

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-8-1
Relating to Exemptions under Section 27156
of the Vehicle Code

AIR QUALITY PRODUCTS, INC.
"PURE POWER"

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 Section 39023 of the Health and Safety Code;

IT IS ORDERED AND RESOLVED: That the installation of "Pure Power" capacitive discharge ignition system manufactured by Air Quality Products, Inc. has been found to not reduce the effectiveness of required emission control devices in vehicles and therefore is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1955-1974 model-year vehicles except those vehicles originally equipped with electronic ignition systems and those 1966-70 model-year vehicles equipped with incompatible NOx devices (Reference Executive Order G-19-2). The device consists of a d-c to d-c converter, capacitor, and electronic switch (silicon controlled rectifier).

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different than those listed by the vehicle manufacturer.

Changes made to the design or operating conditions of the device as originally submitted to the Air Resources Board for evaluation that adversely affect the vehicle's pollution control devices shall invalidate this Executive Order.

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 "PURE POWER" DEVICE.

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 unlawful, untrue or misleading advertising and Section 17534 makes violation punishable as a misdemeanor.

Section 39130 and 39184 of the Health and Safety Code provide as follows:

"39130. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for certification of a device, represent, any device as a motor vehicle pollution control device unless that device has been certified by the 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 section is a misdemeanor."

"39184. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for accreditation 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 accredited by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as an accredited device. Any violation of this section is a misdemeanor."

Any apparent violation of the policy or laws will be submitted to the Attorney General of California for such action as he deems advisable.

Executive Order D-8, dated March 19, 1973 is superseded and of no further force and effect.

Executed at Sacramento, California, this 6th day of February, 1974.

Original signed by
William Simmons

WILLIAM SIMMONS
Executive Officer

State of California

AIR RESOURCES BOARD

February 1, 1974

Staff Report

Evaluation of the Air Quality Products, Inc.,
"PURE POWER"
Capacitive Discharge Ignition
Systems for Exemption to the Prohibitions
of Section 27156 of the Motor Vehicle Code

I. Introduction

Air Quality Products, Inc., Orange, California, has applied for exemption to the prohibitions of Section 27156 of the Motor Vehicle Code for the "Pure Power" capacitive discharge ignition system. Section 27156 prohibits the installation of any device which reduces the effectiveness of motor vehicle emission control systems. The applicant intends to sell the device as an "add-on" part to the standard ignition system of 1974 and older model-year vehicles.

II. System Description

For a general description of capacitive discharge ignition systems, see staff report "Evaluation of Capacitive Discharge and Transistorized Ignition Systems for Compliance with the Requirements of Section 27156 of the Motor Vehicle Code", dated February 14, 1973.

The "Pure Power" device consists of circuits for a d-c to d-c converter, storage capacitor and a silicon controlled rectifier which

serves as an electronic switch, and a trigger conditioner.

III. Emission Testing

The "Pure Power" capacitive discharge ignition system is identical in design and operation as the capacitor discharge system used in the accredited Air Quality Products' "55-65 Pure Power" and "66-70 Pure Power" emission control devices. No adverse effects attributed to the capacitive discharge ignition system section of the control devices were detected during their accreditation evaluations.

Additional tests were performed on the "Pure Power" device by the Air Resources Board Laboratory. The following vehicles were used in the evaluation:

1973 Pontiac, 350 CID, 2 Bbl. Carb. EGR/AIR, Auto. Trans.

1973 Mercury, 302 CID, 2 Bbl. Carb. EGR, Auto. Trans.

The idle air fuel mixture and ignition systems of both vehicles were prechecked to insure proper engine operation. For all tests, with and without device, the engine settings were adjusted to the vehicle manufacturer's specifications.

Baseline and device hot start CVS tests were performed. The following are the results of the ARB tests:

	<u>Hot CVS</u> <u>Grams/Mile</u>		
	<u>HC</u>	<u>CO</u>	<u>NOx</u>
1973 Pontiac Baseline	2.23	18.22	2.60
Device	2.38	18.33	2.38
1973 Mercury Baseline	2.42	14.25	2.57
Device	2.52	16.02	2.50
1973 Mercury* Baseline	2.48	13.93	2.48
Device	2.51	14.60	2.57

*Tests repeated to establish cause of excessively large increase in CO emissions measured during the device test. Basic reason for the increase is attributed to a shift in the engine's operating condition.

Baseline and device spark timing advance was measured on both vehicles. The data showed no significant difference between the curves produced by the device and the baseline vehicle.

During baseline and device emission tests on the 1973 Pontiac, open circuit spark voltages were measured at idle and 2,200 engine RPM.

	Open Circuit Spark Voltage	
	<u>Idle(600 RPM)</u>	<u>2,200 RPM</u>
Baseline	22,000 volts	22,000 volts
Device	32,000	28,000

IV. Conclusions and Recommendations

It is the staff's opinion that the Air Quality Products, Inc. "Pure Power" capacitive discharge ignition system will not adversely affect the performance of the motor vehicle exhaust emission control system when evaluated with respect to the exhaust emissions obtained with a conventional ignition system of a "tuned" engine. This device may also have a beneficial effect in the control of exhaust emissions by maintaining the "tuned" condition of the engine for a longer period of time. Therefore, the "Pure Power" capacitive discharge ignition system should be exempt from the prohibitions of Section 27156 of the Motor Vehicle Code for the model-year vehicles shown in Executive Order D-8-1.