MMBtu, 11,000,000 MMBtu, and 12,000,000 MMBtu, respectively. The other units designated in this plan are Labadie units 1, 2, 3, and 4, and Rush Island units 1 and 2. The designated representative is Paul A. Agathen.

Rush Island in Missouri: units 1 and 2 will each comply with a NO_X averaging plan for 1996–1999. For each year under the plan, the actual annual average emission rate for NO_X for each of these units shall not exceed the alternative contemporaneous annual emission limitation of 0.31 lbs/MMBtu for unit 1, and 0.60 lbs/MMBtu for unit 2. The actual annual heat input for unit 1 shall not be less than the annual heat input limit of 34,000,000 MMBtu; the actual annual heat input for unit 2 shall not be greater than the annual heat input limit of 31,000,000 MMBtu. The other units designated in this plan are Labadie units 1, 2, 3, and 4, and Meramac units 1, 2, 3, and 4. The designated representative is Paul A. Agathen.

Dated: August 10, 1995.

Larry F. Kertcher,

Acting Director, Acid Rain Division, Office of Atmospheric Programs, Office of Air and Radiation.

[FR Doc. 95–20426 Filed 8–16–95; 8:45 am]

BILLING CODE 6560–50–P

[FRL–5276–4]

Notice of Agency Completion of Study Regarding Heavy-Duty Engine Rebuilding Practices and Availability of Documents

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of completion of study and availability of documents.

SUMMARY: EPA has completed a study of heavy-duty engine rebuilding practices as required by Section 202(a)(3)(D) of the Clean Air Act (CAA), and the results of that study are now available to the public.

Based on this study, EPA takes the current view that regulations are not warranted to ensure that rebuilt current-technology heavy-duty engines meet the certification emission standards that applied to the engines when new. EPA retains broad authority under section 202(a)(3)(D) of the CAA to impose requirements controlling heavy-duty engine rebuilding practices, and will continue to analyze whether requirements are warranted to protect public health or welfare.

FOR FURTHER INFORMATION CONTACT: Tom Stricker, Environmental Engineer, Manufacturers Operations Division (6405–J), U.S. Environmental Protection Agency, Washington, D.C. 20460, Telephone: (202) 233–9322. The available reports may be obtained by contacting the person identified above.

SUPPLEMENTARY INFORMATION:

I. Introduction

Section 202(a)(3)(D) of the amended Clean Air Act (Act) requires the Administrator to study the practice of rebuilding heavy-duty engines (HDE's) and the impact rebuilding has on engine emissions. On the basis of that study and other information, EPA may prescribe requirements to control rebuilding practices, including emissions standards, ''* * * which in the Administrator's judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare taking costs into account.'' 42 U.S.C. 7521(a)(3)(D). The required study has been completed and is now available to the public. The study findings are set forth in three documents: ''Heavy-Duty Engine Rebuilding Practices'', ''Heavy-Duty Engine Rebuilding Practices—Results of Emissions Testing'', and Heavy-Duty Engine Rebuilding Practices—Executive Summary''.

II. Background

EPA has long been aware that many HDE's, specifically heavy heavy-duty diesel engines (HDDE's) and medium HDDE's, accumulate mileage far exceeding their statutory useful-life mileage [1], in large part due to engine rebuilding. Many heavy HDDE's accumulate up to one million miles or more before retirement. As a result, heavy HDDE's and medium HDDE's are unregulated for a large part of their actual lives.

EPA conducted the statutorily required study in two phases described below:

Phase I: Conduct a study of the current heavy-duty rebuild market, including identifying the key players in the rebuild industry, the current practices employed by rebuilders, the frequency of rebuilds and the types of engines being rebuilt. The primary data collection source utilized was a Request for Information published in the **Federal Register**.[2] Phase I was completed in January 1992, and a report was circulated to various interested parties within government and industry.

Phase II: Using the findings of Phase I, conduct emissions testing of various rebuilt heavy-duty engines. EPA solicited comments from industry in the development of the final testing plan. A draft report was completed in May, 1994 and made available to various interested parties.

III. Phase I: Rebuild Study Findings

EPA found a marked difference in rebuild practices among the various types of heavy-duty diesel engines. Heavy and medium heavy-duty diesel engines are usually rebuilt whereas light heavy-duty diesel engines and heavy-duty gasoline engines are seldom rebuilt.

EPA determined that heavy HDDE's are rebuilt every 300,000–400,000 miles. These large diesel engines are designed to be rebuilt, may undergo up to three or more rebuilds in a lifetime, and generally accumulate one million miles or more before scrappage.

EPA estimates that 220,000–250,000 heavy HDDE's (out of a total heavy HDDE population of approximately 1.5 million) are rebuilt each year by fleets, independent garages, independent remanufacturing centers, original equipment (OE) dealers, OE remanufacturing facilities and others. Critical emissions components such as the fuel injection pump, fuel injectors, cylinder head, and cylinder kits (piston, rings and liner) are generally rebuilt, replaced or calibrated during a typical rebuild.

EPA found that medium HDDE's are generally rebuilt only once, typically at around 200,000 miles. Significant mileage accumulation after rebuild is possible since most of these engines operate for about 300,000 miles before scrappage.

EPA estimates that approximately 67,000 medium HDDE's (out of a total medium HDDE population of approximately 900,000) are rebuilt each year by fleets, independent garages, independent remanufacturing centers, OE dealers, and OE remanufacturing facilities. As with heavy HDDE's, most critical emission components are serviced during rebuild.

Due to the significant number of rebuilds performed on heavy HDDE's and medium HDDE's and the likelihood of significant mileage accumulation after rebuild, EPA determined quantitative emission data from these categories of engines were needed to effectively determine the impact of rebuilding on engine emissions.

Light heavy-duty diesel engines and heavy-duty gasoline engines (HDGE's) are quite different from medium HDDE's and heavy HDDE's. EPA found that light HDDE's and HDGE's are not frequently rebuilt. Most engine manufacturers do not sponsor remanufacturing programs

[1] See 40 CFR 86.085–2 for useful-life definitions.

[2] See ''Request for Information Concerning Heavy-Duty Rebuild Study'', 56 FR 13825 (Apr. 4, 1991).

for these engines because of small market demand.

EPA estimates that about 40,000 HDGE's are rebuilt each year out of a population of about four million (about 1 percent annually). EPA could not estimate the number of light HDDE rebuilds because so few of these engines are rebuilt that data were not available. Rebuilds on these two categories of engines generally result if engine failure occurs early in the life of the vehicle, and rebuilding the engine is financially advantageous compared to purchasing a new vehicle or engine. Once rebuilt, additional mileage accrued by these engines is generally limited by the vehicle life, which typically does not substantially exceed the statutorial useful-life of 110,000 miles. Due to the few number of rebuilds performed on these engines, no emissions data were generated by EPA.

IV. Phase II: Rebuilt Engine Test Findings

EPA conducted emissions testing of rebuilt medium HDDE's and heavy HDDE's to determine the impact of rebuilding on engine emissions. Mack Trucks, Inc. (Mack) performed similar testing. The results of EPA and Mack testing are shown in Tables 1 and 2 below. A complete description of each test program is contained in an EPA report entitled ''Heavy-Duty Engine Rebuild Study—Results of Emissions Testing''.

Every engine tested, when rebuilt, demonstrated emissions of hydrocarbons (HC), carbon monoxide (CO), oxides of nitrogen (NO_X) and particulate matter (PM) below the new engine certification standards applicable when each engine was new. Five engines emitted higher than the applicable standard for smoke. As discussed in the above referenced report, the smoke emissions measured by EPA are considered worst-case. In general, smoke emissions are becoming less of a concern as PM standards become more stringent.

Based on the available data, no substantial difference in emissions performance was noted based on the party that rebuilt the engine—OE manufacturer, dealer, independent rebuild facility or fleet. Similarly, no significant emissions performance difference was noted between OE and aftermarket parts used to rebuild engines.

V. Advanced Diesel Engine Technologies

Engines contained in this study ranged from model year 1983 through 1990, inclusive. In general, heavy-duty diesel engines originally produced during this timeframe used mechanical fuel injection control, turbochargers and air-to-water or air-to-air aftercooling. Beginning in the late 1980's and early 1990's, advanced technologies such as electronic engine controls were incorporated into many engine designs to increase durability, reliability and emissions control (EPA tested one electronically controlled engine as part of this study). In addition to electronic controls, future engines may be equipped with other advanced control measures not present on most current engines, such as exhaust gas recirculation (EGR), aftertreatment (catalyst or particulate trap), advanced turbocharger geometry, and other engine modifications. At present, it is unknown how these future technologies will be addressed during rebuild and what affect rebuilding these components will have on engine emissions. Additionally, as future emission standards become more stringent, it may become more difficult for rebuilders to achieve the same ''like-new'' emissions levels demonstrated by the current-technology engines tested in EPA's study.

VI. Conclusion

Based on the study findings, regulations to control rebuilding practices applicable to current-technology heavy-duty engines are not warranted to ensure that rebuilt engines meet the emission certification standards that applied to the engines when new. The study demonstrated that current-technology rebuilt engines generally emit below the standards applicable when such engines were new. While rebuilding extends the actual life of engines, it does not appear that the emissions characteristics of current engines deteriorate as a result of rebuild. Furthermore, most emissions critical components are currently replaced or adjusted during a typical engine rebuild.

EPA retains broad authority to prescribe requirements to control heavy-duty engine rebuilding practices, and EPA will continue to analyze whether such requirements are warranted to protect public health or welfare.

Dated: August 7, 1995.

Carol M. Browner,

Administrator.

TABLE 1.—RESULTS OF EPA HEAVY-DUTY REBUILT ENGINE TESTING

Engine description	HC (g/bhphr)	CO (g/bhphr)	NO_x (g/bhphr)	Part. (g/bhphr)	Smoke*		
					''A''	''B''	''C''
OE Remanufacture (After Rebuild):							
1987 Cummins NTC 315	0.778	5.000	6.140	0.424	*24.7*	*18.4*	41.7
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)
1986 Caterpillar 3406B	0.708	3.840	8.203	0.603	*21.0*	10.1	32.2
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)
Fleet Rebuild (After Rebuild):							
1990 Cummins NTC 365	0.896	3.620	5.782	0.430	8.4	11.2	12.2
	(1.3)	(15.5)	(6.0)	(0.6)	(20)	(15)	(50)
1983 Cummins NTC 400	0.597	4.540	4.835	0.476	18.7	6.8	26.6
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)
1986 Cummins LTA10	1.293	6.270	4.288	0.902	*43.2*	*18.7*	*68.9*
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)
Simulated In-Frame Rebuild (After Rebuild):							
1989 Cummins NTC 365	0.752	3.000	5.736	0.286	10.0	*16.3*	16.8
	(1.3)	(15.5)	(10.7)	(0.6)	(20)	(15)	(50)
1989 Detroit Diesel Series 60	0.370	3.810	8.697	0.329	15.4	10.1	24.5
	(1.3)	(15.5)	(10.7)	(0.6)	(20)	(15)	(50)
1986 Caterpillar 3406B	0.180	2.680	5.988	0.407	19.2	11.7	36.6
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)

TABLE 1.—RESULTS OF EPA HEAVY-DUTY REBUILT ENGINE TESTING—Continued

Engine description	HC (g/bhphr)	CO (g/bhphr)	NO_x (g/bhphr)	Part. (g/bhphr)	Smoke*		
					"A"	"B"	"C"
Independent Remanufacture (After Rebuild):							
1987 General Motors 8.2T	0.823	2.100	7.280	0.451	12.5	8.6	24.8
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)
1987 Navistar DT466	0.559	2.560	7.435	0.343	10.6	9.2	17.8
	(1.3)	(15.5)	(10.7)	(na)	(20)	(15)	(50)

*"A" = Acceleration; "B" = Lugging; "C" = Peak.
Applicable standard shown in parentheses ( ) under each emission result.
Italic type indicates emissions above applicable standard when such engine was new.

TABLE 2.—RESULTS OF MACK TRUCKS, INC. HEAVY-DUTY REBUILT ENGINE TESTING

Engine description	HC (g/bhphr)	CO (g/bhphr)	NO_X (g/bhphr)	Part. (g/bhphr)	Smoke*		
					"A"	"B"	"C"
OE Remanufacture (After Rebuild):							
1987 Mack E6–350	0.29	2.97	6.27	0.31	10.5	3.4	18.8
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)
1985 Mack EM6–300	0.59	7.46	6.90	1.26	*62.1*	5.2	*98.8*
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)
1987 Mack EM6–237	0.56	2.37	8.99	0.75	17.6	10.9	35.8
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)
Fleet Rebuild (After Rebuild):							
1984 Mack EM6–300	0.21	1.56	8.27	0.37	8.1	3.6	14.8
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)
1986 Mack E6–300	0.16	2.69	8.82	0.23	9.1	3.1	17.0
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)
Simulated In-Frame Rebuild (After Rebuild):							
1987 Mack E6–350	0.21	2.18	6.32	0.42	10.6	10.4	19.4
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)
1984 Mack EM6–300	0.28	2.10	7.58	0.44	10.4	5.4	19.5
	(1.3)	(15.5)	(10.7)	(NA)	(20)	(15)	(50)

*"A" = Acceleration; "B" = Lugging; "C" = Peak.
Applicable standard shown in parentheses ( ) under each emission result.
Italic type indicates emissions above applicable standard when such engine was new.

[FR Doc. 95–20423 Filed 8–16–95; 8:45 am]
BILLING CODE 6560–50–P

[FRL–5277–8]

Intent to Grant an Exclusive Patent License

AGENCY: Environmental Protection Agency.

ACTION: Notice of intent to grant an exclusive patent license.

SUMMARY: Pursuant to 37 CFR Part 404, EPA hereby gives notice of its intent to grant an exclusive, royalty-bearing, revocable license to practice the invention described and claimed in the patent listed below, all corresponding patents issued throughout the world, and all reexamined patents and reissued patents granted in connection with such patents, to the University of Maryland, College Park, Maryland. The patent is:

U.S. Patent No. 5,406,805 entitled "Tandem Refrigeration System," issued April 18, 1995.

The invention was announced as being available for licensing in the April 26, 1995 issue of the **Federal Register** (60 Fed. Reg. 20490, 20491) as U.S. Patent Application No. 08/150,996, filed November 12, 1993. The University of Maryland is joint owner of the patent by assignment from its employee inventors. The proposed exclusive license will contain appropriate terms, limitations and conditions to be negotiated in accordance with 35 U.S.C. 209 and the U.S. Government Patent Licensing Regulation at 37 CFR Part 404.

EPA will negotiate the final terms and conditions and grant the exclusive license, unless within 60 days from the date of this Notice EPA receives, at the address below, written objections to the grant, together with supporting documentation. The documentation from objecting parties having an interest in practicing the above patent should include an application for exclusive or nonexclusive license with the information set forth in 37 CFR 404.8. The EPA Patent Counsel and other EPA officials will review all written responses and then recommend to the Assistant Administrator for Research and Development, for the U.S. Environmental Protection Agency, or his designee, who has been delegated the authority to issue patent licenses under 35 U.S.C. 207, whether to grant the exclusive license.

DATES: Comments to this notice must be received by EPA at the address listed below by October 16, 1995.

FOR FURTHER INFORMATION CONTACT: Alan Ehrlich, Patent Attorney, Office of General Counsel (Mail Code 2379), U.S. Environmental Protection Agency, Washington, D.C. 20460, Telephone (202) 260–7510.

Scott Fulton,

Acting General Counsel.

[FR Doc. 95–20420 Filed 8–16–95; 8:45 am]
BILLING CODE 6560–50–P