Chemical or Agent (No Duplicates)	CAS #	Likelihood of being found in Wisconsin (Low, Mod, High)	Use	Examples of Possible Affected Wisconsin Companies (Note: Virgin Fossil Fuel combustion emissions are currently exempt)	Comments
Talc, containing no asbestos fibers	14807-96-6	H	Many Uses - Adhesives, coatings, paints, building materials, fire extinguishers, lubricants	Chemical not reportable to inventory	
Tantalum, metal and oxide dusts, as Ta	7440-25-7	H	Metallurgy, welding	Chemical not reportable to inventory	
Tetrafluoroethylene	116-14-3	H	Manuf. Of Teflon Plastic/ Propellant in food	Chemical not reportable to inventory	
Tetranitromethane	509-14-8	H	Fuel additive, rocket propellant, explosive, chemical intermediate	Chemical not reportable to inventory	
Triethanolamine	102-71-6	H	Adhesives, solvents, metal fabrication	Chemical not reportable to inventory	
Triethylamine	121-44-8	H	Paints and coatings	9 sources reported - all below <25 ft threshold.	Threshold <25ft = 1,945 lbs/yr; >75 ft = 58,780 lbs/yr
Trimethylamine	75-50-3	M	Odorant in natural gas; chemical intermediate	Chemical not reportable to inventory	
Tris(2,3-dibromopropyl phosphate)	126-72-7	M	Manuf. Of Plastics/Flame retardant	Chemical not reportable to inventory	
Vanadium pentoxide, as V2O5, respirable dust and fume	1314-62-1	H	Coal fired boilers, welding	3 sources above thresholds for >75ft stack, all of them are coal fired boilers; 6 more coal fired boilers above 200 lbs; Milw metro. Sewerage district reported 78 lbs/yr	Most sources are coal fired boilers - there is exemption for virgin fossil fuel combustion,Threshold <25ft =23.6 lbs/yr; >75 ft=710 lbs/yr.
Vinyl bromide	593-60-2	L	Manufacture of plastics, flame retardants	Chemical not reportable to inventory	
Vinyl fluoride	75-02-5	L	Manuf. Of Plastics, refrigerant, paints	Chemical not reportable to inventory	
Yttrium metal and compounds, as Y	7440-65-5	H	Metallurgy, welding	4 sources reporting - none afftected, all well below 25 ft. threshold	Threshold <25ft = 470 lbs/yr

Diesel Generator Information:

We promised to provide three pieces of information:

1. The horsepower of diesel generators that have been permitted.
2. The risk analysis for 48 generators
3. What would happen if biodiesel fuel rather than diesel fuel were used.

Horsepower Data: We have horsepower data for only 66 of the 450 generators that have been permitted in the state. This is because sources are not required to report their horsepower to the department.

Table 1 lists the generators for which we have horsepower information. We do not have data indicating the number of hours that any of these generators operate during a year. Most of these are probably back up generators. The two shaded sources (Oscar Mayer and Manitowoc Public Utilities) are likely to be the total horsepower of all of the generators at the site.

The table below shows the approximate number of hours that generators of different horsepower could run before tripping the 10,000-gallon/year threshold for the control requirement.

HP	Approximate Operating Hours Equivalent to 10,000 gallons
100	2000
500	400
1500	133
2000	100
2500	80

Risk Analysis:

The "48 Diesel Generator" graph illustrates the range of impacts that could result from diesel particulate emissions from 48 uncontrolled permitted diesel generators in Wisconsin using actual site specific information. We believe this analysis shows that stationary diesel generators can pose a public health risk and should be regulated.

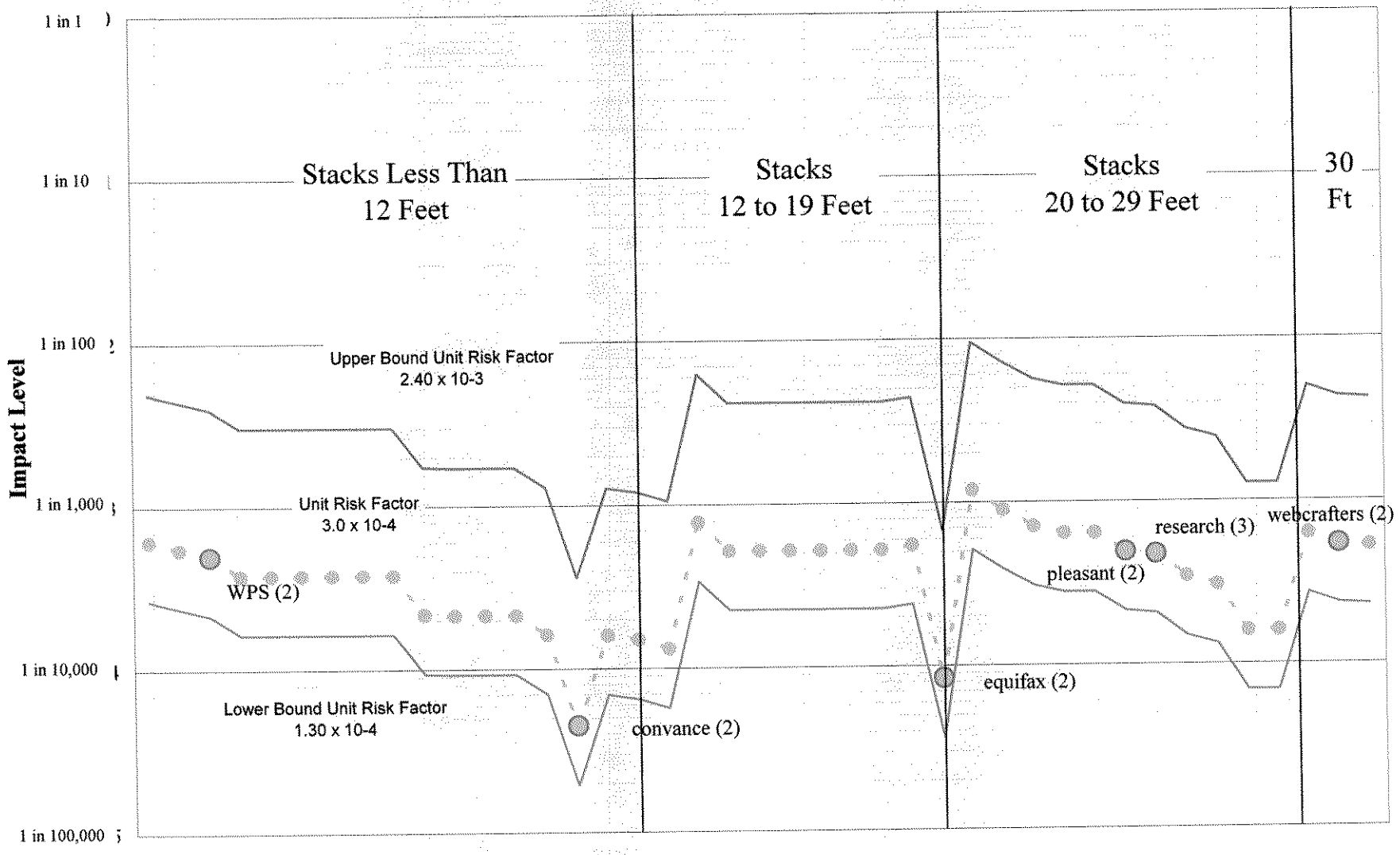
- Applies the range of unit risk factors developed by the California Air Resources Board (CARB) to impacts predicted by the air dispersion model to illustrate potential cancer risk
- Shows that the cancer risk could exceed a 1-in-a-100,000 risk level from all 48 diesel generators using the most conservative unit risk factor developed by CARB
- Shows that cancer risk could be as high as 1-in-a-1,000 for 44 of the 48 generators using the least conservative unit risk factor developed by CARB

Biodiesel: Under the proposed rule, the department would be able to consider biodiesel fuel as an alternative control method.

Diesel Generators and Horsepower

Site/Source	SIC	HP
Oscar Meyer		16,440
NORTHERN NATURAL GAS-BELLEVILLE COMPRESSOF	4922	375
MMSD-JONES ISLAND WASTEWATER TREATMENT PL/	4952	175
MMSD-JONES ISLAND WASTEWATER TREATMENT PL/	4952	5,727
ST. VINCENT HOSPITAL		1,062
ST. VINCENT HOSPITAL		1,233
ST. VINCENT HOSPITAL		1,233
ST. VINCENT HOSPITAL		1,233
MANITOWOC PUBLIC UTILITIES	4911	14,626
THE TRANE COMPANY - MAIN COMPLEX	3585	1,863
BARRON COUNTY HIGHWAY DEPT - CRUSHER	1422	568
JOHNSON MATERIALS CO.	1429	822
JOHNSON MATERIALS CO.	1429	226
ROWE SAND & GRAVEL INC.	1422	206
PITLIK AND WICK, INC. - PLANT #2	1442	870
BS Construction	1422	200
BS Construction	1422	130
BS Construction	1422	400
MG&E Covance Labs		2,740
MG&E Covance Labs		2,740
MG&E CUNA		2,055
MG&E CUNA		2,740
MG&E Oakwood Homes		2,740
MG&E Rhodia Inc.		2,740
MG&E WPS Insurance		1,233
MG&E WPS Insurance		2,740
MG&E Newspaper		2,055
MG&E Research Way	4931	1,370
MG&E Research Way	4931	1,233
MG&E Research Way	4931	822
MG&E Research Way	4931	822
MG&E Webcrafters Inc.		2,055
MG&E Webcrafters Inc.		2,055
MG&E Dane County Reg. Airport		1,370
MG&E Equifax Card Services		1,370
MG&E Equifax Card Services		1,370
MG&E The Bruce Company		822
MG&E The Pleasant Co. Middleton		1,370
MG&E The Pleasant Co. Middleton		1,370
MG&E Superior Health Linens		856
MG&E WI Supply Corporation		856
MG&E Bank of Cross Plains		822
MG&E Berbee Information Network		2,055
MG&E Demco Inc.		822
MG&E Great Lakes Higher Education		822
MG&E Electric Water Well #19		822
MG&E Laboratory Associated		822
MG&E Lands End Cross Plains		822
MG&E Electric Water Well #13		822
MG&E Electric Water Well #14		822
MG&E Electric Water Well #15		822
MG&E Electric Water Well #16		822
MG&E Electric Water Well #18		822
MG&E Electric Water Well #19		822
MG&E Electric Water Well #24		822
MG&E Electric Water Well #25		822
MG&E Electric Water Well #27		822
MG&E Middleton Cross Plains School District		822
MG&E Shockley Communication		822
MG&E Rayovac Corp.		2,740
MG&E Dean Health Care		2,740
MG&E M & I Data		1,233
MG&E Wagner Dairy Farm		822
MG&E E St. Benedict Retreat & Conference		822
IRON RIVER SAND AND GRAVEL INC.	1422	475
Milest. Mater. (Arth. Overgaard Div. Of Mathy Constr.)	1422	9,193

48 Diesel Generator Source Specific Impacts



Each point on the UFR = 3.0x10-4 curve represents a facility with one or more diesel generators on/nearby site.

ENGINES FOR A BETTER TOMORROW

Wisconsin Engine Manufacturer & Distributor Alliance

To: Legislative Joint Committee on Environment & Natural Resources
From: Marc Bentley
Re: NR 445

This is the Wisconsin Engine Manufacturers & Distributors Alliance (WEMDA) initial response to the DNR Air Bureau's approach to regulate certain internal combustion engines under NR 445.

The WEMDA is a trade association of the Engine Industry. WEMDA is interested in matters affecting diesel fuel and diesel engine emissions. The members of WEMDA strongly support the achievement of cleaner air and clean environment. The Engine Manufacturer Industry has made and continues to make great strides to achieving clean burning internal combustion engines. At the same time, WEMDA has serious concerns on DNR's approach to regulate an already over regulated industry.

The DNR must not underestimate the impact of its analysis in this rulemaking. Over-ambitious or unwarranted regulations placed upon the already regulated industries that use diesel-powered engines could have a devastating financial impact upon Wisconsin's economy. Thus, it is imperative that any additional regulatory action by the DNR be well reasoned and scientifically accurate. For these reasons, we are asking the legislature to please exercise extraordinary care in formulating rulemaking under NR 445 so that scientifically sound judgments are the end result of this process.

Commentary and Analysis

1. Diesel Exhaust causes Cancer.

We agree with comments made by the Engine Manufacturers Association that the US EPA and the Clean Air Scientific Advisory Committee (CASAC) both agree that epidemiology data base on diesel emissions and lung cancer are insufficient to determine a unit risk factor.

In the Executive Summary of the Diesel Health Assessment Document, EPA indicates that diesel exhaust particulate exposure data in rat studies are not deemed appropriate for the estimation of human risk. EPA goes further stating that these findings are general indicators of the potential significance of lung cancer hazard, and should not be viewed as a definitive quantitative characterization of risk.

Even EPA's recent health impact report says, "Overall, the evidence for a "potential" cancer hazard to humans resulting from chronic inhalation exposure to diesel emission is persuasive". EPA is thus stating only that it is possible that Diesel Exhaust is a human carcinogen.

The DNR's characterization of diesel exhaust could have far-reaching effects. Personal injury lawsuits alleging adverse health effects from diesel emissions exposure already have been adjudicated. These cases show that the plaintiff's scientific evidence of causation must be sufficient to establish that diesel exposure causes disease. If the DNR approves the proposed listing, it may lead to erroneous claims that diesel exposure causes cancer.

For these reasons, the DNR must not permit the classification of Diesel Exhaust as a human carcinogen when the science is not conclusive.

a. Diesel Exhaust is a small contributor to ambient particulate matter.

The DNR mischaracterizes the significance of diesel exhaust as a source of ambient particulate matter in their analysis. It must be understood that Diesel Exhaust is only one component of PM. A recent EPA report entitled "National Air Pollutant Emission Trends, 1900-1998, reports diesel exhaust (from both on-road and non-road sources) contributed only 1.3% of total emitted PM10 and 4.9% of total emitted PM2.5 These levels do not represent a "major source" of ambient particulate matter.

Thus, it is misleading to characterize Diesel Exhaust as a significant source of PM10 or PM2.5.

2. Emission Rates need to be in uniform with pending and future U.S. EPA federal Tier 2, Tier 3 & Tier 4 Non Road and On Road engine standards.

The DNR must address uniformity when dealing with engine manufacturing regulations. Engine Standards should not be looked at as an intrastate issue but as an interstate issue. Alignment and uniformity with our neighboring states and with nationwide standards is critical to ensure Wisconsin engine manufacturers and distributors avoid competitive disadvantages. By mandating special design and build engines in Wisconsin, the DNR must look at the consequences and concerns on cost-effectiveness and job loss to Wisconsin.

Therefore, DNR must consider Tier 2, Tier 3 & Tier 4 engine standards that U.S. EPA has in place when setting emission standards under NR 445 or any rulemaking.

In addition, with Tier 2 and Tier 3 standards in place and used as a guideline, why require a control technology for new engines? With low sulfur fuel and federal emissions standards implemented, this defies logic. Requiring a BACT analysis for these new engines for sale in Wisconsin again creates uniformity problems in the marketplace.

When conducting a cost benefit analysis, requiring BACT within the rule for new engines will cost engine manufacturers and Wisconsin based distributors millions of dollars to comply at a very small reduction in overall emissions. In addition, a recent WMC survey estimates administrative costs alone will be $200,000 per business to comply with this rulemaking.

This is simply too high of a price to pay for the small emissions rate reductions DNR is trying to achieve. We recommend removing these new engines from a BACT requirement. We must recognize that federal standards in place will achieve greater reductions in air quality. Overlapping state regulations only creates confusion and additional costs on an already over regulated industry.

3. DNR's Proposal Does Not Recognize Existing and Future Federal Mandates

In the case of diesel exhaust, further reductions of air toxics are not technologically feasible and future regulations already press the envelope on the amount of particulate that can be removed from diesel exhaust emissions.

Many of the programs designed to reduce ambient concentrations of the criteria pollutants also aid in reducing air toxics. More specifically, many of the emission control programs put in place pursuant to the Clean Air Act Amendments of 1990 reduce air toxics emission from a wide variety of sources, including sources of diesel exhaust particulate matter. For example, U.S. EPA's final rule regulating emissions from heavy-duty diesel engines will result in a 90 percent further reduction in particulate matter from today's standards. These rules will be effective in 2007, 2010 and 2014. EPA itself, in the context of its recently finalized rule on the control of emission of hazardous air pollutants from mobile sources, acknowledges that the rules model year standards represent "the greatest degree of emission reduction achievable through the application of technology that will be available in considering costs and other relevant factors."

The DNR must recognize the positive significance these federal mandates will have on air quality. WEMDA recommends that under NR 445, the internal combustion engine section be removed and comply with federal law and mandates.

4. Engine Test Facilities

Section NR 445.09 (3) (b) applies to engine test facilities. Why are we recreating the wheel in regards to engine test facilities? Former administrator Whitman has just signed the final Engine Test Facility National Emission Standard of Hazardous Air Pollutants (NESHAP) Rule. The rule will shortly be published in the Federal Register. The new rule applies to new or reconstructed engine test facilities (testing uninstalled engines>25 hp at major sources of HAP emissions.

Again, here is another example of overlap and lack of uniformity with the Department of Natural Resources and the Federal EPA. The WEMDA recommends that this provision be removed in NR 445.09(3) (b) and the DNR should adopt the federal Engine Test Facility regulation and its control measures. This creates uniformity with our regional states. It creates uniformity with the EPA.

Conclusion

In conclusion, the DNR's diesel engine component proposal creates enormous regulatory burdens on engine manufactures without any meaningful emission benefits outside existing and future federal programs on non-road & on road sources. Therefore, the Wisconsin Engine Manufacturers & Distributors Alliance recommends the following:

1. Until the science is conclusive, Diesel Exhaust listed as a Carcinogen should be removed. If it is to be listed, reference the EPA Health Assessment Document instead of the California Air Resource Board (CARB) interpretation.
2. With Tier 2, Tier 3 and Tier 4 regulations already mandated, Sec 445.09 dealing with Compressed Ignition Internal Combustion Engines in NR 445 should be removed altogether. Wisconsin gets a bigger "bang for the buck" under the Federal mandates than under the DNR's proposal.
3. If the legislature believes the internal combustion engine be regulated, adopt the federal non-road standards of 0.15 for Particulate Matter (PM) instead of the DNR proposal of 0.1 PM standard in NR 445. That way certified engines would automatically meet the standard for the 100-750 hp classes and avoid a Best Available Control Technology (BACT) requirement for new engines.
4. If Wisconsin chooses to regulate Engine Test Facilities, Sec 445.09(3)(b) then remove the DNR language and adopt the federal rule and control measures.

What is at stake for Wisconsin is more jobs being lost, companies moving operations out of state, with no environmental benefits under the engine component of NR 445. In a recessionary economy, I believe we should take a more cautious approach with this rulemaking.

Thank you for your time and consideration.

Respectfully submitted,

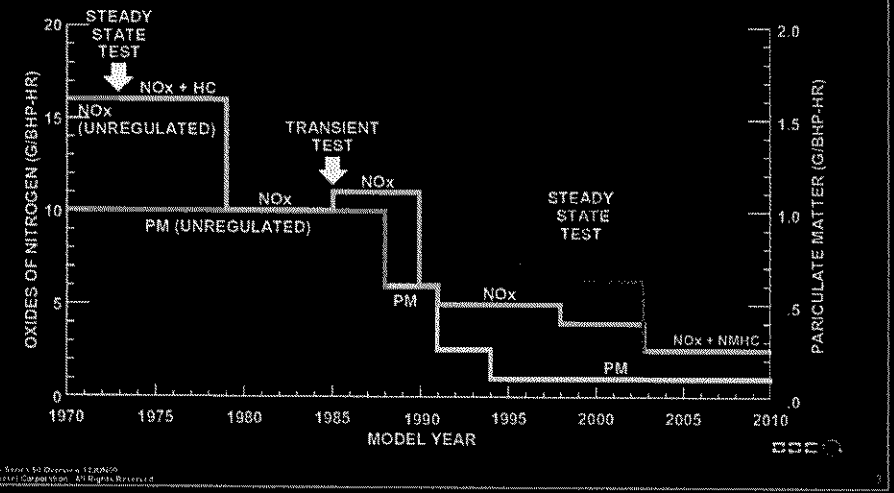
Marc S. Bentley
President

5370 Mariners Cove #504 P.O. Box 1522 Madison, WI 53701-1522

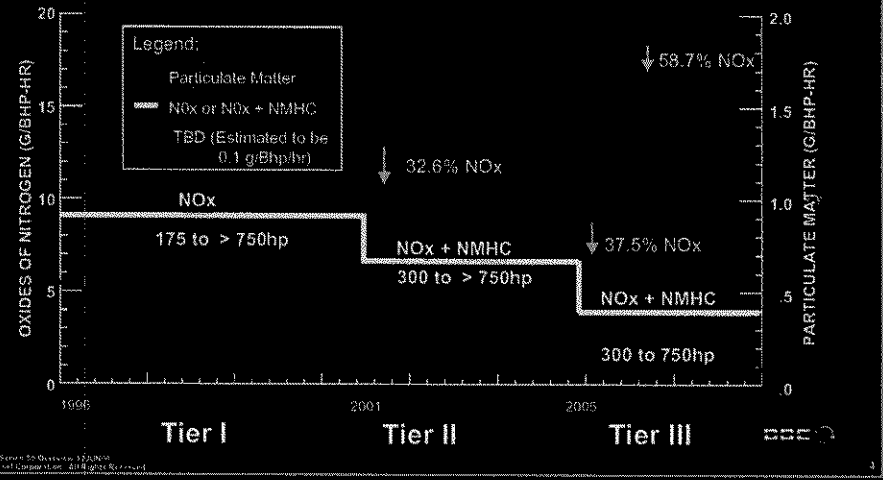
U.S. Emission Standards Comparison

On-Highway And Off-Highway

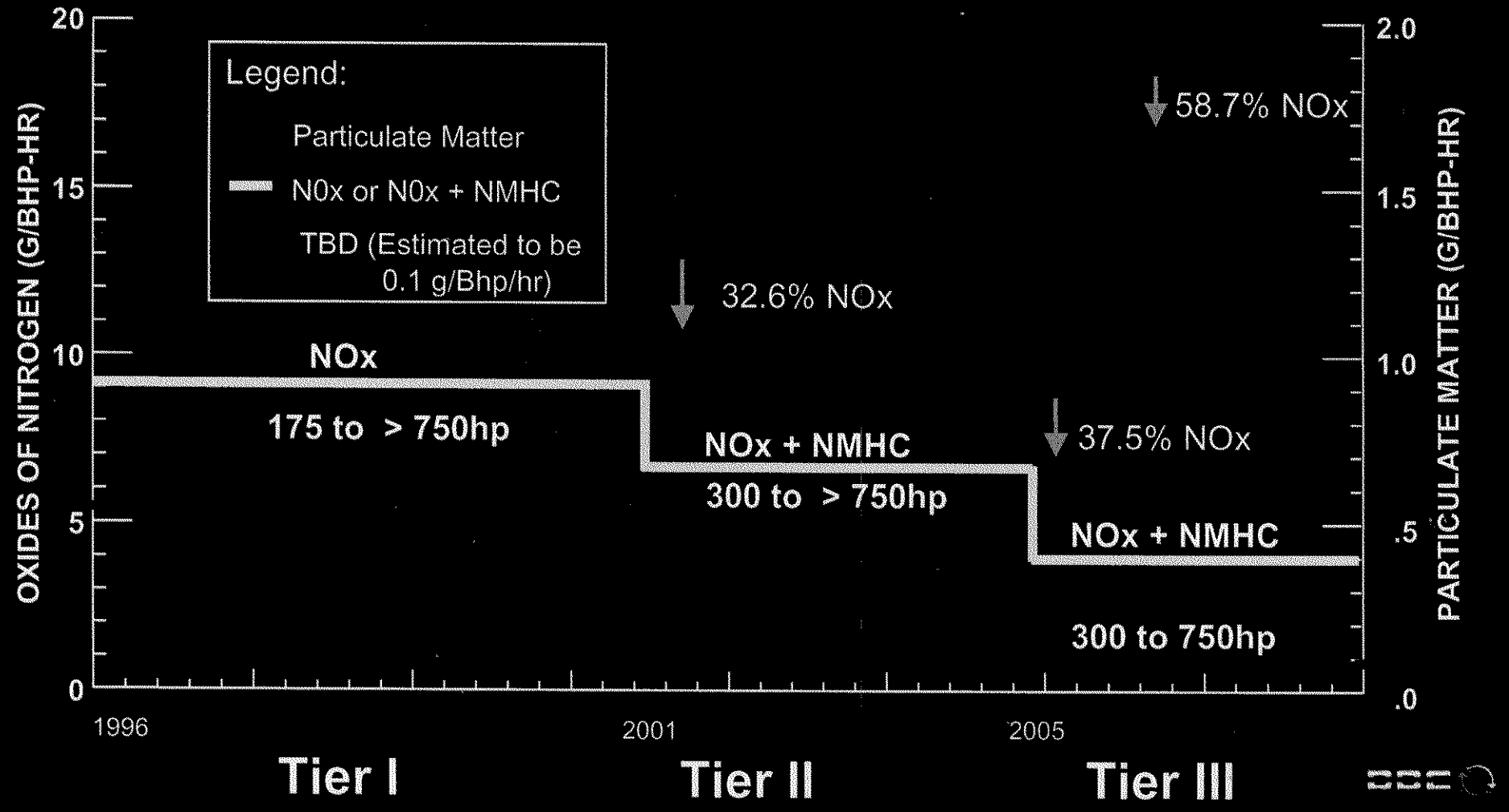
U. S. EPA Emission Standards
Class 8 Heavy Duty Line Haul



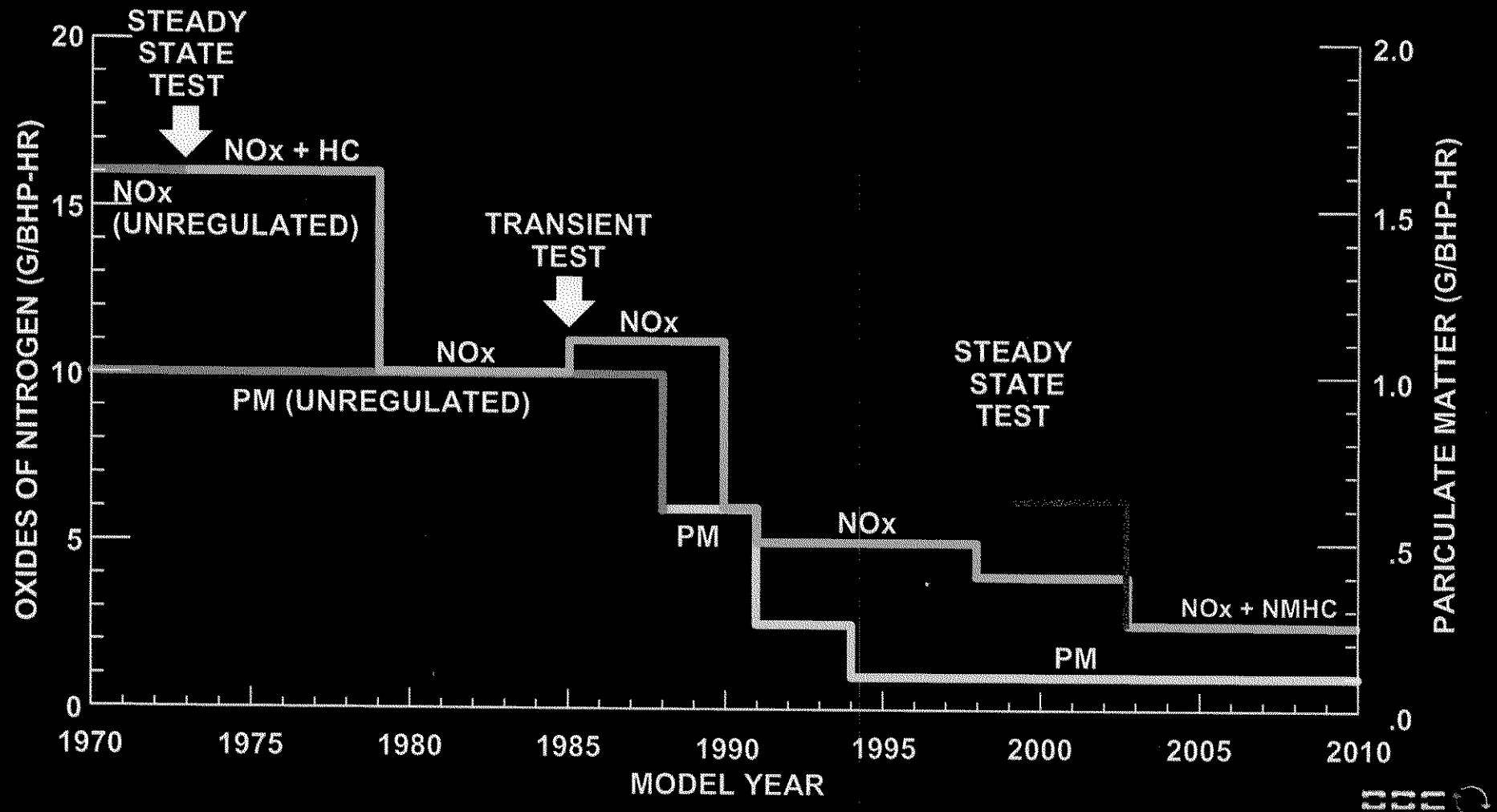
U. S. EPA Emission Standards
Nonroad



U. S. EPA Emission Standards
Nonroad



U. S. EPA Emission Standards
Class 8 Heavy Duty Line Haul



New Standards for Heavy-Duty Highway Engines and Vehicles

A PM emissions standard for new heavy-duty engines of 0.01 grams per brake-horsepower-hour (g/bhp-hr), will take full effect for diesels in the 2007 model year. The NOx and non-methane hydrocarbons (NMHC) standards will be 0.20 g/bhp-hr and 0.14 g/bhp-hr, respectively. These NOx and NMHC standards will be phased in together between 2007 and 2010, for diesel engines. The phase-in will be on a percent-of-sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010.

Gasoline engines will be subject to these standards based on a phase-in requiring 50 percent compliance in the 2008 model year and 100 percent compliance in the 2009 model year.
The program includes flexibility provisions to facilitate the transition to the new standards and to encourage the early introduction of clean technologies, and adjustments to various testing and compliance requirements to address differences between the new technologies and existing engine-based technologies.

Refiners will be required to start producing diesel fuel for use in highway vehicles with a sulfur content of no more than 15 parts per million (ppm), beginning June 1, 2006. At the terminal level, highway diesel fuel sold as low sulfur fuel will be required to meet the 15 ppm sulfur standard as of July 15, 2006. For retail stations and fleets, highway diesel fuel sold as low sulfur fuel must meet the 15 ppm sulfur standard by September 1, 2006.

Nonroad Diesel Engines Exhaust Emission Standards

Nonroad diesel engines built since 1996 have had to comply with modest emission standards, with the focus on reducing NOx emissions. Emission standards have generally not addressed PM emissions. Under the new proposed emission standards manufacturers are expected to use high-efficiency control systems to substantially reduce both NOx and PM emissions. This will achieve a level of control that compares with automobiles being built today. The table below shows the proposed emission standards and when these standards would apply for different sizes of engines. These standards are similar in stringency to the final standards adopted for 2007 and later diesel-powered trucks and buses.

Proposed Tier 4 Emission Standards (g/hp-hr)			
Rated Power	**First Year that Standards Apply**	**PM**	**NOx**
less than 25 hp	2008	0.30	--
equal to or more than 25, but less than 75	2013	0.02	3.5*
equal to or more than 75, but less than 175	2012-2014	0.02	0.30
equal to or more than 175, but less than 750	2011-2013	0.01	0.30
greater than or equal to 750	2011-2014	0.01	0.30

* The 3.5 g/hp-hr standard includes both NOx and nonmethane hydrocarbons.

The proposal includes new provisions to help ensure that emission control systems perform as well when operating in actual service conditions as in the laboratory. These procedures will allow for testing an engine's emission levels while the machinery operates in normal service.

Nonroad Diesel Fuel

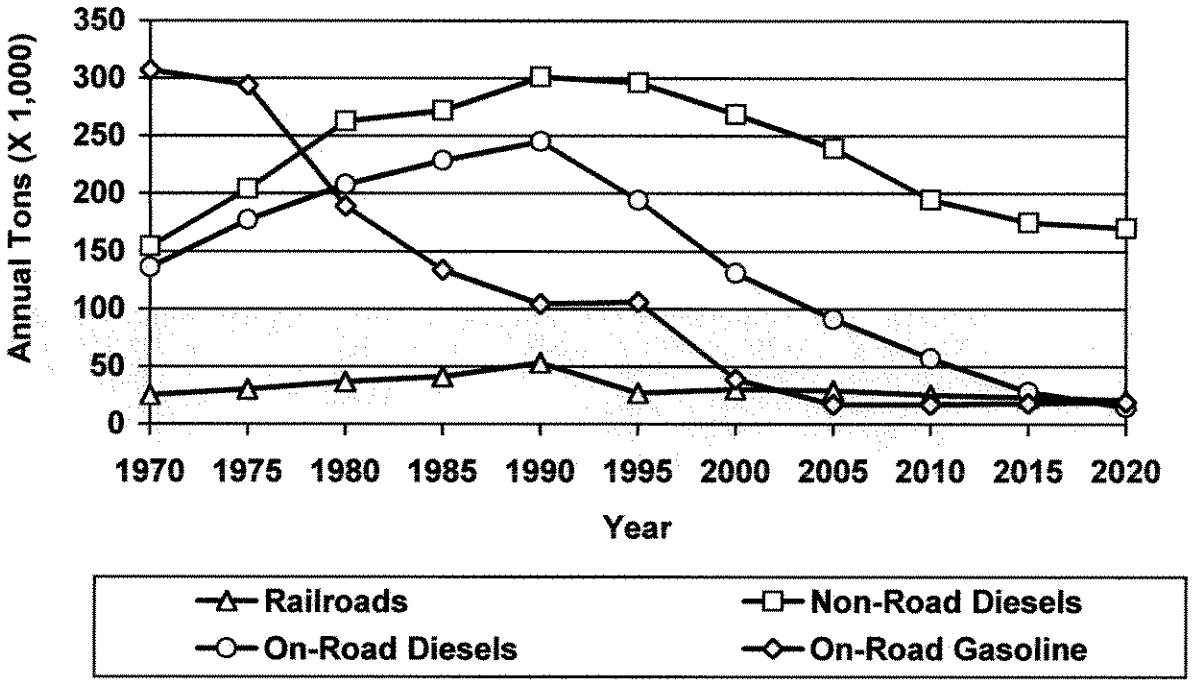
Just as lead was phased out of gasoline because it damages catalytic converters in cars, sulfur can contaminate high-efficiency emission control systems used on diesel engines. Nonroad diesel fuel currently has sulfur levels of about 3,400 parts per million (ppm) on average. This proposal would reduce these levels by 99 percent, which is an essential step in achieving the emission reductions anticipated under the proposal.

Starting in 2007, fuel sulfur levels in nonroad diesel fuel would be limited to a maximum of 500 ppm, the same as for current highway diesel fuel. This limit also covers fuels used in locomotive and marine applications (though not to the marine residual fuel used by very large engines on ocean-going vessels). Reducing fuel sulfur levels to 500 ppm or lower will provide immediate public health benefits by reducing particulate emissions from engines in the existing fleet of nonroad equipment, with the added benefit of reducing the cost of maintaining engines.

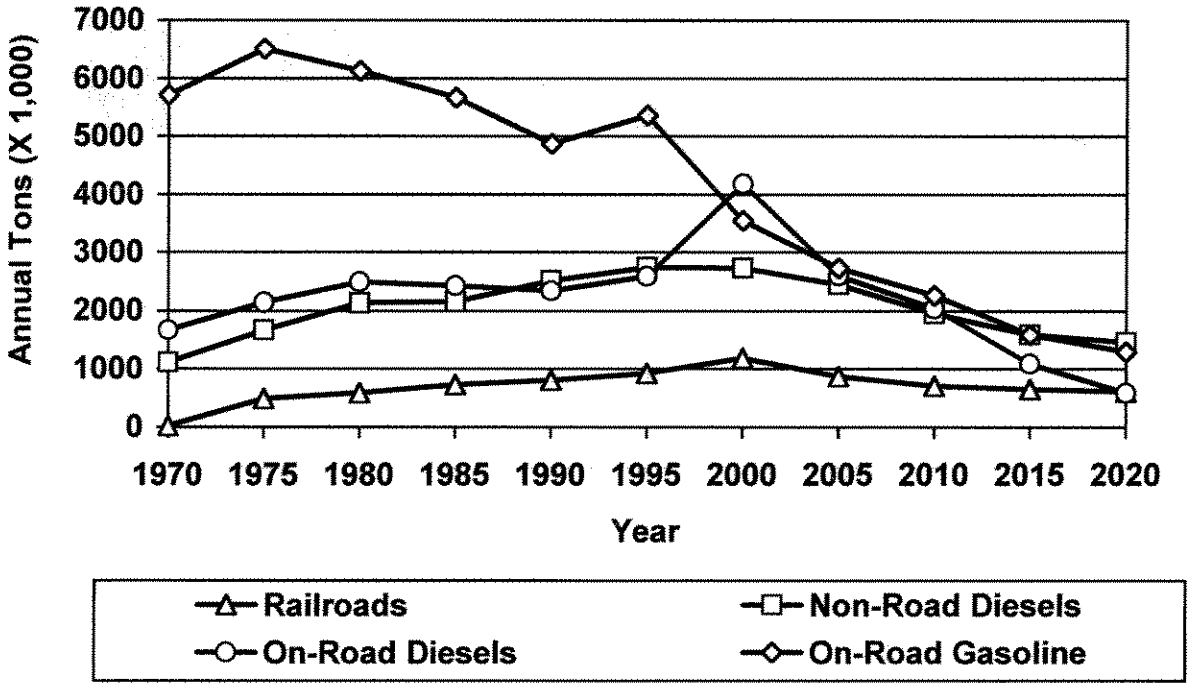
The proposal includes a second step of fuel controls to a 15-ppm limit on sulfur content that would apply in 2010. This additional reduction in sulfur levels will further reduce PM emissions from existing engines. More importantly, the ultra-low sulfur levels will make it possible for engine manufacturers to use advanced emission control systems that will achieve dramatic reductions in both PM and NOx emissions.

Source Emissions Over Time

Particulate Matter



Oxides of Nitrogen



Nationwide Emissions Estimates for On-Road Heavy-Duty Diesel Vehicles With Adopted National Controls

Particulate Matter (PM)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	131	--
2007	91	31%
2010	57	56%
2015	28	79%
2020	15	89%
2030	8	94%

Oxides of Nitrogen (NOx)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	4,181	--
2007	2,600	38%
2010	2,040	51%
2015	1,090	74%
2020	587	86%
2030	292	93%

Non-Methane Hydrocarbons (NMHC)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	282	--
2007	182	35%
2010	172	39%
2015	156	45%
2020	152	46%
2030	167	41%

Sources: U.S. Environmental Protection Agency. *Regulatory Impact Analysis: Control of Emissions of Air Pollution from Highway Heavy-Duty Engines.* July 2000; *Regulatory Impact Analysis: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements Rule.* December 2000.

Nationwide Emissions Estimates for Non-Road Heavy-Duty Diesel Vehicles With Adopted National Controls

Particulate Matter (PM)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	269	--
2005	239	11%
2010	195	28%
2015	175	35%
2020	170	37%

Oxides of Nitrogen (NOx)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	2,727	--
2005	2,451	10%
2010	1,954	28%
2015	1,599	41%
2020	1,464	46%

Non-Methane Hydrocarbons (NMHC)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	328	--
2005	260	21%
2010	193	41%
2015	152	54%
2020	138	58%

Sources: U.S. Environmental Protection Agency. *Final Regulatory Impact Analysis: Control of Emissions from Nonroad Diesel Engines*. August 1998. (Note: Emissions reflect conservative estimates using Bureau of Economic Analysis growth rates.)

Nationwide Emissions Estimates for Railroads With Adopted National Controls

Particulate Matter (PM) (thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	30	--
2005	29	3%
2010	25	17%
2015	23	23%
2020	21	30%

Oxides of Nitrogen (NOx) (thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	1,191	--
2005	869	27%
2010	710	40%
2015	657	45%
2020	611	49%

Hydrocarbons (HC) (thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	47	--
2005	45	4%
2010	40	15%
2015	37	21%
2020	35	26%

Sources: U.S. Environmental Protection Agency, Office of Mobile Sources. *Locomotive Emission Standards: Regulatory Support Document*. April 1998.

Nationwide Emissions Estimates for On-Road Light-Duty Vehicles With Adopted National Controls

Particulate Matter (PM)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	39	--
2007	17	56%
2010	17	56%
2015	18	54%
2020	19	51%
2030	21	46%

Oxides of Nitrogen (NOx)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	3,549	--
2007	2,725	23%
2010	2,263	36%
2015	1,589	55%
2020	1,297	63%
2030	1,274	64%

Volatile Organic Compounds (NMHC)
(thousand tons per year)

Calendar Year	Emissions	Percent Reduction
2000	3,202	--
2007	2,283	29%
2010	2,008	37%
2015	1,800	44%
2020	1,775	45%
2030	2,040	36%

Sources: U.S. Environmental Protection Agency. *Tier 2/Sulfur Regulatory Impact Analysis*. December 1999.

EPA On-Road Heavy-Duty Diesel Engine Standards

EPA Exhaust Emission Certification Standards for Heavy-Duty Diesel Engines (grams per brake horsepower-hour)					
Model Year	**NMHC+NOx**	**NOx**	**HC**	**CO (1)**	**Particulates**
1984-87	**N/A**	**10.7**	**1.3**	**15.5**	**N/A**
1988-89	**N/A**	**10.7**	**1.3**	**15.5**	**0.60**
1990	**N/A**	**6.0**	**1.3**	**15.5**	**0.60**
1991-93	**N/A**	**5.0**	**1.3**	**15.5**	**0.25**
1994-97	**N/A**	**5.0**	**1.3**	**15.5**	**0.10**
1998-03	**N/A**	**4.0**	**1.3**	**15.5**	**0.10**
2004-06 (2)	**2.5**	**N/A**	**N/A**	**15.5**	**0.10**
2007+ (3)	N/A	**0.2**	**0.14**	**15.5**	**0.01**

(1) Heavy-duty diesel engines certify well below the CO standard. Generally in the range of 1-2 g/bhp-hr.

(2) Manufacturers have the choice of certifying engines to either 2.5 g/bhp-hr NMHC + NOx with a limit of 0.5 g/bhp-hr on NMHC or 2.4 g/bhp-hr NMHC + NOx.

(3) NOx & HC standards apply to 50% of new engines for 2007-2009 and 100% thereafter. Particulate standard applies to 100% of new engines in 2007 and after.

Note: Particulate standards for new urban bus engines equal 0.10 g/bhp-hr in 1993, 0.07 g/bhp-hr in 1994-1995, and 0.05 g/bhp-hr beginning in 1996. NMHC = non-methane hydrocarbons

Diesel Sulfur Requirements

ON-ROAD DIESEL:

- Pre-1993 federal on-road diesel standard.....5000 ppm
- Pre-1993 on-road diesel sulfur average.....2500 ppm

- Current federal on-road diesel standard (post-1993).....500 ppm
- Alaska and certain U.S. territory exemption standard.....5000 ppm
- Current federal on-road diesel sulfur average.....350 ppm
- Current CARB on-road diesel sulfur average.....140 ppm

- 2006 federal on-road diesel standard.....15 ppm

NON-ROAD DIESEL:

- Current ASTM non-road diesel standard.....5000 ppm[1]
- Current non-road diesel sulfur average excluding rail.....2500-3500 ppm
- Current non-road diesel sulfur average for rail.....3420 ppm[2]
- ASTM standard for rail diesel fuel .....5000-20000 ppm[3]

GASOLINE:

- Current gasoline sulfur average.....300 ppm

- 2004 federal gasoline sulfur standard .....30 ppm

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[1] ASTM specification D975.
[2] Department of Energy figure based upon 1996 API/NPRA Survey. Ranges were 4250 ppm sulfur content in PADD 1; 3250 ppm sulfur content in PADD 3; and 2810 ppm sulfur content in PADD 4.
[3] Department of Energy figures but figures may be outdated according to DOE.

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[OAR-2002-0040, FRL-]

RIN 2060-A174

National Emission Standards for Hazardous Air Pollutants: Engine Test Cells/Stands.

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national emission standards for hazardous air pollutants (NESHAP) for engine test cells/stands. We have identified engine test cells/stands as major sources of hazardous air pollutants (HAP) such as toluene, benzene, mixed xylenes, and 1,3-butadiene. The final NESHAP will implement section 112(d) of the Clean Air Act (CAA), which requires all major sources of HAP to meet emission standards reflecting the application of the maximum achievable control technology (MACT). The final NESHAP will protect public health by reducing exposure to air pollution.

EFFECTIVE DATE: The final rule is effective [INSERT DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]. The incorporation by reference of certain publications listed in today's final rule is approved by the Director of the Office of the Federal Register as of [INSERT DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

ADDRESSES: Docket No. OAR-2002-0040 contains supporting documentation used in developing the final rule. The docket

is located at the Air and Radiation Docket and Information Center in the EPA Docket Center, (EPA/DC) EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC and may be inspected from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays.

FOR FURTHER INFORMATION CONTACT: Mr. Jaime Pagán, Combustion Group, Emission Standards Division (C439-01), U.S. EPA, Research Triangle Park, NC 27711; telephone number (919) 541-5340; facsimile number (919) 541-0942; electronic mail (e-mail) address pagan.jaime@epa.gov.

SUPPLEMENTARY INFORMATION:

Regulated Entities. Subcategories and entities potentially regulated by this action include those listed in Table 1 of this preamble. In general, engine test cells/stands are covered under the Standard Industrial Classification (SIC) and North American Industrial Classification System (NAICS) codes listed in Table 1 of this preamble. However, cells/stands classified under other SIC or NAICS codes may be subject to the final standards if they meet the applicability criteria. Not all cells/stands classified under the SIC and NAICS codes in Table 1 of this preamble will be subject to the final standards because some of the classifications cover products outside the scope of the final NESHAP for engine test cells/stands.

Table 1. Subcategories Potentially Regulated by the NESHAP for Engine Test Cells/Stands

Test Cells/Stands Used for Testing	SIC Codes	NAICS Codes
Internal Combustion Engines with rated power of 25 horsepower (hp) (19 kilowatts [kW]) or more	3531, 3519, 3523, 3559, 3599, 3621, 3711, 3714, 4226, 4512, 5541, 7538, 7539, 8299, 8711, 8731, 8734, 8741	333120, 333618, 333111, 333319, 335312, 336111, 336120, 336112, 336992, 336312, 336350, 481111, 811111, 811118, 611692, 54171, 541380
Internal Combustion Engines with rated power of less than 25 hp (19 kW)	3519, 3621, 3524, 8734	333618, 336399, 335312, 332212, 333112, 541380
Combustion Turbine Engines	3511, 3566, 3721, 3724, 4512, 4581, 7699, 9661	333611, 333612, 336411, 336412, 481111, 488190, 811310, 811411, 92711
Rocket Engines	3724, 3761, 3764, 9661, 9711	336412, 336414, 336415, 54171, 92711, 92811

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your engine test cell/stand is regulated by this action, you should examine the applicability criteria in §63.9285 of the final rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding FOR FURTHER INFORMATION CONTACT section.

Electronic Docket (E-Docket). The EPA has established an official public docket for this action under Docket ID No. OAR-2002-0040. The official public docket is the collection

United States
Environmental Protection
Agency

Office Of Air Quality
Planning And Standards
Research Triangle Park, NC 27711

EPA-453/R-99-001
March 1999

Air

RESIDUAL RISK
Report to Congress

Available at: http://www.epa.gov/ttn/oarpg/t3/reports/risk_rep.pdf

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5.3 Residual Risk Assessment Strategy Design

Using the context provided by Congress in section 112(f) and the methodologies, data, and assessment process for air toxics described in more detail in previous sections of this Report, EPA has developed a residual risk framework. The framework for residual risk analysis may be described in several steps: identifying management goals that reflect the legal requirements, problem formulation, data collection, exposure and toxicity assessment, risk characterization, and risk management/risk reduction. **Exhibit 20** presents a flowchart of the general residual risk analysis process. In short, the framework calls for an iterative, tiered assessment of the risks to humans and ecological receptors through both direct and multipathway exposures to HAPs, leading ultimately to a decision on whether additional emission reductions are needed for individual source categories. This type of iterative or tiered approach is consistent with the NRC (NRC 1994) and Risk Commission (CRARM 1997a,b) reports written pursuant to the 1990 CAA Amendments.

The first component of the residual risk framework is that EPA state its risk management goals, which are identified at a broad level in the CAA legislation:

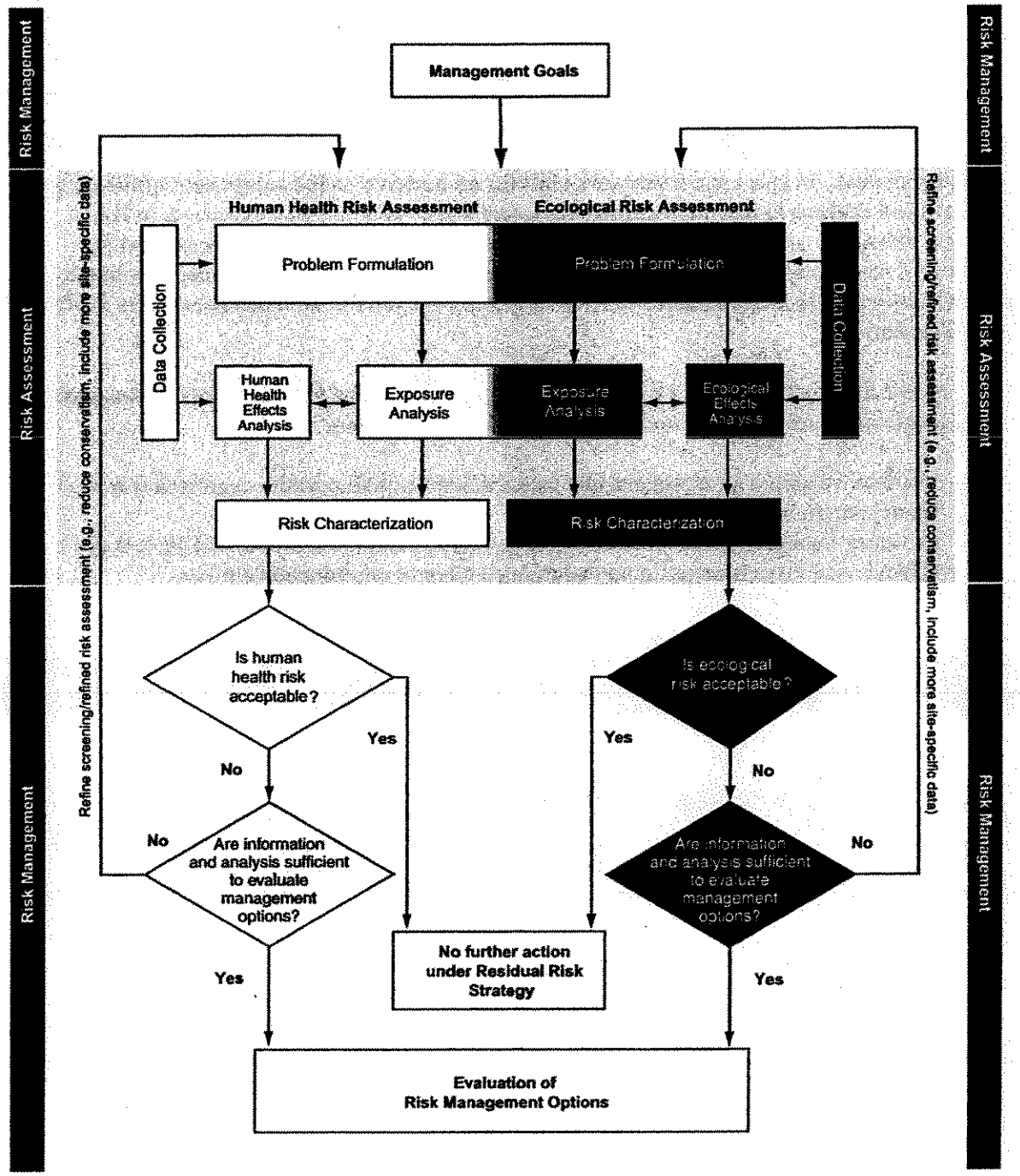
- to achieve a level of emissions that ensures that the public health is protected with an ample margin of safety; and
- to ensure, taking into account cost, energy, safety, and other relevant factors, that the above level of emissions do not result in an adverse environmental effect.

EPA may decide to translate those legislative objectives into more specific management goals. Those management goals help direct the problem formulation phase of both the human health and ecological risk assessments.

For both the human health and ecological risk assessments, the basic premise of the tiered approach is that the early analysis is generally screening in nature. This analysis is designed to be relatively simple, inexpensive, and quick, use existing data and defined decision criteria, and rely on models with simplifying, conservative assumptions as inputs. These simple default assumptions are conservative in nature to ensure that a lack of data does not result in overlooking a source category that may pose significant risk. A more refined analysis requires more resources and data, but the results are more certain and less likely to overestimate risk. While the strategy is represented generally as having two tiers (screening and refined), additional analyses might be performed within one or both tiers. The key point is that the additional analyses of increasing complexity (and resource requirements) will be performed in a manner EPA determines is cost-effective for a given source category. Where the available information indicates the potential for substantial risks, a more refined analysis might be implemented at the start.

In using this approach, EPA will follow the recommendation of the NRC (1994) which stated "EPA should use bounding estimates for screening assessments to determine whether

EXHIBIT 20
OVERVIEW OF RESIDUAL RISK FRAMEWORK
ITERATIVE APPROACH



further levels of analysis are necessary. For further analysis, the committee supports EPA's development of distributions of exposures based on actual measurements, results from modeling, or both." The EPA believes that the analysis being evaluated for use in screening-level assessments does, in most cases, produce bounding estimates. However, if this iteration is so conservative that source categories will not be screened out for further consideration under the residual risk program, an additional iteration that uses less conservative assumptions will be evaluated and used. In the refined analysis, the exposure assessment will provide distributions of exposures and a probabilistic distribution of risk will be estimated.

As shown in Exhibit 20, the human health and ecological risk assessments for a source category are organized into three phases: (1) the problem formulation phase, in which the context and scope of the assessments are specified; (2) the analysis phase, in which the HAPs' toxicity and exposure to humans or ecological receptors are evaluated; and (3) the risk characterization phase, in which the toxicity and exposure analyses are integrated to assess the nature, magnitude, and uncertainty of any risks. Also as illustrated in Exhibit 20, the problem formulation and analysis phases of the human health and ecological risk assessments will partially "overlap" in that certain pathways of concern for humans (e.g., inhalation of outdoor air, consumption of contaminated fish) will in some cases also be pathways of concern for some ecological receptors (e.g., terrestrial wildlife, fish-eating wildlife). The development and conduct of risk assessments by this three-phased approach are described more fully in the Agency's ecological risk assessment framework (EPA 1992b) and guidelines (EPA 1998d). Although described in those documents in the context of ecological risk assessment, the basic phased approach is also appropriate for human health risk assessment.

Following the risk characterization phase of each assessment, a decision step occurs. How much the risk estimates can be improved by refining the analysis is an important consideration at this step. If no unacceptable risks have been identified for human health or environmental effects and the analyses are adequate to support those conclusions (i.e., risks are acceptable), then no further action is required under this process, and the results of the risk assessment should be documented. If human health or environmental risks appear unacceptable, and if sufficient information is available to evaluate management options considering risks, costs, economic impacts, feasibility, energy, safety, and other relevant factors, the risk assessment is complete (i.e., no additional iterations are needed), and the process moves to risk management decision-making. If the information from the risk characterization is insufficient to fully evaluate risk management options, the residual risk assessment should proceed to a still more refined analysis.

5.3.1 Stakeholder Involvement

As the federal government pursues its goals of expanded stakeholder involvement in risk management decisions, consistent with recent recommendations of the Risk Commission (CRARM 1997a,b) and the NRC (NRC 1996), EPA is committed to involving stakeholders, as appropriate, at various stages throughout the residual risk analysis process. The NRC's

Vote Record

Committee on Environment and Natural Resources

Date: 5/28/03

Moved by: ZIEN Seconded by: STEPP

AB_____ SB_____ Clearinghouse Rule 02-097

AJR_____ SJR_____ Appointment_____

AR_____ SR_____ Other UNSPEC. MODIFICATIONS

A/S Amdt _____

A/S Amdt _____ to A/S Amdt _____

A/S Sub Amdt _____

A/S Amdt _____ to A/S Sub Amdt _____

A/S Amdt _____ to A/S Amdt _____ to A/S Sub Amdt _____

Be recommended for: UNSPECIFIED MODIFICATIONS

☐ Passage ☐ Adoption ☐ Confirmation ☐ Concurrence ☐ Indefinite Postponement
☐ Introduction ☐ Rejection ☐ Tabling ☐ Nonconcurrence

Committee Member	Aye	No	Absent	Not Voting
Senator Neal Kedzie	☒	☐	☐	☐
Senator Cathy Stepp	☒	☐	☐	☐
Senator David Zien	☒	☐	☐	☐
Senator Fred Risser	☒	☐	☐	☐
Senator Robert Wirch	☒	☐	☐	☐
Totals:	5	0	___	___

☒ Motion Carried ☐ Motion Failed