

**U.S. Department of Energy
Office of Sustainability Support (HS-21)**



**February CAWVG
Meeting**

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Climate Change / Greenhouse Gases (GHGs)

40 CFR, Part 98 - I

Reminder:

- For facilities that are subject ONLY to Greenhouse Gas (GHG) Mandatory Reporting Rule (MRR) Subpart(s) issued in calendar year (CY) 2009, the CY 2011 GHG Annual Report is DUE on March 31, 2012.
- For facilities that are subject ONLY to GHG MRR Subpart(s) issued in CY 2010, the CY 2011 GHG Annual Report is DUE September 28, 2012.
- For facilities that are subject to GHG MRR Subparts issued in BOTH CY 2010 and 2011, you MUST notify EPA by March 31, 2012 that you will be delaying your CY 2011 GHG emissions report due date until September 28, 2012

40 CFR, Part 98 - II

The following Subparts were issued in CY 2010:

- I: Electronics Mfg.
- L: Fluorinated Gas Production
- T: Mg Production
- W: Petro. & Natural Gas Systems
- DD: Electric Transmission & Distribution Equipment
- FF: Underground Coal Mines
- II: Industrial Wastewater Treatment
- QQ: Imports/Exports of Fluorinated Pre-charged Equipment and Closed-cell Foams
- RR: CO₂ Geologic Sequestration
- SS: Electric Transmission & Distribution Equipment Mfg.
- TT: Industrial Waste Landfills
- UU: CO₂ Injection

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

NESHAP Once In/ Always In Policy

- No change to EPA's Once In, Always In (OIAI) Policy
- 2007 proposed rule would have modified OIAI Policy to allow certain major sources to exempt out of major NESHAP requirements; final rule never issued
- EPA has no current plans to modify OIAI Policy
- Policy states that sources subject to major NESHAP requirements by the first compliance date must remain major NESHAP sources for the life of the source
 - OIAI policy is trumped by rule: some NESHAPs (e.g. printing) have options for major sources to exempt down to area sources after first compliance date
 - Applicable to sources with area and major NESHAP

Major Boiler NESHAP Reconsideration

• **Major Sources:**

- Changed compliance date to 3 years after final new rule
- Added exemptions for residential boilers and boilers used as control devices for other NESHAPs
- Changed emissions limits: removed dioxin/furan limits; added alternative total selected metals (TSM) limits for solid and gas 2 units; many existing source revised limits lower; many new source revised limits higher
- Changed tune-up frequency: 5 years for all limited use, and gas/light liquid fired <5 MMBtu/hr; biennially for ≤ 10 MMBtu/hr; annually for >10 MMBtu/hr
- Clarified definition of energy assessment



<http://www.gpo.gov/fdsys/pkg/FR-2011-12-23/pdf/2011-31667.pdf>

Area Boiler NESHAP Reconsideration

• **Area Sources:**

- Changed deadline for initial tune-ups to 3/21/13
- Added exemptions for temporary, residential, and electric boilers and electric utility steam generators
- Modified emissions limits: less stringent Hg and CO limits for coal boilers
- Changed tune-up frequency: 5 years for seasonal & oil-fired boilers ≤ 5 MMBtu/hr; all coal-fired ≥ 10 MMBtu/hr exempted; biennial tune-up for remaining
- EPA may have to stay existing area NESHAP as it requires tune-ups by 3/21/12. Other requirements compliance date remains 3/21/14.



<http://www.gpo.gov/fdsys/pkg/FR-2011-12-23/pdf/2011-31644.pdf>

Reciprocating Internal Combustion Engines

- RICE NESHAP Updates:
 - EPA has issued a settlement agreement to increase emergency demand response (EDR) use for emergency RICE from 15 hours/year to the lesser of 60 hours/year or the amount required by an energy provider
<http://www.gpo.gov/fdsys/pkg/FR-2012-01-04/pdf/2011-33758.pdf>
 - EPA will publish draft rule in April, final rule in December
 - DOE will comment on the proposed rule, but not the settlement agreement
 - Ad hoc EDR working group: DOE HQ, DOE Argonne and DOE Los Alamos provided comments to EPA regarding EDR in early 2011
 - We may want to reconvene about new EDR proposal



RICE Training

- EPA Region I / APTI sponsored web-based training regarding RICE NESHAP
- RICE NESHAP issued in 3 stages:
 1. 2004: All >500 HP at major sources
 2. 2008: New \leq 500 HP at major sources & all new area sources
 3. 2010: Existing \leq 500 HP at major sources, all existing area sources, existing non-emergency compression ignition (CI) at major sources



Note: existing spark ignition \geq 500 HP at major sources missing

- EPA recommended their RICE Combustion Portal:

<http://www.combustionportal.org/rice.cfm>

RICE Upcoming Dates

- August 31, 2010: Initial notification of applicability for all existing CI RICE
- February 16, 2011: Initial notification of applicability for all existing SI RICE
- *EPA Region I believes a majority of initial notifications have not been submitted*
- 2012: EPA issues RICE NESHAP Reconsideration
- 2012: DOE HQ issues RICE Technical Assistance Tool
- May 3, 2013: Compliance date for existing CI RICE >500 HP at major sources
- October 19, 2013: Compliance date for existing SI RICE ≤500 HP at major sources and all area sources



RICE Major Source Standards

HP	Engine Subcategory					
	Non-emergency					Emergency
	CI	SI 2SLB	SI 4SLB	SI 4SRB	SI LFG/DG	
<100	Work Practice Standards					Work Practice Standards
100-300	230 ppm CO	225 ppm CO	47 ppm CO	10.3 ppm CH ₂ O	177ppm CO	
300-500	49 ppm CO or 70% CO reduction					
>500	23 ppm CO or 70% CO reduction	No standards (2004 rule)	No standards (2004 rule)	350 ppb CH ₂ O or 76% CH ₂ O reduction (2004 rule)	No standards (2004 rule)	No standards (2004 rule)
Limits in yellow are expected to require emissions control retrofit			Note: Existing limited use engines >500 HP at major sources do not have to meet any emission standards. Existing black start engines ≤500 HP at major sources must meet work practice standards.			

RICE Area Source Standards

		Engine Subcategory					
HP	Non-emergency					Emergency or Black Start	
	CI	SI 2SLB	SI 4SLB	SI 4SRB	SI LFG/DG		
≤300	Mgmt Practice Standards	Mgmt Practice Standards	Mgmt Practice Standards	Mgmt Practice Standards	Mgmt Practice Standards	Mgmt Practice Standards	
300-500	49 ppm CO or 70% CO reduction*		Mgmt Practice Standards	Mgmt Practice Standards			
>500	23 ppm CO or 70% CO reduction*		47 ppm CO or 93% CO reduction*	2.7 ppm CH ₂ O or 76% CH ₂ O reduction*			
Limits in yellow are expected to require emissions control retrofit			*Except engines in rural Alaska **If engine used >24 hrs/yr				

RICE Catalyst Control Costs

Engine Type	500 kW / 670 HP	2,000 kW / 2,680 HP
EPA: Compression Ignition	\$ 21,500	\$ 86,350
EPA: Spark Ignition Lean Burn	\$ 16,300	\$ 45,675
EPA: 4-stroke Rich Burn	\$ 38,675	\$ 98,325
Private Consulting Firm	\$ 42,000†	\$ 64,000†

†Includes total compliance costs, (e.g. stack test and catalyst)

Additional compliance costs for ongoing air emissions testing (every 3-5 years)

Defense Land Systems & Misc. Equipment

- Defense Land Systems and Miscellaneous Equipment (DLSME) is stuck, again
- Military has reviewed DLSME but EPA does not seem to have the ability to issue it in draft form
- No deadline for issuing DLSME; it is a voluntary NESHAP
- Since sources were exempted from other NESHAP to be included in DLSME, there are unregulated sources
- If EPA does not issue DLSME, some states (New England) are investigating using CAA 112(j) - “hammer clause” - to issue standards to DLSME sources

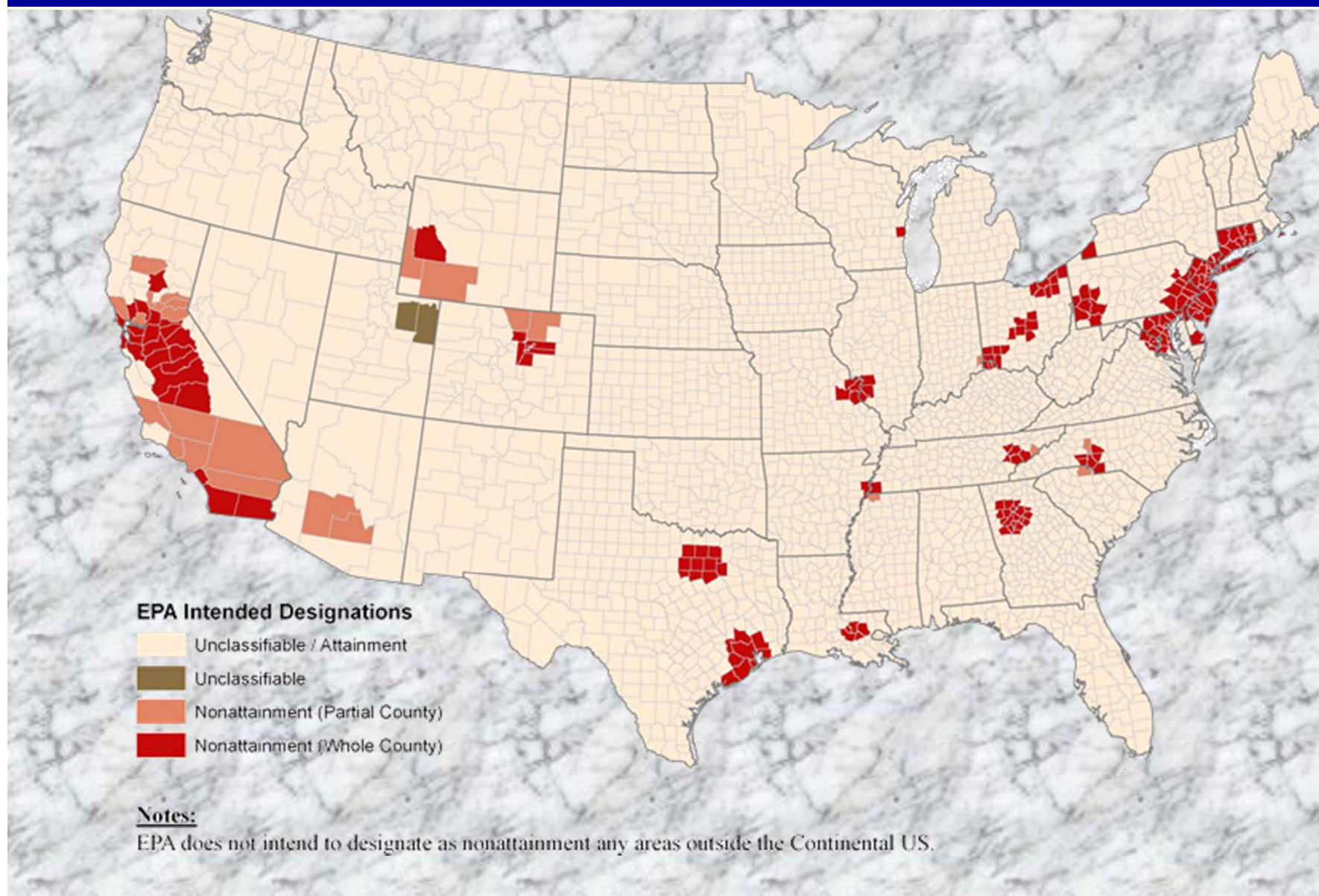


National Ambient Air Quality Standards (NAAQS)

2008 Ozone Determinations

- EPA has issued its response letters to state / local / tribal air agencies regarding their determinations for 2008 ozone (O₃) NAAQS
<http://www.gpo.gov/fdsys/pkg/FR-2011-12-20/pdf/2011-32557.pdf>
- You can find out what your air agency recommended:
<http://www.epa.gov/ozonedesignations/2008standards/state.htm>

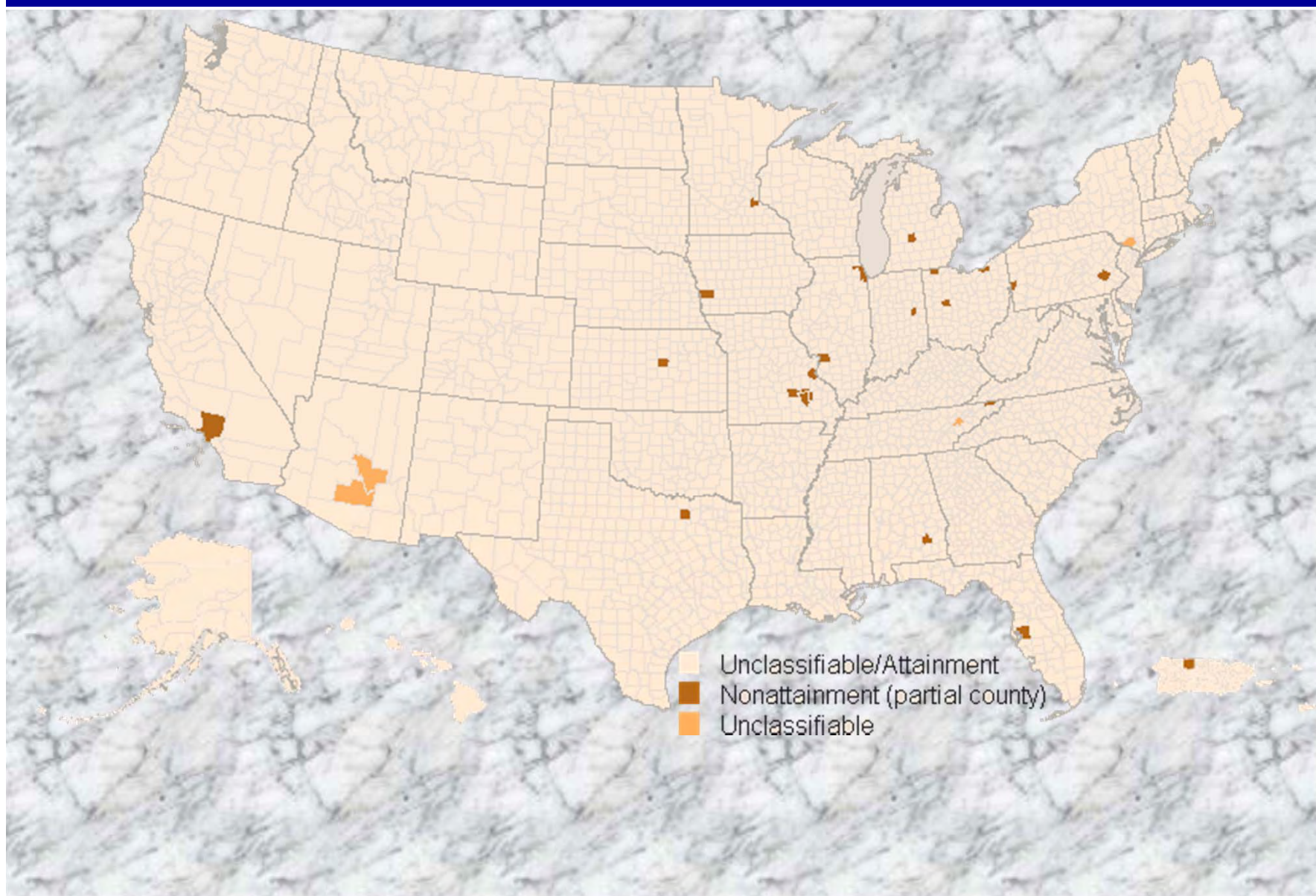
2008 Ozone Designations Map - Draft



2008 Lead Determinations

- EPA has issued its final determinations for lead (Pb) non-attainment and attainment areas
<http://www.gpo.gov/fdsys/pkg/FR-2011-11-22/pdf/2011-29460.pdf>
- You can find out what your air agency recommended:
<http://www.epa.gov/leaddesignations/2008standards/state.html>

2008 Lead Designations



Other Air Quality Concerns

Ozone Depleting Substances

- EPA has updated the Significant New Alternatives Program (SNAP) to include:
 - Isobutane (R-600a) and R-441a for CFC-12 & HCFC-22
 - Propane (R-290) for CFC-12, HCFC-22, & R-502
 - Mainly applies to refrigerators / freezers

<http://www.gpo.gov/fdsys/pkg/FR-2011-12-20/pdf/2011-32175.pdf>

- R-40 is being sold as counterfeit R-134a refrigerant, all overseas and in small, disposable containers (<30 lbs.)
 - **Explosion Hazard! R-40 & aluminum react with air!**
- EPA has extended the laboratory and analytical use exemption for production/import of Class I ozone depleting substances (ODS) through December 31, 2014

<http://www.gpo.gov/fdsys/pkg/FR-2011-12-15/pdf/2011-32179.pdf>

Information Collection Requests

EPA has extended an information collection request (ICR) for two programs:

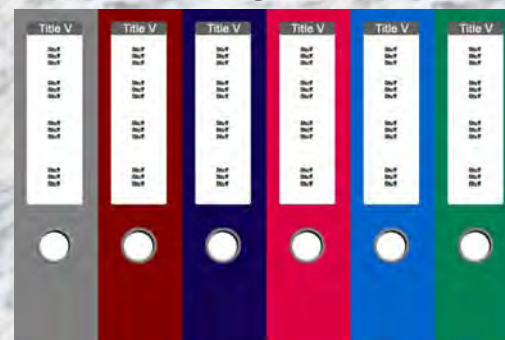
- ODS: ICR applicable to producers, importers, and distributors of Class I ODS, and research institutions using such substances

<http://www.gpo.gov/fdsys/pkg/FR-2011-11-30/pdf/2011-30855.pdf>

- Title V: ICR applicable to Title V major sources

<http://www.gpo.gov/fdsys/pkg/FR-2011-12-14/pdf/2011-32062.pdf>

- Title V ICR used to determine effectiveness of Flexible Air Permits Rule and Greenhouse Gas Tailoring Rule



Questions?