

Technical Bulletin

Summary of Final NSPS/EG Rules for Landfills

Background

The U.S. Environmental Protection Agency (EPA) landfill gas (LFG) rules were published in the Federal Register on August 29, 2016. These rules include an Emission Guideline (EG) rule under Title 40 Code of Federal Regulations (40 CFR) Part 60, Subpart Cf and a New Source Performance Standards (NSPS) rule under 40 CFR Part 60, Subpart XXX. Both rules are finalized with this publication, and they will affect newly-defined NSPS sites (i.e., “new” landfills that are new or modified (expanded in capacity) after July 17, 2014) and EG sites (i.e., “existing” landfills that have not been expanded after July 17, 2014), respectively.

The new rules will ultimately replace the existing NSPS rule (40 CFR Part 60, Subpart WWW) and EG rules (40 CFR Part 60, Subpart Cc and state-equivalent rules) after a transition period. The new rules will take effect 60 days from publication in the Federal Register (October 28, 2016). States and local air jurisdictions have nine months from publication to prepare their EG rules (May 30, 2017). EPA has an additional four months to approve or disapprove of the state/local EG rules. Thus, for existing sites subject to the EG rule, there will be a time lag before the EG rule becomes fully effective.

Primary Element of the Rules

The major component of both rules is that the 50 Mg/year of non-methane organic compounds (NMOCs) emission threshold, which triggers installation of a LFG collection and control system (GCCS), will be lowered to **34 Mg/year** for all landfills with one exception. Existing, closed sites, as defined in the rule under the closed landfill subcategory (sites that are already closed or close within 13 months of publication with proper documentation), will continue to be able to use the 50 Mg/year threshold. This lower threshold appears to be the centerpiece of EPA’s plan to create additional NMOC and methane reductions from landfills nationally.

Key Components of the Rules

Other key areas of the NSPS/EG rules include:

Treatment Definition. The definition of LFG treatment has reverted to the original definition used throughout the industry of filtration, dewatering and compression, without numeric limits or special monitoring. EPA has added a notation that beneficial use can include technologies beyond combustion, such as vehicle fuels, pipeline quality gas, etc. This is a major victory for the LFG to energy (LFGE) industry, which was concerned that a rigid definition of treatment could negatively impact existing and new LFGE projects with additional costs and new compliance issues. However, the rules include a requirement for each regulated landfill to develop a treatment system monitoring plan to address treatment criteria. The rules are unclear whether submittal of the plans are required; if so, how; and if submitted, whether states and local agencies could try to require numeric limits and monitoring requirements on a site-by-site basis.

Surface Monitoring. All penetrations to the landfill cover must now be monitored during each quarterly 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. Monitoring penetrations can add significant time and cost to quarterly SEM events. EPA considers penetrations to be the largest source of surface emission exceedances, and so they are mandating this additional monitoring. EPA has provided some guidance as to what is and is not a penetration (LFG wellheads are clearly defined as penetrations while, for example, fence posts are not) but no actual definition is provided. Also, latitude/longitude must be recorded for each exceedance location within +/- 4-meter accuracy. The use of hand-held global positioning system (GPS) devices for flagging SEM exceedances should satisfy EPA’s proposed requirements for location data.

Tier 4. A new Tier 4 methodology has been promulgated 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 and 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 wind conditions less than 4 miles per hour (mph) average and ten mph instantaneous, and wind speed monitoring is required during the SEM event. If wind speeds exceed these thresholds, a wind barrier can be used, but no monitoring can occur when instantaneous wind speeds exceed 25 mph. Use of the Tier 4 methodology also requires notification of dates of proposed testing and annual reports of results. Overall, this is generally a positive development, which could be helpful for low gas-producing landfills, which only triggered the GCCS requirements due to a high NMOC emissions resulting from NMOC testing results and/or over-predicted LFG generation. However, the wind speed requirement, all of the various monitoring and recordkeeping items, as well as the facts that no landfill with NMOC emissions over 50 Mg/year can use Tier 4 and a single exceedance is a failure of the Tier 4, may limit its use and value.

Wellhead Criteria. EPA has removed the wellhead monitoring threshold criterion for oxygen. Oxygen monitoring will still be required monthly, but no limits or exceedances will exist. Maintaining negative pressure and a temperature of less than 131 F° are still requirements as in the existing NSPS and EG rules. 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. Removing the oxygen requirement will eliminate numerous wellhead exceedances and avoid having to operate a GCCS to meet the oxygen limit rather than minimizing emissions.

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 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). This provision provides some additional flexibility for removal of the GCCS but is only a slight improvement over existing criteria.

Startup, Shutdown, and Malfunction (SSM) Requirements. The rule will now apply at all times, **including** SSM. This would remove the former SSM “exemption” that was contained within the existing NSPS/EG rules and allowed landfills to avoid non-compliance through the use of SSM. In recognition of the unique nature of landfill emissions, and consistent with the need for standards to apply at all times, including during periods of SSM, EPA has indicated that 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. By complying with the work practice standard and SSM requirements for monitoring devices, it is hoped that landfills can avoid potential compliance issues for SSM events. However, specific details on dealing with SSM events under the rules must be further addressed with EPA as there are still several open issues especially in light of the removal of the 5-day downtime limit.

Other Issues Addressed

EPA has also provided rule clarifications and other minor changes to the rules on the following issues:

GCCS Design Plans will be required to be updated under two situations: (1) due 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. Third-party review/verification will not be required for Design Plans, as considered under the draft rules. Under the new rules, landfills must notify the state/local agency when a Design Plan has been completed and submit the signature page, stamped by

a professional engineer. The agency will have 90 days to request a full copy of the plan be submitted 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 submittal is requested, then the landfill is bound by requirements for working with the agency to get the plan approved and then complying with it.

Electronic Reporting will be required for performance test reports, NMOC emission rate reports, annual reports, Tier 4 reports, and wet landfilling practices through the EPA’s Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). Owners or operators are allowed to maintain electronic copies of the records instead of hardcopies to satisfy federal recordkeeping requirements. Although this may seem simple, experience with electronic reporting under the federal greenhouse gas reporting rule has been more complex and costly than originally thought.

EPA Method 25A will be included in the rule for testing low NMOC concentrations on the control device outlet, but **EPA Method 18** will not be allowed for NMOC analysis by itself. It can, however, be used in conjunction with Method 25A. The return of EPA Method 25A is an important allowance for stack testing of control devices for NMOC destruction demonstrations.

Waste Definitions. EPA has clarified the definitions of “household waste” and “segregated yard waste” so that landfills that take these materials would not be defined as municipal solid waste (MSW) landfills under the rules unless they accepted other materials that would classify them as MSW. This should clear up previous confusion and avoid enforcement actions that several EPA regions attempted against construction and demolition debris (C&D) landfills.

Wet Landfills. EPA elected not to include any additional regulations for so-called “wet” (those that recirculate leachate or accept liquid wastes) landfills; however, they are requiring specific information to be submitted as part of the electronic reporting that would help them decide how to regulate wet landfills in the future. This is a completely new set of recordkeeping and reporting requirements for these wet landfills and includes some historical reporting.

Portable Meters. EPA has explicitly allowed the use of portable meters for compliance with EPA Methods 3A and 3C (nitrogen and oxygen). This rule change allows the continued use of portable meters that are already in use in the industry; however, some meters may require modifications to comply.

Low-Producing Areas. EPA still requires that low-producing areas must be generating less than 1% of the NMOC emissions compared to the landfill as a whole before they can be removed from the gas collection and monitoring requirements. However, with the new rules, actual gas flow data can be used instead of the LFG generation model for estimating NMOC emissions. This offers some additional flexibility but is more limited than what industry had hoped for in exempting low-producing areas.

Industry Involvement

Note that the landfill industry will be reviewing these rules in detail, working with EPA, and providing guidance to the industry in conjunction with the Solid Waste Association of North America (SWANA) and the National Waste and Recycling Association (NW&RA). There remain some serious issues related to applicability, interpretation, and implementation that must be resolved. It is important to determine whether each landfill will be considered new or existing under the rules. New sites must be prepared to comply with the new requirements in the next several months. Existing sites can wait until the states develop/gain EPA approval for their EG rules while complying with currently applicable rules.

It should be noted that EPA had not revised the landfill National Emission Standard for Hazardous Air Pollutants (NESHAPs; 40 CFR Part 63, Subpart AAAA). Landfills subject to the NESHAPs must continue to comply with it.

For copy of the rules and related documents:

<http://www.epa.gov/ttn/atw/landfill/landflpg.html>

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