

# Best Practices for Air Permitting of Hazardous Waste Combustors Under the HWC NESHAP



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## Hazardous Waste Combustor (HWC) Facilities

This document recommends best practices for Clean Air Act (CAA) permitting of HWCs consistent with the requirements of the HWC National Emission Standards for Hazardous Air Pollutants (NESHAP). This document is not intended to address all requirements that apply to HWCs such as other state or federal requirements. Federal law sets minimum standards for HWC facilities that owners/operators must comply with. HWC facilities must comply with a combination of federal, state, and local regulations, and state and local jurisdictions may impose more stringent requirements if allowed by state law. HWC regulations generally address emission limitations, control requirements, operator training and certification, permit compliance and inspections, and record keeping and reporting requirements. Due in part to the nature of their operations, the communities surrounding HWC facilities are typically disproportionately affected by air pollution. HWC facilities are subject to CAA requirements as well as Resource Conservation and Recovery Act (RCRA) air emission requirements. HWCs must comply with the HWC NESHAP, as specified in 40 CFR 63 Subpart EEE. This standard applies to hazardous waste incinerators, hazardous waste burning cement kilns, hazardous waste burning lightweight aggregate kilns, hazardous waste solid and liquid fuel boilers, and hazardous waste hydrochloric acid production furnaces, as defined in the HWC NESHAP. HWC facilities are also subject to applicable requirements under 40 CFR parts 260 and 270 as required by the RCRA. A facility may be subject to both the CAA and RCRA air requirements and EPA provides a mechanism to address potential regulatory overlap of the CAA and RCRA requirements.

Hazardous waste combustors are used to incinerate hazardous waste primarily for destruction and/or treatment purposes.

When performed properly, incineration destroys the toxic organic constituents in hazardous waste and reduces the volume of the waste.

Hazardous wastes are the byproducts of manufacturing processing or discarded chemical products, such as cleaning fluids or pesticides and can be liquids, solids, contained gases, or sludges.

To help protect human health, federal and state rules aim to reduce the amount of HAP emissions from hazardous waste combustors.

## Air Permitting Requirements for HWC Facilities

### HWC NESHAP

HWCs emit hazardous air pollutants (HAPs) and are subject to the HWC NESHAP which limits the amount of HAP metals, such as arsenic, mercury and lead, as well as other pollutants (dioxins and furans, carbon monoxide, hydrocarbons, particulate matter, and hydrogen chloride and chlorine gas) that can be emitted from a facility. The HWC NESHAP requires a facility to measure the amount of metals in the waste being burned and compare these measurements to past air emission test results to show that its air pollutant emissions are below the required levels. The HWC NESHAP also requires the facility to continuously operate certain air pollution control and emissions monitoring devices to minimize emissions and ensure that the facility complies with its emission limits. The HWC NESHAP allows facilities to ask EPA for permission to install other devices to measure air pollutant emissions. A permitting authority may also determine that additional monitoring is necessary, on a case-by-case basis.

### Title V Permit

The CAA requires an operating permit, known as a Title V permit, for facilities that emit or have the capacity to emit large amounts of air pollution, and for certain types of facilities that must comply with specific federal air pollution standards. If a facility is subject to the HWC NESHAP, it needs a Title V air permit, needs to incorporate all operating requirements into the Title V permit. The feedstream analysis plan and contents of the notice of compliance, including all operating parameter levels, are applicable requirements for Title V permitting and need to be placed into a Title V air permit.

### Other Requirements

HWCs are also subject to many local, state and federal requirements. These requirements include construction permit requirements, requirements contained in state implementation plans, other NESHAPs, and New Source Performance Standards.

## Best Practices - Required HWC NESHAP Work Practices

*The following are work practices that are required by the HWC NESHAP. This list is not exhaustive and permitting authorities may impose additional requirements. HWCs are usually also subject to other NESHAPs that come with their own work practices.*

1. **Comprehensive Performance Tests (CPTs)** – A facility subject to the HWC NESHAP must conduct a CPT every 5 years according to an approved test plan. The purpose of the CPT is to: (1) demonstrate compliance with the emission limits and performance specifications for any continuous emission monitoring system (CEMS), and (2) establish operating parameter limits (OPLs). OPLs are maximum or minimum limits on critical operating parameters under which the facility will continuously operate under to assure compliance with emission limits.
2. **Confirmatory Performance Tests (CfPTs)** – The facility must conduct a CfPT approximately 2.5 years after commencing the last CPT, according to an approved test plan. The purpose of the CfPT is to: (1) demonstrate compliance with the dioxin/furan emission standard when the source operates under normal operating conditions, and (2) conduct a performance evaluation of continuous monitoring systems required for compliance assurance with the dioxin/furan emission standard.
3. **Notification of Compliance (NOC)** – The facility must submit its NOC to the permitting authority within 90 days of completing the CPT. The NOC is to document compliance or noncompliance with the emission limits and CEMS requirements. The NOC is also to identify all operating and monitoring parameter limits necessary to assure continued compliance with the standard. Once the NOC is postmarked, the source must comply with all the OPLs in the NOC unless otherwise required by the permitting authority.
4. **Feedstream Analysis Plan (FAP)** – The facility must operate under a FAP that includes sampling and analysis procedures that are sufficient to document compliance with established feedrate limits and emissions standards under the HWC NESHAP. The HWC NESHAP requires the facility to analyze all feedstreams burned at the facility, and details what is required to be included in the FAP. The required analysis may include sampling and analysis. In addition to what sampling and analytical procedures will be used to analyze or characterize feedstreams, and at what frequencies this will be done, the FAP must discuss how this data will be used to document compliance.
5. **Automatic Waste-Feed Cut-Off (AWFCO)** – When triggered, the AWFCO system stops the feeding of hazardous wastes to the combustion chamber immediately if the combustion device does not perform as permitted, or continued operation of the device could result in a violation of an emission or operating limit.

### Required HWC NESHAP Best Practices

#### A HWC facility must:

- Conduct a comprehensive performance test.
- Conduct a confirmatory performance test.
- Submit their notice of compliance.
- Submit and operate according to the feedstream analysis plan.
- Operate an automatic waste-feed cut-off.





## Best Practices - Recommended Best Practices

*In addition to the work practices mandated by the HWC NESHAP, EPA recommends HWC facilities and CAA permitting authorities follow the best practices specified below:*

1. **Approved Methodology for Setting OPLs** – Ensure the proposed methodology for setting OPLs is approved by the permitting authority as part of the CPT plan. In particular, the permitting authority should review and document approval of any proposed extrapolation of measured feedrates for arsenic, beryllium, lead, chromium, cadmium and mercury. To ensure that established feedrate OPLs do not cause emissions exceedances, the permitting authority should consult with EPA before approving any extrapolation of feedrates for these metals.
2. **Add Minimum FAP Requirements to a CAA permit** – Consider adding minimum specific FAP requirements in an enforceable CAA permit. By establishing such requirements in a permit, the permitting authority would be setting in place enforceable minimum standards for the FAP that would aid in the development of future versions of the FAP. Minimum requirements may include but are not limited to: (1) how undetected metal concentrations should be reported for purposes of complying with metal feedrate OPLs; (2) the types of feedstreams that may be exempted from sampling and analysis; (3) the types of additional approvals that are required under the FAP (e.g., requests to exempt additional feedstreams) and how such approvals would be obtained; (4) the frequency by which the FAP should be reviewed and updated, if necessary, by the facility.
3. **Update the FAP Along with a Title V Renewal** – Review and update the FAP with each Title V permit renewal. We recommend that all updates to the FAP be submitted to the permitting authority for review and approval prior to inclusion in the Title V renewal application.
4. **Consider CEMS** – Consider using CEMS for monitoring heavy metal emissions. These CEMS, called multi-metals CEMS, are commercially available and can be installed and operated on HWCs to continuously monitor and record heavy metal emissions. Under the HWC NESHAP, subject facilities can petition EPA to use multi-metals CEMS as the primary compliance method in lieu of establishing and complying with feedrate OPLs. Absent such a petition, permitting authorities and HWC facilities can employ such CEMS as a check on the adequacy of OPLs and other operating requirements.
5. **Coordinate Simultaneous Review of the FAP and WAP** – Coordinate review of the FAP with RCRA review of the facility's Waste Analysis Plan (WAP). Although the FAP and WAP are required by different statutes and may contain different procedures, the two documents often complement each other. To ensure that no conflicts exist between the FAP and WAP, EPA recommends the FAP and WAP be reviewed by CAA and RCRA staff for any conflicts.

### Recommended HWC NESHAP Best Practices

#### A HWC facility must:

- Ensure that the proposed methodology for setting the OPLs is approved as part of the CPT plan.
- Consider adding minimum FAP requirements in a CAA permit.
- Update the FAP with each Title V renewal permit.
- Consider CEMS to monitor heavy metal emissions.
- Coordinate review of the FAP with RCRA review of the facility's WAP.

# Who do I contact for more information?

## United States Environmental Protection Agency

Region 5  
Air & Radiation Division (AR-18J)  
77 West Jackson Blvd  
Chicago, Illinois 60604-3590  
(312) 353-2000  
[R5AirPermits@epa.gov](mailto:R5AirPermits@epa.gov)



<https://www.epa.gov/caa-permitting/caa-permitting-epas-great-lakes-region>



## State/Tribal/Local Permitting Authorities

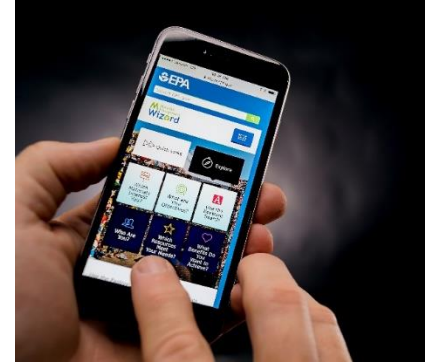
EPA has approved or delegated authority for the following Region 5 states and other jurisdictions to issue certain CAA permits:

- Illinois: <https://www2.illinois.gov/epa/Pages/default.aspx>
- Indiana: <https://www.in.gov/idem/airquality/index.htm>
- Michigan: <https://www.michigan.gov/egle/>
- Minnesota: <https://www.pca.state.mn.us/>
- Ohio: <https://www.epa.ohio.gov/>
- Wisconsin: <https://dnr.wisconsin.gov/>



# Useful Resources

1. National Emission Standards for Hazardous Air Pollutants (NESHAP) for Hazardous Waste Combustors: <https://www.epa.gov/stationary-sources-air-pollution/hazardous-waste-combustors-national-emission-standards-hazardous>
2. Clean Air Act Section 112 Hazardous Air Pollutants: <https://www3.epa.gov/airtoxics/overview.html>
3. Clean Air Act Part 70 Air Permits: <https://www.epa.gov/title-v-operating-permits/basic-information-about-operating-permits>
4. NESHAP Compliance Monitoring information: <https://www.epa.gov/compliance/clean-air-act-cao-compliance-monitoring#pane-2>
5. EPA guidance on the RCRA/CAA Air Emission Controls Compliance Exemption/Election: <https://www.epa.gov/hwpermitting/implementing-rcra-cao-air-emission-controls-compliance-exemption-election-provisions>



**DISCLAIMER:** This document aims to explain the application of certain EPA regulatory provisions using plain language. Nothing in this document revises or replaces any regulatory provisions, any other part of the Code of Federal Regulations, the Federal Register, or the Clean Air Act. Following the best practices contained herein does not equate to or guarantee compliance with the Clean Air Act, its implementing regulations, and associated state/local requirements. For more information, visit: <https://www.epa.gov/cao-permitting>.