

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-126  
Relating to Exemptions under Section 27156  
of the Vehicle Code

GENERAL MOTORS CORPORATION  
8V-92TA AND 6V-92TA GM-DDAD  
DIESEL ENGINE MODIFICATION  
"CUE" PACKAGE

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-5;

IT IS ORDERED AND RESOLVED: That the modification of 1975 through 1981 model 8V-92TA and 1976 through 1981 model 6V-92TA General Motors Detroit Diesel Allison Division heavy-duty diesel engines has been found not to reduce the effectiveness of required motor vehicle pollution control devices. The modification will consist of replacing the OEM cylinder liner, gear train for blower drive gear, fuel injectors, blower, turbocharger, aftercooler, air inlet housing, throttle delay check valve, camshaft, and piston rings with corresponding parts utilized in 1982 California certified engines. It is hereby exempt from the prohibitions of Vehicle Code Section 27156.

This Executive Order is valid provided that installation instructions for the "CUE" package will not recommend tuning the vehicle to specifications different from those submitted by the manufacturer.

Changes made to the design or operating conditions of the "CUE" package, as exempted by the Air Resources Board, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of the "CUE" package using an identification other than that shown in this Executive Order or marketing of the "CUE" package for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board.

This Executive Order does not constitute any opinion as to the effect that the use of the "CUE" package may have on any warranty either expressed or implied by the vehicle manufacturer.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE GMC "CUE" PACKAGE.

No claim of any kind, such as "Approved by Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

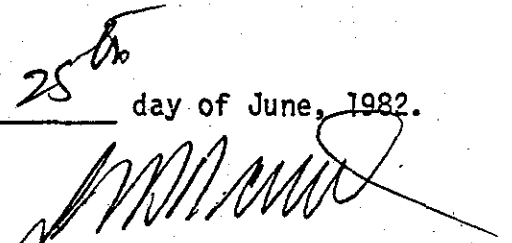
Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

"43644. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the state board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the state board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at El Monte, California, this 25<sup>th</sup> day of June, 1982.

  
K. D. Drachand, Chief  
Mobile Source Control Division

State of California  
AIR RESOURCES BOARD

Staff Report

June 15, 1982

Evaluation of General Motors Corporation's "California Upgrade for Economy" (CUE) Engine Modification in Accordance with Section 2222, Title 13, of the California Administrative Code.

I. INTRODUCTION

General Motors Corporation (GMC), of Warren, Michigan, has requested for an exemption from the prohibitions of California Vehicle Code Section 27156 for an engine modification program. GM proposes to make available an engine modification package, California Upgrade for Economy (CUE), for upgrading 1975 through 1981 model 8V-92TA and 1976 through 1981 model 6V-92TA General Motors Detroit Diesel Allison Division (GM-DDAD) heavy-duty engines. The modification of these older engines will utilize some components of 1982 California certified 8V-92TA and 6V-92TA GM-DDAD engines to a hybrid specification. The purpose of the CUE modification, according to GMC, is to improve performance and fuel economy.

II. "CUE" PACKAGE DESCRIPTION

GMC proposes, in their CUE program, to replace certain 1975 through 1981 OEM engine parts during a routine rebuild or a special rebuild solely for fuel economy improvement with components utilized on 1982 model year California certified engines. The parts which are to be upgraded are cylinder liners, gear train (for the blower drive gear), fuel injectors, blower, turbocharger, aftercooler, air inlet housing, throttle delay check valve, camshaft, and piston rings. Tables I and II (attached) list these parts by GMC part numbers.

### III. EVALUATION

GMC did not submit any test data to show that the modification will have possible effects on emissions.

In response to GMC's request, the staff reviewed the parts list and compared with GMC certification document to assure that the components used in the CUE package are those parts used in 1982 California certified engines. Because not all parts contained in the CUE package are listed in GMC's certification application, only a partial list of the parts were cross-checked and verified. It may be assumed that the other parts not listed in the certification application (cylinder liner, gear train for blower drive gear, air inlet housing, throttle delay check valve, camshaft, and piston rings), when updated to the 1982 configuration which was designed to meet more stringent emission standards, will not have, if any, adverse effect on emissions.

### IV. DISCUSSION

Per Air Resources Board (ARB) engine change policy (ARB Mail Out No. 81-040) pertaining to heavy-duty vehicles, an engine which is rebuilt to non-OEM configuration must be reviewed by the ARB and receive a written exemption prior to rebuild.

Since the components replaced are currently utilized on certified 1982 engines, the staff is of the opinion that there will be no adverse effect on emissions during the rebuild of the subject engines.

### V. RECOMMENDATION

The staff is of the opinion that the GMC engine modification package in the CUE program during rebuild of 1975 through 1981 model 8V-92TA and 1976 through 1981 model 6V-92TA engines will not have any adverse effect on emissions. The staff, therefore, recommends that Executive Order No. D-126 be adopted.

T & A  
GM-DDAD 6V-~~4~~ A Engine  
"CUE" Components

<u>Nomenclature</u>	<u>1982 Replacement Part</u>	<u>1980-1981 OEM Part</u>	<u>1979 OEM Part</u>	<u>1977-1978 OEM Part</u>	<u>1975-1976 OEM Part</u>
Cylinder Liner	5107176	Reuse	Reuse	5104214	5148505
Gear Train (blower drive gear)	5122920	5122918	5122918	5122918	Reuse
Injectors	9F90-5226090	9C90-5229890 9C85-5229885 9C80-5229880	9B90-5229810 9B85-5229815 9B80-5229805	9A90-5229630 9A85-5229625 9A80-5229620	9A90-5229630 9A85-5229625 9A80-5229620
Blower	8923495 (1) 8923497 (2) 8923496 (3)	5101528 (1) 5104936 (2) 5103854 (3)	5101528 (1) 5104936 (2) 5103854 (3)	5101528 (1) 5104936 (2) 5103854 (3)	5101528 (1) 5104936 (2) 5103854 (3)
Turbocharger	TV-7111 (1.23) 8923051	TV-8102 (1.08) 5101151	TV-8102 (1.23) 5102353	TV-8102 (1.08) 5101151	TV-8102 (1.08) 5101151
Aftercooler	8923050	5101152	5101152	5101152	5101152
Air Inlet Housing	8923179	5101411	5101411	5101411	5101411
Throttle Delay (check valve)	5103296	Reuse	5102155	5102155	5102155
Camshaft	5108114 R/B 5108113 L/B	8921368 R/B 8921367 L/B	Reuse Reuse	5107245 R/B 5107248 L/B	5107229 R/B 5107227 L/B
Piston Rings	8923178 (4) 8923113 (5) 8923112 (6) 8923559 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)

(1): Front mount turbo  
(2): Rear mount turbo

(3): Back mount turbo  
(4): Fire rings

(5): Compression ring  
(6): Oil ring

(7): Expander

Table I  
GM-DDAD 8V-5.7L A Engine  
"CUE" Components

<u>Nomenclature</u>	<u>1982 Replacement Part</u>	<u>1980-1981 OEM Part</u>	<u>1979 OEM Part</u>	<u>1977-1978 OEM Part</u>	<u>1975-1976 OEM Part</u>
Cylinder liner	5107176	Reuse	Reuse	5104214	5148505
Gear train (blower drive gear)	5109602	5122920	5122920	5122918	5122918
Injector	9F90-5226090	9C90-5229890 9C85-5229885 9C80-5229880	9A90-5229630 9A85-5229625 9A80-5229620	9A90-5229630 9A85-5229625 9A80-5229620	9290-5229405 9285-5229400 9280-5229180
Blower	8923474 (1) 8923475 (2) 8923476 (3)	5101483 (1) 5104937 (2) 5144787 (3)	5101483 (1) 5104937 (2) 5144787 (3)	5101483 (1) 5104937 (2) 5144787 (3)	5101483 (1) 5104937 (2) 5144787 (3)
Turbocharger	TV-8117 (1.39) 8923340	TV-8101 (1.39) 5101508	TV-8101 (1.60) 5101513	TV-8101 (1.60) 5101513	TV-8101 (1.60) 5101513
Aftercooler	8923233	5101327	5101327	5101327	5101327
Air inlet housing	8923341	5122918	5122981	5122918	5122918
Throttle delay (check valve)	5103296	Reuse	5102155	5102155	5102155
Camshaft	5108116 R/B 5108115 L/B	8921370 R/B 8921369 L/B	Reuse Reuse	Reuse	5107231 R/B 5107232 L/B
Piston Ring	8923178 (4) 8923113 (5) 8923112 (6) 8923559 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)	5100601 (4) 5100607 (5) 5144620 (5) 5102736 (6) 5102737 (6) 5144622 (6) 5102744 (7)

(1): Front mount turbo  
(2): Rear mount turbo

(3): Back mount turbo  
(4): Fire rings

(5): Compression ring  
(6): Oil ring

(7): Expander