New Source Performance Standards Cf and XXX – What’s Happening Now?

Joseph Krasner, P.E.
April 26, 2022
Our Agenda – Leave No Noodle Behind

• What’s New?
• NSPS/EG Update
• NESHAP Subpart AAAA
• Title V Permitting
• Action Items
• Monitoring Issues
## What’s New?

<table>
<thead>
<tr>
<th>RULE</th>
<th>EFFECTIVE</th>
<th>APPLIES</th>
<th>TRIGGER DATE</th>
<th>DESIGN CAPACITY</th>
<th>EMISSIONS TRIGGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSPS XXX</td>
<td>Variable</td>
<td>New Landfills as Defined in Rules</td>
<td>Built or Modified after 7/17/14</td>
<td>≥ 2.5M Mg or 2.5M m³</td>
<td>NMOC ≥ 34 Mg/yr.</td>
</tr>
<tr>
<td>EG OOO</td>
<td>6/21/2021</td>
<td>Existing NSPS WWW/EG Cc/EG GGG Landfills in States w/o Approved Rules</td>
<td>Built or modified before 7/17/14</td>
<td>≥ 2.5M Mg or 2.5M m³</td>
<td>NMOC ≥ 34 Mg/yr.</td>
</tr>
<tr>
<td>EG Cf</td>
<td>Variable</td>
<td>Depends on a State’s Effective Rule Date</td>
<td>Built or Modified before 7/17/14</td>
<td>≥ 2.5M Mg or 2.5M m³</td>
<td>NMOC ≥ 34 Mg/yr.</td>
</tr>
<tr>
<td>NESHAP AAAA</td>
<td>9/27/2021</td>
<td>All Landfills with GCCS Under NSPS or EG Rules</td>
<td>Rule – 3/20/2020 Changes Effective - 9/27/2021</td>
<td>≥ 2.5M Mg or 2.5M m³</td>
<td>NMOC ≥ 50 Mg/yr. or Major HAP</td>
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</tbody>
</table>
Transition to New NSPS/EG

<table>
<thead>
<tr>
<th>Transition Options</th>
<th>Details</th>
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<tbody>
<tr>
<td>Already transitioned into NSPS Subpart XXX.</td>
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<tr>
<td>or</td>
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<tr>
<td>or</td>
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<tr>
<td>Subject to EPA approved State EG Cf rule;</td>
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<tr>
<td>and</td>
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<tr>
<td>Title V permit already accounts for Rule changes, or former NSPS or EG rule conditions are taken out of Title V permit, or other Agency agreement.</td>
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<tr>
<td>New NSPS/EG is not fully replaced by NESHAP Subpart AAAA; only the “major compliance provisions.” Sites opt into those.</td>
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<tr>
<td>New version of NESHAP Subpart AAAA effective on Sep-27-21.</td>
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<tr>
<td>Other elements of the NSPS Subpart XXX or EG Subparts Cf, or OOO will remain effective, liquids reporting for example.</td>
<td></td>
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</tbody>
</table>
## Summary of EG Subpart OOO Landfills

<table>
<thead>
<tr>
<th>Legacy Controlled</th>
<th>Closed Landfill</th>
<th>All Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>No 30-month phase in period for landfills already subject to the full GCCS requirements under an existing NSPS or EG rule</td>
<td>Closure Report Submitted pre 9/27/17 Closure</td>
<td>Initial Design Capacity and NMOC Rate Reports was due 9-19-21</td>
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<tr>
<td></td>
<td>Retains 50 Mg/yr. NMOC threshold</td>
<td>Comply with 30-month timeline for GCCS installation</td>
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<tr>
<td>Compliance on 6-21-21</td>
<td>Compliance on 6-21-21 as applicable</td>
<td>Variable</td>
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</table>
## State Plans as of April 24, 2022

<table>
<thead>
<tr>
<th>State Approved</th>
<th>State Pending</th>
<th>Neg. Declaration</th>
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<tbody>
<tr>
<td>Arizona plan covering Pinal County and another covering the state (does not cover Maricopa or Pima counties)</td>
<td>South Carolina state rules effective 8/23/2019, no status on state plan</td>
<td>Maine</td>
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<td>California (partial approval, partial disapproval)</td>
<td>Washington State</td>
<td>Philadelphia, PA</td>
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<tr>
<td>Delaware</td>
<td></td>
<td>Rhode Island</td>
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<tr>
<td>New Mexico plan covering Albuquerque – Bernalillo County and another covering the state</td>
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<td>Vermont</td>
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<td>North &amp; South Dakota</td>
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<td>Washington, DC</td>
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<td>Oregon</td>
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<td>Virginia</td>
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<td>West Virginia</td>
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<td>New York</td>
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<tr>
<td>Florida</td>
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<tr>
<td>Colorado</td>
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**TX and OK are not on list...yet!**
Key Elements Common to XXX/Cf/OOO

- Changes to Wellhead Standards
  - Oxygen Standard Removed (must still be monitored monthly),
  - Temperature Standard Remained 131°F,
  - Pressure Standard Unchanged,
  - 10-12% O2 Span and Annual Temperature Probe Calibration.

- Additional Wellhead Corrective Actions
  - Root Cause/Corrective Action Analysis Requirements
Key Elements continued
Root Cause/Corrective Action Analysis Requirements

- **Day 0**
  - Monitor wellhead.

- **5 Days**
  - Initiate corrective actions.

- **15 Days**
  - Complete corrective action, & demonstrate exceedance corrected.

- **60 Days**

- **75 Days**
  - If corrective action longer than 120 days after initial exceedance; submit Root Cause + Corrective Action Analyses, & Implementation Timeline to agency. If corrective action not longer than 120 days, submit notification.

- **120 Days**
  - Remediation completed, or agency approves continued remediation & corrective actions with your new timeline.

Conditions: Temp > 131°F or Lack of Vacuum
Key Elements continued

• Changes to SEM Requirements
  • Penetration Monitoring,
  • GPS Coordinates of Exceedances (5 decimal places, 4 meters),

• Liquids Addition Reporting
  • Have recirculated leachate/disposed liquid wastes at all within past 10 years.

• Increments of Progress
  • 12, 20, 24, 30-month deadlines proscribed by the rule
Key Elements continued

• **All** Control Device and GCCS Downtime Reported
  • No 1-hour and 5-day thresholds.

• SSM Exemption – Eliminated
  • Comply with work practice standard—1 hour criteria,
  • Allowable malfunction/maintenance for monitoring devices,
  • Document downtime, restarts, and repairs.

• Treatment Systems (LFGE Plants)
  • Treatment System Monitoring Plan Required; **is due May-23-22**, or sooner if AAAA,
  • “Treated” gas that is not used (flared) now subject to requirements.
Federal EG (OOO)

- EPA Created “Legacy Controlled Landfill” Category
  - Must have complied on 6/21/21 (no “transition” period)
  - No initial submittal requirements
- Closed Landfill Subcategory – Retains 50 Mg
  - Closure Report Submitted pre-9/27/2017
- If not “legacy controlled” then:
  - Initial Design Capacity and NMOC Rate Reports
    - Was due by September 20, 2021
  - Annual NMOC Rate reports required annually (or every-5 years)
General Reminders

• When full GCCS not yet triggered under any NSPS/EG rule, or for recently triggered requirements:
  • Continue the 30-month timetable under that specific rule,
  • Comply with the applicable NSPS or EG rule and the new NESHAP if above 50 Mg/yr. when the final compliance date is met,
  • The compliance clock will not change.

• If subject to the GCCS requirements of an existing NSPS or EG rule:
  • EPA made clear that a site cannot re-evaluate NMOC emissions to see if readings are below the 34 Mg/yr. threshold for applicability of the new NSPS or EG rule.
NESHAP AAAA

• Not a New Rule – Been Around Since 2003
  • Many sites (> 50 Mg NMOC) subject for years,
  • Previously imposed SSM Plan requirements.

• Many New Changes Were Effective Sep-27-21

• Timing = Immediate (no “phase in”) unless you are currently within 30-month GCCS design and construction phase of NSPS or EG rule.

• Past Report Certification
  • AAAA allows you to certify some past report submittals (rather than require re-submittal) in semi-annual report
NESHAP AAAA Changes

• Many Compliance Requirements (XXX & OOO) Incorporated Directly into NESHAP
  • But NESHAP does not replace NSPS/EG

• Wellhead Temperature Standard = 145 deg F
  • But many additional requirement for wells > 145 deg

• Flare Temperature – SSM Events No Longer Excluded from 3-Hour Avg. Requirement

• Initial Design Capacity and NMOC Rate Reports

• Additional Requirements via General Provisions

• Wellhead Correction Actions
  • For exceedances > 15 days, new requirements (Root Cause, etc., same as for OOO/XXX)
NESHAP AAAA Applicability

- All landfills subject to the GCCS control requirements of any NSPS or EG rule and over 50 Mg/year of NMOC,
- Major HAP sources,
- Co-located with a major HAP source.
NESHAP AAAA Applicability continued

• If less than 50 Mg but over 34 Mg/year, you can:
  • Comply with NSPS XXX, EG Cf, or EG OOO as applicable,
  • Continue to complete NMOC emission reporting to demonstrate that NESHAPs AAAA is not applicable.
    • If Tier 2 necessary to stay under 50 Mg, the cost of a probe study is probably not worth it. If Tier 2 can be done from GCCS, then it may be cost effective.
  • Note new Method 25C (December 2020)
OR
• Opt into NESHAPs AAAA
### NESHAP’s New Wellhead Enhanced Monitoring

<table>
<thead>
<tr>
<th>Temperature 131-145°F</th>
<th>146-164°F</th>
<th>+165°F</th>
<th>+170°F &amp; CO 1,000+ ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not an Exceedance</strong></td>
<td>Increased monitoring - weekly 7 days after first reading +145°F. Include: wellhead CO, oxygen, methane, &amp; temperature.</td>
<td>Increased monitoring + perform annual downwell temp. monitoring every 10 feet.</td>
<td>Taken at wellhead or any downwell reading &amp; CO &gt;1,000 ppm must submit a 24-Hour High Temperature Report to Administrator. Actions to reduce temperature &lt; 170°F completed within 15 days.</td>
</tr>
</tbody>
</table>

- Can shift to monthly if 4 consecutive CO readings <100 ppm.
- EPA Method 10, stack method, industry submitted alternative.
- Can stop with HOV approval or temp. back to less than 145°F.
- Observe for evidence of SSO (smoke, smoldering, ash, well damage, etc.)
NESHAP – Flare Minimum Temperature

- SSM events are no longer excluded from 3-hour block average,
- Requirement is for “operating” temperature,
- Cool-down period after shutdown is not operating so can be excluded,
- Warm-up period after startup is “operating” and must be included in the average
  - Biggest concern is multiple startups during same block,
  - Consider increased set points to compensate and make sure to re-set the set points after a source test,
  - Consider limiting the number of automatic restarts if it becomes a problem.
Work Practice Standard/Loss of SSM Requirements

• SSM plan no longer required, and no tracking of SSM events, but
  • Confirm whether SSM tracking is still required under state/local rules or in permit.

• Consistent with loss of SSM exemption under new NSPS/EG
  • No semi-annual SSM reports.

• Unofficial SSM recordkeeping and reporting may be useful to track events for future compliance determinations.
  • Use of modified forms to demonstrate compliance with work practice standards.
NESHAP – Reports and Plans

GCCS Design Plan

Carry forward previously approved alternatives.
Use to get new alternatives approved (e.g., CO monitoring).

Design Capacity and NMOC Reporting

NEW reports - sites under 50 Mg/yr. NMOC to avoid NESHAP applicability.

CMS QC Plan

Continuous Monitoring System Quality Control Plan
Keep onsite. Was due by 9-27-21

Treatment System Monitoring Plan

Should be standalone plan.

Compliance Reports

Semi-annual with certification statement in initial report.
Similar to existing NSPS/EG reports, with additional details.
Was due 3-26-2022.

NEW reports - sites under 50 Mg/yr. NMOC to avoid NESHAP applicability.
Title V Permitting
Title V Permitting

• TX
  • Title V Updates should be made to update the OP-UA44 form demonstrating applicable NSPS/NESHAP Requirements from WWW/Cc to either XXX/OOO and new AAAA
  • Specific forms have been partially updated, but the GOP 517 Index tables have not; must use OP-REQ2 form to remove prior requirements of AAAA, and OP-REQ3 form to correct to the newer-AAAA requirements

• OK
  • Permit will need to be updated for the Federal Regulation section to reflect changes from WWW/Cc to XXX/OOO and new-AAAA regulations
Planning and Tracking Recommendations

- Determine applicable NSPS or EG rules and site status.
- Confirm NMOC emission rates and determine which sites are:
  - Equal to or over 50 Mg/yr
  - Between 34 and 50 Mg/yr
  - Below 34 Mg/yr
  - When they are likely to exceed limits
- Confirm sites already transitioned into NSPS XXX.
Planning and Tracking continued

• Sites in mid 30-month transition into NSPS XXX, EG Cf, or EG OOO:
  • If site never triggered NSPS/EG GCCS requirements, confirm all future compliance dates and continue on the original 30-month path.
  • Note additional increments of progress are required under EG OOO.
    • 20 month: award construction contract;
    • 24 month: start construction;
    • 30 month: end construction; and
    • 30 month: start NSPS compliance.

• Sites already subject to XXX/OOO and AAAA
  • Determine if current GCCS Design Plan needs updating for any alternatives or flexibilities to NESHAPS AAAA
  • Survey and compile listing of HOVs and approved alternatives for each site; confirm the ones to continue under the new rules.
  • Evaluate sites with high wellhead temperature issues.
    • Identify sites and wells at those sites with temperatures over 145 F, 165 F, and 170 F without approved HOVs, as different requirements are triggered at each level.
    • Identify any reaction landfills with very high gas temperatures.
    • Consider new HOVs if appropriate.

All due within 10-days of meeting increment!
Planning and Tracking continued

• If site is >34 Mg/yr, <50 Mg/yr, and has a LFGE, a Treatment System Monitoring Plan is due no later than 5/23/2022 under OOO (if >50 Mg/yr, was to have been prepared by 9/27/2021).

• Tier 2 Testing now requires “equal distribution” of probes samples.

• Once a site is subject to control requirements of XXX/Cf and AAAA, several sections of AAAA override the XXX/Cf provisions for:
  • Operation Standards of gas systems
  • Compliance Provisions
  • Monitoring of operations

Reporting also defaults to Semi-Annual reports compared to the annual reports of XXX/Cf.
Current Requirements (OOO)

• If site is not >34 Mg/yr
  • NMOC report within 1 year of NMOC prior (submitted by 9-19-21)
    • Tier 2 Testing is only good for 5 years, verify latest Tier 2 testing is still valid

• If site is within 30-month NSPS window
  • Increment of Progress are required within 10-days of each meeting each increment (Construction Award, Construction Start, Construction Finish, NSPS-Operation begin)

• If site is NSPS, but NMOC < 50 Mg/yr
  • If site has a treatment system, treatment system monitoring plan is due 5-23-2022 (AAAA site must have had in place by 9-27-21)
  • If not opting into AAAA, must submit an NMOC report until demonstrating site’s NMOC >50 Mg/yr

• Initial Liquids Reporting Due 6-21-2022
Field Issues and Corrective Actions – Penetration of SEMs
Identifying Penetrations

• Penetrations are any component that penetrates through the cover into the waste.

• The preamble to the OOO rule states the following are not considered penetrations:
  • Survey stakes, litter fencing, flags, trees and utility poles.

• The problem, the exemptions are not listed in the actual rule.
Lessons Learned

• Testing and correcting is easier and costs less.
• Penetration monitoring has been going on in California since 2011 and we’ve learned a few things:
  • Common exceedance locations: wells, leachate risers, below to above grade pipe transitions, condensate sumps, and valve vaults.
  • Unusual locations: signposts, large diameter long rebar stakes for holding pipe in place, cones used for identifying roads, trash fence poles, areas around buried solidification bins.

If it penetrates the cover, test it.
Inspections

Inspectors are thorough.

• Inspectors may perform testing that exceeds the rule requirements.
  • Keep a calibrated unit on site during inspections.
• Well Boots are a common issue,
• Mounded soil can be a magnet,
• Bottom Line - Everything is fair game.
Solutions

If you believe it may be a penetration, test it and fix it

• Keep Bentonite on site, it may be needed.
• Add a new seal when raising wells.
• You may need to add seals to above/below grade pipe transitions.
• Walk your pipelines where rebar or pipe is used to pin the piping.
Solutions continued

• Soil mounding around the well – this can be short term; drying out may allow escaping gas.

• Use of well boots – pipe connection maintenance is essential.
Solutions continued

- Use of emissions control systems at some wells and penetrations.

- Best solution is aggressive monitoring and repair.
Questions?

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