to monitor scrubber pH because that parameter is not related to PM control efficiency. This parameter has been moved to the Specific Condition for 02D .1100. Added a requirement to monitor which scrubber is in service for these emission sources.
9	2.1 A.4 (new)	 02Q .0317 condition Added an avoidance condition for 02D .1112 and 112(g) as previously requested by the Permittee in the .21A application.
n/a	2.1 B (former)	 Removed former section 2.1 B because it only included a specific condition for 02D .0516 and the overcladding lines ES-9 and ES-9a. These sources are not combustion sources, and therefore 02D .0516 does not apply, rendering this section unnecessary.
12	2.1 B. (new)	• Moved etching operations to new section 2.1 B.
13	2.1 C	• Combined all boilers into this section because the requirements for the boilers at this facility are virtually identical.
n/a	2.1 D, E, and F (former)	• Removed these sections because they have been combined into Section 2.1 C.

Page No.	Section	Description of Changes
17, 19	2.2 A.1 and 2.2 B.1	 02Q .0317 (PSD Avoidance) conditions Removed references to 1SCR because they were never operated. Removed references to POS and AOS because the permit no longer includes any NOx control devices and the AOS and POS have no effect on NOx emissions. Removed references to "uncontrolled" NOx emissions because the permit no longer includes any NOx control devices. Simplified testing requirement to "annually" instead of "by May 30 of each year." Removed requirements to test for NOx from the dry scrubber systems, and replaced them with a general requirement to test for NOx because the permit no longer includes any control devices any control devices for NOx (i.e., all NOx emissions are the same during all operating scenarios). Removed references to continuous NOx monitors because they were only ever required for use with the SCR system, which has now been removed from the permit.
20	2.2 C.1	 02D.1100 condition Added monitoring, recordkeeping, and reporting requirements for the scrubber 4WS because DAQ had previously neglected to include these requirements. Moved the requirement to test and monitor the scrubbers' pH to this section. Moved the requirement to monitor the baghouse lime injection rate to this section.
23	2.2 D.1	 02D .2100 condition Added specific condition for 15A NCAC 02D .2100 and Section 112(r) of the Clean Air Act because the Permittee has stated that this facility must develop a Risk Management Plan.
24, 26	2.3 A.1 and 2.3 B.1	 02D .0614 (CAM) conditions Removed the requirement to monitor the lime injection rate for the bagfilters because the CAM plan covers PM emissions and the lime injection rate does not control PM emissions.
28	3	 Removed the following insignificant activities as requested by the Permittee: I-ES-SCR-FGH1 I-ES-SCR-FGH2 I-ES-SCR-AIH1 I-ES-SCR-AIH2 Corrected the size of I-ES-FP to 208 horsepower.
29	4	• Updated General Conditions to version 8.0.

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

4. Rules Review

Prysmian is subject to the following State Implementation Plan (SIP) rules and state-enforceable only rules, in addition to the General Conditions:

- 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 .0614 "Compliance Assurance Monitoring"
- 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" [state-enforceable only]
- 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (Subparts ZZZZ and DDDDD)
- 15A NCAC 02D .2100 "Risk Management Program"
- 15A NCAC 02Q .0317 "Avoidance Conditions" (PSD Avoidance, 112(g) Avoidance)
- 15A NCAC 02Q .0508 "Permit Content" (Alternative Operating Scenario)

Prysmian's applicability and compliance requirements for each of these rules are discussed in detail below.

4.1 15A NCAC 02D .0503 "Particulate Emissions from Fuel Burning Indirect Heat Exchangers"

Applicability: This rule applies to *all* indirect heat exchangers (such as boilers). Each boiler at this facility is therefore subject to this rule. There are no other indirect heat exchangers at this facility.

Emission limits: The emission limit for this rule is calculated by the equation $E = 1.090 \times Q^{-0.2594}$, where *E* is the particulate emission limit (lb/MMBtu) and *Q* is the combined heat input of each emission source subject to this rule (MMBtu/hr). *Q* is determined when an emission source is added to the permit, and the resulting *E* is not subsequently recalculated when other sources subject to this rule are added to (or removed from) the permit. As a result, different sources can have different emission limits under this rule.

For each subject source at this facility, E is 0.40 lb/MMBtu.⁴

Compliance: Each of the boilers subject to this rule can only burn natural gas. In order to calculate PM emissions from the combustion of natural gas, 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:

PM from natural gas combustion in a boiler (AP-42 Chapter 1.4, Table 1.4-2; PM [Total]):

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

Therefore, natural gas combustion in these boilers is expected to comply with the PM limit by a wide margin without the use of a control device.

⁴ See DAQ's review of Title V permit revision 07334T29 (issued December 16, 2019), page 5. Before this permit was issued, each subject boiler was listed as an insignificant activity. Because they were all included in the list of permitted emission sources at this time, DAQ determined Q to be the same for each boiler.

Monitoring, Recordkeeping, and Reporting: Based on the wide margin of compliance shown above, DAQ has determined that no monitoring, recordkeeping, or reporting is required to demonstrate compliance with 15A NCAC 02D .0503 for the boilers at this facility.

4.2 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"

Applicability: This rule applies to emission sources that exhaust through a stack and are not subject to another particulate matter (PM) emission limit. Note that, when demonstrating compliance with this rule, facilities must perform emission testing using EPA Methods 5 *and* 202 (i.e., test for filterable and condensable PM).⁵ Therefore, rules that only apply to filterable PM are not considered for the purposes of this rule.

- The boilers are subject to a PM limit under 02D .0503.
- DAQ has previously determined that this rule does not apply to ES-Etch.⁶
- Each of the other emission sources at this facility are subject to this rule.

Emission limit: The emission limit for this rule is calculated by the equations $E = 4.10 \times P^{0.67}$ (for $P \le 30$) or $E = 55(P)^{0.11} - 40$, where E is the emission limit in pounds per hour and P is the process rate of the emission source measured in tons per hour. The equations are listed in the permit as an emission limit.

Compliance: PM emissions at this facility are generally controlled by wet scrubbers or fabric filters.

Testing: The existing permit required Prysmian to perform emission testing on scrubber 3WS and the fabric filters 1DS and 2DS.

Emission Sources	Controlled by	Emission Test Reference Number	PM test results (lb/hr)	PM limit [†] (lb/hr)	Test results as % of limit
ES-1, ES-4, ES-11, ES-13, ES-14, ES-18	Scrubber 3WS Or Scrubber 5WS***	2024-034ST*	0.150	0.221**	68%
ES-9	Filter 1DS	2023-086ST	0.253	0.352	72%
ES-9a	Filter 2DS	2023-086ST	0.378	0.604	63%
ES-12	Filters 1BH through 4BH	2024-034ST*	0.040	9.509	0.42%

* Still under review by DAQ.

** This test was only required for ES-13, but given that 3WS controls multiple sources, it appears that this test included emissions from all sources venting to 3WS.

*** In the existing permit, scrubber 5WS is an option only for ES-13. Prysmian has not yet installed this scrubber, and each of these sources vents only to 3WS.

 \dagger "PM Limit" is based on the process rate reported for each test, and does not necessarily represent the maximum *E* for each source.

⁵ See 15A NCAC 02D .2609(a).

⁶ See DAQ's review of Title V permit revision 07334T28 (issued March 18, 2019), page 13: "The application indicates this is not a source of particulate thus 02D .0515 and .0521 do not apply."

Subsequent testing: DAQ will require Prysmian to conduct subsequent testing at least once every five years (*i.e.*, once per Title V permit renewal). The control device parameters (such as liquid flow rate and filter pressure drop) will be revalidated during this subsequent testing. Furthermore, if Prysmian installs scrubber 5WS, Prysmian must conduct emission testing to verify the operation of 5WS.

Requirements for sources controlled by scrubbers: In general, Prysmian must monitor the liquid flow rate, liquid pH, and pressure drop for each of the scrubbers. Prysmian must keep records of which emission sources and control devices were in service during each operating hour. Prysmian must conduct a quarterly inspection and perform maintenance based on manufacturer recommendations. However, as discussed below, monitoring the pH of the scrubber liquid is not required to demonstrate compliance with 15A NCAC 02D .0515.

Requirements for sources controlled by filters: In general, Prysmian must monitor the pressure drop across each of the filters and perform regular inspections and maintenance. For filters using lime injection, the existing permit requires Prysmian to also monitor the lime injection rate. However, as discussed below, monitoring the lime injection rate is not required to demonstrate compliance with 15A NCAC 02D .0515.

Recordkeeping and reporting: Prysmian must keep records of control device maintenance and operation and submit a semiannual summary report.

Compliance: Prysmian appeared to be in compliance with this rule during the most recent compliance inspection. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit:

- The testing requirement in the existing permit will be updated to clarify that Prysmian must conduct subsequent testing.
- The existing permit requires Prysmian to monitor the lime injection rate for the filters 1DS and 2DS and maintain that rate above 30 pounds per hour. Lime injection is used to control emissions of SO₂ and HAP/TAP, not PM. Therefore, the lime injection rate monitoring requirement will be moved to the specific condition for 15A NCAC 02D .1100 "Control of Toxic Air Pollutants."
- The existing permit requires Prysmian to monitor the pH of the scrubbing liquid for 3WS and 5WS and maintain a minimum pH of 8. The pH of the scrubbing liquid is an indicator that it is properly controlling acid, such as HCl. Therefore, like the filter pressure drop, the pH monitoring requirement will be moved to the specific condition for 15A NCAC 02D .1100.
- Because Prysmian has requested to allow the use of 3WS and 5WS as options for ES-1, ES-4, ES-14, ES-11, and ES-18, a recordkeeping requirement will be added to the permit for Prysmian to record which control devices were in service for those emission sources during operation.

4.3 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"

Applicability: This rule applies to combustion sources that are not subject to an SO₂ emission limit under NSPS or MACT.

• Each boiler at this facility is subject to this rule.

- The existing permit lists the cladding units ES-9 and ES-9a as subject to this rule. However, Prysmian claims that these units are not actually combustion units. They are heated by plasma generated by generated by a non-combustion process. The facility sometimes refers to this as a "torch" or "burner," but this process is not actually a combustion process because it does not use fuel. Therefore, ES-9 and ES-9a are not actually subject to this rule.
- There are no other permitted combustion sources at this facility.

Emission limit: The emission limit is 2.3 pounds of SO₂ per million Btu of heat input.

Compliance: The boilers at this facility can only burn natural gas (except for the emergency generator, which can burn No. 2 fuel oil). In general, SO_2 emitted by combustion sources is a function of the amount of sulfur present in the fuel.

In order to calculate SO_2 emissions from the combustion of natural gas, 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:

SO₂ from natural gas burned in a boiler (AP-42 Chapter 1.4, Table 1.4-2; SO₂):

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

Therefore, natural gas combustion sources are expected to comply with the SO₂ limit by a wide margin.

Monitoring, Recordkeeping, and Reporting: Based on the wide margin of compliance for each of the subject sources at this facility, DAQ has determined that no monitoring, recordkeeping, or reporting is required to demonstrate compliance with 15A NCAC 02D .0516.

Changes to the existing permit: The existing permit includes a specific condition for 15A NCAC 02D .0516 and the cladding units ES-9 and ES-9a. This will be removed because those units are not subject to this rule.

4.4 15A NCAC 02D .0521 "Control of Visible Emissions"

Applicability: This rule applies to sources of visible emissions (VE) that are not subject to another VE standard under 02D .0500. Generally, this rule is not applied to sources that are not expected to produce any VE (*e.g.*, from a storage tank).

- DAQ has previously determined that this rule does not apply to ES-Etch.⁷
- Each of the other emission sources at this facility are subject to this rule.

Emission limits: The VE limit for this rule depends on the construction date of the individual source in question. For sources constructed before July 1, 1971, the VE limit is 40%. For each source at this facility, the VE limit is 20% averaged over any six-minute period. The rule allows for one exceedance of the specific limit per hour, and four exceedances per 24-hour period.

⁷ Ibid.

Requirements for boilers: The boilers at this facility only burn natural gas. In general, well-maintained natural gas-fired boilers are not expected to produce substantial VE. The boilers are subject to good work practice requirements under 40 CFR Part 63 Subpart DDDDD (a.k.a., the Boiler MACT; see Section 5.3). DAQ has previously determined that, with regards to the boilers, no specific monitoring, recordkeeping, or reporting is required for Prysmian to demonstrate compliance with this rule.

Requirements for other sources: VE from emission sources controlled by filters and scrubbers, Prysmian must conduct weekly VE observations for VE greater than normal. If VE above normal is detected, Prysmian must take corrective actions or conduct a Method 9 test to determine that an exceedance of the VE standard has not occurred.

Recordkeeping and Reporting: Prysmian must keep records of VE observations and submit a semiannual summary report.

Compliance: Prysmian appeared to be in compliance with this rule during the most recent compliance inspection. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit: DAQ will update the monitoring requirements for 02D .0521 to the latest standard template. This change is mostly for clarity and conformity, and should not have a meaningful impact on Prysmian's compliance requirements.

4.5 15A NCAC 02D .0614 "Compliance Assurance Monitoring" (CAM)

This rule incorporates the requirements of 40 CFR Part 64 (i.e., Compliance Assurance Monitoring) into North Carolina's SIP.

See Section 5.4 for a discussion of Prysmian's requirements under CAM.

4.6 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" [State-enforceable Only]

Background: Prysmian has previously performed air dispersion modeling in order to demonstrate compliance with the acceptable ambient limits (AAL) for the toxic air pollutants (TAP) listed in 02D .1104. The modeled emission rates are listed in the Title V permit as emission limits. See Section 6 for additional discussion of Prysmian's requirements for TAP emissions.

Changes to the existing permit:

- As indicated in DAQ's most inspection report, the existing permit does not include any monitoring, recordkeeping, or reporting requirements for the scrubber 4WS and the associated ES-Etch. DAQ will add a requirement to perform regular internal inspections and parameter monitoring to ensure that scrubber 4WS is operating according to the manufacturer specifications.
- The requirement to monitor the lime injection rate for the filters 1DS and 2DS, formerly included in the permit under 15A NCAC 02D .0515, has been moved to this section because the lime injection rate controls emission of HAP/TAP.
- The requirement to monitor the pH of the scrubbers 3WS and 5WS, formerly included in the permit under 15A NCAC 02D .0515, has been moved to this section because the pH of the scrubber controls emission of HAP/TAP.

4.7 15A NCAC 02D .2100 "Risk Management Program"

Background: In general, this rule applies to facilities that are required to submit a risk management plan (RMP) under Section 112(r) of the Clean Air Act.

Applicability: In the application for Title V renewal, Prysmian indicated that this facility must submit an RMP. Therefore, this rule applies to this facility. See Section 5.6 for a discussion of Prysmian's requirements under this rule.

Changes to the existing permit: The existing permit does not include a specific condition for this rule. A new specific condition will be added to the renewed Title V permit.

4.8 15A NCAC 02Q .0317 "Avoidance Conditions"

Applicability: A facility may choose to accept enforceable emission limits in order to avoid triggering applicability under certain rules. Prysmian has accepted limits on NOx emissions in order to avoid triggering requirements under PSD. Furthermore, Prysmian has previously requested an emission limit for hazardous air pollutants (HAP) from the sintering operations (ID No. ES-13), but DAQ has previously neglected to include those limits in the permit.

4.8.1 PSD Avoidance (Avoidance 15A NCAC 02D .0530)

Background: For facilities that are major stationary sources under PSD (see 40 CFR 51.166(b)(1)), that facility may accept enforceable emission limits in order to avoid a project being designated a major modification under PSD (see 40 CFR 51.166(b)(2)). Prysmian has accepted two such limits.

Limits: The following emission limits have been included in the Title V permit since at least the T19 permit revision.⁸

Pollutant	Limit	Sources	
NOx	250 tax	ES-9 (and four Cell 5)	
NOX	250 tpy	Two boilers, and several insignificant activities	
NO	250 tpy	ES-9a (and five Cell 5)	
NOx		Two boilers, and sources associated with the SCR	

The permit has previously included a facility-wide PSD avoidance limit for PM_{10} , but that was removed as part of the T22 permit revision (issued August 24, 2007) when "market conditions" caused the facility to change previous construction plans. DAQ concluded at that time that the PSD avoidance condition for PM_{10} was no longer necessary at that time.

Compliance: The existing permit broadly includes two methods of demonstrating compliance with each of the NOx limits:

• Calculate uncontrolled NOx emissions for periods where the SCR is not in use. The facility performs annual emission testing to establish a NOx emission factor, and that factor is used to calculate the uncontrolled NOx emissions.

⁸ Issued July 25, 2002. This is the oldest permit for this facility available in DAQ's electronic database.

• Monitor NOx emissions from the SCR using a continuous emission monitor, and perform testing to determine the control efficiency of the SCR.

Prysmian has never operated the SCR and has thus always demonstrated compliance with the NOx limits by performing annual emission testing.

Recent test results: Prysmian has been performing emission testing for NOx from ES-9 and ES-9a as required by the existing permit.

Stack test (date)	Sources tested	NOx Result*
2024-034ST (March 19, 2024)	Results still under review	
2023-086ST (August 15,	ES-9	32.2 lb/hr (136.6 tpy)
2023)	ES-9a	52.3 lb/hr (228.9 tpy)
2022-058ST (March 23, 2022)	ES-9	21.5 lb/hr (92.4 tpy)
	ES-9a	55.3 lb/hr (242.2 tpy)
2021-019ST (March 23, 2021)	ES-9	20.1 lb/hr (88.0 tpy)
	ES-9a	43 lb/hr (188.3 tpy)
2020-023ST (March 5, 2020)	ES-9	17.3 lb/hr (75.8 tpy)
	ES-9a	51.5 lb/hr (225.6 tpy)

*Test results are reported in units of pounds per hour, and the annual value is obtained by multiplying by 8,760 hours per year.

Monitoring: Prysmian must monitor the operations of ES-9 and ES-9a and each of the associated activities (such as the boilers) so that monthly NOx emissions can be calculated.

Recordkeeping and Reporting: Prysmian must keep records of NOx testing, NOx emissions, and submit a semiannual summary report.

Compliance: Prysmian appeared to be in compliance with this rule during the most recent compliance inspection. Continued compliance will be determined with subsequent inspections and reports.

Changes to the existing permit: As stated above, Prysmian has never installed the SCR. As part of the Title V renewal application, Prysmian requested that all references to the SCR be removed from the permit. Therefore, the following changes must be made to the PSD avoidance requirements in the existing permit:

• The emission limit in Section 2.2 A.1.a of the existing permit should apply to all listed sources, not just ES-9 and the two hot water boilers as described in the existing permit. This will be corrected in the new permit.

- References to continuous NOx monitors will be removed from the permit. This was only ever meant for determining compliance while using the SCR.
- References to NOx control devices will be removed from the permit. ES-9 and ES-9a are equipped with baghouses (that include lime injection) which do not provide any NOx reductions. Therefore, all NOx emissions from these sources are uncontrolled.

Note that the NOx emission limits are not changing as a result of the above changes. Therefore, potential emissions of NOx from this facility are not expected to increase. Furthermore, because the SCR was never installed in the first place, removing it from the permit will not increase actual emissions of NOx from this facility.

In addition to the above, the existing PSD avoidance condition includes several references to AOS and POS. As discussed in Section 4.9, the AOS and POS only relate to the use of dopant materials, which results in emissions of HF and SO₂, not NOx. There should be no difference between the AOS and POS with regards to NOx emissions, so those references should be removed from the permit.

4.8.2 112(g) Case-by-Case MACT Avoidance (Avoidance of 15A NCAC 02D .1112)

Background: In general, 15A NCAC 02D .1112 requires facilities to develop a case-by-case MACT pursuant to §112(g) if they are constructing a major source of HAP *and* if that source has no applicable MACT rule under 40 CFR Part 63. As an alternative, a facility can accept an enforceable emission limit under 02Q .0317 to avoid applicability of the rule.

In Prysmian's application for significant modification submitted in 2021 (the ".21A Application"), Prysmian applied for (among other changes) a new emission source "sintering operations" (ID No. ES-13). Prysmian's application showed that potential HAP emissions from ES-13 meant that 112(g) avoidance must be considered. Moreover, in that application, Prysmian specifically requested an avoidance limit for 112(g): "The proposed operation will have emissions of chlorine of 9.99 TPY (approximately 10 TPY) taking into account the calculated control efficiency. In order to avoid 112(g), Prysmian is requesting to take a 10 TPY limit for the new source" (.21A Application at 3-2).

In response to the .21A Application, DAQ issued permit revision T30, which include ES-13, but did not include any reference to 112(g) (avoidance or otherwise). DAQ's application review for the T30 permit also did not include any discussion with regards to 112(g) (avoidance or otherwise)

The potential applicability of 15A NCAC 02D .1112 and potential need for an avoidance limit are examined below.

Greenfield facilities: This facility has been in operation since before July 1, 1998. Per 15A NCAC 02D .1112(a)(2), this rule does not apply to an existing major source if it was operating prior to July 1, 1998. Therefore, this rule did not apply to the greenfield facility, regardless of major source status. However, subsequent modifications may still trigger applicability of this rule.

Process or production unit: This rule can apply to both entire facilities and individual process or production units. According to the .21A Application, ES-13 would be controlled by a new wet scrubber (ID No. 5WS), although it could also be controlled by an existing wet scrubber (ID No. 3WS). Based on the definition in 02D .1112(c)(13), the new sintering operations are a single production unit, and separate from the already-present facility.

Construct a major source: Based on Prysmian's emission calculations included in the .21A Application, the sintering operations have potential pre-control emissions of three HAPs greater than the major source threshold: chlorine, hydrogen chloride, and hydrogen fluoride.

ntering 5-13 VS and/or 5WS O unit Uncontrolled Emissions ¹ (lb/hr)	Control Efficiency ²	Controlled	Controlled Emissions
Emissions ¹	Efficiency ²	T 1 1	
(lb/hr)		1	
· · · · · · · · · · · · · · · · · · ·	%	(lb/hr)	TPY
0.141	0%	0.141	0.618
12.48	81.73	2.280	9.99
2.64	98.90	0.029	0.127
6.42	83.47	1.061	4.65
1.41	95.50	0.063	0.278
21.54		3.370	14.76
0.00			
s	balance calculated 4.10 P ^ 0.67 0.00	balance	balance calculated 4.10 P ^ 0.67 0.06 ton/hr

Figure 1: Potential Emissions from Sintering (ID No. ES-13)⁹

Prysmian submitted a clarification of the above table: ES-13 consists of four sub-units, and the emission calculations in Figure 1 represent the potential of all four units. The emission rates can therefore be calculated on a per-unit basis:

⁹ This table was included in Prysmian's application 1800419.21A, page A-22. Note that 10 tpy (the threshold for a major source for an individual HAP) equates to approximately 2.28 pounds per hour, and that 25 tpy (the threshold for a major source for all HAP combined) equates to approximately 5.71 pounds per hour.

Figure 2: Potential Emissions from Sintering (ID No. ES-13), on a per-unit basis¹⁰

Potential Emissions Sintering (ES-13)				rysmian Cables a Claremont,	
Source Description: Source ID: Control Device: Four furnaces for each		Venturi Wet Scrubbe	er		
	Uncontrolled Emissions ¹	Control Efficiency	Controlled Emissions	Controlled Emissions	
	(lb/hr/unit)	%	(lb/hr/unit)	TPY	
PM	0.035	0%	0.035	0.155	
Cl ₂	3.12	81.73	0.570	2.50	
HF	0.66	98.90	0.007	0.032	
HCI	1.60	83.47	0.265	1.16	
SO ₂	0.35	95.50	0.016	0.069	
Total HAP	5.38		0.842	3.69	
1 - lb/hr factors for PM are estimated based on 2 - Theoretical Efficien	mass balance	ons from sister facility	with similar op	erations. Others	
DIUD	4.10 P ^ 0.6	7			
PWR =					

In order for the construction of ES-13 to avoid meeting the definition of "construct a major source" (as defined in 15A NCAC 02D .1112(c)(4)), Prysmian must ensure that actual emissions of any individual HAP are less than 10 tpy and all HAP combined are less than 25 tpy. Based on the emission calculations above, Prysmian predicts that the use of the wet scrubber (3WS or 5WS) will be sufficient to comply with these emission limits, and therefore the construction of ES-13 can avoid the definition of "construct a major source."

Avoidance: In order to avoid the definition of "construct a major source," Prysmian must show that ES-13 emits less than 10 tpy of any individual HAP and 25 tpy of total combined HAP. In the .21A Application, Prysmian estimated HAP emissions based on operations at similar facilities and "theoretical efficiencies." DAQ will require Prysmian to conduct site-specific emission testing on ES-13 to determine the actual uncontrolled and controlled emission rates of chlorine, hydrogen fluoride, and hydrogen chloride. Prysmian will demonstrate compliance with the avoidance limit using the following formula:

¹⁰ Email from Dana Norvell (Manager of Consulting Services for Trinity Consultants, a firm representing Prysmian) to Russell Braswell (Engineer, DAQ), received November 15, 2024.

2.1 A.4.

d. i. For each calendar month, the Permittee shall calculate the monthly individual HAP emissions from this source (ID No. ES-13) for that month using the following equation. For the purposes of calculating emissions, "normal operation" means the time that the emission source is operating, the emission source is venting to the associated control device (e.g., the control device is not bypassed), and the associated control device is operating within previously established parameter ranges.

$$HAP_{i} = \frac{\left[\left(\sum Opp_{normal} \times EF_{HAPi,con}\right) + \left(\sum Opp_{uncon} \times EF_{HAPi,uncon}\right)\right]}{\left[2000 \text{ lb/ton}\right]}$$

EF _{HAPi} ,unc	on =	table below. (pounds per hour)					
FFuen	_	normal operation. (unit-hours per month) For each HAP <i>i</i> , the established emission factor for uncontrolled operation. See					
∑Opp _{uncor}	. =	below. (pounds per hour) The sum of the monthly hours of unit operation each sintering unit that were not					
EF _{HAPi} ,con	=	For each HAP <i>i</i> , the established emission factor for controlled operation. See table					
$\sum Opp_{norm}$	_{al} =	The sum of the monthly hours of unit operation for each sintering unit during normal operation. (unit-hours per month)					
HAP _i	=	The monthly HAP emissions for specific HAP <i>i</i> . (tons per month)					

Table 1 to Section 2.1 A.4				
Pollutant	Uncontrolled Emission Factor (lb/unit-hr)	Controlled Emission Factor (lb/unit-hr)		
Chlorine	3.12	0.57		
Hydrogen fluoride	0.66	0.007		
Hydrogen chloride	1.60	0.265		

ii. For each month, the total HAP emissions shall be the sum of each HAP *i* for that month.

Testing: As discussed above, Prysmian must determine controlled and uncontrolled emission rates of chlorine, hydrogen fluoride, and hydrogen chloride. Furthermore, Prysmian must conduct subsequent testing annually (or every five years, if the test results are less than 80% of the limit).

At this time, ES-13 is controlled by the scrubber 3WS. If Prysmian chooses to construct the scrubber 5WS, as allowed by the existing permit. Prysmian will be required to perform new testing to show that the new scrubber still complies with the HAP limits.

Based on the results of testing, Prysmian:

- may apply to modify the permit to include a less stringent value (e.g., the test result for the controlled emission rate of chlorine is less than 2.28, as shown in the current permit).
- must apply to modify the permit to include a more stringent value (e.g., the test result for the controlled emission rate of chlorine is greater than 2.28, as shown in the current permit).

Monitoring: Prysmian is already operating the scrubber 3WS, and is already monitoring appropriate parameters to ensure that 3WS is controlling emissions: scrubber flow rate, pressure drop, and scrubbing solution pH. Prysmian will continue to monitor these parameters to show that ES-13 complies with the avoidance limits. Furthermore, Prysmian will calculate actual HAP emissions on a monthly basis as discussed above.

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Recordkeeping and reporting: Prysmian must keep records of HAP emissions and submit a semiannual summary report.

Current compliance status: The existing permit does not include any specific HAP emission limit for the sintering operations. If the sintering operations have actually emitted HAP at a rate greater than the 10/25 tpy threshold discussed above, then the sintering operations would trigger 112(g) because they would have actual emissions of HAP greater than the major source threshold.

Based on Prysmian's annual emission inventories, the sintering operations first operated during CY2023. Prysmian reported emissions of Cl (highest HAP) as 1.66 tpy and total HAP as 2.50 tpy. This appears to be reasonable because, during DAQ's most recent on-site inspection of this facility, it was stated that only half of the sintering operation was active at that time, and Prysmian anticipates full operation by the end of 2024.¹¹

Therefore, it appears that the sintering operations are, as of now, not a major source of HAP and can therefore qualify for the 112(g) avoidance condition.

Changes to the existing permit: As discussed above, DAQ has previously neglected to include a specific condition for avoidance of 112(g) in the permit. A specific condition will be added to the permit that includes the appropriate emission limits, monitoring, recordkeeping, and reporting for avoidance of 112(g).

4.9 15A NCAC 02Q .0508(j) "Permit Content" (alternative operating scenarios)

Background: Pursuant to 02Q .0508(j), the Title V permit must "state the terms and conditions for reasonably anticipated operating scenarios identified by the applicant." In cases where the Permittee expects to have distinctly different operating scenarios, it is DAQ's policy to list the "primary" and "alternative" operating scenarios ("POS" and "AOS"), and specify which requirements apply to which scenarios.

Applicability: Prysmian has identified two distinct operating scenarios for the over-cladding units (ES-9 and ES-9a):

- POS: Not operating with dopant material.
- AOS: Operating with dopant material, and limestone injection is required.

Therefore, the existing permit includes a specific condition that lists these scenarios.

In the AOS, the dopant material is used to deposit sulfur and fluoride on the surface of the glass rods, but this process causes emissions of hydrogen fluoride (HF) and sulfur dioxide (SO₂). In order to control emissions of HF and SO₂, Prysmian must use lime injection in the associated baghouses.

In the POS, no such material is used, and therefore there are no emissions of SO₂ and HF.

Recordkeeping: Prysmian must keep records of switching between the POS and AOS.

Compliance: Based on the most recent inspection report, Prysmian appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections.

¹¹ See DAQ's April 5, 2024 inspection report for 1800419 Prysmian Cables and Systems USA, LLC (Page 6).

Changes to the existing permit: In the application, Prysmian requests a slight clarification to the wording of the POS and AOS. Instead of Prysmian's proposed language, DAQ will make the following change:

1.	15	A NCAC 02Q .0508(j)(1): OPERATING SCENARIOS
	a.	The Permittee, contemporaneously with making a change from one alternative operating scenario to another, shall record in a logbook (written or electronic format) the scenario under which it is operating. [15A NCAC 02Q .0508(j)]
	<mark>b.</mark>	The Primary Operating Scenario (POS) is defined as the two Over-cladding Units (ID Nos. ES-9 and
		ES-9a) not using dopant material. Utilizing lime injection in the control devices (ID Nos. 1DS and 2DS) is not required under the POS.
	c.	The Alternative Operating Scenario (AOS) is defined as the two Over-cladding Units (ID Nos, ES-9 and

- c. The Alternative Operating Scenario (AOS) is defined as the two Over-cladding Units (ID Nos. ES-9 and ES-9a) using dopant material. Using lime injection in the control devices (ID Nos. 1DS and 2DS) is required under the AOS.
- d. If the recordkeeping requirements in Section 2.1 A.1.a are not met, the Permitee shall be deemed in noncompliance with 15A NCAC 02Q .0508(j)(1).

Note that this change is only a clarification, and is not intended to have a meaningful impact on compliance requirements.

DAQ will also add paragraph d to this specific condition. This change is for completeness and conformity with DAQ's other Title V permits and the implementation of operating scenarios in those permits.

5. NSPS, NESHAP, MACT, CAM, PSD, and §112(r)

5.1 New Source Performance Standards (NSPS; 40 CFR Part 60)

There are no NSPS rules that apply to this facility.

5.2 National Emission Standards for Hazardous Air Pollutants (NESHAP; 40 CFR Part 61)

There are no NESHAP rules that apply to this facility.

5.3 National Emission Standards for Hazardous Air Pollutants for Source Categories (a.k.a. Maximum Achievable Control Technology, MACT; 40 CFR Part 63)

5.3.1 Major Source Status

Prysmian is a major source of hazardous air pollutants (HAP) because the facility has actual emissions of HAP greater than the thresholds listed in the definition of "major source" in 40 CFR 63.2. Because this facility is a major source of HAP, rules that apply exclusively to area sources of HAP (*e.g.*, Subpart JJJJJJ) categorically do not apply to this facility.

Note that this facility is a major source of HAP, but there is no corresponding MACT rule for activities at this facility (fiber optic cable production). As discussed in Section 4.8.2, Prysmian has accepted an enforceable limit to avoid the requirement to establish a 112(g) case-by-case MACT.

5.3.2 MACT Subpart ZZZZ "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"

Applicability: This rule applies to all stationary reciprocating internal combustion engines (RICE). Each engine at this facility is subject to this rule. The rule has different requirements for engines based on the status of the facility (major or minor source of HAP), use of the engine (emergency, nonemergency, etc.), age of the engine, and size of the engine. The engine I-ES-FP is subject to this rule.

Category: For the purposes of this rule, the engine I-ES-FP is:

- existing,
- emergency-use,
- compression ignition (CI),
- capacity less than 500 horsepower.

Requirements: In general, small (less than 500 horsepower) emergency-use CI engines must:

- Perform maintenance as listed in Table 2c to the rule,
- Minimize the engine's time spent idle and during startup,
- Operate with good work practices,
- Use diesel fuel that meets the requirements in 40 CFR 1090.305 (notably, the fuel must be less than 15 ppm sulfur),
- Install a non-resettable hour meter, and
- Operate only during circumstances allowed by the definition of "emergency stationary RICE" in the rule.

Insignificant activities: This rule only applies to emission sources included in the list of insignificant activities per 15A NCAC 02Q .0503(8). Such sources are not referenced elsewhere in the Title V permit. Because this rule only applies to insignificant activities, the Title V permit does not include a specific condition for this rule. Note that Prysmian must still comply with this rule.

5.3.3 MACT Subpart DDDDD "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters"

Applicability: This rule applies to boilers and process heaters (defined by 40 CFR 63.7575) located at major sources of HAP. Each of the boilers at this facility is subject to this rule.

New versus existing: A boiler is "new" or "reconstructed" if it was constructed/reconstructed after June 4, 2010 (see 40 CFR 63.7490(b)-(d)). Otherwise, the boiler is existing. At this facility, the boilers ES-boiler1 through 4 are existing, and the others are new.

Subcategories: For each boiler, the requirements of this rule are based on the specific subcategory of boiler. Each boiler at this facility is in the "Units designed to burn gas 1 fuels" subcategory (a.k.a. "gas 1 boilers," see 40 CFR 63.7499(1)).

Requirements: For gas 1 boilers (i.e., each boiler at this facility), the rule requires:

- Operate with good work practices [40 CFR 63.7500(a)(3)],
- Conduct initial and regular tune-ups [40 CFR 63.7540(a)(10)-(13)]
 - Every five years for boilers with capacity less than 5 MMBtu/hr
 - Every other year for boilers with capacity between 5 and 10 MMBtu/hr
- For existing boilers, conduct an initial, one-time energy assessment. [40 CFR 63.7500(a)(1), Table 3]

Monitoring, recordkeeping, and reporting: The facility must keep records of the tune-ups and other maintenance activities and submit regular reports. For boilers with capacity less than 5 MMBtu/hr, the report is only required once every five years. For boilers with capacity between 5 and 10 MMBtu/hr, the report is required every other year.

Compliance: During DAQ's most recent inspection, Fort Liberty appeared to be in compliance with this rule. Continued compliance will be determined during subsequent inspections and reports.

Changes to the existing permit: The existing permit includes three separate specific conditions for MACT Subpart DDDDD. This is extremely repetitive because the requirements of the rule are very similar for each of the boilers at this facility. The new permit will include only one specific condition for MACT Subpart DDDDD. This change is being made to streamline the permit, and does not reflect a physical change or a change in the method of operation at the facility.

5.4 Compliance Assurance Monitoring (CAM; 40 CFR Part 64 and 15A NCAC 02D .0614)

Background: 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.

Per 02D .0614(a), this rule potentially applies to any facility required to obtain a permit under 02Q .0500 (i.e., a Title V permit). This facility is required to obtain a permit under 02Q .0500. Therefore, CAM applicability must be examined.

Applicability: 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 conditions are met:

- I. The unit is subject to any pre-November 15, 1990, Section 111 or 112 limitations or standards (*i.e.*, non-exempt standards, see 15A NCAC 02D .0614(b)(1)) 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 under Title V.

Existing CAM plans: The existing Title V permit includes CAM plans for the filters 1DS and 2DS. These CAM plans were revised as part of the T29 permit revision (the previous Title V permit renewal) and then revised again as part of the T30 permit revision. This Title V permit renewal will not have any effect on the existing CAM plans. Add 5WS as an optional control device for ES-1, ES-4, ES-14, ES-11, and ES-18 will not change their applicability (or lack thereof) for CAM.

Changes to existing CAM plans: The existing CAM plans require Prysmian to maintain the lime injection rate for the filters 1DS and 2DS above a minimum of 30 pounds per hour. As indicated in the existing permit, the requirement for Prysmian to develop a CAM plan is for ES-9 and ES-9a (and filters 1DS and 2DS, respectively) is triggered by 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes," which is a rule that applies exclusively to PM emissions. The minimum lime injection rate in filters 1DS and 2DS is unrelated to PM control, and therefore should not be part of a CAM plan for PM emissions. Therefore, references to lime injection rate monitoring will be removed form the existing CAM plans.

Plan submittal requirements: CAM plans must be submitted according to the schedule in §64.(5):

- For large pollutant-specific emissions units ("large PSEU;" *i.e.*, units that have the potential to emit more than the major source threshold *after* controls are applied), a CAM plan is due when the first application for a Title V permit is submitted (see §64.5(a)).
- For all other PSEUs, a CAM plan (if required) is due when a facility applies to renew a Title V permit.

In addition to revising the existing CAM plans, the T30 permit revision added new emission sources (ES-12 and ES-13) and control devices to the permit. Neither ES-12 nor ES-13 are large PSEUs, so CAM applicability must be determined during the Title V renewal. Now that the Title V permit is being renewed, those new sources must be reviewed for CAM applicability.

CAM applicability: The table below analyzes CAM applicability for ES-12 and ES-13

Emission source	Control devices	Pollutants	Potential emissions greater than major source threshold?	Triggers CAM?
ES-12: Over- cladding, deposition machines	1BH, 2BH, 3BH, and 4BH Or 1DS	PM, PM ₁₀ , PM _{2.5}	No ¹²	No
ES-13: Over- cladding,	3WS Or	PM, PM ₁₀ , PM _{2.5}	No ¹³	No
sintering machines	5WS	Cl ₂ , HF, HCl (i.e., HAPs)	Yes	No (see discussion below)

ES-13 has potential emissions of individual and combined HAP greater than the major source threshold (10 tpy and 25 tpy, respectively; see 40 CFR 63.2). There are two rules that regulate HAP emissions from ES-13: 02D .1100 and 02Q .0317.

- 02D .1100 is a state-enforceable rule regulating North Carolina's toxic air pollutants. This rule is not part of North Carolina's SIP, and is thus not an applicable rule for CAM.
- 02Q .0317 is an avoidance condition. The limit under 02Q .0317 is an annual emission cap, and thus is exempt from CAM per 02D .0614(b)(1)(E).

Therefore, there is no rule that triggers CAM applicability for ES-13, and therefore no CAM plan is required for ES-13.

5.5 Prevention of Significant Deterioration (PSD; 15A NCAC 02D .0530)

Background: The Federal rules for PSD are implemented into North Carolina's SIP under 15A NCAC 02D .0530 and 02D .0544. In general, a facility is a major stationary source for PSD if the facility has actual or potential emissions of a pollutant greater than the threshold listed in 40 CFR 51.166(b)(1). For facilities that fall under the specific categories listed in 40 CFR 51.166(b)(1)(i)(*a*), the threshold is 100 tpy. Prysmian is an optical glass fiber manufacturer (notably not a "glass fiber processing plant" which is generally reserved for fiberglass), which is not one of the listed categories; therefore the threshold is 250 tpy (see 40 CFR 51.166(b)(1)(i)(*b*)).

Major stationary source: Prysmian is a major stationary source for PSD, but Prysmian has avoided triggering any specific requirements under PSD by accepting enforceable emission limits. Note that, separately to this Title V renewal application, Prysmian has submitted an application for a PSD major modification. DAQ is processing that application separately from the Title V renewal application.

¹² This source has a potential pre-control hourly PM emission rate of 7.83 lb/hr. The hourly emission rate that yields 100 tpy is approximately 22.83 lb/hr (at 8,760 hours per year). Therefore, this source has pre-control emissions below the major source threshold. See Application 1800419.21A (submitted by Prysmian on September 3, 2021), Appendix A-21.

¹³ This source has a potential pre-control hourly PM emission rate of 0.141 lb/hr and SO₂ emission rate of 1.41 lb/hr, and therefore have pre control emissions below the major source threshold (see Note 9). See Application 1800419.21A, Appendix A-22.

5.6 Section 112(r) of the Clean Air Act (and 15A NCAC 02D .2100 "Risk Management Program")

Background: This rule requires facilities that store materials above the threshold quantities in 40 CFR 68.130 above their respective thresholds to prepare and submit a risk management plan (RMP).

Applicability: In the renewal application on Form A3, Prysmian states that an RMP is required for this facility because the facility stores chlorine above the threshold quantity. The application also notes that an RMP was most recently submitted on February 15, 2024. As discussed in Section 4.7, a specific condition for 15A NCAC 02D .2100 will be added to the Title V permit.

General duty: Note that other parts of that rule, such as the General Duty clause, may also apply to this facility; those portions of \$112(r) are beyond the scope of the Title V permit.

6. Toxic Air Pollutants

Background: In general, a facility that emits toxic air pollutants (TAP) at rates greater than the TAP permitting emission rate (TPER) listed in 15A NCAC 02Q .0711 must perform air dispersion modeling following the procedures in 15A NCAC 02D .1106. The results of this modeling must be less than the acceptable ambient limits (AAL) listed in 15A NCAC 02D .1104.

Previous modeling: The existing permit includes TAP emission limits based on previous air dispersion modeling demonstrations. The most recent demonstration was approved by DAQ on January 4, 2022.

The modeled emission rates are far higher than the actual emission rates of any of the modeled sources. For example:

- The modeled emission rate of chlorine from the scrubber 3WS was 43.97 lb/hr.
- The actual emission rate of chlorine from the scrubber 3WS was 32,850 lb/yr, or 16.43 lb/hr based on the CY2023 Emission Inventory. For the CY2023 Emission Inventory, Prysmian reported 8,760 hours of operation (*i.e.*, full time operation).

Compliance: Because post-control emission rates of TAPs are far less than the modeled emission rates, Prysmian must demonstrate compliance with the modeled emission rates by complying with the control device maintenance and monitoring requirements elsewhere in the Title V permit.

Changes to the existing permit:

- The existing permit includes modeled rates for ammonia emitted from the SCRs. Given that the SCRs are being removed from the permit, the modeled rates for ammonia and references to the SCR control devices will be removed from the permit.
- As discussed in Section 4.6, the permit will be updated to include monitoring, recordkeeping, and reporting requirements for ES-Etch and the associated scrubber 4WS.

7. Compliance Status and Other Regulatory Concerns

Compliance status:

- The application includes a signed Form E5 "Title V Compliance Certification." In this form, Prysmian certified compliance with all applicable requirements.
- This facility was most recently inspected on March 19, 2024 by Joe Foutz. Prysmian appeared to be in compliance with the Title V permit at that time.
- Since the Title V permit was most recently renewed, Prysmian has been issued one Notice of Violation (NOV). On September 8, 2023, DAQ issued an NOV to Prysmian because the facility had not conducted the required annual testing for NOx from ES-9 and ES-9a. DAQ considers this matter resolved as of November 3, 2023.

Application fee: Applications for Title V renewal do not require an application fee.

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 15A NCAC 02Q .0103 that involve the criteria in 02Q .0112(a)(1)-(3). The PE Seal included in Prysmian's .24A application certified the "entire application." Given that Prysmian's request to reroute some emission sources to the scrubber 5WS was originally included in the .24A application, the PE Seal for that application conveys to this one.

Zoning Consistency Determination: Applications for Title V renewal do not require a zoning consistency determination.

Addition of 1-bromopropane to §112(b): On December 22, 2021, the US EPA added 1-bromopropane (1-BP) to the list of HAP.¹⁴ Prysmian has not previously quantified emissions of 1-BP. As part of processing this application, DAQ asked Prysmian to quantify 1-BP emissions from the facility. Prysmian responded that it does not believe the facility emits 1-BP.

General Conditions: The General Conditions (Section 4 of the existing permit) have been updated to DAQ's latest version (Version 8.0). The General Conditions appear in each Title V permit issued by DAQ. Changes to the General Conditions are not targeted at any specific facility or triggered by any action of an applicant.

¹⁴ See 87 FR 393 (published January 5, 2022).

8. Facility Emissions Review

Changes in emissions: In the application, Prysmian requested that the selective catalytic reduction (SCR) systems associated with ES-9 and ES-9a. The SCR systems were meant to reduce NOx emissions in order to comply with the NOx emission limits associated with PSD avoidance. However, Prysmian has never operated the SCR systems; instead of using the SCR systems, Prysmian has been able to comply with the PSD avoidance limits without these systems.

Given that Prysmian has not operated the SCR systems, removing the systems will not cause an increase in NOx emission from the facility.

Title V: Prysmian is a major source for Title V (as defined in 40 CFR 70.2) because it has potential emissions of regulated pollutants greater than 100 tpy. This application for Title V permit renewal will not affect Prysmian's status as a major source for Title V.

HAP: Prysmian is a major source of HAP (as defined in 40 CFR 63.2) because it has actual emissions of HAP greater than the major source threshold. This application for Title V permit renewal will not affect Prysmian's status as a major source of HAP.

PSD: Prysmian is a major stationary source for PSD because it has actual emissions of regulated NSR pollutants greater than the thresholds in 40 CFR 51.166(b)(1)(i)(b). Note that a "glass fiber processing plant" is a specifically listed source category in 40 CFR 51.166(b)(1)(i)(a), but other types of glass product manufacturing (such as optical cables) are not specifically listed. This Title V permit renewal will not affect Prysmian's status as a major stationary source under PSD.

9. Draft Permit Review Summary, Public Notice, and EPA Review

Initial draft: An initial draft of the permit and this application review were sent to DAQ Permits staff on August 23, 2024. Comments were received October 3, 2024. A revised draft was sent October 16, and comments on the revised draft were received October 22, 2024.

•	DAQ Permits Comment 1:	Were all the sources subject to 02D .0503 added at the same time?
	Response:	They were moved from the list of insignificant activities to the permitted list at the same time. The review will include the date these sources were added to the permitted list.
•	DAQ Permits Comment 2:	A discussion of monitoring, recordkeeping, and reporting is needed for 02D .0516 and the over cladding operations.
	Response:	After discussing this issue with the facility, Prysmian stated that 02D .0516 does not apply to the over cladding operations because they are heated with a plasma that does not use fuel, and therefore are not combustion sources. The review will discuss the non-applicability of this rule to the over cladding operations.
•	DAQ Permits Comment 3:	DAQ's justification for the non-applicability of 02D .0521 and ES-Etch comes up multiple times. The review should explain this rather than just reference it.
	Response:	The review will include the specific determination of non- applicability from DAQ's original review of ES-Etch.
•	DAQ Permits Comment 4:	Reviewing previous stack tests of the baghouses suggests they generate NOx.
	Response:	The permit previously referenced testing for NOx before and after the baghouses 1DS and 2DS, but that requirement was later dropped in the T29 revision of the permit. Test results did show higher NOx emissions exiting the baghouses, which is a counter- intuitive result given that neither the baghouse nor the lime injection should generate NOx emissions. According to DAQ's Mooresville Regional Office, there had been some concerns regarding the ductwork and probe location exiting the baghouses, and DAQ concluded that pre-baghouse NOx emissions were sufficient.
•	DAQ Permits Comment 5:	Has ES-13 exceeded the 10/25 tpy of HAP threshold?
	Response:	Based on Prysmian's emission inventory, no. The review will include a discussion on Prysmian's actual reported HAP emissions from ES-13.

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• DAQ Permits Comment 6:	The review is missing a discussion of MACT Subpart DDDDD. Also the proposed permit condition for MACT Subpart DDDDD must be revised.
Response:	The review's discussion of MACT Subpart DDDDD was inadvertently removed from the initial draft. The specific condition for MACT Subpart DDDDD will be corrected.
• DAQ Permits Comment 7:	The review's discussion of TAP emission rates and the lack of TAP emission monitoring needs a better explanation.
Response:	The review will include a specific example of TAP emissions from the facility based on data from the emission inventory.
• DAQ Permits Comment 8:	The term "i.e. no hydrogen fluoride (HF) or sulfur dioxide (SO ₂)" should not be included in Section 2.1 A.1 of the permit. This should be discussed in the application review.
Response:	This text will be removed from the permit and discussed in the review.
• DAQ Permits Comment 9:	In general, the description of several sources (such as ES-9) is inconsistent throughout the permit and does not match the permitted emission source list.
Response:	This will be made more consistent throughout the permit.
• DAQ Permits Comment 10:	In general, the permit mentions the AOS and POS in several specific conditions where the AOS and POS have no effect (such as the PSD avoidance conditions).
Response:	References to the AOS and POS will be removed where they are not needed.
• DAQ Permits Comment 10:	The specific conditions for PSD avoidance still reference "uncontrolled" NOx emissions, even though NOx control devices have been removed from the permit.
Response:	These references will be removed from the permit.
• DAQ Permits Comment 11:	The permitted emission source list should not include control device parameters that are enforceable (such as the scrubber flow rate and pH).
Response:	These references will be removed from the permitted emission source list.
• DAQ Permits Comment 12:	Various typos in the review and permit.
Response:	These will be corrected.

Subsequent drafts: A revised draft of the permit and this application review were sent to DAQ SSCB staff, DAQ MRO staff, and Prysmian staff on November 6, 2024. Comments were received from Prysmian staff on November 15, 2024. An additional draft was sent to Prysmian on November 26, 2024. Comments on that draft were received January 20, 2025. Final comments were received March 4, 2025.

•	Prysmian Comment 1:	Prysmian would like the ability to send emission sources ES-1, ES-4, ES-13, ES-11 and, ES-18 permitted to 3WS and/or to the new 5WS scrubber as well. Prysmian requested this change in the PSD application which is currently under review at DAQ as we felt this would be processed before the renewal. In the expansion project in 2021, Prysmian requested to install a combined stack for these scrubbers and modeled the worst case stack scenario which demonstrates compliance with this scenario. As such, this is just an administrative update to current draft.
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- Response: DAQ initially declined to make this change as part of the Title V permit renewal. After considering this issue further, DAQ determined that this would be allowable.
- Prysmian Comment 2: DAQ has added annual testing for PM testing for the sources being sent to 3WS/5WS (ES-1, ES-4, ES-13, ES-11 and, ES-18 and ES-13). The majority of these sources have been operating for years with no issue and the estimated potential emissions from ES-13 are low. Prysmian performed initial testing of ES-13 in March 2024 as required by current permit (as a onetime test) and demonstrated an emission rate that if at potential would be 0.6 tons per year of PM. This testing is less than 80% of limits so does this mean DAQ would not require testing again until 5 years from that previous test or is another initial test required here? Annual testing seems overburdensome.
 - Response: Although these sources may have low absolute emissions of PM, relative to the 02D .0515 emission limit, they are high (70% or greater). Given that
 - 1. these units use monitored parameters to demonstrate compliance with the limit,
 - 2. those parameters are site-specific and determined by previous testing,
 - 3. and these units have high emissions relative to the limit,

it seems reasonable to require some kind of subsequent testing to ensure continued compliance. Note that, although annual testing is the default, 5-year testing is an allowable alternative if the test results are low relative to the emission limit. Based on the most recent test results, Prysmian would qualify for the 5-year testing schedule.

•	Prysmian Comment 3:		DAQ has added annual testing of PM for ES-9, ES-9A and ES-12. Prysmian did initial testing of ES-9 and 9A in August 2023 even though emissions of PM were expected to go down due to the POS not using lime injection in the baghouses. Using this tested rate for PTE calculations, emissions from ES 9 and ES-9A would be 2 tons per year. Prysmian tested ES-12 in March 2024 as required by current permit (as a onetime test) and demonstrated an emission rate that if at potential would be 0.4 tons per year of PM. This testing is less than 80% of limits so does this mean DAQ would not require testing again until 5 years from that previous test or is another initial test required here? Annual testing seems overburdensome.
	Response:		After reviewing this condition again, DAQ determines that subsequent testing is not required for these sources for 02D .0515.
		1.	This condition requires monitoring the minimum lime injection rate. That parameter is related to SO2/acid emissions, rather than PM. Noncompliance with the minimum lime injection rate should not trigger a violation of 02D .0515. Therefore, this parameter should not be tracked by this condition.
		2.	The pressure drop for the bagfilters appears to be a manufacturer specification, rather than a site-specific operating parameter. Therefore, continued compliance should be demonstrated by following the manufacturer recommendations.
•	Prysmian Comment 4:		DAQ has added annual testing of HAPs for ES-13. Prysmian can understand an initial confirmation test but annual testing as stated above seems overburdensome. The avoidance condition was also requested for chlorine as HCL and HF are expected to be extremely low. Requesting annual testing for all pollutants also seem overburdensome.
	Response:		This testing condition is written such that an annual test is the default, but a 5-year test is allowable if any test shows low emissions relative to the limits. Based on the info included in the .21A application, this 5-year test seems to be the most likely scenario for Prysmian. One test every five years to verify subsequent compliance does not seem to be overly burdensome.
			Based on the information in application .21A, ES-13 has the potential to emit more than 10 tons of Cl, and 25 tons of total HAP. Therefore, Prysmian should be required to demonstrate at least initial compliance with the 10 and 25 ton limit by testing for all HAP.
			It may be that, based on the results of this initial test, Prysmian can show that compliance with both the 10 and 25 ton limit can be

demonstrated solely by testing/monitoring Cl2 emissions. Such a

determination can only be made once site-specific data is available.

- Prysmian Comment 5: The avoidance condition was also requested for chlorine as HCl and HF are expected to be extremely low. Requesting annual testing for all pollutants also seem overburdensome. The emission factors in the calculation of HAPs from ES-13 in Condition 2.1.A.4. d.i needs to be updated. The emission factors (lb/hr) are for all units together and not a "per unit" as stated in the calculation. Prysmian does track hours of operation per unit and as such has requested that the emission factors in the calculation be updated.
 - Response: DAQ will make this change.

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 .0518(b), the EPA will have a 45-day review period. Based on an agreement between DAQ and EPA, this period will generally coincide with the 30-day public notice 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. DAQ voluntarily provides notice to each bordering State (Virginia, Tennessee, Georgia, and South Carolina).

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

10. 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.

DAQ recommends issuance of Permit No. 07334T32. MRO, SSCB, and Prysmian have received a copy of this permit and submitted comments that were incorporated as described in Section 10.