

#3:

D-96-01

II-A-1104

RELEVANT COMMUNICATIONS BETWEEN
EPA, FORD AND GM.

ONAC - 81-02

NOISE EMISSIONS #3
STANDARDS

Environmental Activities Staff
General Motors Corporation
General Motors Technical Center
Warren, Michigan 48090

Betsy ANCKER-JOHNSON
Vice President

October 2, 1980

Mr. Douglas M. Costle
Administrator - A100
U.S. Environmental Protection Agency
Washington, D.C. 20460

Dear Mr. Costle:

Medium and Heavy Truck Noise Regulation

On August 14, 1980, General Motors submitted a letter (copy attached) to the Office of Noise Abatement and Control regarding deferral of the 1982 medium and heavy truck noise standard until 1984. This letter contained further justification of GM's original request made in Mr. T. A. Murphy's letter to President Carter on June 10, 1980.

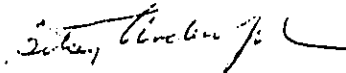
Since that time, a petition for reconsideration of the 80 dB standard was submitted by International Harvester on September 2, 1980. For reasons unclear to us, we have been informed that this action on the part of International Harvester precludes timely consideration of the General Motors request for a two-year delay in enforcing the 80 dB truck noise standard.

The GM request can be, and should be, considered separately from the IH petition. In fact, if the deferral is granted, it means, for 1982 and 1983, the issues raised in the IH petition for reconsideration.

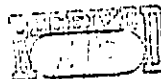
As noted in the attached letter, the timing of this deferral is critical if maximum advantage is to be realized. The spending race to attain the 80 dB level for trucks has been accelerated beginning this month. Therefore the advantage to GM will rapidly be reduced as the approximate \$6 million of deferred expenditure is dissipated day by day following October 1, 1980.

On this basis, we respectfully request your personal review of our request at this time.

Sincerely yours,



Att.



#3



USG-350-80-19

Environmental Activities Staff
General Motors Corporation
General Motors Technical Center
Warren, Michigan 48090

August 14, 1980

Mr. Henry E. Thomas, Director
Standards and Regulations Division (ANR-490)
Office of Noise Abatement and Control
U. S. Environmental Protection Agency
Washington, DC 20460

Dear Mr. Thomas:

Medium and Heavy Truck Noise Regulations

In a letter to President Carter on June 10, 1980, Mr. T. A. Murphy, Chairman of General Motors, requested review of a number of government regulations impacting the automobile industry. Included in the list of regulations for which General Motors requested a reappraisal was the EPA regulation requiring that all medium and heavy trucks meet a noise standard of 80 dB starting January 1, 1982.

General Motors requested that the effective date of this noise standard be delayed until January 1, 1984, in order that hardware changes for noise and heavy duty exhaust emissions control can be installed at the same time. The EPA has requested that General Motors further explain the rationale for this request; it is the purpose of this letter to submit additional information.

The advantages of deferring the effective date of the 1982 noise standard until 1984 are summarized as follows:

1. Engineering costs and capital investment are deferred until a later date. This would help alleviate critical cash flow problems caused by the requirement to redesign and retool a new product line of more fuel efficient automobiles.
2. In certain cases, elimination of engineering cost will result from the deferment due to the elimination of the 1982 noise control design cycle. Otherwise, a second noise control design cycle in 1984 will take place to accommodate air induction and exhaust system changes which will be required for exhaust emissions reductions scheduled for 1984.

In order to meet the 80 dB noise standard scheduled for 1982, many naturally-aspirated diesel engines will be eliminated and turbocharged engines will be used almost exclusively. But in order to meet exhaust emission standards for 1984, all diesel engines will be turbocharged.

Furthermore, many features of the 1982 turbocharged engine will not be the same as for the 1984 turbocharged engine, and prudent engineering management suggests that designing the noise control hardware for the 1984 engine is the most efficient method of attaining the goal of lower emission and noise levels. Emission control changes in 1984 which will impact the then existing 1982 noise control package are as follows:

- o Air intake
- o Fuel injection
- o Combustion
- o Timing
- o Cooling
- o Exhaust

Changes to the 1984 engines will require, as a minimum, retesting of the product line to assure compliance to the noise standard then in effect. Until these engines are tested, we cannot precisely identify the extent of redesign for noise control that can be avoided if EPA does defer the 80 dB noise regulation until 1984. In order to avoid short-lived designs, both noise control and emission control changes should be made simultaneously.

There are two General Motors Divisions directly impacted by the noise and emission regulations: Detroit Diesel Allison Division and GMC Truck and Coach Division. To the degree possible at this time we have quantified the benefit of deferring the 80 dB noise regulation from 1982 until 1984 as follows:

GMC Truck & Coach Projected Sales Volume 1982

Truck Weight Class 4 through 8

<u>Engine Type</u>	<u>1982 Regulated Level</u>	
	<u>80 dB</u>	<u>83 dB</u>
Gasoline	39,250	39,250
Diesel	46,600	46,600
Naturally-aspirated	5,000	10,000
Turbocharged	41,600	36,600

It will be necessary to turbocharge 5000 additional engines for purposes of noise control alone, to meet an 80 dB noise standard in 1982.

Engineering costs at GMC Truck & Coach that could be deferred by delaying the 80 dB regulation amount to approximately \$3,000,000. This does not consider costs that can be eliminated by delaying the regulation because otherwise certain noise control design will need to be done twice, as explained above.

In addition, capital tooling costs of approximately \$600,000 attributable to the 80 dB regulation will be deferred.

Detroit Diesel Allison Division would also be impacted by deferring the 80 dB noise regulation because there are considerable expenditures associated with designing and building diesel engines to meet the 80 dB standard. Estimated costs that could be deferred by delaying the effective date of the regulation are as follows:

Engineering costs	\$1,250,000
Production tooling	\$ 950,000

In addition, the cost of recertifying the 8.2 liter naturally-aspirated engine for emissions would be eliminated. Changes being made to this engine for purposes of noise control to meet the 80 dB standard would require recertifying for exhaust emissions at a cost of \$150,000.

The 80 dB standard will eliminate the DDAD 6I-71N, 8V-71N and possibly the 6V-53T from the line of available truck engines. Other engines will be sold in-place of the 6I-71N and 8V-71N. However, in the case of the 6V-53T, there would not be an equivalent engine in the product line and it is estimated that 11 million dollars in sales will be lost to DDAD in the two-year period if in fact the engine must be dropped.

In summary, deferring the 80 dB regulation for two years will have the following estimated benefit for General Motors:

Costs deferred	\$ 5,800,000
Costs avoided (partial identification)	\$ 150,000

These estimates are based on a resolution of the proposed deferral by October 1, 1980.

If we can be of further assistance in providing information regarding this proposal, please feel free to call.

Sincerely,



Edwin G. Ratering, Director
Product Noise Control

7BJG/811



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D. C. 20460

OFFICE OF
AIR, NOISE, AND RADIATION

Ms. Betsy Ancker-Johnson
Vice President
General Motors Corporation
Warren, Michigan 48090

Dear Ms. Ancker-Johnson:

We have very carefully reviewed the information provided in the General Motors submission of August 14, 1980, which provided further data relative to the request of Mr. T. A. Murphy of June 10, 1980.

We have also completed our initial review of the petition of International Harvester of September 2, 1980. You were concerned that we delayed action on your request while we reviewed the International Harvester petition. However, we felt this was the correct procedure since were the IH petition granted, it would moot the GM request. We have not, however, granted the IH petition based on the information which we have received to date.

The information submitted in the GM letter of August 14 has left us with substantial questions. There appear to be essentially two cost areas associated with GM compliance with the 1982 medium and heavy truck noise regulation:

1. Turbocharging: You presently have projected a 1982 sales volume of 36,000 diesel-engined trucks which will be turbocharged even if the 80 dB level is deferred. To meet the 80 dB level an additional 5,000 engines will have to be turbocharged. The engineering cost which you associate with turbocharging the additional 5,000 engines is \$3 million. A substantial part of the GM rationale for the 80 dB deferral is that these same 5,000 engines will have to be turbocharged to comply with the 1984 air emission standards, and thus it is more cost effective to accomplish both environmental objectives simultaneously.

However, correspondence of Mr. T.M. Fisher, GM Director of Automotive Environs Control to Mr. Walsh of EPA, dated October 3, 1980, states with regard to the 1984 Heavy-Duty Engine Exhaust Emission Regulation,

"Since EPA's own tests show that current production (Fisher emphasis) diesel engines should have no difficulty complying with the 1984 emission standards we believe there is no demonstrated need for the complex and very expensive procedures EPA has adopted -- again representing a squandering of resources without measurable benefit."

We were under the impression from the earlier correspondence that GM would be forced to turbocharge the 5,000 engines of concern to comply with the 1984 emission standards but apparently these engines are already in compliance. If this is so, then the argument of delaying the 1982 noise limits to 1984 to dove-tail with the 1984 emission standards is not applicable.

Apparently, considerable numbers of GM diesel engines are turbocharged for other-than-noise-regulation compliance - that is, because of customer demand or improved performance. If this is so, there would appear to be benefits which would justify turbocharging beyond just complying with noise regulations, since turbocharging is offered and purchased by customers voluntarily. Accordingly, we presume that the \$3 million engineering cost might well be incurred, in whole or in part, because of customer demand for turbocharging. In addition, to the extent that the national goals of energy conservation and cleaner air are also served by turbocharging, the additional benefits to the country of GM's proceeding to meet the 1982 noise emission standard on time must also be weighed. I trust that GM is not prepared to state that the corporation will not and should not be producing and offering for sale in 1982 more than 36,600 turbo-charged diesel engines absent the 80 dB noise regulation.

Finally, your request amounts to a recommendation that we defer the entire 1982 truck noise regulation in order to smooth out design of 6% of your production line. This rather extreme solution seems far out of proportion to the nature of the problem which you describe.

2. Engine changes. You state that there are considerable expenditures associated with designing and building diesel engines to meet the 80 db standard (our emphasis).

Recognizing the major decisions associated with dropping an engine line, and the substantial lead time essential to such a decision, we are extremely surprised to hear that such a decision may still be under discussion at GM at this late date in planning for compliance with the 1982 noise regulations. This regulation has been on the books, as you know, since April of 1976.

Your correspondence, in fact, indicates that no decision has been made by GM to drop a major engine line primarily because of compliance with the 1982 noise regulations. It is thus unclear whether the engine change costs which you suggest may be incurred will in fact be incurred or alternatively be ascribed primarily to the noise regulation. Since these decisions do not appear to be firm, the timing of the EPA decision on deferring the 1982 standard does not appear to be financially crucial with regard to this aspect of your request.

-3-

On the basis of the foregoing, we do not see where a deferral of this very important regulation can be justified.

Sincerely yours,

David G. Hawkins
Assistant Administrator
for Air, Noise, and Radiation



Environmental Activities Staff
General Motors Corporation
General Motors Technical Center
Warren, Michigan 48090

August 14, 1980

Mr. Henry E. Thomas, Director
Standards and Regulations Division (ANR-490)
Office of Noise Abatement and Control
U. S. Environmental Protection Agency
Washington, DC 20460

Dear Mr. Thomas:

Medium and Heavy Truck Noise Regulations

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In order to meet the 80 dB noise standard scheduled for 1982, many naturally-aspirated diesel engines will be eliminated and turbocharged engines will be used almost exclusively. But in order to meet exhaust emission standards for 1984, all diesel engines will be turbocharged.

Furthermore, many features of the 1982 turbocharged engine will not be the same as for the 1984 turbocharged engine, and prudent engineering management suggests that designing the noise control hardware for the 1984 engine is the most efficient method of attaining the goal of lower emission and noise levels. Emission control changes in 1984 which will impact the then existing 1982 noise control package are as follows:

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Detroit Diesel Allison Division would also be impacted by deferring the 80 dB noise regulation because there are considerable expenditures associated with designing and building diesel engines to meet the 80 dB standard. Estimated costs that could be deferred by delaying the effective date of the regulation are as follows:

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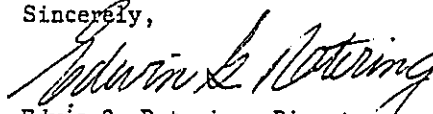
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If we can be of further assistance in providing information regarding this proposal, please feel free to call.

Sincerely,



Edwin G. Ratering, Director
Product Noise Control



D. SRAM

Ford Motor Company
Environmental and Safety
Engineering Staff

The American Road
Dearborn, Michigan 48121

July 15, 1980

Mr. Charles L. Elkins
Deputy Assistant Administrator
Noise Control Programs
U.S. Environmental Protection Agency
1921 Jefferson Davis Highway
ANR 471
Arlington, VA 20460

Dear Mr. Elkins:

On July 10, 1980, you asked me for a detailed analysis of Ford's anticipated \$10-20 million investment for the 1982 80 dB(A) noise limit, as outlined in our suggested regulatory modification package.

Ford currently has set aside a budget for this program with the following breakdown:

<u>Expenditures</u>	
(Mils)	
Tools	\$ 8
Facilities	1
Launch	(Less than .5)
Engineering	<u>6</u>
	<u>\$15</u>

Most of the above expenditure will be needed to quiet our diesel powered trucks. As you are aware, these vehicles (1980 models) currently emit noise between 77.9 and 81.3 dB(A). In order to ensure compliance with the 80 dB(A) standard, it will be necessary for Ford to design to a 77.3 dB(A) level. This will require some or all of the following measures:

- . Added/improved chassis and engine undershields
- . Retuned exhaust systems
- . Internal engine and transmission revisions
- . Modification to the cooling systems

3/6

Mr. Charles L. Elkins

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July 15, 1960

Further expenditures will be required for an engineering prove-out program which will require 26 prototype trucks and 11 rebuilds to validate more than 400 configurations. In addition to sound testing, other affected systems will require evaluation.

- . Wind tunnel testing for cooling system
- . Intake restriction tests for new intake systems
- . Exhaust back pressure tests for new exhaust systems
- . Jounce tests for vehicles with new noise shields

Our gasoline powered trucks which are already below the 80 dB(A) standard and near our in-house design objective will require an insignificant amount of the expenditure.

I trust this information is sufficient to answer all your questions. Please feel free to contact me if you need further information.

Sincerely,



D. R. Buist, Executive Engineer
Emissions, Fuel Economy and
Noise Certification

lmr

*See Mr. Council's notes
from 5/27/80
attached*

GENERAL MOTORS CORPORATION
GENERAL MOTORS BUILDING
DETROIT 48202

*b/c - orig. sent to
ANR. Mike Walsh
(see attached notes)*

E. M. ESTES
PRESIDENT

May 27, 1980

The Honorable
Douglas M. Costle
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Doug:

You will recall that in our meeting with you on May 9, Dr. Ancker-Johnson and I discussed with you the need for revising the permissible ozone level from the present .12 closer to .20. Subsequently, as we left the White House meeting on May 14, I mentioned that we were considering another method of approaching the problem.

Attached is a brief memorandum setting forth that alternative proposal. In essence, this would change the criteria for ozone standard compliance by allowing up to five excursions per year. I have also asked Dr. Ancker-Johnson to send you a list of EPA regulatory issues, both active and pending, which are unnecessarily costly and burdensome and could be modified without significant effect on air quality.

Sincerely,



National Ambient Air Quality Standards (NAAQS)

In 1970 Congress required that EPA establish ambient air quality standards for pollutants. In 1971, EPA set standards for, among others, oxidants (later changed to ozone), carbon monoxide (CO) and nitrogen dioxide (NO₂). Subsequently EPA was directed to review each of the standards at least every five years. The most recent review of the ozone (O₃) criteria and standard has recently been completed. The CO and NO₂ standards are still in the review process.

Studies, based on the same data used by EPA, indicate that with the possible exception of two or three cities the CO NAAQS will almost certainly be achieved nationwide, in 1987, solely by virtue of the improved emissions characteristics of the vehicle fleet which will be on the road in that year. Nothing more need be done.

Studies also indicate that, with the exception of about 12 cities, the O₃ NAAQS will be achieved, nationwide, in 1987, solely by virtue of (1) New Source Performance Standards (NSPS), and (2) the improved emissions characteristics of the vehicle fleet which will be on the road in that year.

With the exception of the 12 cities noted above, full compliance with the existing CO and O₃ standards will be achieved by 1987, nationwide, and without resort to vehicle inspection and maintenance programs (I/M), reasonably available control technology (RACT), or transportation control measures (TCM's).

Of the 12 cities which are not expected to meet the O₃ NAAQS by 1987 in the absence of I/M, RACT, or TCM's, only Los Angeles and possibly two or three others would be out of compliance if the criteria for determining compliance with the standard were amended to allow excursions for up to five days per year on the average, instead of only one day per year as presently allowed.

The effect of permitting excursions from the ozone standard on five days per year is comparable to the effect which would be achieved by changing the allowed exposure level from 0.12 ppm to 0.15 ppm. Given the considerable uncertainty which exists as to the health effects encountered at 0.25 ppm (or more than twice the current permissible level), a large margin of safety would still remain.

Recommended Action:

EPA should be directed to relax its criteria for determining compliance with the ozone standard by allowing up to five excursions per year on the average. The number of counties or cities which would have to impose some additional controls would be minimized as opposed to the almost universal nature of EPA's current "rare event" regulatory approach. Such a relaxation would

obviously diminish the national cost of achieving acceptable air quality goals which are indeed protective of public health. EPA should be required to provide more credible scientific justification before further regulatory action regarding hydrocarbon control is permitted.

The estimated billion dollar per year program for pursuit of too stringent CO and ozone ambient air quality standards through imposition of I/M programs should be curtailed in scope and to a level which satisfies the intent of the law, while still being cost/beneficial.

All retrofit and transportation control programs (except for one or two unique geographic situations) should be deleted from the State Implementation Plans as unnecessary to meet the ozone NAAQS by 1987.

Less stringent ambient standards which still protect the public health can be translated into less stringent emission standards for mobile and stationary sources. EPA must also reevaluate its present practice of establishing ambient standards based on "worst case" medical findings and "no risk" pollution levels.

All ambient air quality criteria and standards should be reviewed as warranted or at least every five years by an independent, objective group of experts. This group should employ a cost-benefit analysis as a mandatory step in its review and recommendations.

* * *

5/27/80

355742 H

Rec'd by hand 6/13/80

Environmental Activities Staff
General Motors Corporation
General Motors Technical Center
Warren, Michigan 48090

HS

BOB ANGLER-JOHNSON
Vice President

June 10, 1980

Al...
DE
DGE

The Honorable Douglas M. Costle
Administrator
U.S. Environmental Protection Agency
Waterside Mall, Room 3982
401 M Street, S.W.
Washington, DC 20460

Dear Mr. Costle:

As you know from Mr. Estes' recent letter and the previous discussion in your office, General Motors is recommending to President Carter a reappraisal of the need and scope for a number of EPA regulations, among other agencies' regulations directly affecting not only the automotive industry, but in some cases the whole economy.

As you also know, over 280,000 people in the automotive industry alone have indefinitely or temporarily lost their jobs. We in General Motors are cutting costs in every way we can short of jeopardizing our plans to produce more fuel efficient cars. Given the state of the nation's economy, it is safe to assume, that all businesses are working diligently to cut costs. We respectfully urge you to examine EPA's priorities, to see if some of your major regulations could be trimmed or, in some cases, eliminated without noticeably affecting EPA's important objectives. Let me reiterate: we at GM, along with all citizens, wish to see the environmental protection goals realized.

EPA is not constrained by statute, in many instances, to consider cost/effectiveness when promulgating regulations. Nevertheless, since environmental regulations in general can never insure zero risk, a subjective judgment of the cost of compliance is implicit each time a "safe" level of control is chosen. Furthermore, regulation beyond that which is required to achieve the goals is wasteful.

The attached papers identify 24 different areas covered by EPA regulations which General Motors believes are unnecessarily stringent or do not benefit the public enough to justify regulation. Attachment I is a listing of the subject areas;

SRD ANR-4

30 JUL 20 1980

Attachment II describes each very briefly; and Attachment III contains a terse discussion of the issues and recommended actions. All of these regulations could be changed by your administrative initiative. Your implementation of these recommendations would, we believe, enable both EPA and our personnel's talents and our resources to be applied in significant measure to more critical national needs than those addressed by these regulations.

Sincerely,



B. Ancker-Johnson

cc: Secretary Goldschmidt

[The following text is extremely faint and illegible due to poor copy quality. It appears to be a list of names or a distribution list.]

POOR COPY

355742 ^B

ATTACHMENT I
RECOMMENDED ACTIONS TO IMPROVE COST/EFFECTIVENESS
OF EPA REGULATIONS.
June 10, 1980

General Motors has long supported regulations where there is a demonstrable health or safety need not met in the marketplace. This paper lists many regulations which might be eliminated, or modified, as indicated, without a significant effect on health, safety or the environment. The cumulative effect of these changes would save consumers and taxpayers billions of dollars.

Section I. Changes the Executive Branch Could Implement

<u>Subject</u>	<u>Recommended Action</u>
1. National Ambient Air Quality Standards	Relax the definition of "attainment"
2. CO Waiver	Grant two-year industry-wide waiver.
3. 1984 Heavy Duty Engine Emissions	Establish 85% standard and continue current test procedure
4. Redundancy in Enforcement of Emission Standards	Eliminate redundancy
5. Hazardous Waste Management Emissions Performance Warranty	Prioritize classification of wastes Defer implementation until an accurate short test is developed
7. Industrial Boilers - New Source Performance Standard	Allow more extensive use of innovative technology
8. Industrial Wastewater Discharge to Municipal Sewer	Allow 3 years leadtime from date of standards for multiple source plants
9. Light Duty Diesel Particulate Standards	Maintain 1982 standard of 0.6 gpm
10. Light Duty Diesel NOx Waiver	Grant full four year waivers on all diesels
11. Engine Adjustment Tampering	Regulation should only apply to idle air-fuel mixture
12. Heavy Duty (HD) Truck Noise Standards	Impose 80 dB(A) requirements in 1984 MY when new emission standards apply.
13. Unregulated Emissions	Continue current practice indefinitely
14. Light Duty Diesel Emission Standards	Rationalize standards and procedures

Section II. Prospective Regulations Which Should Not Be Promulgated

<u>Subject</u>	<u>Recommended Action</u>
1. High Altitude Regulations	Eliminate unnecessary interim standards
2. Light Duty Truck Emissions Standards	Postpone and modify 1983 proposed regulation
3. Chlorofluorocarbons	Need better definition of the problem and potential solutions
4. Vehicle Refueling Vapor Recovery	Control, if needed, should be at service station not on automobiles.
5. Ultimate Heavy Duty Truck Noise Standards	Retain 80 dB(A) requirements

- 6. Aftermarket Emission Control Parts
Emission Testing at Different Temperatures
- 8. Heavy Duty Engine Emissions Certification
Procedures for Deterioration
- 9. Heavy Duty Fuel Evaporative Emission Reduction
- 10. Bus Noise Standards

Withdraw proposal until realistic solution is found

Withdraw - proposal unwarranted

Retain present procedure

Standard should specify certification "by design"

Revise implementation program

ATTACHMENT II

RECOMMENDED ACTIONS TO IMPROVE COST/EFFECTIVENESS
OF EPA REGULATIONS
June 10, 1980

General Motors has long supported regulation where there is a demonstrable health or safety need not met in the marketplace. This paper summarizes many regulations which might be eliminated, or modified as indicated, without a significant effect on health, safety or the environment. The cumulative effect of these changes would save consumers and taxpayers billions of dollars.

All estimates given represent the best information currently available to General Motors and are subject to change, given the variability of regulatory, technological, market and other factors.

Section I Changes the Executive Branch Could Implement

1. National Ambient Air Quality Standards

- o The ozone air quality standard of 0.12 ppm with only one allowable excursion per year is far more stringent than necessary to protect public health.
- o Most of the problems this creates (state I/M programs, excessive industry hydrocarbon controls, construction bans) can be solved by allowing five excursions per year.
- o Consumers would save \$1 billion per year during 1982-1987 by curtailment of I/M programs.
- o Industry would save a large portion of the \$15 billion cost of retrofit HC emission controls.

2. CO Waiver

- o Congress authorized a 2-year waiver of the 3.4 gpm carbon monoxide auto emission standard to 7.0 gpm.
- o Granting waivers across-the-board for all engine families would not jeopardize public health.
- o This could save GM car buyers about \$165 million over two model years.

3. 1984 Heavy-Duty (HD) Engine Emissions

- o EPA set stringent HD truck CO emission standards which require catalytic converters on gas-powered trucks over 8,500 pounds. EPA also set unrealistic and costly test procedures.
- o If the CO standard required an 85% instead of a 90% reduction—a change which would not endanger public health—converters would not be necessary. This would save purchasers of new GM trucks about \$1,200 per truck, in initial cost, and an additional \$1700, over the life of the truck, by not using unleaded gas.
- o Current test procedures are effective and should be retained. This would save GM about \$100 million for new test facilities and tooling.

4. Redundancy in Enforcement of Emission Standards

- o EPA uses numerous procedures to ensure that vehicles comply with emission standards. This is redundant and costly.
- o Prototype certification costs GM nearly \$40 million per year.
- o The redundancy in emission enforcement should be eliminated.

5. Hazardous Waste Management

- o By not prioritizing the treatment of potentially hazardous waste, the EPA may force many industries to pay huge cost penalties to dispose of relatively harmless materials.
- o EPA should fully control the most hazardous wastes immediately while phasing in regulations of reduced stringency to control other wastes according to their "degree of hazard."

6. The 207(b) Emissions Performance Warranty

- o EPA recently promulgated emission performance warranty requirements and instituted "short tests" for vehicle inspections. Unfortunately, the short tests do not correlate well with the federal certification test procedure. Thus, the warranty program will result in errors and be relatively ineffective in improving air quality.
- o The 207(b) warranty provisions should not apply until a short test is developed which correlates with the full certification test.

7. Industrial Boilers-New Source Performance Standard (NSPS)

- o Current EPA regulations require baghouse collector technology for control of particulate emissions from new boilers. This technology costs about 10 times more than the new Side Stream Separator technology, which GM developed and is now testing in Ohio.
- o The regulations should be enacted to allow more extensive use of the Side Stream Separator or other innovative technology. There would be no impact on air quality.
- o GM could save \$150 million if the Side Stream Separator combined with the use of low-sulfur fuels could be used.

8. Industrial Wastewater Discharge to Municipal Sewer

- o EPA's projected wastewater treatment standards for 21 industrial categories were written to regulate businesses discharging wastes in only one category.
- o Integrated facilities, such as all GM plants, produce wastewater in two or more categories. They should be regulated through a separate set of standards because different treatment is appropriate when two or more regulated substances combine in a single discharge.
- o A three year delay for compliance from the date of promulgation of standards for integrated facilities would allow GM to postpone and possibly reduce expenditures of roughly \$100 million.

9. Light Duty Diesel Particulate Standards

- o EPA has promulgated technology-forcing particulate standards of 0.6 gpm for 1982 and 0.2 gpm for 1985. These levels, along with a 1.0 gpm NOx standard federally, a .4 gpm NOx standard in California and high altitude standards in 1984, are beyond the reach of technology.
- o At a minimum, the 0.2 gpm standard for 1985 should be rescinded until reasonable control technology is available.

10. Light Duty Diesel NOx Waiver

- o EPA has denied entirely, or granted short term waivers from the 1.0 gpm NOx standard, which tends to inhibit development of diesel technology.
- o EPA should grant the waivers for a full four years on current and future engines, as authorized, instead of only for two years on engines currently on the market.

11. Engine Adjustment Tampering

- o EPA requires extensive hardware changes and testing to inhibit tampering with emission control systems.
- o Hardware changes should be limited to making idle air-fuel mixture screws inaccessible, since this is the only action justified by field data.
- o This would save GM new car buyers \$42 million in 1981 and \$50 million in 1982.

12. Heavy Duty (HD) Truck Noise Standards

- o EPA regulations now mandate a reduction of new HD truck noise from 83 dBA to 80 dBA, beginning with 1982 models.
- o Vehicle noise at current levels constitute an annoyance, at most, but not a threat to public health. The 80 dBA level should be delayed until 1984 MY, when hardware changes for noise and emission control can be installed at the same time.
- o GM HD truck purchasers will save an estimated \$500 per truck at the 83 dBA noise level compared to 80 dBA level.

13. Unregulated Emissions

- o EPA has indicated an intent to require automotive manufacturers to submit health effects data for unregulated emissions to prove that no unreasonable risk to public health will result from the use of a new device or engine.
- o The Agency should not require proof of a negative, i.e., that no health risk exists, but should maintain the current practice of obtaining a statement of compliance from manufacturers.

14. Light Duty Diesel Emission Standards

- o Between federal EPA and California, standards for light duty diesel vehicles will change each year for the next several years, making optimization of systems difficult, if not impossible.
- o EPA should preempt California's independent course, since federal standards are now virtually as strict as California's. Fuel economy losses and model restrictions in California constitute a greater penalty than the almost immeasurable air quality benefit.

Section II

Section II Prospective Regulations Which Should Not Be Promulgated

1. High Altitude Regulations for 1982-83

- o EPA has proposed stringent interim high altitude standards, including a requirement that all cars sold at sea-level be capable of adjustment to meet these standards at altitude.
- o These standards are not necessary, since most 1981 GM cars (and others as well, it appears from public statements) will be capable of meeting the interim requirements at altitude through the altitude compensating capabilities of the advanced emission control systems.

2. 1983 Light-Duty Truck Emissions Standards

- o Stringent emissions standards, test procedures and definitions--patterned after the unrealistic HD regulations--have been proposed. The regulations will require a catalytic converter and one catalyst change, and establish a useful life of approximately 130,000 miles, etc.
- o These proposals should be withdrawn and only reissued after modifications are made so that they are realistic and cost/beneficial.
- o New GM truck purchasers would save \$62 per vehicle initially, and later up to \$300 per vehicle for a deleted catalyst change. GM will save about \$2.3 million, or about \$340,000 per engine-family tested.

3. Chlorofluorocarbons (Freon)

- o While domestic use of CFCs dropped over 50% when their use was banned in aerosol sprays, Europeans have not cut their consumption significantly. Further reductions in domestic consumption, therefore, will not solve the perceived problem of upper atmosphere CFC concentration.
- o If an alternative to CFCs is required in automotive air conditioning systems and seat foam manufacturing processes, GM would have to invest close to \$1 billion for alternate systems.
- o EPA should postpone action until the problem and solutions are better defined.

4. Vehicle Refueling - Vapor Recovery

- o EPA has proposed to control vapor losses during vehicle refueling. The agency is considering control equipment installed either on the vehicle or at the service station pumps.
- o If control is justified, it should be done with equipment installed at the pump. This can be accomplished quicker, as compared to ten years before hardware could be on most cars in the national fleet. Moreover, it could be implemented regionally where needed.
- o Such a decision would save new car purchasers from \$16 to \$24 per car or about \$160 million to \$240 million per year.

5. Ultimate Heavy Duty (HD) Truck Noise Standards

- o EPA intends ultimately to regulate truck noise to 75 dB(A), probably by 1985.
- o The technology available and economics make 80 dB(A) the lowest level which should be required, commencing with 1984 MY when other major hardware changes are required.
- o EPA should discontinue pursuit of 75 dB(A) until the need has been established and the technology for control has improved.

6. Aftermarket Emission Control Parts

- o EPA is proposing that vehicle manufacturers test and determine whether aftermarket replacement parts manufactured by other firms will cause an emissions control system to fail to meet applicable new car emission standards. Moreover, the vehicle manufacturer must honor the warranty for such other manufacturer's parts if the part is "EPA certified." However, vehicle manufacturers have no control over the production or quality control of these parts. It is also a violation of anti-trust principles.
- o The proposal should be withdrawn, and only repropose if a more realistic system can be developed.

7. Emission Testing at Different Temperatures

- o EPA proposes to test prototype certification vehicles at high and low temperatures in addition to the mean temperature of the vehicle's operating range.
- o The proposal should be dropped.
- o This will save GM \$500,000 per year in new test costs and up to \$20 million additional investment costs for test facilities.

8. Heavy-Duty (HD) Engine Emissions Certification Procedures for Deterioration

- o EPA intends to repropose a system of testing durability of new truck engines by requiring that they be installed in trucks in actual use for a period of time, then removed for test purposes, then reinstalled for further field test.
- o This completely unworkable procedure should be eliminated.
- o GM would save approximately \$10 million per year.

9. Heavy Duty Vehicle Fuel Evaporative Emission Reduction

- o EPA has proposed a new system to control HD engine evaporative emissions. The system is completely different from the workable and simplified one now used in California.
- o The proposed regulation should be withdrawn, and California's procedure and concept adopted in order to avoid unnecessary capital expenditures by truck manufacturers.
- o GM would not have to construct new test preparation storage facilities, a new sealed evaporative test facility and a new heavy-duty truck dynamometer.

10. Bus Noise Standards

- o Interim 83 dB(A) noise standards for transit and intercity buses would add significant cost and administrative burden, with negligible resulting benefit.
- o EPA should regulate directly to 80 dB(A) in 1984 MY, and withdraw subsequent reduction to 77 dB(A) until it has been demonstrated as feasible without severely affecting performance, maintenance and durability.

Section I

ATTACHMENT III

RECOMMENDED ACTIONS TO IMPROVE COST/EFFECTIVENESS OF EPA REGULATIONS June 10, 1980

General Motors has long supported regulations where there is a demonstrable health or safety need not met in the marketplace. This paper discusses many regulations which might be eliminated, or modified as indicated, without a significant effect on health, safety or the environment. The cumulative effect of these changes would save consumers and taxpayers billions of dollars.

All estimates given represent the best information currently available to General Motors and are subject to change, given the variability of regulatory, technological, market and other factors.

SECTION I

Changes the Executive Branch Could Implement

1. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

In 1970, Congress required EPA to establish ambient air quality standards for pollutants. In 1971, EPA set standards for, among others, oxidants (later renamed ozone), carbon monoxide (CO) and nitrogen dioxide (NO₂). Subsequently, EPA was directed to review each of the standards at least once every five years. A review of the ozone (O₃) criteria and standard was recently completed; the CO and NO₂ standards are currently in the review process.

Discussion

In spite of this review procedure, reliable projections of air quality indicate that the EPA standards and compliance measures contain redundancy and safety factors which combine to constitute a substantial "overkill" of the problems they are intended to solve.

Specifically, air quality projections showing the frequency of excursions, based on publicly available data provided by EPA and the Council on Environmental Quality, indicate that, with the probable exception of two or three cities, the NAAQS for CO almost certainly will be achieved nationwide in 1987, solely by virtue of the improved emissions characteristics of the vehicle fleet which will be on the road in that year. Nothing more needs to be done to achieve the CO NAAQS.

Similar studies indicate that, with the exception of about 12 metropolitan areas, the O₃ standard will be achieved by 1987, nationwide, without resorting to state vehicle inspection and maintenance (I/M) programs, reasonably available control technology (RACT), or transportation control measures (TCMs).

Of the 12 metropolitan areas which are not expected to meet the O₃ NAAQS by 1987 in the absence of I/M, RACT, or TCMs, only Los Angeles and possibly 2-3 others would be out of compliance if the State Implementation Plan criterion for determining "attainment" would permit excursions over 0.12 ppm O₃ up to five days per year on the average, instead of only one day as presently allowed.

3. 1984 HEAVY DUTY (HD) ENGINE EMISSIONS

The recently promulgated Heavy Duty Engine Emissions regulation is an outstanding example of administratively imposed regulatory overkill.

Discussion

The Clean Air Act authorized a reduction in heavy duty engine emissions by 90%, but permits a smaller reduction. EPA's final regulation, went far beyond the legislative intent by not only establishing the new standards at the lowest possible level but, at the same time, changing virtually every heavy duty regulatory convention that was currently in use. The intent of Congress could have been met by continuing to use the existing test procedure, which would allow the use of existing facilities and existing equipment. A permissible reduction to 85% would have avoided \$1200 in hardware cost, primarily for catalytic converter systems, and \$1700 in added lifetime unleaded fuel costs for gasoline-powered heavy duty vehicles. These facts were provided to EPA during the rulemaking process, but the agency disregarded them. The rules promulgated made essentially all of the existing heavy duty engine test facilities obsolete. In addition, no members of the industry were able to test and evaluate the new scheme prior to final rulemaking due to this lack of facilities. To be able to do the necessary testing, GM alone will have to spend almost \$100 million. The air quality improvements from these regulations are not expected to be measurable.

Beyond the apparent capriciousness of the test procedure decision, several provisions of the new regulations make the standards even more stringent than the 90% authorized by the statute.

For instance, the Acceptable Quality Level (AQL) specified as part of the Selective Enforcement Audit (SEA) provisions requires that 90% of heavy duty engine production must comply with the emission standards. In contrast, EPA has accepted a 60% pass rate for passenger cars. The 90% heavy duty engine AQL makes the emissions standards more than 50% more stringent.

Also, EPA has changed the definition of truck engine "useful life" so that compliance with emission standards and warranty coverage is extended from twice to more than four times current requirements for either heavy duty or light duty vehicles. This requirement adds significantly to the stringency of the emission standards since the percentage reduction calculation is based on "average" emissions from "new" engines. No allowance is made for emissions performance deterioration resulting from normal wear occurring during an engine's lifetime.

While cost figures for the new AQL and expanded useful life provisions are not available, the impact of these regulations on the truck manufacturing industry will be very substantial.

Recommended Action

The current test procedures should be continued for 1984 and until more cost effective and significantly improved procedures are developed and validated. The following emission standards, in conjunction with current certification procedures would satisfy the CAA requirements.

HC - 1.0 g/bhp-h (90% reduction)
 CO - 20.0 g/bhp-h (85% reduction)
 NOx - 9.8 g/bhp-h (approximate stringency of
 current standard)

There are many uncertainties in making projections regarding the attainment status of any particular geographical area. A draft report of the National Commission on Air Quality Ozone Panel has discussed many of them. For example, atmospheric intrusion, as well as natural and man-made background emissions, need to be quantified better in terms of their contribution to the existing O₃ baseline. In addition, improved models which will account for chemical reactivity and spatial distribution of emission sources are under development. These developments and uncertainties suggest that the administrative definition of "attainment" be relaxed to allow up to five excursions per year above the 0.12 ppm level. This change is justified on the basis of our inability at this time to predict air quality accurately enough to distinguish between one and five excursions per year and the large safety factor below substantiated health concerns of the present standard and criterion.

Implementation of the "five day per year" excursion limit would:

- o Permit a drastic curtailment of I/M programs, with a consequent saving to consumers of \$1 billion per year during 1982-1987.
- o Remove the need for retrofit HC emissions control (RACT) programs in all but a few localities, thereby reducing dramatically the estimated \$15 billion U.S. industry is now obligated to spend.
- o Allow TCM programs to be implemented on the basis of long term energy conservation goals and socioeconomic shifts, rather than for pollution control objectives that will be realized anyway.

Recommended Action

EPA should not require vehicle inspection and maintenance programs as a strategy for achieving the ozone and carbon monoxide National Ambient Air Quality Standards (NAAQS) until the results of the existing controls have time to be effective.

EPA should also relax its interpretation of ozone air quality "attainment" so that State Implementation Plans may permit excursions above the 0.12 ppm standard on five days per year instead of only one.

2. CO WAIVER

A standard of 3.4 gpm CO becomes effective in 1981, however Congress provided for waiver to 7.0 gpm CO for both 1981 and 1982. Emission control technology has been developed to meet this statutory standard but with increased cost.

Discussion

Most experts agree that granting an industry-wide two-year CO waiver would have insignificant effect on air quality and public health. A balancing of risks shows that the increased cost to meet the statutory standard far exceeds any possible benefit.

A CO waiver at this late date would save GM consumers about \$165 million over two years or a savings of \$60 to 70 per vehicle that could be affected by a waiver.

Recommended Action

EPA should grant an industry-wide two-year waiver. This would allow the industry to develop lower cost technology to meet the 3.4 gpm CO standard in 1983.

The heavy-duty engine "useful life" definition should be changed back to the currently prescribed time periods consistent with the passenger car regulation.

The AQL for trucks should be changed to agree with that used with passenger cars.

4. REDUNDANCY IN ENFORCEMENT OF EMISSION STANDARDS

EPA's methods for checking compliance with automotive emission standards are redundant. We do not question the need for compliance, but only the means for insuring it.

Discussion

Certification is the first requirement in the compliance process. GM spent nearly \$40 million to certify its 1980 product line. Some of the present certification provisions are certainly not needed. Recently issued Parameter Adjustment Regulations, required for certification, will cost the GM consumer about \$42 million for model year 1981 and about \$50 million in 1982. These costs are largely unjustified. Moreover, new certification complications under development by the EPA could effectively discourage innovation aimed at fuel efficiency. EPA is also working on new testing requirements corresponding to atypical customer usage, including a special test just to simulate New York City driving.

Plant Inspection is a compliance tool EPA uses which is also totally unnecessary. We are constantly improving our production processes and quality control systems in ways that will assure, among other things, that the GM vehicle configurations are built as defined in our Certification Application. This EPA enforcement scheme is thus redundant of our internal efforts.

A third enforcement activity evolved when EPA required GM, through a "voluntary" program, to submit internally-generated production audit data on exhaust emissions (FETS). GM originally implemented this quality control program to assure compliance with the Certification Application and to detect production vehicles that exceeded the standards.

The GM audit programs are far more effective in controlling new car emissions than EPA's fourth layer of requirements, Selective Enforcement Audits (SEA), because our own feedback loop is short, thus permitting quick correction, in contrast to the SEA situation. The effectiveness of the GM program is evident from our exemplary compliance record. General Motors has experienced 55 SEA test orders so far and has passed all but 2. These two were on vehicle configurations that had already been identified by the internal GM audit (FETS) and corrective action was already underway. EPA uses its third layer of enforcement procedures, our own audit data, to trigger the fourth layer, SEA. Useless confrontation under these circumstances is almost inevitable.

EPA employs In-Use Surveillance to determine if vehicles meet the emission standards for five years, or 50,000 miles, as required by the Clean Air Act. The EPA test program is currently at a high enough rate to check each major engine family once during its five year/50,000 mile period. In-Use Surveillance produces Recalls. Since 1977 approximately 1.6 million GM vehicles have been recalled and brought into compliance at no expense to the owners. This highly successful EPA compliance program alone obviates the need for the other compliance steps described herein.

The EPA enforcement tools also include broad authority to gather information (Clean Air Act Section 208 Requirements). Section 208 allows EPA to obtain any "reasonable information" in making a determination of whether the manufacturer is in compliance with the Clean Air Act and/or EPA regulations. One might question

whether EPA limits its information requests to items necessary for compliance enforcement. Many of the requests appear overly broad, and require unnecessary effort to prepare responses.

Defect Reporting refers to identifying errors, exceeding 25 of one kind, in materials or workmanship which usually occur during assembly early in a production run. GM, before the regulation, recalled vehicles in 41 cases containing defects that influenced emissions. (In some cases, the EPA definition of "defect" can mean a part differing only in identification number from that in the Certification Application.) Thus, this seventh compliance tool is unnecessary.

EPA is currently requiring some states to institute vehicle Inspection/Maintenance (I/M) programs as an additional compliance enforcement mechanism. I/M will become redundant since new emission systems are highly tamper proof, and In-Use Surveillance provides the same discipline as I/M. In-Use Surveillance is much more effective than I/M because the tests for compliance in the former program are more reliable. The cost/benefit ratio for I/M programs thus appears to be very unfavorable.

Performance Warranty - Section 207(b), a ninth enforcement step, is triggered by I/M. Recently signed by the EPA Administrator, this regulation will require manufacturers to pay for the repair of eligible cars that fail an EPA "short test" under the I/M program even if failure is caused by a part that is not original equipment nor even manufactured or authorized by the manufacturer.

Obviously, the redundancy detailed above is costly for both EPA and industry; furthermore, it is inflationary for the whole country. Scarce financial resources are being diverted unnecessarily from the major industry effort to convert capacity to more fuel-efficient cars. Surely it is time to begin to dismantle this redundancy.

Recommended Action

EPA should reduce redundancy by relying primarily on the In-Use Surveillance and Recall programs, and by eliminating or reducing all other enforcement regulations noted above.

5. HAZARDOUS WASTE MANAGEMENT

On May 19, 1980, EPA promulgated hazardous waste regulations under the Resource Conservation and Recovery Act. These regulations include criteria and lists for identifying hazardous wastes. EPA did not consider the "degree of hazard" concept recommended by professional and industrial organizations during the rulemaking process. Therefore, all identified hazardous wastes are required to meet the same stringent requirements. This EPA approach does not allow orderly implementation of controls, imposes unnecessary control costs on less hazardous wastes, and diminishes efforts to control the most hazardous substances first.

Discussion

EPA estimated that the hazardous waste regulation will impose \$310 million capital cost and \$510 million per year operating cost on industry nationwide. The total cost estimated by the business community was over \$2 billion per year. Of the four million tons of wastes generated within GM last year, 50% may be identified as hazardous under EPA regulations and result in approximately \$180 million per year additional cost for disposal.

EPA's failure to consider the "degree of hazard" concept is evident in the listing of the following two wastes as hazardous in the May 19 regulations:

- o "F006 - Wastewater treatment sludges from electroplating operations."
- o "F007 - Spent plating bath solutions from electroplating operations."

F006 is much lower in degree of hazard than F007. New York and Ohio State agencies, are considering the disposal of F006 in separated cells in sanitary landfills, as opposed to F007 which may contain highly toxic cyanides or strong acids which require special management. Other examples of low hazard wastes are:

- o Lead bearing wastewater treatment sludges from gray iron foundries. (EPA scheduled listing for June, 1980.)
- o Waste oil. (EPA scheduled listing for November, 1980.)

Recommended Action

EPA should revise the May 19, 1980, regulations to incorporate the "degree of hazard" concept.

6: 207(b) PERFORMANCE WARRANTY REGULATIONS

EPA intends to implement the performance warranty provisions of the Clean Air Act by the recent promulgation of regulations defining a "short test" for I/M programs. Under this warranty, 1981 and later model cars failing an emission "short test" would be brought into compliance at the expense of the vehicle manufacturer. However, the "short tests" EPA proposes differ from the test used to certify vehicles and, in fact, no short test exists, nor is one likely to be developed, which will adequately correlate with the certification test.

Discussion

The Performance Warranty Regulations fall under Section 207 of the Clean Air Act, Compliance of Vehicles in Actual Use. The defect warranty and recall provisions of this Section already are operative. The performance warranty regulations have only recently been issued. Other regulations in this group are short test, inspection and maintenance and aftermarket part self-certification regulations. As a group these regulations are going to be very costly to implement; costly to consumers and taxpayers. Their total cost is expected to run into billions with only a nominal, if any, improvement in air quality.

Since the Performance Warranty Regulations have just been issued, there has not been an opportunity to evaluate fully their impact. However, these regulations likely will have a significant adverse impact on the automobile industry in terms of administrative costs, burdensome procedures for implementation, warranty costs for parts, diagnosis and repair, and the cost of warranting a third party manufacturer's part. Although the total cost of implementing this Performance Warranty has not been estimated yet, it is expected to be substantial.

In addition to the administration and implementation costs, the regulations as proposed contain serious legal problems which may require litigation in order to clarify the legality of the requirements. This, too, will prove to be expensive and time consuming, diverting government and industry personnel from more productive efforts.

Recommended Action

The performance warranty regulation should be rescinded until a practical way is found to measure simply emissions of vehicles in service. Existing In-Use Surveillance and

Recall programs are adequate and much more effective ways of assuring the emission control performance of cars in use.

7. INDUSTRIAL BOILERS-NEW SOURCE PERFORMANCE STANDARD (NSPS)

EPA is currently developing a New Source Performance Standard (NSPS) for industrial and commercial boilers of 10 to 250 million Btu. The standard requires the use of baghouses for particulate control, as well as flue gas scrubbing for sulfur dioxide emission control. Environmental impact studies clearly indicate that these controls are unreasonably costly based upon a cost/benefit analysis.

Discussion

Based on extensive monitoring and modelling data, the cost of baghouses and wet scrubbers can be shown to be excessive compared to the benefits derived, when applied to industrial-size boilers.

The estimated cost of baghouses and scrubbers to the total industrial sector will be \$1 to \$2 billion between now and 1985. If technological innovations such as the newly developed GM side stream separator and low-sulfur coal can be used as an alternate to baghouses and scrubbers, this estimate could be reduced to approximately \$100 million, with only minimal impact on air quality.

For GM, compliance with the proposed NSPS for the control of sulfur and particulates of the approximately 60 replacement boilers scheduled over the next ten years is estimated at \$157 million; use of the alternate control strategy is estimated at \$7 million, thus allowing a potential saving of \$150 million.

Recommended Action

EPA should postpone the NSPS until environmental data from the use of the GM side stream separator and low-sulfur coal is analyzed.

8. INDUSTRIAL WASTEWATER DISCHARGE TO MUNICIPAL SEWERS

The Water Pollution Control Act requires industrial discharges to municipal sewers to meet EPA pretreatment standards (issued by manufacturing category) within three years of promulgation for each category. Most of the GM plants are integrated facilities (facilities with several waste categories) and will be affected by at least seven different categorical pretreatment standards to be published between now and July, 1981.

Discussion

The National Commission on Water Quality did not address pretreatment standards. The seven pretreatment standards to be issued by manufacturing category (single category) will apply to 134 of GM's U.S. manufacturing facilities (multiple category) which discharge to municipal sewer systems. As an example, compliance with the promulgated electroplating standards, by October 1982, will cost GM an estimated \$100 million. The other standards yet to be promulgated would require a projected additional \$200 million for compliance. Congressional action is not required to delay the compliance date for each categorical pretreatment standard.

Recommended Action

EPA should delay compliance with the pretreatment categorical standards until 3 years after the last standard affecting an integrated facility is promulgated. This would

allow time for affected industries to minimize expenditures by cost-effective design of treatment facilities that could comply with one combined pretreatment standard.

9. LIGHT-DUTY DIESEL PARTICULATE STANDARDS

The particulate standards enacted by EPA are more stringent than required and will discourage development of fuel efficient diesel engines. The 0.2 gpm standard for 1985 is not technologically feasible at the present time. Even the 0.6 gpm standard for 1982 cannot be achieved on most engines without a waiver of NOx to 1.5 gpm. California's 0.4 gpm NOx requirement cancels all diesel possibilities.

Discussion

Emission control technology does not exist to meet the 0.2 gpm standard and concepts being researched need much more development before they can be considered practical. The most promising technology for meeting a 0.2 gpm particulate standard involves some form of regenerating particulate trap, but the development remains in the experimental stage.

Cost for the control hardware is difficult to estimate since no feasible system has been developed. However, cost estimates on the prime concepts being developed range from \$400 to \$600 per-car.

The particulate standards are based on a Clean Air Act requirement for maximum emission reduction considering available technology, cost, lead time, noise, energy and safety. EPA has once again chosen to set technology forcing standards which will cause unnecessary development costs. If the standards were postponed, the effect on ambient particulate levels would be minimal.

Recommended Action

The 1985 0.2 gpm particulate standard should be rescinded until reasonable control technology is available. EPA should grant NOx waivers for light-duty diesels to the maximum extent allowed by the Clean Air Act (4 years), and revoke California's waiver for its 0.4 gpm NOx standard.

10. LIGHT-DUTY DIESEL-NOx WAIVER

A standard of 1.0 gpm NOx is effective in 1981, but it can be waived to 1.5 gpm through 1985. Technology does not exist to meet this standard, especially in conjunction with particulate and altitude standards. This tends to discourage diesel engine development.

Discussion

Most experts agree that granting the full four-year waiver would have an insignificant effect on air quality. Attempting to meet the 1.0 gpm NOx standard will increase particulates, making that standard even more difficult to meet, plus degrading engine durability. The waiver provision in the Clean Air Act was included to encourage diesel engine development. By-granting only restricted waivers, EPA is penalizing diesel development efforts by forcing resources to be directed toward short term goals.

Costs for meeting the NOx standard are difficult to establish since the total control system must be integrated to meet not only NOx but also particulate and altitude requirements. These total system costs amount to approximately \$100 per car in 1983 and are expected to reach \$400-\$500 per car in 1984.

Recommended Action

Since there is no significant evidence or data to warrant restricting the NOx waiver, EPA should grant the full waiver. This will allow the concentration of development resources on longer term needs, allow the diesel engine to mature technically and avoid unnecessary control system costs.

11. ENGINE ADJUSTMENT TAMPERING

The Parameter Adjustment or anti-tampering regulation forces manufacturers to design engines so as to eliminate engine system adjustment features or to limit their range of adjustment. The regulation is ambiguous and EPA has been forced to make arbitrary judgments for each proposed design. Furthermore, carburetor idle mixture screws are the only adjustable feature for which tamper resistance can be justified, according to EPA's own field surveillance data.

Discussion

The basis for this regulation is field surveillance work which indicated that misadjustment of the air/fuel mixture at engine idle was a common occurrence. Subsequently, EPA issued a broad regulation affecting this adjustment and several others which have not been demonstrated to be field problems. The final rule, published on January 12, 1979, required four parameters to be sealed in the first two years, beginning with 1981 (idle mixture screws and choke in 1981, ignition timing and idle speed in 1982). GM voluntarily included an idle mixture screw sealing cover on all of its cars beginning in 1979, two years before the rule became effective. In the spirit of discouraging tampering, GM voluntarily provided tamper-resistant features for chokes in the 1980 model year.

EPA has been vigorously enforcing this regulation in an arbitrary manner by requiring detailed approval of every design proposed. Decisions about the accessibility of adjustments have been highly subjective. General Motors has entered into a negotiated settlement for 1981 and 1982 which adds considerable complexity and cost to the carburetor choke mechanism.

As a result of this regulation, increased costs are estimated to be \$42 million in 1981 and \$50 million in 1982.

Recommended Action

EPA should rescind all Parameter Adjustment requirements except those for idle mixture screws.

12. HEAVY DUTY (HD) TRUCK NOISE STANDARDS

In order to comply with both EPA noise and exhaust emission regulations, trucks will have to switch from naturally aspirated to turbocharged diesel engines. However, the effective dates of these regulations are different. It would be cost beneficial to consumers if both regulations became effective at the same time.

Discussion

The next scheduled noise reduction for medium and heavy trucks will reduce the maximum allowable sound level from 83 dB(A) to 80 dB(A) on January 1, 1982. This action will cause a number of naturally aspirated diesel engines to be replaced by turbocharged versions. Two years later, in 1984, more stringent exhaust emission standards for trucks will also require a switch from naturally aspirated diesel engines

to turbocharged configurations.

Other changes required to meet the 80 dB(A) truck regulation in 1982, will increase the cost of GM trucks to consumers by \$25 million annually. This does not include the increased maintenance costs on these trucks resulting from the added complexity of noise control hardware.

Recommended Action

Enforcement of the 80 dB(A) truck regulation should be deferred for two years until 1984.

13. UNREGULATED EMISSIONS

EPA has indicated that it plans to require manufacturers to run extensive product tests and health effects studies related to possible exhaust emissions which are presently unregulated.

Discussion

The 1977 Clean Air Act Amendments state that, effective with 1979 model-year vehicles, no emission control device or element of design shall be used if it will contribute to an unreasonable risk to public health, welfare, or safety. To date, EPA has issued certificates of conformity based on manufacturers' statements that, to the best of the manufacturer's knowledge and belief, the emission control devices being used comply with the requirements of the Act. However, EPA has indicated that it plans to require these statements to be based upon extensive product tests and health effects studies. The detailed test program outlined by EPA in a draft proposal in late 1978 would cost manufacturers hundreds of millions of dollars per year.

The amount of testing proposed by EPA is much more than needed to effectively monitor unregulated pollutants. The requirements of the legislation can be satisfied by a continuing, orderly research-oriented study of the sort that has been in existence for some time in General Motors. In this program, we review new control system concepts and new engine design types for the probable occurrence of unregulated emissions, and test for unregulated pollutants that are suspect. We also assess potential effects on air quality and public health. Areas of particular concern are studied in more detail, either within GM or by outside contractors.

Recommended Action

EPA should continue the current compliance-statement procedure.

14. LIGHT-DUTY DIESEL EMISSION STANDARDS

Emission standards — either federal or California — for light-duty diesel engines change each year from 1981 through 1985, requiring that engineering expertise be concentrated on short-range goals rather than on long-term emission control development. The yearly change in standards hampers development of basic diesel engine technology and will inhibit the increase in diesel engine applications.

Discussion

The yearly changes in light-duty diesel emission standards are summarized as follows:

1. Gaseous exhaust standards include a 1.0 gpm NO_x level for 1981, waivable by EPA to 1.5 gpm through 1984. EPA has only granted waivers through 1982, and

only on specific engines.

2. For 1982, EPA has granted California a waiver including a 1.0 gpm NOx standard.
3. For 1982, EPA has promulgated an exhaust particulate standard of 0.6 gpm.
4. EPA is developing regulations to implement the required all-altitude standards for 1984.
5. EPA has promulgated an exhaust particulate standard of 0.2 gpm for 1985.

Many of these emissions standards cannot be achieved with available technology and new control technology must be developed.

Since technology to meet these sequentially more stringent standards does not exist, the costs to meet them are difficult to estimate. However, attempting to meet these standards in the short term will use manpower and resources better used to develop optimum, long-term solutions to diesel emissions.

Recommended Action

The following actions are recommended:

1. Grant full four-year NOx waiver to 1.5 gpm.
2. Rescind California 1.0 gpm NOx waiver.
3. Defer all-altitude requirements.
4. Rescind the 1985 0.2 gpm particulate standard.

SECTION II

Proposed Regulations Which Should Not Be Promulgated

1. HIGH ALTITUDE REGULATIONS FOR 1982-83

EPA has proposed high altitude emission standards for 1982-83. This regulation is unnecessary from the air pollution standpoint, is not required by law and will result in significant certification expenditures and some hardware additions.

Discussion

The Clean Air Act authorizes, but does not require, EPA to set high altitude emission standards for 1981-83. Such standards were recently proposed by EPA for 1982-83 cars and light trucks.

1981 GM cars will employ emission control technology which provides substantial altitude compensation. On the average, the 1981 GM cars should provide high altitude emission control similar to the EPA proposal. Thus, the regulations will result in no perceptible benefit to air quality. However, certain individual models could require significant improvement to achieve the proposed standards -- equipment which could add \$10 to \$60 consumer cost per car.

There is provision in the proposal for "modification" of low altitude vehicles to meet high altitude standards.

In addition, the regulation as proposed requires cars to be capable of adjustment to meet standards at both high and low altitudes. This capability is not available on all cars and thus could eliminate certain high fuel economy cars from national production. It will most certainly add substantial cost to the car manufacturers' certification testing burden.

Recommended Action

EPA should discontinue any consideration of 1982-83 high altitude emission requirements.

2. 1983 LIGHT-DUTY TRUCK EMISSIONS STANDARDS

Proposed regulations for 1983 and later model year light-duty trucks (up to 8500 lbs.), go far beyond the mandate of the Clean Air Act and exceed the Administrator's authority under the Act.

Discussion

In addition to establishing new emissions standards, the regulations proposed for 1983 and later model year light-duty trucks include provisions which, (1) extend the regulated life of a light-duty truck to about 130,000 miles instead of 50,000, (2) severely limit allowable maintenance, (3) require virtually every vehicle to meet the standards in SEA audits, as opposed to current procedures which essentially require the average vehicle to meet them, and (4) change the durability test procedures to require a costly and time-consuming in-service test to determine a deterioration factor.

The Clean Air Act only requires a reduction in the standards for trucks between 6000 and 8500 lbs. after allowing a four-year lead time (which is not provided by the proposal). The Administrator has the discretion to set a higher standard. GM believes

the Administrator has exceeded his authority under the Act in most aspects of the proposed regulations.

If promulgated as proposed, the regulations will add a significant test cost, piece cost, and maintenance cost, and will result in a fuel economy loss for these trucks. Among the costs which would result from the proposal are:

1. New equipment cost, estimated by EPA at \$62 per vehicle.
2. Cost for one catalyst change (estimated by GM at \$300), required in order to certify the vehicle for 130,000 miles.
3. For every model year, the lifetime cost of an estimated 7% loss in fuel economy will cost the nation's light duty truck drivers about \$1.5 billion - at a gasoline price of \$1 per gallon.
4. Certification costs to GM of the in-use durability program will be about \$2.3 million, or about \$340,000 per engine family.

Total costs of the proposal would be above \$16.5 billion; instead of the \$3 billion EPA estimated (since they did not include the need to replace a catalyst, nor the fuel losses.)

Recommended Action

1. Postpone these regulations until the air quality need is shown.
2. Revise the requirements of useful life, reduced maintenance and audit testing so they are somewhat realistic.
3. When finally promulgated, the regulations should carryover present EPA certification requirements and audit practices and simply establish the new HC and CO emission standards, while providing the required four-year lead time.

3. CHLOROFLUOROCARBONS (FREON)

EPA is considering regulation of the non-aerosol uses of chlorofluorocarbons (CFCs) based on National Academy of Sciences (NAS) studies which state that the increasing ozone depletion rate is cause for concern, if worldwide uses of CFCs continue at today's rate.

Discussion

EPA has already cut the U.S. usage of CFCs by 50% by banning CFC use in aerosol sprays in 1978. Now EPA plans to reduce CFC use further by either limiting production to current levels or by limiting production to about 70% of current production in the future. The effects of this proposal have not been adequately assessed. There are no currently available substitutes for GM's major uses (i.e., automotive air conditioning refrigerant R- 12 and flexible seat foam blowing agent R- 11).

If a change to any known alternate refrigerant for vehicle air conditioning systems is required, the machinery, equipment and tooling for the current systems would have to be replaced. If an alternate refrigerant were selected now, we estimate that it would take General Motors 5-7 years to test, develop and place into production a system that would be compatible with the new refrigerant.

If General Motors were to change to an alternate blowing agent used in flexible seat foams, the development time to place such a foam into production is currently estimated at 2-3 years.

The Clean Air Act requires the Administrator to study the CFC problem and make recommendations for regulations. No effective date is specified in the Act.

For General Motors, the current replacement value of the fixed assets which may have to be replaced is close to \$500 million dollars each for both vehicle air conditioning and for flexible seat foams.

Recommended Action

EPA should postpone any regulatory actions until the problem and potential solutions are better defined.

4. VEHICLE REFUELING - VAPOR RECOVERY

The Clean Air Act (CAA) requires EPA to examine proposals relating to refueling of vehicles to determine the feasibility of requiring new vehicles to utilize on-board hydrocarbon control technology as opposed to recovery utilizing stationary equipment at service station fueling sites. A decision to go on-board not only would involve more cost per unit of emissions controlled, but would impose national control which is not needed in many areas.

Discussion

EPA is required by the CAA to impose regulations requiring on-board control if it finds that approach (compared to service station control) feasible and desirable. However, that judgment must, by law, consider cost effectiveness; GM estimates the cost is about three times greater for on-board control in dollars per ton of emissions prevented. The estimated cost per car of on-board control hardware is \$16 to \$24 per car which translates to \$160 to \$240 million per year, assuming other manufacturers' costs are similar.

If control of refueling emissions is actually required in certain areas it can be obtained quickly and more cost effectively with service station control. On-board control would involve a national program, regardless of need and require more than ten years to become effective -- as a result of the time needed to replace older cars without this type of control.

Recommended Action

If control of refueling emissions can be justified, it should be confined to service station control in those areas where it can be shown to be necessary and cost effective.

5. ULTIMATE HEAVY DUTY (HD) TRUCK NOISE STANDARDS

In the truck noise regulations originally proposed in October 1974, the EPA included plans to limit truck noise to 75 dB(A). However, when the regulation was finally published in 1976, based upon an evaluation of the technology and economics by the Administrator, it required a reduction to only 80 dB(A). Subsequently, EPA has stated that it is the intent of the agency to further regulate to 75 dB(A), probably by 1985.

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Discussion

There is no new information today that should change the conclusion of the Administrator in 1976. The technology for attaining the 75 dB(A) sound level for trucks still requires engine and transmission enclosures, the cost and complexity of which is out of proportion to the benefit attained.

EPA has spent, and is spending, money to build prototype trucks at the 75 dB(A) level to try to demonstrate the viability of a 75 dB(A) regulation. These prototype trucks do not offer any new technology compared to that demonstrated and reported by the DOT quiet truck programs starting in 1974. The DOT reports on these programs were part of the EPA evaluation of the viability of a 75 dB(A) regulation in 1976.

The EPA intention to require 75 dB(A) is being pursued without any indication of new technology being available and without an appraisal of the benefits ensuing from regulations already in effect. This expressed EPA intent forces industry to divert resources from more pressing problems.

Recommended Action

EPA should stop pursuing the goal of 75 dB(A) regulation on medium and heavy trucks until:

1. The improvement in the environment resulting from 80 dB(A) trucks has been properly evaluated; but the timing of the 80 dB(A) requirement should be coordinated with emissions control revisions in 1984.
2. There is a demonstration of noise control technology, other than total enclosures for engines and transmissions, that would be more cost beneficial and more practical for field use.

6. AFTERMARKET EMISSION CONTROL PARTS

The aftermarket part self-certification regulations were proposed on August 8, 1979 as a result of requirements added to the CAA in the amendments of 1977. The unacceptability of the proposal was evident at the EPA public hearings on October 3 and 4, 1979, in which the proposed regulations were overwhelmingly rejected by all witnesses. Even the automotive aftermarket associations, which originally lobbied in Congress for the program and drafted emissions standards for specific parts and systems, did not support the regulations as proposed.

Discussion

As proposed, this program would permit aftermarket parts manufacturers to self-certify that their parts would not cause the emissions from a car to increase if these parts were installed. It would also require each vehicle manufacturer to monitor and validate the test data and claimed capability for the aftermarket parts applicable to that vehicle manufacturer's products. Vehicle manufacturers would be liable for the quality of the part and installation, despite the fact that vehicle manufacturers have no control over the parts or the people involved. While these proposed regulations were portrayed by EPA as not having a significant cost impact, they are in truth "significant major regulations" (as defined by the President's Executive Order 12044). General Motors estimates \$20 million in non-recurring facilities cost -- and \$30 million annual recurring cost -- for GM alone.

Recommended Action

The aftermarket self-certification proposal should not be promulgated as proposed. Final regulations should be delayed until a definitive cost effectiveness analysis can be performed. This delay would not have a significant negative impact on air quality, aftermarket part manufacturers, the independent repair industry, or the vehicle manufacturers.

7. EMISSION TESTING AT DIFFERENT TEMPERATURES

EPA is developing regulations which would require emission testing of vehicles at temperatures above and below the temperature at which the standard emission test is run. These regulations would require major new expensive facilities and add significantly to the certification test load. There is no current evidence, to our knowledge, that indicates air quality benefits resulting from this effort and expense.

Discussion

EPA believes that the the Clean Air Act empowers them to expand certification testing requirements to include operating temperatures and conditions not now included in the Federal Test Procedure. In September, 1972, EPA issued an Advisory Circular which attempted to implement such changes without even using normal rulemaking procedures. General Motors responded by questioning the need, authority, and proposed method of implementing these requirements. GM believes that these additional testing requirements are not mandated by the Clean Air Act nor required from the standpoint of air quality in view of the many other existing layers of compliance.

General Motors has voluntarily supplied data to EPA which demonstrate that present control systems at temperatures different from the standard test temperature provide about the same proportional control as they do at the standard temperature. Thus, elaborate new test requirements would not provide any significant additional air quality benefits.

For the 1980 model year, the added cost to General Motors for additional testing and new facilities to comply with EPA's proposed requirements would have been approximately \$20 million.

Recommended Action

EPA should cancel this activity.

8. HEAVY DUTY (HD) ENGINE EMISSIONS CERTIFICATION PROCEDURES FOR DETERIORATION

First proposed as part of the 1984 HD exhaust emission package, this provision was withdrawn but is planned to be re-proposed for 1985.

Discussion

EPA intends to implement a system of testing HD engines to establish certification deterioration factors. This system would require that engines be placed in customer vehicles which are in service. Periodically, for as many as ten years, the engines would be removed from the vehicles for emission testing and then reinstalled for further use.

The GM cost estimate for the program as originally proposed is approximately \$10 million just for the initial model year. GM considers the current durability test requirements to be adequate.

Recommended Action

The "in-service" procedure to determine deterioration factors would be unduly complex and add considerable expense. The durability test should continue to be accomplished on an engine dynamometer and completed prior to start of production.

9. HEAVY-DUTY VEHICLE EVAPORATIVE EMISSION REDUCTION

EPA has proposed an unduly complex heavy-duty (HD) vehicle evaporative emission certification procedure.

Discussion

In May, 1980, EPA proposed evaporative emission rules for HD vehicles patterned after existing rules for light-duty (LD) vehicles. Because of the large number of different truck models necessary to satisfy the variety of truck uses, the size of the HD test fleet would be almost as large as that for LD vehicles. Considering the difference in LD and HD vehicle sales, the HD test burden would be disproportionate. Vehicle certification would be further complicated by the proposed requirement that manufacturers of incomplete vehicles somehow determine the final configurations of vehicles to be completed by secondary vehicle builders and procure these completed vehicles for certification testing. Thus, the vehicle manufacturer becomes responsible for the actions of others.

EPA's approach to HD vehicle evaporative certification is particularly absurd in view of California's successful and cost effective control of HD vehicle evaporative emissions. Since 1973 California has certified control systems "by design" i.e., by projecting light-duty vehicle system design data to establish heavy-duty vehicle compliance.

Recommended Action

EPA should take the long overdue action of adopting the California regulatory concept of "by design" certification. If some additional type of testing is deemed necessary, it should be limited to system component testing in order to preclude the need for large new building facilities and oversized test equipment.

10. BUS NOISE STANDARDS

EPA proposed progressive exterior bus noise standards of 83 dB(A), 80 dB(A) and 77 dB(A) in September 1977. EPA has not yet promulgated the regulation but is expected to in June 1980. These standards would apply to school buses, transit buses and intercity buses.

Discussion

Transit buses are built to a DOT specification which establishes 83 dB(A) as the exterior sound level. Establishing 83 dB(A) as the first level of regulation by EPA would not result in an environmental benefit but would require costly production verification and selective enforcement audit programs on the part of the bus manufacturer. Therefore, it would be better to eliminate this first level of regulation and go directly to the 80 dB(A) level at some later date. General Motors maintains that 80 dB(A) is the more cost beneficial level of regulation.

Inasmuch as a 77 dB(A) transit bus conforming to all other performance requirements in this country has not been demonstrated, the technical risks of initially regulating to this level are prohibitive. It is probable that this level of regulation would require a fully enclosed engine compartment. Sufficient time must be allowed to design and

adequately test such unproven features for durability.

Recommended Action

EPA should not regulate at the 83 dB(A) level for transit and intercity buses as it would add costly administrative burdens for government and industry alike without redeeming benefit.

We suggest that EPA regulate transit and intercity buses directly to 80 dB(A) in 1984. This has the advantage of achieving 80 dB(A) earlier with a corresponding significant environmental improvement.

EPA should not regulate to the 77 dB(A) level until it has been demonstrated that buses operating at that level will meet performance, maintenance, and durability requirements.