



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482

www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

MEMORANDUM

TO: Regional Directors
Regional Air Permit Managers
Regional Air Compliance Managers
Central Office Air Managers

CC: Jeffery A. Steers, Director of Central Operations

FROM: Michael G. Dowd, Director, Air and Renewable Energy Division

SUBJECT: Air Permitting Guidance Memo No. APG-577 – Air Permit Guidance for Air Curtain Incinerators

DATE: April 6, 2021

Purpose:

This document discusses the regulatory requirements pertaining to air curtain incinerators. Questions regularly arise from the regulated community that warrant capturing the multiple regulatory requirements and prohibitions applicable to this category of emissions units.

Electronic Copy:

Once effective, an electronic copy of this guidance will be available on:

- The Virginia Regulatory Town Hall under the Department of Environmental Quality (<http://www.townhall.virginia.gov/L/gdocs.cfm?agencynumber=440>);

Contact Information:

Please contact Patrick Corbett at 804-698-4016 or patrick.corbett@deq.virginia.gov with any questions regarding the application of this guidance.

Certification:

As required by Subsection B of § 2.2-4002.1 of the APA, the agency certifies that this guidance document conforms to the definition of a guidance document in § 2.2-4101 of the Code of Virginia.

Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

APG-577 – Air Permit Guidance for Air Curtain Incinerators

This guidance contains several references to Virginia’s Solid Waste regulations (9VAC20-81-10 *et seq.*). These references are included not to provide guidance on those regulations but to alert the reader of these other requirements that may apply for an operation. This document discusses the myriad provisions in Virginia’s Regulations for the Control and Abatement of Air Pollution (the Regulations) to resolve the appearance of conflicting requirements and briefly touches on the Environmental Protection Agency’s (EPA’s) federal regulations for incinerators. Nothing in this guidance binds the federal government’s interpretation of their regulations.

A. ACI Operation

An air curtain incinerator (ACI) operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. ACI as used in this guidance includes trench burners.

Clean wood waste is loaded into the ACI and an accelerant (e.g., diesel fuel) is usually poured onto the wood and ignited. Once ignited, no other fuels are normally added. The air curtain is not fully-engaged until the fire has grown in strength (usually 15 to 20 minutes) because the air curtain may blow out a weak fire. The air curtain then runs at steady-state throughout the burning operations and the waste wood is loaded at a rate consistent with the rate of burn.

The purpose of the air curtain is to stall or slow down the smoke particles on their way out of the ACI. In doing this, the particles (PM) are subjected to the highest temperatures. Stalling the smoke particles in the region just under the air curtain causes them to re-burn, further reducing their size. A properly designed and operated ACI results in opacity under 10%.

B. Air Regulatory Applicability

There are several regulations that may apply to the use of ACIs. Some of the regulations are not clearly applicable or inapplicable and the determination may change based on the specific situation for a given unit (i.e., this is a case-by-case decision).

1. Federal Regulations

EPA has promulgated several rules pertaining to the combustion of solid waste as required in the Clean Air Act (CAA)¹. With several of these rules, EPA promulgated specific requirements for ACIs burning certain waste materials (wood waste, clean lumber, and/or yard waste). These rules generally require opacity less than 10%. ACIs cannot burn waste materials other those listed above because an ACI cannot meet the more stringent emission standards applicable to such materials from these rules. These rules currently require any ACI subject to the opacity standards to apply for and receive a Title V operating permit. This permit application is subject to permit application fees. Additionally, the operation is subject to on-going maintenance fees. Information on fees can be found on the [Fee Page](#)².

2. Virginia Regulations

¹ These rules are contained in Part 60, promulgated pursuant to Section 129 of the Clean Air Act. The federal rules are Subparts Eb, AAAA, CCCC, and EEEE of 40 CFR Part 60 and the rules implementing the federal emission guidelines are Article 45 (9VAC5-40-6250 *et seq.*), Article 46 (9VAC5-40-6550 *et seq.*), or Article 54 (9VAC5-40-7950 *et seq.*) of 9VAC5-40 (Existing Stationary Sources) in Virginia’s Regulations for the Control and Abatement of Air Pollution. The Regulations should be consulted to ensure any new rulemakings that may impact these units are considered.

² <https://www.deq.virginia.gov/permits-regulations/laws-regulations/air/fees-under-the-air-pollution-control-law>

While ACIs meeting certain opacity requirements may be allowed under EPA regulations, Virginia’s open burning regulations (9VAC5 Chapter 130) exclude ACIs subject to these rules (9VAC5-130-10D).³ In fact, the only ACIs that may be operated in Virginia must qualify for and comply with the Chapter 130’s requirements for “special incineration devices.” Any combustion of waste that is not covered by Chapter 130 would result in the ACI being classified as an “incinerator” subject to 9VAC5-40 Article 7, which prohibits the use of flue-fired incinerators, where fuel/waste is fed into the same flue as the discharge of exhaust gas (9VAC5-40-800). ACIs are flue-fired; therefore, they are prohibited if they do not meet the requirements of Chapter 130 for special incineration devices.

C. Local Government Ordinances

In a VOC Control Area (9VAC5-20-206), a locality may have an ordinance regulating ACIs that cannot be less stringent than the Chapter 130 provisions. Where an ACI is proposed in a county that is not in a VOC control area, localities may have an ordinance that cannot be less stringent than the applicable Chapter 130 provisions. Regardless, owners and operators must check with the local government to verify if any local ordinances could affect the operation of the ACI.

D. Interaction with Waste Regulations

Regardless of air regulatory provisions, the solid waste regulations require that certain activities have solid waste permits as well as prohibit certain activities in relation to waste disposal. Open burning under the Virginia Solid Waste Management Regulations (VSWMR) is only allowed under the circumstances outlined under 9VAC20-81-95 (see D.15. for general open burning allowances and D.16. for open burning allowance at landfills in post-closure care) and 9VAC20-81-140 (see A.4. for open burning allowances at active landfills). DEQ’s Regional Solid Waste Manager must be contacted to determine possible requirements.

E. Conclusion

In summary, Virginia regulations prohibit ACIs where the special incineration device’s operation or waste is specifically prohibited by Chapter 130. Chapter 130 prohibits collecting waste and bringing it to a central location for “open burning” except under limited circumstances. All owners must also check with their local government officials regarding any possible local requirements, including those adopted in accordance with Chapter 130 that could affect the operation of the ACI. Where the waste and the operation of the ACI meets all requirements of Chapter 130, no minor NSR permit⁴ is required (9VAC5-80-1105B.14). An owner must still check with DEQ’s Regional Solid Waste Manager to determine applicability of the Solid Waste regulations.

³ Chapter 130 also prohibits open burning or use of a special incineration device in any VOC control area from May 1 through September 30 of each year. VOC Control Areas are defined in 9VAC5-20-206 (<https://law.lis.virginia.gov/admincode/title9/agency5/chapter20/section206/>).

⁴ There is no exemption for an operation that would be subject to major NSR permitting (9VAC5-80 Articles 8 or 9). Title V permitting also may be required based on federal regulatory requirements.