
Commercial and Industrial Solid Waste Incineration Units (CISWI) Federal Plan (FP)

National Informational Webinar

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Overview of Commercial and Industrial Solid Waste Incineration Units (CISWI)

Commercial and Industrial Solid Waste Incineration Units (CISWI)

- Any **distinct operating unit of any commercial or industrial facility** that combusts, or has combusted in the preceding 6 months, **any solid waste**.

Existing CISWI

- Commenced construction on **or before June 4, 2010**, or
- Commenced modification or reconstruction **after June 4, 2010**, but **no later than August 7, 2013**.

Overview of Commercial and Industrial Solid Waste Incineration Units (CISWI)

- Sections 111(b) and 129(a) of the Clean Air Act (CAA) address emissions from new units (*i.e.*, New Source Performance Standards (NSPS))
- CAA sections 111(d) and 129(b) address emissions from existing units (*i.e.*, Emission Guidelines (EG))
- NSPS are federal regulations that are directly enforceable
- Emission guidelines provide direction for developing state plans and are not themselves directly enforceable

Overview of Commercial and Industrial Solid Waste Incineration Units (CISWI)

- Emission guidelines must be implemented through a
 - **state plan** or
 - **federal plan.**
- The federal plan applies to CISWI in states that **do not have approved state plans in effect** to implement the emission guidelines.
- States may submit state plans after the effective date of the federal plan.

Overview of Commercial and Industrial Solid Waste Incineration Units (CISWI)

- CISWI emission guidelines address **specific air pollutants** including:

Carbon
Monoxide

Sulfur
Dioxide

Hydrogen
Chloride

Mercury

Particulate
Matter

Dioxins/
Furans

Nitrogen
Oxides

Lead

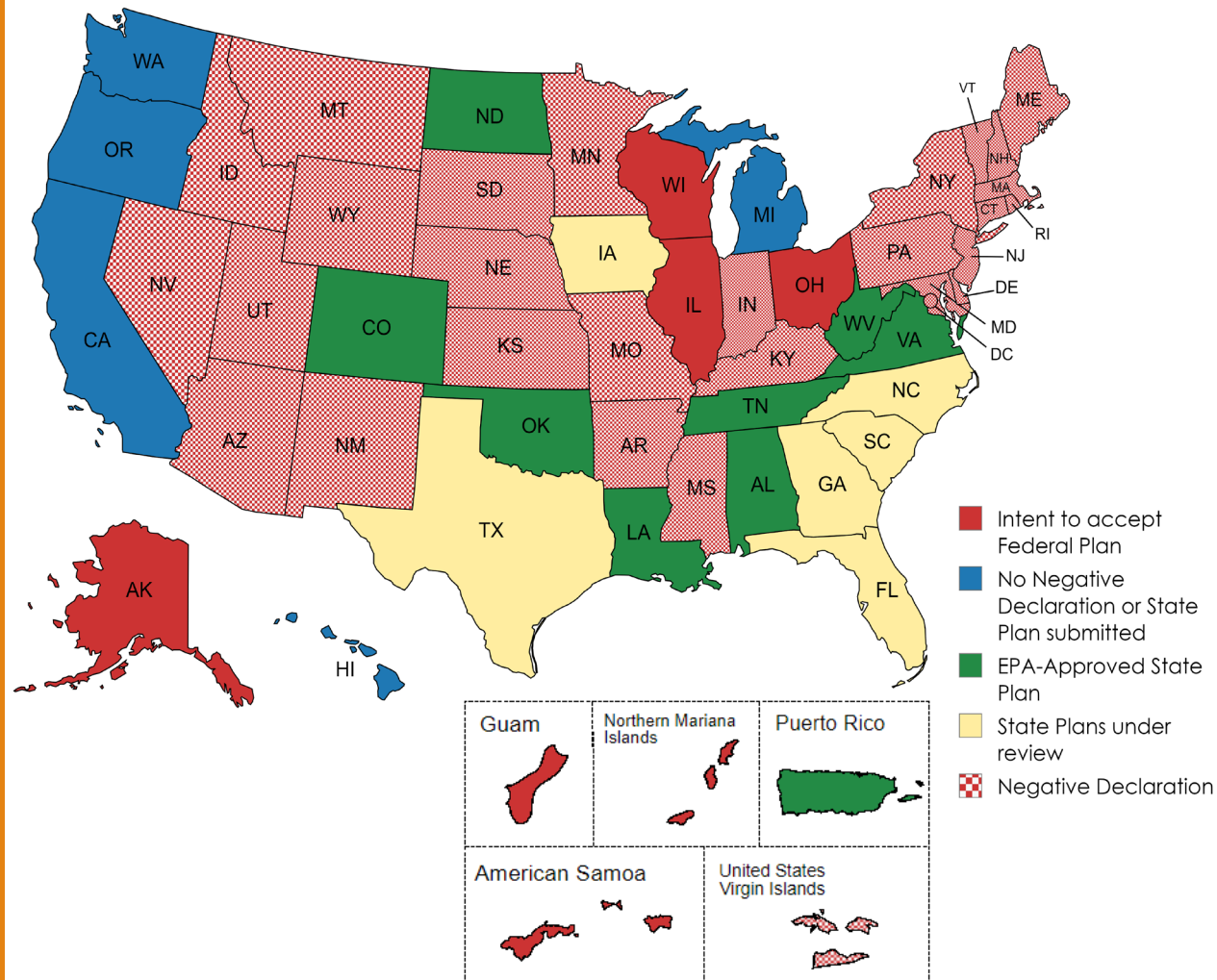
Cadmium

CISWI Federal Plan

Finalizing a federal plan (FP) for existing CISWI

- Emission Guidelines issued in 2013, amended in 2016 and 2019
- In states that **do not have an approved state plan¹** implementing the CISWI emission guidelines (EG)

¹ The EPA is not aware of any CISWI owned or operated by Indian tribal governments.



Changes to CISWI Federal Plan – New Subpart

- Created a new subpart IIIa
- Subpart III is no longer effective 30 days after date federal plan published in the federal register
- Subpart IIIa is effective from that date onward.
- Subpart III applies to incinerators.
- Subpart IIIa defines 4 subcategories for CISWI.

Changes to CISWI Federal Plan – CISWI Subcategories

Federal plan defines 4 subcategories for existing CISWI:

- **Incinerators** (i.e., units designed to burn discarded waste materials for the purpose of disposal)
- **Energy recovery units (ERUs)** (i.e., units that would be boilers or process heaters if they did not combust solid waste)
- **Waste burning kilns** (i.e., units that would be cement kilns if they did not combust solid waste)
- **Small remote incinerators** (i.e., units that combusts 3 tons per day or less of solid waste and more than 25 miles driving distance to nearest municipal solid waste landfill)

Changes to CISWI Federal Plan – Compliance Timing

- Establishing the final compliance date for existing sources
 - 30 days after date of publication in the Federal Register
 - Compliance date remains as proposed
 - No statutory authority under CAA section 129 for providing compliance extensions

Changes to CISWI Federal Plan – Technical Amendments

- Implemented 2019 technical amendments to CISWI EG
 - Additional time to complete initial compliance demonstrations
 - Waste Management Plan submittal due date changed to final compliance date
 - Timing of initial test and initial performance evaluation
 - Production-based emission limits in lieu of concentration-based limits for mercury (Hg)
 - Demonstration of initial and continuous compliance when using Continuous Emissions Monitoring System (CEMS)
 - Additional minor technical amendments

Changes to CISWI Federal Plan – Small Remote Incinerators in Alaska

- Modifies emission guidelines to only apply to small remote incinerators (SRIs) located outside the state of Alaska.
- Consolidated Appropriations Act of 2024
 - Prohibits EPA from “expending funds to implement or enforce subpart DDDD with respect to units in the state of Alaska.”
- Small remote incinerators in the state of Alaska do not have implementation obligations under CISWI.

Changes to CISWI Federal Plan

- Modified equation 7 at 40 CFR 62.14670(y) (now at 40 CFR 62.14640a(y)) for waste-burning kilns

$$C_{ks} = \frac{(Emission\ Limit \times (Q_{ab} + Q_{cm} + Q_{ks})) - (Q_{cm} \times C_{cm})}{Q_{ks}} \quad (\text{Eq. 7})$$

$$C_{ks} = \frac{(Emission\ Limit \times \sum_1^n Q_i) - \sum_1^m (Q_i \times C_i)}{Q_{ks}} \quad (\text{modified Eq. 7})$$

Principal Components of Federal Plan

1. Waste management plan
2. Operator training and qualification
3. Emission limitations and operating limits

SUMMARY OF EMISSIONS LIMITS FOR EXISTING CISWI

| Subcategory | | HCl (ppmv) | CO (ppmv) | Pb (mg/dscm) | Cd (mg/dscm) | Hg (mg/dscm) | PM, filterable (mg/dscm) | Dioxins/ Furans, total (ng/dscm) | Dioxins/ Furans, TEQ (ng/dscm) | NOx (ppmv) | SO2 (ppmv) |
|------------------------|------------------|---------------|---|-----------------|-----------------|-----------------|--------------------------------|---|---|---------------|---------------|
| Incinerators | | 29 | 17 | 0.015 | 0.0026 | 0.0048 | 34 | 4.6 | 0.13 | 53 | 11 |
| ERUs - Solids | Biomass units | 0.2 | 260 | 0.014 | 0.0014 | 0.0022 | 11 | 0.52 | 0.12 | 290 | 7.3 |
| | Coal units | 58 | 95 | 0.057 | 0.0017 | 0.013 | 130 | 5.1 | 0.075 | 460 | 850 |
| ERUs – Liquid/Gas | | 14 | 35 | 0.096 | 0.023 | 0.0024 | 110 | 2.9 | 0.32 | 76 | 720 |
| Waste Burning Kilns | | 3 | 110 (long kilns) 790 (preheater/precalciner) | 0.014 | 0.0014 | 0.011 | 13.5 | 1.3 | 0.075 | 630 | 600 |
| SRIs | | 300 | 64 | 2.1 | 0.95 | 0.0053 | 270 | 4400 | 180 | 190 | 250 |

Principal Components of Federal Plan

- 4. Performance testing
- 5. Initial compliance requirements
- 6. Continuous compliance requirements
- 7. Monitoring

Principal Components of Federal Plan

8. Recordkeeping and reporting

9. Definitions

10. Emission limits tables

Estimated Emission Reductions

| Pollutant | Estimated Reduction |
|---------------------------------------|---|
| Acid gases (HCl and SO ₂) | 7,046 tpy ¹ |
| Particulate Matter | 2,401 tpy |
| Non-Mercury metals (Pb and Cd) | 4.5 tpy |
| Carbon Monoxide (CO) | 20,000 tpy |
| Nitrous Oxides (NO _x) | 5,399 tpy |
| Mercury | 688 lb/year |
| Co-benefit | Reduce emissions of PAH ² and PCB ³ |

¹ Tons per year

² Polycyclic aromatic hydrocarbons

³ Polychlorinated biphenyls

Questions?

Technical Contact: Felica Davis, PhD
davis.felica@epa.gov