SCS ENGINEERS

SCS TECHNICAL BULLETIN – JUNE 23, 2020

VIRGINIA STATE PLAN FOR NEW LANDFILL EG APPROVED

New Air Regulations for MSW Landfills in Virginia

On June 23, 2020, the U.S. Environmental Protection Agency (EPA) published its approval of the Virginia State Plan to implement the new Emission Guidelines (EG) air regulations for municipal solid waste (MSW) landfills of 40 CFR 60 Subpart Cf. Approval is **effective July 23, 2020**.

The EG rule applies to existing MSW landfills (those existing landfills that have accepted waste since November 8, 1987 and have not initiated an expansion after July 17, 2014). The new EG is intended to eventually replace the existing rules under the New Source Performance Standards (NSPS) of Subpart WWW and the EG of Subpart Cc. As required by the new EG, Virginia submitted a state plan to implement the rules to the EPA for approval on August 29, 2019.

The Virginia state plan is published in state administrative code under 9 VAC §5-40-5925 through §5-40-5990 (also known as Rule 4-43.1).

Short-Term Action Items

First Report Submittal(s) Due by October 21, 2020. Within 90 days of the effective date (July 23, 2020), the following are due to VDEQ and EPA:

- Initial design capacity report.
- For landfills with a design capacity of at least 2.5 million Mg and 2.5 million m^3, an initial non-methane organic compound (NMOC) emission rate report is <u>also</u> due.

NMOC Threshold for GCCS Installation and Operation. The new EG reduces the threshold that triggers the requirements to install and operate a gas collection and control system (GCCS). The 50 Mg/yr threshold under the previous rules has been reduced to 34 Mg/yr, with one exception. Existing, closed landfills, as defined in the rule under the "closed landfill subcategory" (sites that were closed by September 29, 2017) will be allowed to continue using the 50 Mg/yr threshold.

Landfills with emissions above the threshold trigger requirements to install and operate a GCCS, although there are a few "tiered" levels of refinement (e.g. Tier 2) that may be used to revise emission rates. If a landfill triggers the GCCS requirements, the following timeline applies upon submittal of the triggering NMOC report:

1. Within 12 months of submittal, prepare a GCCS design plan.
2. Within 30 months, complete GCCS construction, installation, and startup.

Key Components: Virginia EG Plan

In addition to the reduced NMOC threshold, other key areas of the rules include:

Treatment Definition. The definition of LFG treatment remains unchanged from the previous EG rules (filtration, dewatering and compression), with an additional notation on beneficial use. However, the new EG includes a new requirement for each regulated landfill with a landfill gas-to-energy (LFGTE) project to develop a treatment system monitoring plan.

Surface Monitoring. All penetrations of the landfill cover must now be monitored during each surface emission monitoring (SEM) event. This is in addition to monitoring of the required serpentine path across the landfill surface, the path around the perimeter of the landfill, and for areas where visual observations suggest a potential leak. Penetrations include wellheads, LFG collection system components, or any object that completely passes through the landfill cover. Survey stakes, fencing, flags, signs, and utility posts are not included.

Latitude/longitude must be recorded for each SEM exceedance location, accurate within +/- 4 meters.

Tier 4. A new Tier 4 method has been included to assess whether a GCCS is required once NMOC emissions exceed 34 Mg/year (but are less than 50 Mg/year). The procedure includes four quarters of SEM with no exceedance of the 500 parts per million by volume (ppmv) threshold for methane, then quarterly SEM for active sites and annual SEM for closed sites after the initial monitoring period.

Monitoring under Tier 4 must be conducted during specific wind conditions (or otherwise use a wind barrier) and wind speed monitoring is required during the events. Use of the Tier 4 methodology requires notification of dates of proposed testing and annual reports of results. Although Tier 4 could help low gas-producing landfills, the stringent requirements and small NMOC emission rate window (≥34 Mg/yr; < 50 Mg/yr) may limit its use and value.

Wellhead Criteria. The wellhead monitoring threshold criterion for oxygen has been removed. Oxygen monitoring is still required monthly, but no limits or exceedances exist. Maintaining a negative pressure and a temperature of less than 131 °F remain requirements.

Alternative timeline requests have been clarified as only being required if the exceedance cannot be corrected in 15 days. If this occurs, a root cause analysis must be conducted, and the exceedance remediated within 60 days. If not completed by 60 days, then the landfill must conduct a corrective action analysis and develop an implementation schedule for completion of corrective action by 120 days. If longer than 120 days is necessary, then Administrator approval is required, and the landfill must submit the root cause/corrective action analyses and schedule within 75 days.

Criteria for Removing GCCS. For removal/ decommissioning of the GCCS, the following three criteria must be met: (1) must be a closed landfill; (2) GCCS must have operated for 15 years, or the landfill must demonstrate that the GCCS could not operate for 15 years due to declining flow; and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/year on three consecutive test dates (50 Mg/year for the closed landfill subcategory).

Removal of the Startup, Shutdown, and Malfunction (SSM) Exemption. The rule will now apply at all times, **including** during SSM events. This removes the SSM "exemption" that was contained in the previous EG rules and allowed landfills to avoid non-compliance during SSM events.

Now, a work practice standard applies during SSM events. During such events, owners or operators must shut down the gas mover system and close all valves in the GCCS, which could contribute to the potential venting of the gas to the atmosphere, within one hour. The new rules also have specific criteria for managing SSM events for monitoring equipment used for rule compliance.

All periods of control device and treatment system downtime must be reported, not just those exceeding 1 hour. Although the EPA has included the work practices standard, it remains unclear how landfills can comply with EG requirements during SSM events.

Other Aspects

Clarifications and other minor changes (as compared with the previous rules) included in the new EG include the following:

GCCS Design Plans. Required to be updated under two situations: (1) 90 days after expansion of the GCCS into a new area, and (2) if changes made to the GCCS were not consistent with current plan.

Under the new rules, landfills must notify VDEQ when a Design Plan has been completed and submit the signature page, stamped by a professional engineer. VDEQ will have 90 days to request a full copy of the plan for review. If they do not, then the plan can be implemented, and no submittal is required, although the landfill remains "at risk" and responsible for developing a fully compliant Design Plan. If VDEQ requests submittal, then the landfill is bound by requirements for working with VDEQ to get the plan approved and then complying with it.

Electronic Reporting. Submittal of performance test reports, NMOC emission rate reports, annual reports, Tier 4 reports, and wet landfilling practices is required through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI), once templates are available. Landfills are allowed to maintain electronic copies of the records in lieu of hardcopies to satisfy federal recordkeeping requirements.

EPA Method 25A will be included in the rule for testing low NMOC concentrations on the control device outlet, but EPA Method 18 will only be allowed if used in conjunction with Method 25A.

Waste Definitions. The definitions of "household waste" and "segregated yard waste" have been clarified so that landfills that take only these materials would not be defined as MSW landfills unless they accepted other materials that would classify them as MSW.

Wet Landfills. Landfills that recirculate leachate or accept liquid wastes (or have done so in the past 10 years) are subject to additional recordkeeping and annual reporting requirements.

Portable Meters. The new EG explicitly allows the use of portable meters for compliance with EPA Methods 3A and 3C (nitrogen and oxygen).

Low-Producing Areas. Before they can be removed from gas collection and monitoring requirements, low-producing areas must be generating less than 1% of the NMOC emissions compared to the landfill as a whole. However, the new EG now allows actual gas flow data to be used in lieu of an LFG model for estimating NMOC emissions.

Odors and Visible Emissions (Virginia-specific). The Virginia EG incorporates existing standards for visible emissions (9 VAC §5-40-80) and odors (9 VAC §5-40-140). These standards are typical permit conditions, and so likely will not represent new requirements.

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