



CLEAN AIR ACT REGULATIONS FOR NATURAL DISASTER MANAGEMENT

*LOCAL GOVERNMENT
ENVIRONMENTAL ASSISTANCE
NETWORK
WEBINAR SERIES*

ENVIRONMENTAL LAW INSTITUTE



Clean Air Act Regulations for Natural Disaster Management

Office of Enforcement and Compliance
Assurance

Office of Compliance

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Agenda

- Introduction of EPA Speakers
- Scope of Webinar
- Discussion of Focus Regulations
 - Emergency Engines
 - Asbestos
 - Incinerators
- Other Resources
- Questions?



Introduction of EPA Speakers

- Sara Ayres, Mechanical Engineer
- John Cox, Environmental Protection Specialist
- Marcia Mia, Chemical Engineer



Scope of Webinar

- Focus is on specific Clean Air Act (CAA) regulations relevant to natural disaster management and which have the potential to be applicable to local and tribal governments.
- However:
 - Many other programs and regulations exist which are applicable to or may help local governments and tribes prepare for and respond to natural disasters.
 - EPA also is the nation's lead federal agency for responding to the inland release of chemicals and oil.
 - EPA also can/may conduct air monitoring in areas impacted by natural disasters.
 - EPA has developed a four-tiered waste management hierarchy to guide waste management decision-making. (<https://www.epa.gov/homeland-security-waste/waste-management-hierarchy-and-homeland-security-incidents>).
 - Source reduction and reuse are preferred to treatment and disposal options, which include incineration
 - These topics (excepting incineration) are beyond the scope of this webinar.



Operation of Emergency Engines during Natural Disasters



Why do we regulate Stationary Engines?

- Stationary Engines are common combustion sources that can impact air quality and public health.
- They use pistons that alternatively move back and forth to convert pressure into rotating motion.
- They are commonly used:
 - at power and manufacturing plants to generate electricity or power pumps and compressors.
 - in emergencies to produce electricity or pump water for flood and fire control.
- Estimates of the number of existing engines range up to almost 1 million¹ with new engines coming into service all the time.
- 1. 957,832 per Table 4-7 of the Regulatory Impact Analysis (RIA) for Existing Stationary Compression Ignition Engines NESHAP, February 2010,



Why do we regulate Stationary Engines?

- Pollutants emitted from stationary engines include:
 - formaldehyde,
 - acrolein,
 - acetaldehyde
 - methanol
 - carbon monoxide (CO),
 - nitrogen oxides (NO_x),
 - volatile organic compounds (VOCs), and
 - particulate matter (PM).
- Exposure may cause:
 - irritation of the eyes, skin and mucous membranes,
 - breathing issues, especially asthma among children and seniors,
 - central nervous system problems.



Reciprocating Internal Combustion Engines (RICE) and Disasters

- Many municipalities, medical facilities, industrial facilities, and other organizations have installed backup generators to provide emergency power in case of losing grid power during a natural disaster.
- The RICE rules (NSPS Subparts IIII and JJJJ and NESHAP ZZZZ) provide special requirements for these emergency engines.



What is an Emergency Engine?

An Emergency Stationary RICE:

- “. . . is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment . . . when electric power from the local utility . . . is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.” (Subpart ZZZZ 63.6675)
- Operates in non-emergency situations only as specified in the rule



Emergency Engine Operational Limitations

- Unlimited use during emergencies
 - No RICE rule language specifically on use during natural disasters
- 100 hr/yr for maintenance or testing
- 50 hr/yr of the 100 hr/yr allocation can be used for:
 - non-emergency situations if no financial arrangement
 - local reliability as part of a financial arrangement with another entity if:
 - existing RICE at area source
 - engine is dispatched by local transmission/distribution system operator
 - dispatch intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads
 - dispatch follows reliability, emergency operation, or similar protocols that follow specific NERC, regional, state, public utility commission, or local standards or guidelines
 - power provided only to facility or to support local distribution system
 - owner/operator identifies and records dispatch and standard that is being followed

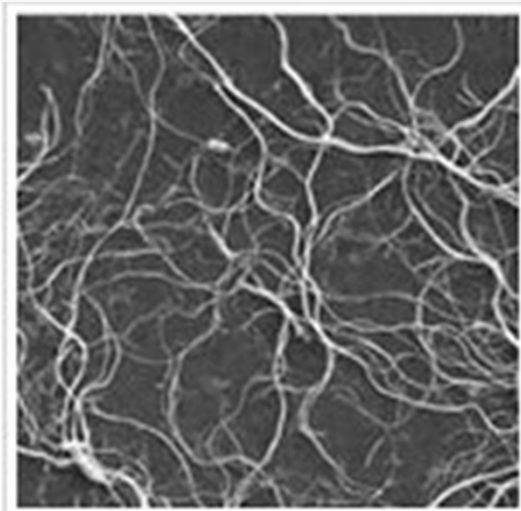


RICE use during Disaster Relief

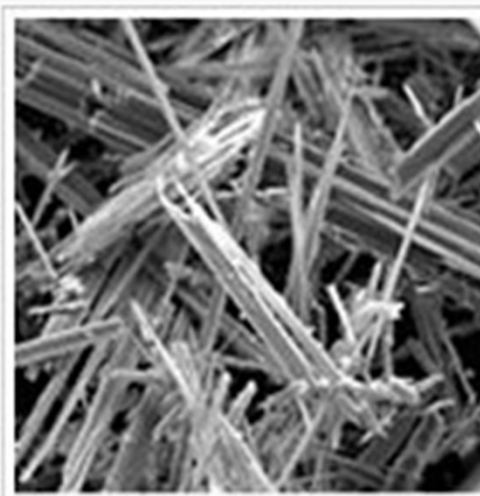
- None of the RICE rules have language specific to use after the initial emergency is over.
- Once grid power is again available, emergency RICE would be subject to the limitations on non-emergency use.
- If an emergency engine is used for more than the allowed 100 hours in non-emergency situations, the engine would no longer be considered an emergency engine and would be subject to the rule requirements that would apply to a non-emergency engine



The Asbestos NESHAP & Catastrophic Natural Disasters



Serpentine - Chrysotile
white asbestos



Amphibole - Amosite
brown asbestos



What is asbestos?

- The term asbestos is a generic designation referring usually to six types of naturally occurring mineral fibers that are or have been commercially exploited.
- Six varieties of asbestos are currently regulated under the asbestos NESHAP regulation, 40 CFR Part 61, Subpart M (§ 61.140).



Chrysotile



Amosite



Crocidolite



Tremolite



Anthophyllite



Actinolite



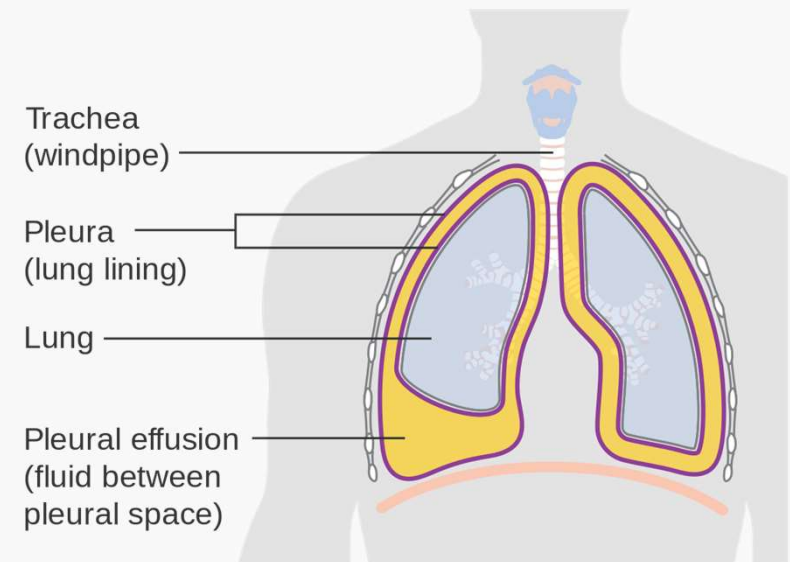
Characteristics of Asbestos

- The fibrous minerals share several properties which qualify them as asbestiform fibers:
 - they are found in bundles of fibers which can be easily separated from the host matrix or cleaved into thinner fibers; the fibers exhibit high tensile strengths,
 - they show high length: diameter (aspect) ratios, from a minimum of 20 up to greater than 1000;
 - they are sufficiently flexible to be spun; and macroscopically, they resemble organic fibers such as cellulose.
- Since asbestos fibers are all silicates, they exhibit several common properties:
 - non-combustible,
 - thermal stability,
 - resistance to biodegradation,
 - chemically inert towards most chemicals,
 - and low electrical conductivity.



Adverse Health Effects of Asbestos

- There are three major asbestos-related diseases
 - Asbestosis
 - Lung cancer
 - Mesothelioma
- Non-life threatening
 - Pleural plaques and thickening
 - Pleural effusion
- Reported increased cancer risks
 - Colon, pancreas and other organs





What does the Asbestos NESHAP Regulate?

- An owner and/or operator of a facility is responsible for:
- The **thorough inspection** of the facility or the part of the facility that will be renovated or demolished.
- The thorough inspection needs to identify **regulated asbestos-containing materials (RACM)** that are **friable**, as well as non-friable asbestos that will become friable during demolition or renovation process.
- If the combined amount of friable and non-friable asbestos that will become friable is greater than **260** linear feet on pipes, or **160** square feet on facility components, the owner and/or operator must comply with all applicable regulatory requirements.
- All RACM must be contained and disposed of at an asbestos approved landfill per the requirements in § 61.150.



Examples of Asbestos Containing Materials

- Drywall materials (e.g., transite siding)
- Joint Compound





What is Friable ACM?

- Materials containing greater than 1% asbestos.
- When dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
- If material contains <10% asbestos, verify with point counting using polarized light microscopy (PLM).





What is Non-Friable Asbestos?

- A material with $>1\%$ asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder with hand-pressure.



Category I Non-Friable Asbestos

Any asbestos-containing packings, gaskets, resilient floor covering, and asphaltic roofing products containing $>1\%$ asbestos.



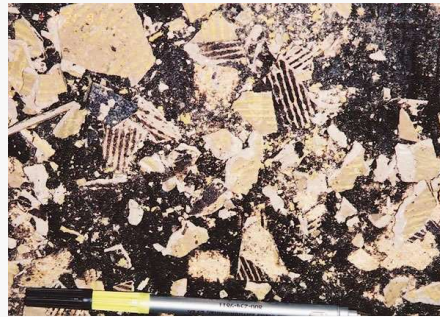
Category II Non-Friable Asbestos

Any asbestos-containing material excluding Category I non-friable ACM containing $>1\%$ asbestos.



What is Regulated Asbestos Containing Material (RACM)?

- Friable asbestos material,
- Category I nonfriable ACM that has become friable,
- Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or
- Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of the demolition or renovation operation.





Demolition & Renovation

- Demolition is the wrecking or removal of any load-supporting structural member of a facility, together with any related handling operations.
- The intentional burning of any facility is also considered a form of demolition.
- Renovation is the altering of a facility, or a facility component(s) in any way.
- Stripping or removal of RACM from a facility component is also considered a form of renovation.





What is a Thorough Inspection?

- A notification must be sent by the owner or operator of the facility to EPA at least 10-days prior to the expected start date of the demolition/renovation. This will include documentation that a thorough inspection of the facility has been completed and should include the following information:
 - Sampling locations and necessary field notes so that reports written later will accurately reflect site conditions.
 - Photographs of materials found on the site and documenting on photo logs.
 - Samples to be provided to a laboratory to be analyzed for asbestos type(s) and percentages.
 - Reports that describe the activities, sampling and analytical results.
 - The final reports from these activities will be the backbone of enforcement actions and potential litigation.



Asbestos and Catastrophic Disasters

- The Asbestos NESHAP does not contain specific rule language regarding catastrophic natural disasters.
- For catastrophic natural disasters, refer to [EPA's 2009 Guidance for Catastrophic Emergency Situations Involving Asbestos](#)
 - Section IV: Catastrophic Events and the Asbestos NESHAP Applicability
- Prior to demolition/renovation, owners & operators are still required to:
 - Follow all applicable NESHAP regulations
 - Emergency provisions may allow notice of demolition/renovation to be made 24 hours in advance instead of 10 working days.



Incineration of Non-Hazardous Disaster Debris



Incineration of Non-Hazardous Disaster Debris

- Section 129 of the CAA requires EPA to establish standards of performance for nonhazardous solid waste incinerators. These standards address emissions of nine pollutants:
 - particulate matter, sulfur dioxide, hydrogen chloride, nitrogen oxides, carbon monoxide, lead, cadmium, mercury and dioxins/furans.
- Section 129 of the CAA also regulates air curtain incinerators except:
 - air curtain incinerators that only burn wood wastes, yard wastes and clean lumber must comply with opacity limits instead of the nine pollutants..



Other Solid Waste Incinerators

- The incineration regulations most likely to be applicable to a local government or tribe burning disaster debris are the [New Source Performance Standards \(NSPS\)](#) or the [Emissions Guidelines \(EG\)](#) for Other Solid Waste Incineration (OSWI).
 - The NSPS applies to OSWI units constructed after December 9, 2004, or to incinerators which undertook a modification or reconstruction on or after June 16, 2006. We call these “new” OSWI units.
 - All other OSWI units are subject to standards promulgated in accordance with the EG. We call these “existing” OSWI units.



OSWI

- OSWI applies, in relevant part, to owners or operators burning less than 35 tons per day of municipal solid waste.
 - Certain exclusions apply to OSWI units (See § 60.2887/60.2993) including ***temporary-use incinerators and air curtain incinerators used in disaster recovery.***



Temporary Use Incinerators and Air Curtain Incinerators Used in Disaster Recovery

- Requirements found at § 60.2969/60.3061
 - the incinerator or air curtain incinerator (ACI) must be used to combust debris in an area:
 - declared a State of Emergency by a local or State government, or
 - declared by the President under the authority of the [Stafford Act](#) that an emergency or a major disaster exists



General Requirements – Less than 8 Weeks

- EXCLUDED from all of OSWI if:
 - Used for a period of 8 weeks (start to stop) or less in the same emergency or declaration area
- “Fine Print” -
 - No notice is required
 - No records are required
 - No Title V permit is required



General Requirements – more than 8 weeks and less than 16 weeks

- EXCLUDED from OSWI emissions limits BUT:
 - You must notify the Administrator and request permission to continue to operate the unit, up to an additional 8 weeks.
 - At the end of 16 weeks you must cease operation of the unit or comply with all of the OSWI requirements.
- “Fine Print” - In order to be eligible for an *additional 8 weeks*, you must submit the notification *within 8 weeks* after you started operation of the unit.



Content of Notification

- Date the unit started operation within the boundaries of the current emergency or disaster declaration area;
- Identification of the disaster or emergency for which the unit is being used;
- A description of the types of materials being burned in the unit;
- A brief description of the size and design of the unit;
- The reasons the incinerator or air curtain incinerator must be operated for more than 8 weeks; and
- The amount of time for which you request permission to operate including the date you expect to cease operation of the unit.



General Requirements – More than 16 weeks

- Comply with all of OSWI; or
- Request to continue operation
 - If the Administrator approves in writing your request to continue operation, then you may continue to operate the incinerator or air curtain incinerator without complying with the OSWI limits and other requirements of the rule.
- “Fine Print” - The Administrator will specify a date by which you must cease operation of the unit or comply with all of OSWI



Can I?

- Move the unit around within the boundaries of the current emergency or disaster declaration area? **Yes.**
- Does moving the unit around within the boundaries of the current emergency or disaster declaration area restart the 8-week clock? **No.**



What if?

- I own or operate an ACI that only burns 100 percent wood waste, 100 percent clean lumber, 100 percent yard waste, or 100 percent mixture of only these three types of wastes? **You may still use the temporary use exclusion as previously discussed.**





Or....

- You may opt to comply with the ACI standards in § § 60.2970 through 60.2974/ § § 60.3062 through 60.3069 and which do not limit the amount of time you may operate the ACI.
 - Meet an opacity limit of 10%
 - Conduct initial and annual testing for opacity
 - Maintain records and submit reports
 - Obtain a Title V operating permit





OR...

- You can do both:
 - Operate as a temporary incinerator for up to 16 weeks; then
 - Comply with the ACI requirements



OSWI Amendments

- On August 31, 2020, the U.S. Environmental Protection Agency (EPA) proposed amendments to the 2005 New Source Performance Standards (NSPS) and Emissions Guidelines (EG) for Other Solid Waste Incineration (OSWI) units.
- The proposed amendments may be found [here](#).
- A fact sheet may be found [here](#).
- No changes to temporary use or air curtain incinerators used in disaster recovery were proposed.
- EPA proposed to remove the requirement to obtain a Title V permit for ACI which are subject only to the opacity standards.



Other Resources – Air Quality

- Government Partnerships to Reduce Air Pollution - <https://www.epa.gov/clean-air-act-overview/government-partnerships-reduce-air-pollution>
- CAA for Waste Management <https://www.epa.gov/stationary-sources-air-pollution/clean-air-act-guidelines-and-standards-waste-management>
- Combustion Portal - <https://www.combustionportal.org/>
- Refrigeration and Air Conditioning - <https://www.epa.gov/section608>
- Greenhouse Gas Reporting Program - <https://www.epa.gov/ghgreporting/resources-subpart-ghg-reporting>
- National Association of Clean Air Agencies <http://www.4cleanair.org/>
- Airborne Spectral Photometric Environmental Collection Technology (ASPECT) - <https://www.epa.gov/emergency-response/aspect>
- Trace Atmospheric Gas Analyzer (TAGA) - <https://www.epa.gov/natural-disasters/equipment-epa-uses-collect-site-air-monitoring-data#:~:text=In%20response%20to%20a%20disaster,chemicals%20at%20very%20low%20levels>
- Geospatial Measurement of Air Pollution (GMAP) - <https://www.epa.gov/sites/production/files/2018-05/documents/factsheet-neic-fb-advmonitoring.pdf>



Other Resources – Con't

- Natural Disasters - <https://www.epa.gov/natural-disasters>
- Managing Materials and Wastes for Homeland Security Incidents - <https://www.epa.gov/homeland-security-waste>
- Disaster Debris Recovery Tool - <https://www.epa.gov/large-scale-residential-demolition/disaster-debris-recovery-tool>
- Planning for Natural Disaster Debris- <https://www.epa.gov/homeland-security-waste/guidance-about-planning-natural-disaster-debris>
- Regulatory Information by Sector (Fed Facilities and Local Governments) https://www.epa.gov/sites/production/files/2019-05/documents/final_pndd_guidance_0.pdf
- EPA compliance homepage - <https://www.epa.gov/compliance>
- EPA air enforcement homepage - <https://www.epa.gov/enforcement/air-enforcement>
- ECIEE.org - https://www.eciee.org/emergency_response.php
- Computer-Aided Management of Emergency Operations (CAMEO) - <https://www.epa.gov/cameo>
- EPA Inspector WIKI <http://inspector.epa.gov/inspector>
 - Inspector training is managed in FedTalent. All inspectors must obtain a FedTalent account to take and/or document mandatory inspector training. Non-EPA inspector must first request access to FedTalent at: <https://epafedtalent.ibc.doi.gov/login/index.php?saml=off>
 - Asbestos Resources: <https://inspector.epa.gov/inspector/index.php/CAA#Asbestos>
 - RICE 101 Course: <https://inspector.epa.gov/inspector/index.php/CAA#.E2.96.BATraining>



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Questions?



THANK YOU

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LOCAL GOVERNMENT ENVIRONMENTAL ASSISTANCE NETWORK

Upcoming Webinar

Oil Spill Prevention, Control and
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Upcoming Podcast

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