MSW Landfill Air Rule Update: NSPS XXX

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What is “NSPS”?

NEW SOURCE PERFORMANCE STANDARD RULE BASICS

• Federal rules to control air pollutants from new sources
• 40 CFR Part 60; Subpart A (general) and Subparts B through UUUU (~90 source-specific rules)
• Specific categories of sources:
  • Diesel engines – NSPS I III A.K.A. “NSPS Quad i”
  • Landfills – NSPS WWW “triple W” & NSPS XXX “triple X”
• EPA looks at large numbers of similar sources and sets minimum emission standards
What NSPS Rules Apply to Landfills?

NSPS WWW  NSPS XXX
EG Cc  EG Cf

(there may be others)
What NSPS Rules Apply to Landfills?

- NSPS WWW
- NSPS XXX
- EG Cc
- EG Cf
What Does NSPS XXX Accomplish?

• Establishes requirements for collection and control of non-methane organic compounds (NMOC)
• Landfill size and NMOC generation trigger different requirements
• What is NMOC?
What Does NSPS XXX Attempt to Do?

LFG Composition

- methane (45-55%)
- carbon dioxide (40-50%)
- nitrogen (2-5%)
- oxygen (0.5-2%)
- trace (<0.5%)

trace (this is where NMOC resides)
Brief History of Landfill Air Rules

1991
DRAFT
NSPS WWW and EG Cc Rules

1996
FINAL
NSPS WWW and Cc Rules

1997-1999
State EG Rules Approved

1999
Federal EG Implemented

2003
NESHAP AAAA Rules

2009
Federal GHG Reporting Rule

2016
FINAL NSPS XXX and EG Cf

1990s

2000s

2010s
What is the “CONSTRUCTION” Date?

“CONSTRUCTION” MEANS FABRICATION, ERECTION, OR INSTALLATION OF AN AFFECTED FACILITY. – 40 CFR PART 60 SUBPART A

• Day a horizontal or vertical airspace expansion permit is issued?
• Day excavation begins for the landfill/expansion?
• Day waste is put in place?
• What if daily cover is removed from an area that will become an expansion?
• What if the expansion is vertical only (waste limits are not altered)?
Applicability: What Landfills Are Subject to NSPS XXX?

NEW SOURCE PERFORMANCE STANDARD SUBPART XXX

APPLICABILITY

40 CFR § 60.786

Has the landfill obtained a land

improvement permit to receive the

benefits of the NSPS?

Yes

No

STOP

NSPS Subpart X (CDS/ND) apply and require the following:

• Check applicability for NSPS Subpart X (CDS/ND) using

  Table 1 or 36 CFR Part 620.

STOP

NSPS Subpart X (CDS/ND) apply and require the following:

• Submit an operating permit.

STOP

NSPS Subpart X (CDS/ND) apply and require the following:

• Submit a design capacity report no later than 90 days

  after commencement of construction, modification or

  expansion. Generally, Tier 3 exemptions are

  unrequired when Tier 1 or Tier 2 are subject to

  NSPS Subpart X (CDS/ND).

Summary of Recordskeeping

§ 60.786

Please refer to the rule text for details on records that are required to be kept.

≥ 0.5 Mgy/0.5 million m³ [§ 60.786(b)]

Summarize of Test Methods

§ 60.784

• MOGC Emission rate calculation Tier 1 (§ 6.7(a)(1) & (2))

• MOGC Emission rate calculation Tier 2 [§ 6.7(a)(2)]

• MOGC Emission rate calculation Tier 3 [§ 6.7(a)(3)]

• MOGC Emission rate calculation Tier 4 [§ 6.7(a)(4)]

• MOGC Emission rate calculation Tier 5 [§ 6.7(a)(5)]

• MOGC Emission rate calculations for PSD [§ 6.7(c)]

• Performance testing [§ 6.7(d)]

Operational Standards

NSPS Subpart X (CDS/ND)

• Operate under a valid LGDP and control

  system that is in compliance with

  Table 1.

• Conduct daily monitoring of

  methane emissions and

  monitoring of a control

  device.

• Conduct weekly monitoring of

  methane emissions and

  monitoring of a control

  device.

• Conduct monthly quality control

  monitoring of methane

  emissions.

• Conduct quarterly quality control

  monitoring of methane

  emissions.

• Conduct yearly quality control

  monitoring of methane

  emissions.

• Conduct monthly compliance

  monitoring of methane

  emissions.

• Conduct yearly compliance

  monitoring of methane

  emissions.

• Conduct monthly quality control

  monitoring of methane

  emissions.

• Conduct yearly quality control

  monitoring of methane

  emissions.

• Conduct monthly quality control

  monitoring of methane

  emissions.

• Conduct yearly quality control

  monitoring of methane

  emissions.

Summary of Reports

§ 60.787

• Design capacity report. Due 60 days after start of construction.

• MOGC Emission Rate Report. Due 60 days after start of construction.

• CDS/ND design plan. Due within 1 year of first MOGC emission rate report showing

  Tier 1 or Tier 2.

• Revert to CDS/ND plan. Due 60 days before expiring on any not previously

  included in the approved CDS/ND design plan.

• Closure report. Due 32 days after a landfill stops accepting waste.

• Equipment removal report. Due 30 days prior to removing control equipment.

• Annual report. Due within 180 days of starting of a CDS/ND Tier annually.

• Initial performance test report. Due 60 days after Tier 4 Tier 4 being used.

• Corrective action and proposed timeline. Due 75 days after exceedance if

  Tier 4 exceedance will not be corrected within 180 days.

• Liquid addition report. Only if landfill uses leachate recirculation.

• Tier 4 notification. Due within 30 days of Tier 4 test, only required if Tier 4 being used.

This flowchart is intended to be a summary of NSPS XXX, please refer to the rule text for additional details.
Applicability: What Landfills Are Subject to NSPS XXX?

• STEP #1: Has the landfill **started construction** on an expansion since **July 17, 2014**?
  • NO? → NSPS Subpart XXX **DOES NOT APPLY**; other rules such as NSPS WWW, or EG C, Cb, Cc or Cf may still apply.
  • YES? → NSPS Subpart XXX **APPLIES**; move to STEP #2.
Applicability: What Landfills Are Subject to NSPS XXX?

• STEP #2: Is the TOTAL design capacity of the landfill greater than 2.5 million Mg AND 2.5 million cubic meters?
  • NO (to either)? → NSPS Subpart XXX APPLIES in a very limited manner.
    • Landfill must submit a design capacity report within 90 days of start of construction, THAT IS IT.
  • YES (to both thresholds)? → Move to STEP #3.
    • Landfill must submit a design capacity report AND NMOC emission rate report within 90 days of construction.
    • Additionally, a Title V air operating permit is required.
    • Move to STEP #3 to determine if there are more requirements.
Applicability: What Landfills Are Subject to NSPS XXX?

• STEP #3: Does the NMOC emission rate report show that more than **34 Mg/year** of NMOC are generated by the landfill?
  - NO? → Submit the following:
    • Annual NMOC Emission Rate Report.
    • If using Tier 2, re-test NMOC every 5 years.
    • If using Tier 3, additional requirements will apply.
    • GCCS will not be required by the rule.
  - YES, but using Tier 4? → GCCS not required, but Tier 4 requirements apply.
  - YES, but not using Tier 4? → Submit the following:
    • GCCS design plan within 1 year of construction.
    • GCCS system must be installed within 30 months of construction.
    • Lots of O&M and monitoring requirements will apply.
TIERS 1-3 USE A LANDFILL GAS MODEL TO ESTIMATE NMOC GENERATION

TIER 1: Assume default NMOC concentration [4,000 ppmv]

TIER 2: Test NMOC concentration [often 100-600 ppmv]

TIER 3: Test site-specific methane generation rate [not used often]

TIER 4: Use surface emission monitoring [impractical as written]
## Some Differences Between NSPS XXX and NSPS WWW

<table>
<thead>
<tr>
<th>NSPS WWW Requirement</th>
<th>NSPS XXX Requirement</th>
<th>Bad or Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMOC &lt; 50 Mg/yr</td>
<td>NMOC &lt; 34 Mg/yr</td>
<td>🖐️</td>
</tr>
<tr>
<td>Oxygen must be &lt; 5%</td>
<td>Oxygen no longer must be &lt; 5%</td>
<td>🧡</td>
</tr>
<tr>
<td>Surface scans @ 30 m intervals</td>
<td>Surface scans @ 30 m intervals AND cover penetrations, GPS coordinates (3 m)</td>
<td>🖐️</td>
</tr>
<tr>
<td>Tier 1, 2, or 3</td>
<td>Tier 1, 2, 3, or 4</td>
<td>🖐️ or 🧡</td>
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</tbody>
</table>
Rule Reconsideration/Stay/Future

Aug. 29, 2016
FINAL
NSPS XXX & Cf
Published

Oct. 27, 2016
Petition Submitted
to EPA by Multiple
Parties

May 5, 2017
EPA Granted 90-
Day STAY of
NSPS XXX & Cf

Aug. 29, 2017
Stay Ended With
No EPA Action

2017 - ?
EPA
Reconsidering
Rule, But Rule Still
in Effect
What Did the Petition Discuss?

- Tier 4 is not a practical option
- Annual liquids reporting is burdensome
- Corrective action timeline procedures are complex
- Overlapping applicability with other rules
- Definition of cover penetration
- Design plan approval by agencies

These are some of the possible items EPA is reconsidering.
How is Michigan DEQ Implementing NSPS?

- XXX
- Cf
Practical Examples

**LEARNING: UNDERSTAND THE DATE OF “CONSTRUCTION”**

*Case #1:* Was under impression that they had to comply with NSPS XXX starting on the date they received land expansion permit.

*Case #2:* Was unsure if the removal of daily cover from an area that had been permitted for an expansion would trigger “construction” of the expansion.
Practical Examples

**LEARNING: BE AWARE OF THE RULES**

Case #3: Began construction on expansion and due to start of construction right about when the rule was published was not aware of NSPS which requires submittals within 90 days of construction. Landfill missed deadline for design capacity and NMOC report; nearly missed the deadline to apply for the Title V operating permit; and was almost forced to install an active GCCS due to missing the report deadlines.

Case #4: Submitted a NMOC report in 2017 with a projection out to 2020 showing that NMOC will exceed the 34 Mg/yr threshold starting in 2020. Unnecessarily forced into compliance with NSPS Subpart XXX.
Thank you.

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