

4. Regulatory Applicability Analysis

A key objective of a Title V operating permit application is to compile all applicable Clean Air Act derived requirements into one document. Conceptually, these requirements can be categorized as (1) emission limits and work practice standards, or (2) testing, monitoring, recordkeeping, or reporting requirements. To compile a list of all the requirements for which a facility must comply, it is first necessary to determine which federal and state air regulations apply to the facility as a whole or to individual emission units. Details for several regulations are presented below.

4.1 Federal Regulatory Applicability

Federal air quality regulations reviewed included New Source Performance Standards (NSPS, codified at 40 CFR 60), National Emission Standards for Hazardous Air Pollutants (NESHAP, codified at 40 CFR 63), Compliance Assurance Monitoring (CAM, codified at 40 CFR Part 64), and stratospheric ozone protection regulations (codified at 40 CFR 82). Applicable regulations are summarized in this section.

4.1.1 NSPS Subpart A, General Provisions

The General Provisions of 40 CFR Part 60, New Source Performance Standards, apply to any source subject to Subpart of the regulation. As described in more detail in the following section, AVX Boiler B201 is subject to NSPS Subpart A, Subpart Dc. The general provisions require written notification regarding construction, startup, and any physical or operational change resulting in an emissions increase. AVX complied with these notification requirements on March 16, 1999. NSPS also requires record keeping of any startups, shutdowns, or malfunctions of the boiler. The amount of fuel combusted monthly must be recorded and maintained onsite for two years. However, per S.C. Regulation 61-62.70.6 Title V sources must keep records for a period of at least five years. Compliance is shown with performance tests required by 40 CFR 60.8. Finally, AVX must operate the unit in a manner consistent with good air pollution control

practices. AVX complies with this regulation through maintaining fuel combustion records and recording startups, shutdowns, or malfunctions of the boiler.

4.1.2 NSPS Subpart Dc, Small Industrial-Commercial-Institutional Steam Generating Units

NSPS Subpart Dc applies to steam generating units with design heat input rates between 10 and 100 MMBtu/hr installed after June 9, 1989. Since B201 is a natural-gas fired boiler with a design heat input of 16.7 MMBtu/hr and was installed in 1999, Subpart Dc applies in addition to the General Provisions of NSPS. Since B201 only fires natural gas, compliance with Subpart Dc only requires monthly fuel consumption records, which must be maintained for a minimum of two years.

4.1.3 Part 63 NESHAP Applicability (Subparts A & B)

National Emissions Standards for Hazardous Air Pollutants (NESHAP) are applicable to facilities that are in a regulated source category or are a major and areas source of HAP. Major source status is defined as having potential emissions in excess of 25 tons per year for total HAP and/or potential emissions in excess of 10 tons per year for any individual HAP. Area sources are HAP emission sources that are not major. AVX had HAP emissions above the major source thresholds. May 2000, AVX submitted a NESHAP 112(g) Case-by-Case Maximum Achievable Control Technology (MACT) determination for emissions from chip manufacturing at the New Manufacturing Facility. More recently, with production decreases, material replacement changes, and removal of 2-butoxyethanol from the federal HAP list, AVX is no longer a major source of HAP. However, with the USEPA's May 16, 1995 interpretation guidance of the general provisions of 40 CFR 63 and Section 112 of the Clean Air Act, a facility that was once a major source of HAP emissions, will always be considered major and must continue to comply with applicable requirements. This guidance is more commonly referred to as the "once in, always in" policy. On December 21, 2006, the USEPA proposed, in essence, a reversal of this policy, however, this proposal has not been finalized. As a result, AVX currently remains classified as a major source.

The USEPA published the final 40 CFR Part 63, Subpart ZZZZ, NESHAP for Reciprocating Internal Combustion Engines (RICE MACT) on March 3, 2010. The rule applies to both major and area sources of HAP. This rule is applicable to AVX's four diesel-fired emergency generators. They are defined as affected, existing source with compliance required by May 3, 2013.

4.1.4 Part 64 Compliance Assurance Monitoring

Compliance assurance monitoring (CAM) applies to pollutant specific emission units (PSEU) located at major sources that meet the following criteria:

- a. The PSEU is subject to an emission limit or standard, and
- b. The PSEU uses a control device to achieve compliance, and
- c. Potential pre-control emissions from the PSEU are equal to or exceed 100% of the major source threshold.

CMAF (Unit ID 17) utilizes a control device to limit VOC emission from the process and has a potential to emit 116.5 of VOC pre-control, which exceeds 100% of the major source threshold (applicability item c). The manufacturing building that includes the CMAF process currently has a Prevention of Significant Deterioration (PSD) Synthetic Minor VOC emission limit of 39.5 tons per year. As discussed in more detail in Section 4.3, AVX is formally requesting removal of this limit from the operating permit for flexibility purposes. However, as discussed in Section 4.1.3, AVX is a major source under the "once in, always in" policy. Therefore the CMAF control system, as part of the 112(g) Case-by-Case determination, is required to remain and operate as originally applied. Therefore, AVX has included with this application a CAM Plan as required by the CAM Rule for major source operating permit renewal applications.

The only other control devices at AVX are fabric filters. The potential to emit pre-control emissions for the associated units are below Title V trigger levels, and are therefore not subject to CAM.

4.1.5 Part 82, Subpart F Stratospheric Ozone Protection Regulations

40 CFR 82, Stratospheric Ozone Protection, applies to the maintenance of refrigeration equipment at this facility that contains ozone-depleting substances. AVX's personnel responsible for air condition maintenance have been properly trained and certified as required by this regulation.

4.2 South Carolina Regulations

South Carolina air quality regulations fall under two main categories: those regulations that are generally applicable (e.g., permitting requirements), and those that are specifically applicable to an emission unit (e.g., PM standards for manufacturing equipment). The generally applicable requirements are straightforward (e.g., filing of emission statements) and, as such, are not discussed in further detail. The specific requirements associated with several regulations are discussed following.

4.2.1 62.5 Standard 1, Emissions From Fuel Burning Operations

This regulation applies to fuel burning devices such as furnaces and boilers, and sets limits on opacity, PM emissions, and SO₂ emissions. All fuel burning equipment at the facility is subject to the opacity requirements in Section I - visible emissions, except for the VOC control equipment (see section 4.2.3). Boiler B201 is subject to pollutant specific regulations as well. Because the boiler is natural gas-fired, AVX expects to comply with all requirements, namely visible emissions (Section I), PM emissions (Section II), and emissions of sulfur dioxide (SO₂) (Section III, Number 3). Opacity monitoring requirements detailed in Section IV, periodic testing requirements under Section VI, and source testing requirements under Section VII do not apply because all fuel burning equipment at the facility fire natural gas only. AVX is required to observe for visible emissions (opacity) and record in a Daily Inspection Log.

4.2.2 62.5 Standard 2, Ambient Air Quality Standards

Standard 2 establishes ambient air quality standards for all criteria pollutants. AVX is required to demonstrate compliance with this regulation when a physical modification is being proposed that would lead to an increase in emissions. AVX is consolidating CMAP, CMAP Support, and Termination. Plating will remain at its current location in MB1, however, the Autoline will be decommissioned some time in 2011. At that point, all plating will be accomplished using the SBE and FCT plating processes. With the AVX consolidation, criteria pollutant emissions will decrease, however, some changes in physical emission points will result. Therefore, worse case emissions of criteria pollutants are included in the air dispersion modeling analysis attached to this Title V renewal application (Appendix F).

4.2.3 62.5 Standard 3, Waste Combustion and Reduction

This standard limits PM emissions and opacity and applies to combustion of material other than virgin fuels. This standard applies to the VOC control system, which incinerates the VOC stream from CMAP operations. The PM limit is 0.5 lb/MMBtu of heat input and the opacity limit is 20%. Because the thermal oxidizer runs on natural gas, a clean burning fuel, it is not anticipated that these limits will be exceeded during normal operations of this equipment. With proper operation the combustion of VOC will not contribute substantially to PM emissions or opacity. Proper operation is ensured through daily continuous monitoring of the thermal oxidizer temperature.

4.2.4 62.5 Standard 4, Emissions From Process Industries

This standard limits PM emissions and opacity and applies to process industries. All equipment groups at AVX not subject to Standard 1 or Standard 3 are subject to Section VIII (Other Manufacturing) of this regulation. Equipment groups at AVX subject to this standard include the dicers, metals mixer, RMM grinders and mills, RMM mixers, and the slip manufacturing mixers.

Standard 4 limit units in the applicable groups to the PM emissions calculated using the process weight rule. The supporting emission rate calculations included in this application compare AVX emissions to Standard 4 limits. All calculated emissions are below these limits.

Additionally, any of the units constructed or modified after December 31, 1995 are subject to a 20% opacity limit. All other units constructed before December 31, 1995 are subject to a 40% opacity limit.

4.2.5 62.5 Standards 5.1, VOC Emissions Control and LAER

Standard No. 5.1, Lowest Achievable Emission Rate Applicable to Volatile Organic Compounds (LAER), will apply if AVX's net VOC emissions increase due to any future modification, exceeds 100 tons per year. A net VOC emissions increase refers to the actual increase in the potential to emit of a source due to a modification plus any other creditable increases and decreases that have occurred at the plant since July 1, 1979.

As presented in this Title V renewal application, AVX's VOC emissions have been declining significantly at the Myrtle Beach facility due to production decreases, improved efficiency, and material substitution changes. The facility has eliminated the uses of materials such as trichloroethylene (TCE) and significantly reduced usage of xylene. In addition, with the consolidation of the manufacturing, more organic emissions will be destroyed by the adsorber/desorber/thermal oxidizer air pollution control system. Therefore, no units at AVX are currently subject to LAER. The current permitted potential to emit is 285 tons per year, based on a 2001 Title V renewal application. This renewal application revises the potential to emit to 61 tons per year.

4.2.5 62.5 Standard 8, Toxic Air Pollutants

This standard regulates ambient impacts associated with emissions of toxic air pollutants (TAP). AVX is required to demonstrate compliance with this regulation when a physical modification is being proposed that would lead to an increase in emissions or change the physical parameters which previous modeled concentrations were based. The consolidation will change the

distribution of emissions of TAPs at AVX. Therefore, a facility-wide TAP modeling analysis is included with this Title V renewal application.

4.3 State Operating Permit Conditions

In addition to state and federal regulations, AVX is subject to existing state permit conditions. Most conditions reflect state or federal regulations discussed above. One condition in the current operating permit is a PSD Synthetic Minor limit of 39.5 tons per year of VOC emissions on the New Manufacturing Facility. This building will soon contain the consolidated manufacturing equipment, which includes the chip manufacturing VOC abatement system. The 39.5 ton per year limit was established to permit the construction of the new building while avoiding PSD review (construction permit #1340-0002-CS and CT). At the time of permitting the building, the original Title V permit documented AVX's VOC potential to emit greater than the PSD major applicability threshold of 250 tons per year [52.21(1)(b)]. The 2004 Title V operating permit indicates a potential facility-wide VOC emission rate of 282.88 tons per year. As stated previously, the potential emission rates presented in the earlier Title V applications were based on anticipated (future) equipment needs required for expected production levels. AVX never installed the quantity of equipment permitted as product demand did not reach such anticipated levels. There are no records indicating that actual VOC emissions from the facility have ever exceeded the 250 ton per year major source level. Therefore, AVX can be classified as a "true" PSD minor source. This Title V renewal application reflects the actual number of equipment at AVX and emissions are based on current materials and throughputs. As presented, the current potential, uncontrolled VOC emission rate is 172 tons per year. The potential controlled VOC emission rate is 60 tons per year. In an effort to consolidate, streamline, and introduce flexibility into the AVX operating permit, AVX is formally requesting that the SCDHEC remove of the 39.5 ton per year emission limit. Instead, AVX is proposing facility-wide PSD Synthetic Minor emission limit of less than 250 tons per year of VOC for any 12-month period. In retrospect, this facility-wide PSD avoidance limit should have been requested at the time of permitting the New Manufacturing Facility instead of the 39.5 ton per year limit.