

Changes Proposed to NSPS and EG Rules for Landfills

Two EPA landfill gas rules were published in the Federal Register in August. The proposed EG Guideline rule affects “new” and “existing” landfill sites. Remember, these are guidelines only. Your local and state government agencies will use them to develop and implement the actual rules by which you do business.

■ By Pat Sullivan

Two U.S. Environmental Protection Agency (EPA) landfill gas (LFG) rules were published in the Federal Register on August 27, 2015. These include a draft Emission Guideline (EG) and a supplemental draft New Source Performance Standards (NSPS) rule.

The proposed EG Guideline rule affects “existing” landfill sites (i.e., landfills that have not been expanded and were not newly constructed after July 17, 2014). The NSPS rule is a supplemental proposal that affects “new” landfill sites (landfills that are new or were expanded in capacity after July 17, 2014). Comments on both were due by October 26, 2015. Finalization of both rules is expected in the first quarter of 2016.

Understand that these new EG rules are guidelines only. State and local agencies use them to implement

The Best System of Emission Reductions (BSER) Rule still allows open flares like these multiple enclosed flares at a large landfill. Photos courtesy of SCS Engineers.

their own rules. Once the EG rule is final, states and local air jurisdictions will have nine months to prepare their rules. If a state chooses not to implement rules, the agency defaults to a Federal Plan rule (still to be developed) after a designated timeframe. EPA then has four months to approve or disapprove of the state/local EG rules. Once the NSPS rule is issued as final, it immediately becomes effective for any sites that were constructed or expanded after July 17, 2014.

The New Requirements

The major component of both rules is the current 50 Mg/year of non-methane organic compounds (NMOCs) emission threshold, which triggers an installation of a LFG collection and control system (GCCS). In the proposed rules,

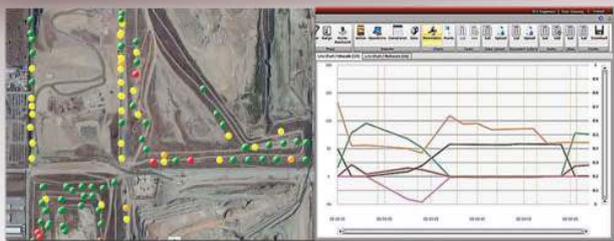
Desperately Seeking Comment

During the comment period, EPA was also looking for public comment on:

- Defining closed areas and how such areas should be regulated under the rule.
- Changing SEM walking pattern to 25 feet instead of 30 meters (100 feet) and/or implementing integrated surface sampling with a limit of 25 ppmv (per California AB 32 landfill methane rule). This enhanced SEM program would be very costly to industry, potentially increasing monitoring and reporting costs by four to six times.
- Defining “wet” landfills and how such landfills should be regulated under the rule.
- Monitoring LFG flow at wellhead and uses of that data.
- Third-party GCCS Design Plan certifications to relieve the burden on state/local agencies and speed up plan approvals.
- Using portable meters for compliance with EPA Methods 3A and 3C (nitrogen and oxygen). Such meters have been in common use for oxygen monitoring and exist for other constituents as well.
- The EPA will have the ability to add additional provisions to the final version of the rule based on the information submitted as a part of these information requests. This means the industry no longer has a say in the final rule language.

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that threshold will be lowered to 34 Mg/year for all landfills except existing, closed sites. This appears to be the centerpiece of the EPA's plan to create additional NMOC and methane reductions from landfills. This is the only item in the supplemental NSPS proposal. With a lowered NMOC threshold, some landfills, particularly those that have been too small to trigger the installation of a GCCS, will be required to install them.

Other Key Components of Draft EG Rule

Treatment Definition

The definition of LFG treatment has reverted to the original NSPS definition 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 industry, which was afraid that a rigid definition could negatively impact existing and new projects with additional costs and new compliance issues. However, the EG rule includes a requirement for each regulated landfill to develop and submit for approval a treatment system monitoring plan to address treatment criteria. This plan could give states and local agencies the ability to require numeric limits and monitoring on a site-by-site basis.

Surface Monitoring

All penetrations to the landfill cover and open areas of the cover must be monitored during each quarterly surface emission monitoring (SEM) event.

Latitude and longitude must be recorded for each location of exceedance within +/- 3 meters. Monitoring all penetrations can add significant time and cost to quarterly SEM events, particularly for landfills that have penetrations beyond the LFG wellheads. Furthermore, in some instances, exceedances at penetrations can be difficult to mitigate. EPA considers penetrations to be the largest source of surface emission exceedances, which is why they are mandating additional monitoring. The industry needs a clear definition of what a penetration is and would like the definition limited to permanent components that pass completely through the cover and deeply into the waste. For example, a temporary fence post should not require monitoring.

Tier 4

A new Tier 4 methodology has been proposed to assess whether a GCCS is required once NMOC emissions exceed 34 Mg/year. The procedure includes four quarters of SEM with no allowed exceedance of the 500 parts per million by volume (ppmv) threshold for methane and then semi-annual SEM after the initial monitoring. Monitoring under the Tier 4 must be conducted during wind conditions less than 5 miles per hour (average) and/or 10 miles per hour instantaneous. This is a positive development, which should be very helpful for dry climate, or low gas-producing landfills, which only triggered the GCCS requirements due to a high NMOC concentration during Tier 2 testing and/or model defaults that over-predict LFG generation. However, the wind speed requirement and the fact that one single exceedance can cause a failure of the Tier 4 may limit its value.

Other Issues

The EPA has provided rule clarifications and other minor changes to the rule on these issues:

- **GCCS Design Plans**—Required under both rules, plans will have to be updated under two conditions: 90 days after expansion of the GCCS into a new area and if changes made to the GCCS were not consistent with the current plan.

- **Organics Diversion**—Not mandated in the rule, though the EPA does encourage wider organics diversion as a best management practice (BMP). The EPA considers organics diversion an element of a state EG plan. Their willingness to consider organics diversion as part of a state plan is troubling and misplaced. Landfills are concerned that certain states could use this opening to require diversion of organic materials, or implement an outright organics ban. An air quality regulation is not the proper place for such a far-reaching waste management decision.

- **Best System of Emission Reductions (BSER)**—The rule requires that the GCCS meet BSER. No new technologies were added to the definition of BSER, and open flares are still allowed. However, the EPA indicates that BMPs can be useful in certain circumstances and are encouraged, such as well bore seals, well dewatering, biocovers, etc. This is a positive development and allays fears that open flares would not be allowed.

- **Electronic Reporting**—Required for performance test reports, NMOC emission rate reports and annual compliance reports.

- **EPA Method 25A**—Included in the rule for testing low NMOC concentrations on the control device outlet. The return of EPA Method 25A is an important allowance for stack testing of control devices for NMOC destruction. EPA Method 18 will not be allowed for NMOC analysis.

- **Waste Definitions**—The EPA has clarified the definitions of “household waste” and “segregated yard waste” so that landfills that take this material are not defined as municipal solid waste (MSW) landfills unless they accept other materials that classify them as MSW. This should clear up previous confusion and avoid enforcement actions that several EPA regions attempted against construction and debris (C&D) landfills.

- **Early Collection**—Despite earlier collection being part of initial discussions, the EPA did not change the time periods for GCCS installation. Initial GCCSs are still required 30 months after exceeding 34 Mg/year (or 50 Mg/year for closed sites) of NMOCs, and expansions of the GCCS into new areas are still based on when the waste reaches five years of age or two years of age if the area is at final grade.

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No new rules were added to the BSER Rule and the good news is that open flares, like this single candlestick flare, are still allowed.



Wellhead Criteria

The EPA has removed the wellhead criteria for oxygen and temperature. Oxygen and temperature monitoring will still be required monthly but no limits or exceedances will exist. Negative pressure is still a requirement. Alternative timeline requests have been clarified as only being required if the exceedance cannot be corrected in 15 days and the remedy will not be complete within 120 days and/or will not include expansion of the GCCS. This is one of the major issues put forth by the industry and represents a major success. Removing the oxygen and temperature requirements will eliminate the vast majority of wellhead exceedances and avoid the situation of operating the GCCS to meet arbitrary wellhead criteria rather than to minimize emissions.

Low Producing Areas

GCCSs can be removed from low gas producing areas if they meet three criteria:

1. It must be a closed landfill or landfill area
2. The GCCS must have operated for 15 years or you must show that GCCS could not operate for 15 years due to declining flow
3. The landfill must demonstrate methane emissions less than 500 ppmv for four quarters of SEM

There is some concern regarding the definition of closed area, which the EPA has defined as physically separated areas with different lining systems where LFG cannot pass into other areas. Also, no definition or guidance is provided as to how landfills can demonstrate that a low-producing area or landfill cannot operate its GCCS due to declining flows. More clarification is needed before industry can fully address the provisions for low-producing areas.

Startup, Shutdown and Malfunction (SSM)

The new rule will apply at all times, removing the SSM “exemption” that allowed landfills to avoid the loss of SSM protections that other sources faced due to legal decisions regarding the National

Emission Standards for Hazardous Air Pollutants (NESHAPs). The EPA has defined a new term of “not operating” to clarify what would be considered SSM events for landfills, as in the GCCS is not operating. Also, landfills will have to estimate excess NMOC emissions when not operating. The focus of this seems to be primarily on malfunctions of the GCCS and monitoring equipment, not of the landfill itself. The EPA defines the concepts of “normal” or “usual manner” for periods of startup and shutdown since those events are expected to be part of the normal GCCS operation cycles. Unfortunately, SSM events could come to be considered deviations; however, EPA has suggested that good faith efforts to comply during downtime could reduce the enforcement burden. The EPA has eliminated the duration of SSM events, and landfills still must limit free venting to less than one hour by shutting down gas mover equipment once a control device goes offline.

Final Thoughts

These are the major changes proposed by the EPA draft EG and NSPS rule. The draft rule also includes some clarifications and minor changes that will also be finalized early next year. For now, these are the changes most likely to impact the industry. Remember, these are guidelines only. Your local and state government agencies will use them to develop and implement the actual rules by which you do business, but based on past experience, those state/local rules are expected to be similar to the federal guidelines. | **WA**

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