APPENDIX 112R

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING
Rules for Various Combustion Sources
(Prerule Stage)

CAA SECTIONS 111, 112, AND 129

REGULATION STATUS

Although the formal Industrial Combustion Coordinated Rulemaking (ICCR) Federal Advisory Committee was disestablished in September 1998, EPA and their contractors are continuing to develop the rules.

Table 1 shows the status of various combustion rules that EPA is developing. The HAP Status Binder will provide information on the following NESHAPs:

- Industrial/commercial/institutional boilers,
- Stationary internal combustion (IC) engines, and
- Stationary combustion turbines.

EPA maintains a web site on these and other combustion related rules at http://www.epa.gov/ttn/uatw/combust/list.html.

Background

In October 1996, EPA established the ICCR Committee to provide oversight and guidance to EPA on the development of several regulations for various combustion sources. The purpose of ICCR oversight was to avoid duplication of effort during rule development and also to prevent regulatory overlap in the eventual rules. The ICCR Committee provided oversight to several subgroups; a subgroup for each combustion source category and common issue subgroups such as emission testing, pollution prevention, and economic analysis.

ICCR membership included representatives from the EPA, environmental groups, regulated industries, combustion source owners, and state/local regulatory agencies.

The following military representatives were active participants in the ICCR process from 1 Oct 96 through 30 Sep 98.

ICCR Committee

- Elsie Munsell, OASN (I&E)
- Alison Ling, OAGC (I&E) (Alternate)

IC Engines Subgroup

- Rand Drake and Brian Quil, NFESC
- Drek Newton, NFESC (Alternate)

Boilers Subgroup

- James Jordan, NFESC
- Gerald Dottington, AFSC/CESM

Turbines Subgroup

- Peter Hill, NFESC
- Drek Newton, NFESC (Alternate)

Former IC Engine Subgroup member Brian Quil is now tracking EPA's progress on these rules for the HAP Subcommittee.

Table 1: Combustion Sources Subject to Regulation Under the CAA

Listed Source Categories	CAA Authority	Applicable Regulations	Regulatory Schedule	Regulated Pollutants	Affects New or Existing Sources
Industrial-Commercial-Institutional (ICI) boilers:	§111	40 CFR 60, subpart Db (ICI steam generators [a] >100 mmBtu/hr)	revised NO_X limits 16 Sep 98 (63 FR 49454)	Criteria (SO_2, NO_X, PM) [b]	New sources (after 9/16/84)
	§111	40 CFR 60, subpart Dc (ICI steam generators [a] 10-100 mmBtu/hr)		Criteria (SO_2, PM) [b]	New sources (after 9/12/90)
	§112	Future NESHAP (Industrial Boilers)	2000 (CAA deadline)	HAP [c]	New and existing
	§112	Future NESHAP (Commercial-institutional boilers)	2000 (CAA deadline)	HAP	New and existing
Process heaters	§112	Future NESHAP	2000 (CAA deadline)	HAP	New and existing
Industrial-commercial waste incinerators [d]	§129 and §111	Future NSPS and existing source emission guidelines (EG)	1998 or 1999	Criteria and HAP (PM, SO_2, HCl, NO_X, CO, Pb, Cd, Hg, dioxins/furans)	Standards for new sources and guidelines for existing sources.
Other solid waste incinerators [e]	§129 and §111	Future NSPS and EG	2000 (CAA deadline)	Criteria and HAP (PM, SO_2, HCl, NO_X, CO, Pb, Cd, Hg, dioxins/ furans)	Standards for new sources and guidelines for existing sources.
Stationary combustion turbines	§111	40 CFR 60, subpart GG	revision planned for 2000	Criteria (NO_X, SO_2) [b]	New sources (after 10/3/77)
	§112	Future NESHAP	2000 (CAA deadline)	HAP	New and existing
Stationary IC engines	§111	Rule proposed in 1979 but never promulgated	promulgation planned for 2000	Criteria	New sources
	§112	Future NESHAP	2000 (CAA deadline)	HAP	New and existing

a Includes devices (such as boilers) that combust any fuel (e.g., coal, oil, natural gas, wood) or by-product to produce steam or heat water or transfer energy to any other heat transfer medium.

b Pollutants shown in ( ) are those previously regulated. Additional criteria pollutants could be regulated if the standards are revised.

c HAP = hazardous air pollutants listed in section 112 of the CAA

d Could include combustion of solid, semi-solid, and liquid non-hazardous industrial or commercial wastes in incinerators and other types of combustors.

e Could include combustion of wood waste, agricultural waste, construction/demolition waste, contaminated soil, residential waste, and other non-hazardous wastes in incinerators and other types of combustors.

DISCUSSION

Applicability

EPA has not yet indicated whether these rule will be limited to major HAP sources or apply to both major and area HAP sources. If EPA uses a consistent approach with all combustion source regulations the rules will be structured as follows. Incinerator regulations will apply to all sources in the category as EPA did with Medical Waste Incinerators. Other combustion sources will primarily apply to major HAP sources except that the rule may also contain limited requirements for area sources to control emissions of dioxins and furans. The proposed NESHAP for furnaces used in the secondary aluminum production industry was structured in this manner.

Potential Standards

Based on the ICCR Committee's final recommendations to EPA, potential requirements for some of the source categories are shown below. Keep in mind EPA has not yet made any public decisions regarding the content of these rules.

Boiler NESHAP

- Natural gas and distillate oil fired boilers: no stack emission controls.
- Residual oil fired boilers: stack emission controls may be required.
- Coal fired boilers: particulate and acid gas control devices will be required.
- Oil and coal fuel composition: Limitations on fuel impurities (i.e., metals, chlorine, and fluorine) are expected to be required for oils and coal.
- Pollution prevention measures:
  - Mandatory annual tune-ups on boilers of all fuels are expected.
  - Mandatory operator training and certification is possible.

Stationary IC Engine NESHAP

- Spark-Ignition, Natural Gas 4-Stroke Rich Burn Engines: Non-Selective Catalytic Reduction
- Spark-Ignition, Natural Gas 4-Stroke Lean Burn Engines: No MACT Floor
- Spark-Ignition, Natural Gas 2-Stroke Lean Burn Engines: No MACT Floor
- Spark-Ignition, Digester Gas and Landfill Gas Engines: No MACT Floor
- Spark-Ignition, Propane, LPG, and Process Gas Engines: No MACT Floor
- Spark-Ignition, Gasoline Engines: No MACT Floor
- Compression-Ignition, Liquid-Fuel Engines (diesel, residual / crude oil, kerosene / naphtha): No MACT Floor
- Compression-Ignition, Dual Fuel Engines: No MACT Floor

- Emergency Power Units: No MACT Floor
- Small Engines (200 brake horsepower or less): No MACT Floor

EPA will consider the following a*bove-the-floor* technologies for some IC engine subcategories if they prove to be cost effective as HAP emission controls:

- Non-selective catalytic reduction
- Selective catalytic reduction
- Carbon monoxide-oxidation catalyst

Stationary Combustion Turbine NESHAP

- Existing combustion turbines: No MACT floor

MILITARY SOURCES

In Apr 97, the Office of the Assistant Secretary of the Navy (Installations and Environment) coordinated a survey of military departments and other Federal agencies represented on the Services Steering Committee. The purpose of this survey was to collect population/inventory, engineering, operating and emissions information on federally owned combustion sources. This survey was part of EPA's Information Collection Request (ICR) needed to develop the MACT Standards. Although this survey was not mandatory, the Services voluntarily participated to ensure their sources were considered as EPA establishes the MACT floor for combustion sources.

The following tables characterize the inventory of Federal combustion sources submitted to EPA as well as the combined inventory submitted by all stakeholders.

Characterization of Military IC Engines

Tables 2 and 3 characterize Federal IC engines in the EPA database. Over 90% of the Federal units in the database are owned by the military. **Table 2** shows that:

- 97% burn liquid fuel,
- 60% are emergency power units, and
- 16% of the IC engines in the EPA database are Federal units.

The eventual rules may only apply to units located on major HAP sources. **Table 3** shows the number of Federal units located on major HAP sources. A comparison of the tables shows that 31% of Federal units are located on facilities that are major HAP sources.

The Services did not report any spark ignition, natural gas 4-stroke rich burn engines. A large number of Federal units are emergency generators and small engines that may be exempted from any control requirements. Therefore, at this time, we expect minimal impact on the military.

Table 2: Characterization of Federal IC Engines in the EPA Database

ENGINE TYPE/SIZE (HP)	FUEL TYPE					
	LP	NG	LIQUID	GASOLINE	OTHER	TOTAL
GENERATORS						
≤ 200			172	4		176
201-999			215			215
1000-4999			68		1	69
5000-10000			3			3
unknown size			26			26
Subtotal			484	4	1	489
COGENERATION						
≤ 200						
201-999		4				4
1000-4999						
5000-10000						
unknown size						
Subtotal		4				4
EMERGENCY GENERATORS						
≤ 200	7	16	911		6	940
201-999	3	2	1316		6	1327
1000-4999		2	232		5	239
5000-10000						
unknown size	2	6	404			412
Subtotal	12	26	2863		17	2918
PEAK SHAVING						
≤ 200			3			3
201-999			19			19
1000-4999			74			74
5000-10000						
unknown size						
Subtotal			96			96
PUMP						
≤ 200			146	4	3	153
201-999			156	1	1	158
1000-4999			3			3
5000-10000						
unknown size			30			30
Subtotal			335	5	4	344
BLANK / OTHER						
≤ 200		2	317	8	25	352
201-999		1	285	1	16	303
1000-4999			132			132
5000-10000						
unknown size		3	163	3	6	175
Subtotal		6	897	12	47	962
Total Federal Units	12	36	4675	21	69	**4813**
Total ICCR Units	154	14509	5344	206		**29469**
% of Total ICCR Units	8%	0%	87%	10%		**16%**

Table 3: Characterization of Federal IC Engines on Major HAP Sources

ENGINE TYPE/SIZE (HP)	FUEL TYPE					
	LP	NG	LIQUID	GASOLINE	OTHER	TOTAL
GENERATORS						
≤ 200			68	4		72
201-999			50			50
1000-4999			25			25
5000-10000						
unknown size			20			20
Subtotal			163	4		167
COGENERATION						
≤ 200						
201-999		4				4
1000-4999						
5000-10000						
unknown size						
Subtotal		4				4
EMERGENCY GENERATORS						
≤ 200	1	4	281		3	289
201-999			431		1	432
1000-4999		2	82			84
5000-10000						
unknown size			33			33
Subtotal	1	6	827		4	838
PEAK SHAVING						
≤ 200						
201-999			1			1
1000-4999			30			30
5000-10000						
unknown size						
Subtotal			31			31
PUMP						
≤ 200			83	3		86
201-999			100	1	1	102
1000-4999			1			1
5000-10000						
unknown size			10			10
Subtotal			194	4	1	199
BLANK / OTHER						
≤ 200			65	2	4	71
201-999			38	1		39
1000-4999			22			22
5000-10000						
unknown size			103	3	6	112
Subtotal			228	6	10	244
Total Federal Units on Major HAP Sources	1	10	1443	14	15	**1483**
Total ICCR Units	154	14509	5344	206		**29469**
% of Total ICCR Units	1%	0%	27%	7%		**5%**

Table 4. Characterization of Federal and Military Boilers in the EPA Database

CAPACITY (MMBTU)	FUEL TYPE						
	NG	DIST OIL	RES OIL	COAL	REFUSE	OTHER	TOTAL
U.S. NAVY							
<=1	46	32				2	80
>1 AND <=10	630	316	10			24	980
>10 AND <= 100	175	70	22	2		3	272
> 100 AND <=250	26	12	5	6	4		53
>250	4	2					6
Total	881	432	37	8	4	29	**1391**
U.S. MARINE CORPS							
<=1	48						48
>1 AND <=10	308	94				2	404
>10 AND <= 100	9	26	8	2			45
> 100 AND <=250	3	1	1	4			9
>250							0
Total	368	121	9	6	0	2	**506**
U.S. AIR FORCE							
<=1	351	81					432
>1 AND <=10	1315	296	2				1613
>10 AND <= 100	10	67	23	2			102
> 100 AND <=250	19	12		15			46
>250							0
Total	1695	456	25	17	0	0	**2193**
U.S. ARMY							
<=1	40	20		2		1	63
>1 AND <=10	711	410	36	7		22	1186
>10 AND <= 100	216	80	46	2			344
> 100 AND <=250	16	5	1	32			54
>250							0
Total	983	515	83	43	0	23	**1647**
ALL FEDERAL SOURCES							
<=1	532	122				20	674
>1 AND <=10	4627	1382	4			58	6071
>10 AND <= 100	675	159	96	29		6	965
> 100 AND <=250	64	7	12	54	4	9	150
>250	4	2	2				8
Total Fed Gov Units	5902	1672	114	83	4	93	**7868**
Total ICCR units	44947	6668	7945	2108	NA	NA	**61709**
% of Total ICCR units	13%	25%	1%	4%			**13%**

Characterization of Military Boilers

Table 4 characterizes both Federal and military boilers in the EPA database. The data shows that:

- 75% of all boilers in the EPA database burn natural gas,
- 13% of the boilers in the EPA database are Federal units.

Since 75% of the Federal boilers operate on natural gas and the majority of the boilers are small (>1 and <=10 MMBTU), we expect minimal impact on the military.

Characterization of Military Combustion Turbines

Military units account for a small fraction of the stationary combustion turbines in the EPA database.

CONTACTS

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