The Impacts of the New NSPS XXX and EG Cf Regulations for Landfills

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NSPS XXX/EG Cf Rules

• In August 2016, EPA published the NSPS XXX and EG Cf

• NSPS XXX - MSW landfills that commenced construction, modification, or reconstruction after July 17, 2014

• EG Cf - MSW landfills that commenced construction, modification, or reconstruction on or before July 17, 2014

Schedule

• NSPS XXX takes effect on 10/28/2016
  • Design Capacity and Tier 1 Reports are due 11/28/2016
  • GCCS Design Plan is due 11/28/2017

• EG Cf is a phased approach
  • States have until May 30, 2017 to submit a state plan to EPA or adopt the EPA plan
  • EPA has 4 months to review and approve the state plan

Thresholds for Installing Controls

• Design Capacity Threshold
  • Remained the same at 2.5 million megagrams (Mg)

• NMOC Emission Threshold
  • Reduced from 50 Mg/year to 34 Mg/year
  • Closed landfills remain at 50 Mg/year
    • MSW Landfills closed on or before September 27, 2017

• Optional Tier 4
  • NMOC Emissions between 34 Mg/yr to 50 Mg/yr
Optional Tier 4

• Surface emissions monitoring (SEM) demonstration - active & closed
  • Monitor entire surface at no more than 30-meter interval path; visual observations indicate elevated concentrations of landfill gas; cover penetrations
  • 4 consecutive quarters below 500 ppmv does not trigger requirement to install GCCS
    • Active landfill must continue conducting quarterly SEM
    • Closed landfill must conduct annual SEM
  • Must submit an annual Tier 4 SEM report

Optional Tier 4 Requirements

• 30-day Notification submitted prior to conducting a Tier 4
• Wind Barrier, similar to a funnel if:
  • Onsite wind speed exceeds 4 mph
  • Gusts exceed 10 mph
• Digital photographs of the instrument setup (must be time and date stamped)
• Wind Speed must be measured with an on-site anemometer
  • Continuous recorder and data logger
  • Average wind speed must be determined at 5-minute intervals
  • Gusts must be determined at 3-second intervals
• Mechanical device such as pole/wheel must be used to ensure the sampling probe is <5cm above the landfill surface
• Additional requirements if landfill has a voluntary GCCS installed

Tier 4 Logistics

• Upon SEM reading of >500 ppm methane
  • Landfill must submit a GCCS design plan within 1 year of >500 ppm reading
  • Install and operate a GCCS within 30 months of the most recent annual NMOC emission rate report
  • Landfill cannot return to Tier 1, 2, or 3 modeling to demonstrate emissions are <34 Mg/yr
**Quarterly SEM Events**

- Monitor around the perimeter of the collection system
- Along a pattern that transverses the landfill no more than 30 meter intervals
- Where visual observations indicate elevated landfill gas
  - Distressed vegetation, cracks or seeps
- Monitor cover penetrations
  - Includes wellheads
  - Excludes survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles
- GPS technologies for SEM exceedances
  - Requiring latitude and longitude coordinates
  - Instrument accuracy of at least +/- 4 meters

**Wellhead Standards**

- Removal of the operation standards for oxygen/nitrogen
  - Monthly wellhead monitoring/recordkeeping still required
- Maintain negative pressure
- Maintain temperature <131 deg F

**Wellhead Standards Corrective Actions**

- Initiate corrective action within 5 days
- Exceedance lasts >15 days
  - Conduct root cause analysis and correct exceedance within 60 days
- Exceedance lasts >60 days
  - Conduct corrective action analysis and develop implementation schedule
  - Notify the Administrator within 75 days
  - Cannot exceed 120 days
- Annual Report must include both analyses and schedule

**Recirculating Leachate or Adding Other Liquids**

- Required for landfills that recirculated leachate or added other liquids within the last 10 years
- An annual report is required:
  - Volume of leachate recirculated and other liquids added (gallons/year)
  - Surface area (acres) over which liquid was added
  - Total waste disposed within area (Mg)
  - Annual waste accepted rates (Mg/yr)
  - Initial report must be for current year and each of the previous 10 years
- First report is due September 27, 2017
- Cease reporting once closure report is submitted
LFG Treatment

- Defined Treatment System
  - System that filters, de-waters, and compresses LFG for sale or beneficial use

- Expanded Types of Beneficial Use
  - Includes vehicle fuel, production of high-BTU gas for pipeline injection and use as a raw material in a chemical manufacturing process

- Prepare/submit site-specific treatment monitoring plan

SSM Provisions

- Standards apply at all times, including periods of startup, shutdown and malfunction (SSM)
- Removed 5-day and 1-hour downtime limitations
- Site must shut down the gas mover system and close valves within 1 hour of shutdown
- Estimate emissions during downtime
- Keep records and submit reports of all periods when the collection and control device is not operating

Capping/Removal of GCCS

- Criteria for Capping/Removal
  - Landfill is closed
  - Calculated NMOC emission rate is <34 Mg/yr on three consecutive test dates
  - GCCS has operated for at least 15 years or demonstrate unable to operate due to declining flows
- 1% criteria not changed

Design Plan Submittal

- Submittal to administrator within one year from initial exceedance
  - Administrator has 90 days from submittal to decide if review is needed
  - If no response within 90 days landfill may implement design plan at own risk
- Design plan revisions:
  - Required 90 days prior to expansion into areas not covered by current design plan
  - Required prior to installing system not in accordance with current design plan
Design Plan Basics

• Design Plan requirements remained unchanged:
  • Prepared by professional engineer
  • Expandable to all future waste areas
  • Show that wells properly sited so all gas producing areas are covered
  • Show that all components are properly sized to manage projected gas amounts as well as condensates, static and settlement forces, and overburden or traffic loads
  • Conveys all gas to control system (flare, beneficial use, etc.)
  • Show piping and control system capable of handling maximum site life flow rate
  • SEM monitoring path plan drawing for site buildout

GCCS Installation

• Installs must Conform with submitted/approved design plan
  • Initial installation within 30 months of exceedance
  • GCCS installed in active areas within 5 years of waste placement
  • GCCS installed within 2 years if closed or waste at final grade
  • Initial install will have to include a control system (flare)

GCCS Components

• Gas Extraction
  • Horizontal Wells
  • Vertical Wells

• Gas Conveyance
  • Lateral and header piping
  • Correct Pipe sizing
  • Condensate management
    • Sumps
    • U-traps

• Control System
  • Flares: Enclosed, Unenclosed (i.e. candlestick)
  • Beneficial use
    • High-BTU, Medium-BTU, Gas to Energy, vehicle fuel

Questions and Answers

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