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STAFF REPORT

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SUBJECT: RESOLUTION OF DIFFERENCES BETWEEN BAR AND ARB
VOLUNTARY ACCELERATED VEHICLE RETIREMENT REGULATIONS
AND OPTIONS TO ADDRESS PARTS RECOVERY AND RESALE
FROM RETIRED VEHICLES

Introduction

This report recommends revisions to current Air Resources Board (ARB) Voluntary Accelerated Vehicle Retirement (VAVR) regulations to minimize the differences between ARB VAVR regulations and Bureau of Automotive Repair (BAR) VAVR regulations per Health and Safety Code, Section 44102. *Specifically, with respect to vehicle eligibility, staff recommends that the ARB VAVR regulations be amended to match the BAR regulations with only two exceptions, i.e., driving in reverse and the vehicle registration history.*

In addition, the report presents policy and strategy options to maximize parts recovery while maintaining the credibility and integrity of the Mobile Source Emission Reduction Credit (MSERC) VAVR programs required by Health and Safety Code, Sections 44120 and 44080 – 44122, respectively.

The Health and Safety Code makes two important stipulations about VAVR programs that generate MSERCs:

1. The MSERC programs must be “harmonized” with respect to BAR’s VAVR program; and,
2. The VAVR programs must maximize the salvage value of vehicles through recycling, sales, and use of parts consistent with the Vehicle Code and state guidelines.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Background

The Health and Safety Code provides for two types of VAVR programs:

- (1) The BAR program which is a “safety valve” for consumers with vehicles that *fail their smog inspection*, but may have difficulty affording repairs and/or deem repair costs not cost effective; and,
- (2) MSERC programs to be operated by private enterprises under local district control following ARB regulations. Under this type of program, local districts use the vehicle retirement program’s emission benefits (“credits”) to substitute for other required emission reductions, such as, trip reduction strategies or additional stationary source reductions.

To establish operating conditions for these two types of programs, the BAR adopted its VAVR regulations on December 3, 1998; whereas, the ARB adopted its present VAVR regulations on October 22, 1999.

The fundamental difference between BAR’s vehicle retirement program and programs operated under ARB regulations is:

- Only vehicles that have **failed** their most recently required biennial smog inspection (within the last 120 days) are eligible for BAR’s VAVR program; whereas;
- Only vehicles that **pass** their biennial smog inspection (or, are exempted from biennial inspection) are eligible for MSERC programs.

This ensures that MSERC emission reductions are “surplus” to the reductions achieved under the Smog Check II program.

Notwithstanding that the two VAVR programs serve different purposes, the Health and Safety Code requires that the two programs operate in “harmony.” Specifically, Section 44102 states:

“(a) The state board, the Department of Motor Vehicles, and the department shall *harmonize the requirements* (emphasis added) and implementation of this program with the motor vehicle inspection program and other programs contained in this chapter, particularly the provisions relating to gross polluters in Article 8 (commencing with Section 44080) and the *repair or removal of high polluters in Article 9 (commencing with Section 44090)* (emphasis added).

(b) Insofar as practicable, *these programs shall be seamless to the participants and the public* (emphasis added).”

For the most part, the two types of VAVR programs have operated without significant conflict. Specifically, the price offered by BAR to retire a vehicle was generally less than the price offered to retire a vehicle under the local MSERC programs, i.e., \$450 versus \$500 - \$700 per vehicle, respectively. Therefore, enterprise operators and local districts considered the two programs “compatible” and did not complain about the regulatory differences.

However, this situation quickly changed on July 1, 2000, when BAR increased the amount paid to the consumer from \$450 per vehicle to \$1,000 per vehicle. This action created a substantial differential between the two programs and caused, at least the perception, that the two programs were in “competition” even though, in reality, BAR’s program targets vehicles failing their biennial inspection; whereas, the private sector programs operated under the ARB regulations, target vehicles that pass or are exempted from the biennial inspection.

In addition, BAR’s increase to \$1,000 per vehicle focused attention on the regulatory differences between the two types of programs. In fact, many interested parties consider the BAR vehicle eligibility regulations to be much less stringent than the ARB vehicle eligibility regulations. For example, to be eligible for vehicle retirement, ARB regulations require that a vehicle must have windshield wipers and mirrors present and operable, whereas, BAR regulations are silent on these two items.

As a direct result, many stakeholders believe that the cost differential combined with the regulatory differences, makes the MSERC type VAVR programs NOT competitive with the BAR VAVR program. These stakeholders further complain that the combined cost differential and regulatory differences jeopardize MSERC program viability.

However, it should be noted that the more stringent ARB regulations attempt to ensure that a vehicle is being driven on a regular basis prior to retirement to substantiate calculated emissions benefits, as well as, to verify that credit is not given or taken for vehicles that are, in reality, sitting idle and not being driven. Vehicles retired under BAR’s VAVR program generate no “credits”; therefore, it is less critical to air quality that BAR ensures that the vehicle is actually being driven on the road.

With respect to the cost differential, the market place controls the price offered for retired vehicles and it is beyond the scope of ARB authority to regulate these prices. On the other hand, ARB does have the authority (and responsibility) to minimize regulatory differences between the two types of programs.

Furthermore, at workshops and meetings held this year to review the VAVR regulations, several groups (classic car clubs, after-market parts manufacturers, scrap dealers, and local air districts) provided public comment about the ARB regulations. Specifically, the participants discussed vehicle eligibility requirements and differences between BAR/ARB regulations. These participants almost unanimously urged the ARB to further harmonize their VAVR regulations with respect to the BAR regulations. Specifically, the

participants proposed that ARB revise the regulations to closely follow the requirements specified in the BAR regulations.

Participants proposed only two alternatives to the eligibility requirements specified in BAR and/or ARB regulations. The first alternative proposal was to simplify the vehicle eligibility requirements to only one requirement: Review BAR Vehicle Information Database (VID) data to verify that the vehicle being retired traveled a specified average number of miles in a given year (based on average vehicle use for a specific model year).

Since smog check technicians are required to enter odometer data when a smog inspection is performed, then the average annual vehicle miles traveled (VMT) can be determined simply by reviewing the VID data. If a vehicle has traveled a specified number of miles in a given period, then it is eligible to be retired under a MSERC program.

Unfortunately, ARB staff examined the feasibility of using VID data as proposed, but concluded that the VID was not reliable enough to determine the total miles a specific vehicle traveled in a given period. ARB staff found that smog check technicians frequently enter erroneous odometer data, either by mistake or otherwise. Overall, this data may be reliable to determine average VMT by model year, but it is not reliable on a vehicle specific basis. Therefore, this alternative is not considered viable.

The second alternative proposal was suggested by one of the districts. The District proposed that the vehicle eligibility requirements be consistent with the motor vehicle code. Specifically, under this proposal, it is assumed that if the vehicle meets vehicle code requirements, it is considered to be both road-worthy and being driven; therefore, it is eligible to be retired under MSERC programs. Any vehicle NOT in compliance with the vehicle code, would NOT be eligible for retirement unless and until necessary repairs were performed.

ARB staff rejected this proposal because compliance with vehicle code requirements does not accurately indicate if a vehicle is actually being operated on the road. More precisely, it is extremely common to see vehicles on the road that are obviously not in compliance with the vehicle code (as example broken tail or head lights). Further ARB staff believes that it would be wasteful to require these vehicles to be brought into compliance, then to immediately retire the vehicle. Finally, ARB staff suggest that, if a vehicle is not in compliance with the vehicle code, then this is an indicator that the vehicle is relatively poorly maintained (even though it may pass smog inspection) and these are the specific vehicles that should be targeted for MSERC programs.

Consistent with the workshop consensus, the following Table 1 presents a side by side comparison of specific vehicle eligibility requirements under both ARB and BAR regulations. Please note that ARB staff proposes to amend current ARB regulations to delete those words shown in strikethrough and add those words underlined. The affect

of these proposed amendments “harmonizes” ARB regulations with BAR regulations while preserving the integrity of MSERC programs with only two exceptions as discussed below.

First, the proposed revised ARB regulations still require that a vehicle must drive 25 feet in reverse; whereas, BAR’s regulations contain no requirement that the vehicle be capable of driving in reverse. ARB staff believes that vehicles that cannot be driven in reverse, generally drive infrequently, at best. Therefore, this requirement is needed to ensure that the credits claimed under MSERC programs are credible. Retiring an infrequently driven or non-operating vehicle can result in an emissions increase (once the credit is used); therefore, vehicle retirement should not generate MSERCs for these vehicles.

The second exception where proposed ARB regulation revisions continue to differ with BAR regulations is the vehicle registration requirements. Specifically, the BAR regulations do not allow an expired registration greater than 120 days after the postmark on the VAVR application. Essentially, under BAR’s regulations, the consumer may allow vehicle registration to lapse for up to 120 days after failing the smog inspection. BAR included this provision to allow the consumer 120 days to decide between repairs versus retirement.

On the other hand, current ARB VAVR regulations allow planned non-operation status for up to 2 months and/or a registration lapse of up to 180 days within the last 24 months prior to retirement. However, the vehicle must be registered as operational during the last 3 months of the 24-month period (two complete registration cycles). This provides some level of confidence that the vehicle is truly driven on the road because to be registered, the vehicle must pass the necessary smog inspection and, even more importantly, be currently insured. It is doubtful that a consumer would expend funds to meet these requirements unless they truly intended to drive the vehicle.

Notwithstanding this, the ARB staff proposes to amend regulations to further simplify vehicle registration eligibility requirements. Specifically, staff proposes to replace the limits in registration lapse with a requirement that the vehicle be registered as an operating vehicle for at least the last 120 days prior to retirement. This means, as a registered operating vehicle, it passes the most recently required smog inspection (if required for registration), the vehicle is insured; and, all fees have been paid.

It should be noted that this represents a substantial change from current regulations in that there is no requirement that the vehicle be registered for two consecutive registration cycles. Therefore, under this proposed revision, it is more possible for a vehicle to be *imported* into the local district and retired for credit than would be possible under current regulations. However, ARB staff believes this risk is minimal given the current economics of MSERC programs, i.e., a vehicle would have to be imported to the district (at some cost), then held for the required 7-day waiting period (at some cost) just to be sold for \$500 to \$700 with very little or no profit margin.

Table 1

Side by Side Comparison of Vehicle Eligibility Requirements
ARB Regulations versus BAR Regulations

Category	ARB Regulations	BAR Regulations
Doors	All doors present and operable without tie-downs such as rope, etc.	All doors present
Hood	Hood lid present and latched without tie-downs such as bungee cord, etc.	Hood lid present
Dashboard	Dashboard present. Warning lights and gauges must be original.	Dashboard present
Windshield	Windshield present. No holes or tape over holes. Windshield wipers present and working.	Windshield present
Side windows	Both <u>One</u> side windows present.	One side window present.
Pedals	Interior Pedals <u>operational</u> present with flat surface.	Interior pedals operational
Panels	<u>Original</u> All side and/or quarter panels present, not cause non-operation.	All side and/or quarter panels present
Lights	Both <u>One</u> headlights, <u>one</u> taillights, and <u>one</u> brake lights present.	One headlight, one taillight and one brake light present
Trunk	Trunk lid closed, no rope, etc.	(No requirement)
Seats	Driver's seat present, stay up.	Driver's seat present
Bumpers and fenders	Both <u>original</u> <u>One</u> bumpers, not cause non-operation present.	One bumper present
Exhaust	<u>Original</u> exhaust system present, not cause non-operation.	Exhaust system present
Holes	No holes in floor or passenger compartment.	(No requirement)
Drive-ability/operability	Drive forward and in reverse ≥ 25 feet. Idle and operate ≥ 10 seconds. Drive ≥ 100 feet and stop with brakes. First 60 feet ≥ 5.5 seconds in dry weather, ≥ 8.5 seconds in wet weather. Return to start point.	Drive forward ≥ 10 yards under own power. (ARB regulations will keep driving forward and reverse for 25 feet.)
Reasons for Rejection	No stalling or whine and other sounds. Brake goes to floor.	(No requirement)
Double Eligibility Criteria	Turn lights, door panels, front windows, mirrors present and operational. No make-shift brackets. No exterior holes two inches at widest	(No requirement)
Ineligible Vehicles	Can not be under Smog Check economic hardship/waiver. Must not be high emitter or gross polluter.	Can be under BAR economic hardship extension/waiver.

Appendix 1 presents the recommended revised ARB regulations with proposed deletions shown in “strike-out”, and new language shown in “underline” format.

Please note that the revised regulations do not address parts recovery. Staff intends to update the paragraphs on parts recycling and resale (Section 2604) after public comment is received regarding the options presented later in this staff report.

Parts Recovery Background

The issue of VAVR parts recovery continues to be controversial, however, to understand the actual magnitude of VAVR programs, Table 2 shows the total number of vehicles retired under MSERC programs for the year 2000. As Table 2 shows, only 6,901 vehicles were retired under these programs, or approximately 0.3% of the State’s total 1966 through 1981 vehicle population. Also note that this is only 2.8% of the approximately 250,000 total vehicles¹ annually retired in the state from all sources, not just the MSERC programs.

It should also be noted that while Table 2 shows the total number of vehicles retired under ARB regulations in the year 2000, only two of the districts, the Bay Area and the South Coast, use the “credits” generated under their MSERC programs against other SIP requirements. Both these districts apply the credits generated against “trip reductions” specified in their local plans. None of the credits are currently sold to stationary sources as is commonly believed.

Table 2
VAVR Programs of Four Participating Districts
in California for Year 2000

District	No. Vehicles
Bay Area	3,821
South Coast	2,626
Santa Barbara	282
San Diego	172
Total	6,901

Specifically with respect to parts recovery and resale, under current regulations, neither BAR, nor ARB allows parts recovery. In fact, the CCR, Title 13, §2604, ARB regulations state:

“...(2) No parts may be removed, for sale or reuse, from any vehicle retired for the purpose of generating emission reduction credits. The only allowable use for any retired vehicle is as a source of scrap metal and other scrap material;

¹ Estimate from State of California Auto Dismantlers Association.

(A) An enterprise operator may separate ferrous and non-ferrous metals prior to vehicle retirement to sell as a source of scrap metal only;

(B) An enterprise operator may sell tires and batteries to an intermediary tire/battery recycler only. All facilities generating or receiving waste tires must use the services of a registered tire hauler/recycler. Battery recyclers must be registered and licensed to handle batteries;...”

Notwithstanding the above, Health and Safety Code, section 44120, states:

“44120. Vehicle disposal under the program (*VAVR programs operating under ARB regulations*) shall be consistent with appropriate state board guidance and provisions of the Vehicle Code dealing with vehicle disposal and parts reuse, and shall do both of the following:

(a) Allow for trading, sale, and resale (emphasis added) of the vehicles between licensed auto dismantlers or other appropriate parties to maximize the salvage value of the vehicles through the recycling, sales, and use of parts of the vehicles, (emphasis added) consistent with the Vehicle Code and appropriate state board guidelines.”

According to several interested parties, including the Legislative Council, ARB’s parts recycling prohibition regulation (CCR, Title 13, §2604) appears to conflict with the Health and Safety Code, Section 44120, which provides for parts recovery. In addition, this issue was raised during the public comment period by the Automotive Parts and Accessories Association, Pick-Ups Ltd., the Specialty Equipment Market Association and numerous private parties as follows:

“Section 44120 of the Health and Safety Code mandates that all scrappage programs allow for parts recycling. This requirement helps make the program more economically viable. It was inserted in Senate Bill 501 to satisfy the concerns of aftermarket parts and service providers and car collectors that only emission-related parts would be destroyed. ARB regulations ignore this legislative mandate.”

In the final statement of reasons for rulemaking, ARB staff disagreed with this comment and argued that a conflict between the ARB proposed regulations and the Health and Safety Code, Section 44120 does not exist. Specifically, ARB wrote:

“Health and Safety Code Section 44120(a) states that the disposal of vehicles retired in accordance with the regulations adopted pursuant to SB 501 shall, "Allow for trading, sale, and resale of the vehicles between licensed auto dismantlers or other appropriate parties to maximize the salvage value of the vehicles through the recycling, sales, and use of parts of the vehicles, consistent with the Vehicle Code and appropriate state board guidelines." First, the Vehicle

Code provides the Department of Motor Vehicles mechanisms for "electronically" retiring a vehicle. These mechanisms allow for, but do not require, the resale and reuse of most vehicle components. Second, the VAVR regulations, which prohibit all vehicle parts resale and reuse from vehicles retired to generate mobile source emission reduction credits, do allow for recycling of the vehicle as scrap metal or other scrap material. These regulations represent the "appropriate state board guidelines" referenced in Health and Safety Code Section 44120(a). Third, the Bureau of Automotive Repair (BAR) has adopted the Vehicle Retirement Program. The Vehicle Retirement Program allows for no recycling of parts other than batteries and tires except as scrap metal or other scrap material. Health and Safety Code §44102 mandates that BAR and ARB harmonize the requirements and implementation of the respective vehicle retirement programs. Finally, it is important to note that the South Coast Rule, 1610, recently came under public scrutiny for allowing dismantlers to sell parts. The sale of parts in this program resulted in parts being used on vehicles that would not have qualified for the scrapping program without being "fixed up", thereby producing emission reduction credits that are not surplus. There is no way to ensure that parts resold and reused once a vehicle has been retired in a VAVR program are not used to keep another high polluter on the road or to "fix up" a vehicle that would have been retired through natural attrition but is, instead, retired in a VAVR program. Thus, in accordance with Health and Safety Code §44121 which states that " The state board shall develop standards for the certification and use of emission reduction credits to ensure that the credits are real, surplus, and quantifiable" the VAVR regulations do not allow for parts reuse."

It is important to note that the Office of Administrative Law (OAL) reviewed the ARB regulation proposal and staff's response to public comments regarding the parts recovery prohibition.

Importantly, OAL approved the ARB regulation as proposed, including the provision to prohibit parts recovery.

Notwithstanding the above, the ARB's parts recovery prohibition continues to be an issue with interested parties such as classic car collectors, aftermarket parts manufacturers, local districts and dismantlers. In addition, the perception remains that ARB regulations conflict with existing statutes.

In fact, on February 26, 1999, Senator Johannessen introduced Senate Bill 1058 (SB1058). This bill would have required private enterprise VAVR programs "to be operated in a manner that results in the maximum availability of vehicles and parts of vehicles for sale and reuse for the purposes of recycling, remanufacturing, rebuilding, repair, restoration, voluntary upgrade and maintenance by the public". The bill would require vehicles delivered and processed at the dismantler's facility for the program to be made available for resale, including a requirement that a list of the vehicles be made available to the public. The bill would specify that vehicles shall not be required to be

destroyed, and would provide that any funds available to the dismantler under the program would be reduced by the value of parts that are sold from that vehicle. The bill would also provide that whole vehicles, and vehicles from which emission-related parts have been sold, are not eligible for the emission credits or other compensation with public funds.

Ultimately, Senator Johannessen agreed to “table” the bill to provide the ARB an opportunity to re-examine the VAVR regulations. In response, the ARB agreed to revisit their VAVR regulations.

As previously mentioned, to thoroughly re-examine the VAVR regulations, ARB staff conducted several informal workshops and meetings earlier this year. These included an informal public VAVR Workshop on January 30, 2001, a meeting with the SCAQMD on January 30, 2001, and, lastly, a meeting with four local air districts, (Bay Area, Santa Barbara, South Coast and San Diego) on February 28, 2001. In addition, ARB received public comments via emails, phone calls and letters.

Two opposing parts recovery views summarize the various outlooks presented at the workshops:

1. Promote or facilitate parts recovery to improve VAVR cost-effectiveness; to provide low-cost parts for vehicle repair for low-income consumers; and, to comply with existing statutory mandates; or,
2. Discourage parts recovery to promote the credibility of MSERC programs; and, to prevent the use of parts from retired vehicles to extend the life of other older, high emitting vehicles that would otherwise be taken out of service.

The following is a summary of the positions of the various interest groups:

Classic Car Collectors – The classic car collectors contend that the destruction of parts from older cars causes an irreversible loss of parts that are typically needed and used to restore cars with significant California historical value. As hobbyists, they take much pride in the restoration of older classic cars to near mint condition and contend that these vehicles run as clean as possible. Specifically, they contend that the parts recovery prohibition significantly diminishes parts availability, thus resulting in higher costs to restore classic vehicles.

In addition, these groups argue that classic cars cause an insignificant impact on air quality because owners drive these vehicles very few miles during any given year.

These enthusiasts also contend that the ARB significantly diminishes MSERC program cost effectiveness by not permitting parts recovery and resale. Therefore, since public funds are sometimes used to support the MSERC programs, public funds are being squandered.

Finally, these groups maintain that the ARB regulations do not adhere to the Health and Safety Code, Section 44120, to maximize salvage of parts acquired from VAVR programs.

After-market parts industry – The after-market parts industry maintains that the parts recycling prohibition reduces the number of older cars utilizing parts this industry produces; thus, causing a loss in earnings and profits. They believe parts recovery increases the availability of classic cars; thus, benefiting after-market parts manufacturers.

Alternately, many after-market parts makers propose voluntary vehicle repair and upgrade as an alternative to scrap programs. They claim that such programs dramatically improve emission performance from older vehicles. These manufacturers point to the pilot repair-upgrade program operated by the San Diego Air Pollution Control District (SDPCD) which demonstrates emission reductions through repair/upgrade. Supporters claim the pilot program realizes twice the emissions benefits of vehicle retirement programs; however, talks with SDPCD revealed that the actual cost of the upgrade program is at least four times more expensive than vehicle retirement in terms of dollars per ton of emission reductions.

Dismantlers –Vehicle dismantlers are in two “camps”, solely depending on their business structure:

- Enterprise operators primarily retiring vehicles to sell MSERCs view parts recovery as an additional administrative burden lacking cost effectiveness. More specifically, enterprise operators that retire vehicles to sell MSERCs are typically large-scale operators that rotate inventories of vehicles waiting to be crushed in large yards. The removal of recyclable parts slows the movement of scrapped vehicles. In addition, the large yards struggle to track vehicles and maintain data on parts resold. Therefore, these MSERC dismantlers opt not to recycle parts.
- Dismantlers which target vehicles with parts recovery value and who also target the classic car enthusiasts or other consumers performing “self repairs” depend on parts recovery to generate revenue. These dismantlers have similar interests and positions as classic car clubs and after-market parts manufacturers. These dismantlers generate revenue by recycling parts and therefore contend that the prohibition of parts recycling degrades revenue generation for the MSERC program. Since the recycling of parts produces their main source of income, they support parts resale.

Environmentalists – Environmentalists contend that no real emission reductions occur when parts are recycled because upon vehicle retirement, the emissions are “*transferred*” to another vehicle marginally passing Smog Check, thus keeping the

second vehicle on the road longer than would otherwise be the case. Therefore, they claim the allowance of parts recovery causes MSERC programs to become a “sham.”

In addition, environmentalists believe that worn/damaged recycled parts from retired vehicles may actually cause emissions to increase in the second vehicle compared to no parts recovery which would cause the consumer to replace the part with a new or re-manufactured part.

Traditional environmentalists did not attend the 2001 workshops, and did not submit any comments to the ARB this year on parts recycling. However, at past workshops, environmentalists have opposed parts recovery and support ARB VAVR regulations (CCR, Title 13, §2604) which prohibit parts recycling.

Options for Parts Recovery

The following section presents a pro and con analysis of 3 parts recovery options discussed at the workshops.

Option 1 - No parts recycling or resale is allowed (No change to current ARB regulations)

Pros

- Best for air quality. This option minimizes the possibility that recycled parts will be used to prolong the life of other older vehicles.
- Adds credibility to the MSERC programs by ensuring that the credits claimed are real.
- Requires no change to existing ARB regulations.

Cons

- Continues at least the perception that existing ARB regulations violate the provision in the Health and Safety Code, Section 44120(a), which states, "Allow for trading, sale, and resale of the vehicles between licensed auto dismantlers or other appropriate parties to maximize the salvage value of the vehicles through the recycling, sales, and use of parts of the vehicles, consistent with the Vehicle Code and appropriate state board guidelines."
- May decrease cost effectiveness of VAVR programs.
- May affect price and availability of parts to maintain classic cars or vehicles owned by low-income consumers.

Option 2 – Allow parts recovery except for “emission- related” parts² and drive train parts³

Under option 2, the engine, emission-related parts, transmission, and drive train parts would be removed and destroyed. The remainder of the vehicle could be resold; however, it is important to note that parts recovery is **permissive, not mandatory**. The *enterprise operator* decides whether or not to resell parts from a vehicle being retired under the MSERC program.

Under this option, ARB regulations would specify how emission-related parts and drive train parts are to be removed before the non-emission-related and non-drive train parts are made available for parts recovery. These regulations would also specify the requirements and procedures to be used by the dismantler to destroy the emission-related and drive train parts. Specifically,

“The part will be considered destroyed when it has been punched, crushed, shredded or otherwise rendered permanently and irreversibly incapable of functioning as originally intended.”

To allow time for classic car enthusiasts to examine and/or purchase a VAVR vehicle (before it is sold to the enterprise operator), the ARB VAVR regulations currently require a mandatory 7-day waiting period in which the dismantler provides the vehicle description to the local district. The local district then publicizes the vehicle description so that the vehicle is available for sale to the public for a minimum of 7 days. If the vehicle is sold then MSERCs cannot be claimed for that vehicle.

If the vehicle is not sold, the dismantler inspects the vehicle per ARB VAVR eligibility requirements or more stringent local district regulations. Upon verifying the vehicle passes the eligibility requirements, the dismantler then decides whether or not to recover non-emission-related and non-drive train parts. If the enterprise operator doesn't intend to recover parts, then the vehicle is crushed within 90 days of the sale.

Under option 2, a decision by the dismantler to recover non-emission-related and non-drive train parts requires the dismantler to remove and destroy the emission-related parts (per the ARB Emission-Related Parts List) and the drive train parts before non-emission-related and non-drive train parts are made available for consumer purchase. If

² 13 CCR §1900(b)(3) - “Emissions-related part” means any automotive part, which affects any regulated emissions from a motor vehicle that is subject to California or federal emissions standards. This includes, at a minimum, those parts specified in the “Emissions-Related Parts List,” adopted by the State Board on November 4, 1977, as last amended May 19, 1981 (and amended June 1, 1990). (See ARB Emissions-related parts list in Appendix 2)

³ Drive train parts are all parts associated with the drive train such as engine, drive mechanism, transmission, differential, axles and brakes.

the dismantler sells any emission-related or drive train parts, MSERCs are not allowed per ARB VAVR regulations.

Staff has created a *preliminary* model checklist (shown in Appendix 3) providing a list of emission-related and drive train parts with check boxes for status, i.e., “removed” and “destroyed.” The checklist is designed to be resistant to error yet practical and feasible with respect to the operations of a typical dismantler. The dismantler completes the checklist as the emission-related and drive train parts are destroyed.

After all emission-related and drive train parts are removed and destroyed, a quality control inspector (designated by the dismantler) performs an inspection of the non-emission-related and non-drive train parts as well as the vehicle body. Upon verification that no emission-related parts or drive train parts have been misplaced with the non-emission-related and non-drive train parts, the quality control inspector signs the checklist. Finally, local districts would be required to audit all aspects of the program.

Pros

- Complies with Health and Safety Code, Section 44120.
- May enhance economic feasibility of MSERC vehicle retirement programs.
- May encourage more dismantlers to participate in MSERC programs, thus, facilitating consumer convenience.
- Voluntary enterprise operator participation ensures that the enterprise operator can choose and participate if there is sufficient economic incentive for parts recycling.

Cons

- More difficult to administer, i.e., effort is required to extract and destroy parts, diminishing the economic return from parts recovery.
- Continues environmental concerns that recycled parts keep older polluting vehicles on the road longer than natural life, thus jeopardizing the credibility of the credits generated under MSERC programs.

Option 3 - Total recycling and resale of all parts, including emission related parts and drive train parts.

A program that allows total recycling would require less administration than either option 1 or 2, since the monitoring of parts resale would not be required. However, vehicle eligibility would still be a requirement, therefore limited auditing by the local districts would be required.

Pros

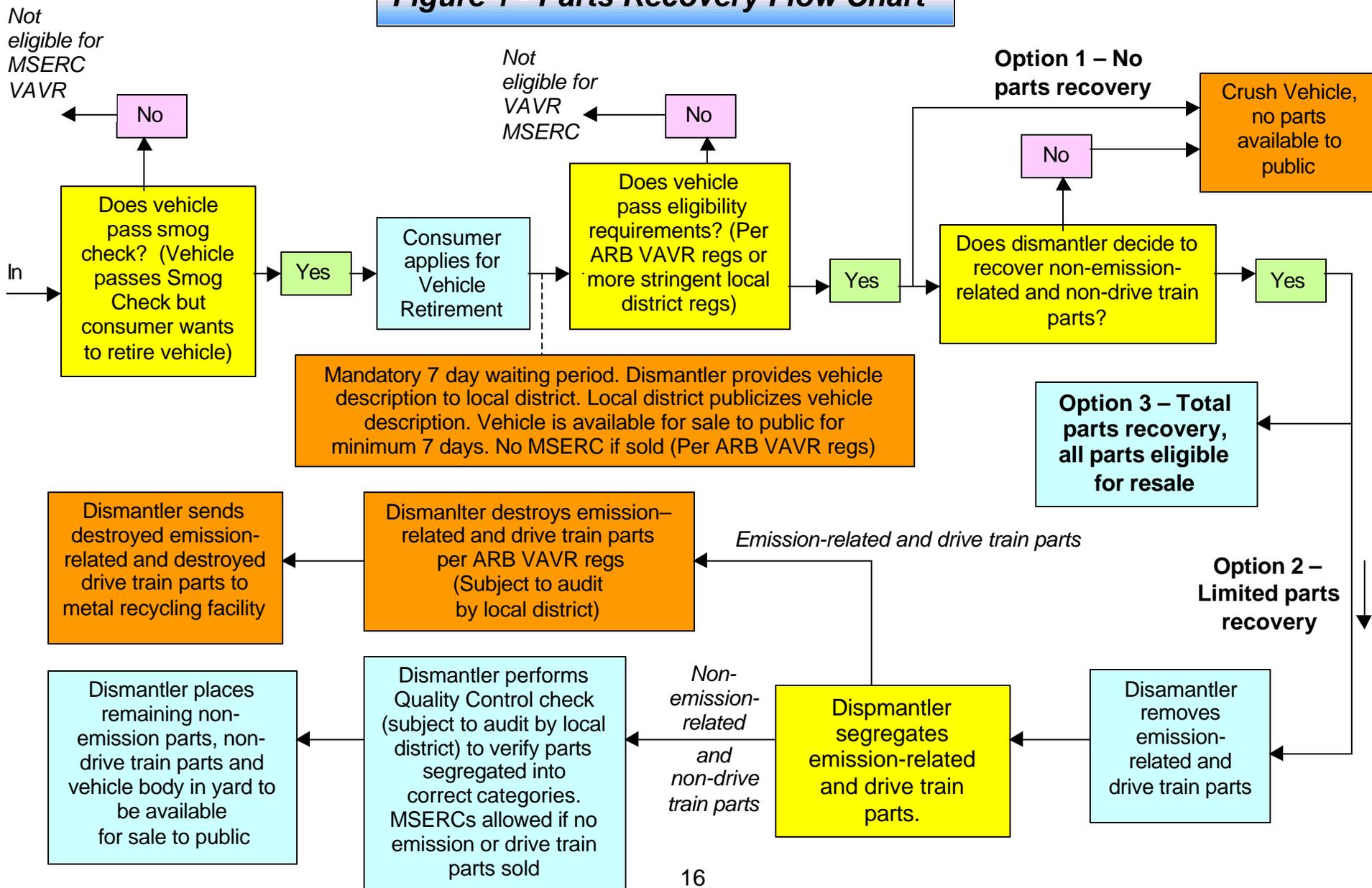
- Maximizes program cost effectiveness
- Like option 1, easy to administer

Cons

- May not result in real emission reductions
- MSERCs difficult to quantify
- Causes lack of credibility of the credits generated under MSERC programs.

Figure 1 below shows the flow chart for all three options including the basic requirements of the program.

Figure 1 - Parts Recovery Flow Chart



APPENDIX 1

Draft Amendment

REGULATIONS FOR VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT ENTERPRISES

[Note: The proposed amendment to Chapter 13, Article 1, Sections 2603, Title 13, California Code of Regulations (CCR), for this rulemaking action are shown in ~~strike-out~~ to indicate proposed deletions and underline to indicate proposed additions.]

REGULATION ORDER

Amend Title 13, California Code of Regulations, Chapter 13, Article 1, Section 2603, to read as follows:

§2603 Vehicle Eligibility

(a) To be eligible for generation of emission reduction credits through a VAVR enterprise, a vehicle shall meet the following criteria:

(1) It shall be voluntarily sold to the enterprise operator for a price mutually agreed between the vehicle seller and the enterprise operator;

(2) It shall be currently registered with the Department of Motor Vehicles as an operable vehicle, and shall have been so registered for ~~twenty-four (24) consecutive months immediately~~ 120 days prior to the final date of sale to the VAVR enterprise, to an address or addresses within the district in which the enterprise is being operated. Smog Checks must be performed as required by the Department of Motor Vehicles in order for the vehicle to be considered registered;

~~(A) A vehicle may also be eligible if the owner of the vehicle placed the vehicle in planned non-operational status per Vehicle Code §4604, et seq., for a total of two (2) months during the continuous twenty-four (24) month registration period, occurring at least three (3) months prior to the date of sale to the VAVR enterprise. Smog Checks must be performed as required by the Department of Motor Vehicles in order for the vehicle to be considered registered;~~

~~(B) A vehicle may also be eligible if the registration has lapsed for a period not to exceed 180 days during the previous twenty-four (24) months and all appropriate registration fees and late penalties have been paid to the Department of Motor Vehicles, provided that the vehicle is registered for at least ninety (90) days immediately prior to its date of sale to a VAVR enterprise. A Smog Check inspection must be performed as required by the Department of Motor Vehicles in order for the vehicle to be considered registered;~~

~~(C)~~ (A) If a vehicle owner has sold a vehicle to an enterprise operator within the previous twelve (12) months, any subsequent vehicles offered to the same enterprise operator must have been registered continuously to that owner for the previous twenty-four (24) month period, in addition to meeting all other requirements of this section;

~~(D)~~ (B) Determination of an individual vehicle's registration history shall be based on:

1. registration data for that vehicle obtained from Department of Motor Vehicles records
2. If (A) provides inconclusive results for an individual vehicle, then copies of the applicable vehicle registration certificates ~~or planned non-operation status certificates covering the necessary time period may be used;~~

(3) It shall be a passenger car or a light-duty truck;

(4) It shall be driven to the purchase site under its own power;

~~(5) It shall not be a high emitter or a gross polluter, and shall not be operating under a Smog Check repair cost waiver or economic hardship extension;~~

~~(6)~~(5) If a vehicle volunteered for retirement is within sixty (60) days of its next required Smog Check inspection, the following criteria must be met:

(A) The vehicle shall pass the Smog Check inspection without receiving a repair cost waiver or economic hardship extension prior to acceptance by a VAVR enterprise operator;

(B) Owners of vehicles requiring Smog Check inspections pursuant to §2603(a) ~~(6)~~(5) shall be required to submit documentation issued by a licensed Smog Check station demonstrating compliance with §2603(a) ~~(6)~~(5)(A). The documentation shall be submitted to the person performing the functional and equipment eligibility inspection pursuant to §2603(b).

(b) Each vehicle shall pass a functional and equipment eligibility inspection performed by the VAVR enterprise operator or other ARB-approved inspector (inspector), conducted on-site at the VAVR enterprise location. The following elements shall be included in the inspection:

(1) The candidate vehicle must have been driven to the inspection site under its own power. If an inspector has knowledge that a vehicle was towed or pushed for any portion of the trip to the inspection site, then the inspector shall not approve the vehicle for eligibility in a VAVR program;

(2) The inspector shall inspect the vehicle to ensure it meets the following requirements and shall reject the vehicle for emission reduction credit generation if the vehicle fails any of these requirements;

~~(A) All doors shall be present and at a minimum the driver's side door shall be operable in a two door vehicle. For a four door vehicle, the driver's side door and one rear door shall be operable. Doors shall be deemed operable if they can open and remain closed without the use of ropes, wire, or tape, or any other add-on device or material that was not part of the original design of the vehicle; All doors shall be present and in place.~~

Driver's door operable;

~~(B) The trunk lid shall remain closed without the use of ropes, wire, or tape, or any other add-on device or material that was not part of original design of the vehicle~~

~~(C)~~ (B) The hood (metal cover providing access to the engine) shall open and shall remain closed utilizing a functional latching mechanism without the use of bungee cords, strapping, ropes, wire, or chains, or any other external device or material that

~~was not part of the original design of the vehicle;~~ The hood shall be present and in place;

~~(D) (C) The dashboard shall contain warning lights and gauges (except clock and/or tachometer) as originally supplied by manufacturer, or functionally equivalent after market replacements;~~ The dashboard shall be in place and operable;

~~(E) (D) Windshield wipers shall be present and operational;~~ Windshield shall be present.

~~(F) The windshield and rear window shall not contain any holes, or holes that are covered by tape or any other external component, or any other defective condition that impairs the driver's vision. In addition, the windshield and rear window shall not be held in place by external components that were not part of the original design of the vehicle;~~

~~(G) (E) The driver's seat must be present and the seat back shall not be reinforced or supported by add-on components such as blocks, tires, boards, or ropes in order to be functional;~~

~~(H) (F) Interior pedals (flat surface attached to a lever(s) controlling the brake, clutch, and accelerators) shall be present~~ operational;

~~(I) (G) The vehicle shall contain bumpers, fenders, exhaust system, and side and quarter panels as originally supplied by the manufacturer or after market part equivalent; these components shall not be damaged to the extent that the operability of the vehicle is impaired. One bumper and all side and/or quarter panels shall be present. Vehicle driveability must not be affected by any body, steering or suspension damage.~~

~~(J) The vehicle shall not contain any holes in the floorboard or any holes penetrating through the body into the passenger compartment. A hole originally designed into the floorboard by the vehicle manufacturer for drainage shall be exempt from this requirement.~~

~~(K) (H) Headlights as well as tail and brake lights shall be present and operational. Burned out light bulbs shall not result in a failure of this requirement provided that the operability of the above lighting systems can be verified. One headlight, one taillight and one brake light shall be present.~~

~~(L) (I) Driver's side and opposing side window shall be present, and not supported by any add-on component that was not part of the original design of the vehicle. Other side windows or functional replacements shall be present;~~ One side window glass shall be present.

~~(M) (J) The requirements of §2603(a)(5) and §2603(a)(6) regarding Smog Check status have been met;~~

~~(N) There should be no obvious indications that the vehicle is not operated on a routine basis for extended periods of time;~~

~~(3) The inspector shall inspect the vehicle to ensure it meets the following requirements and shall reject the vehicle for emission reduction credit generation if the vehicle fails any two of these requirements;~~

~~(A) Turn signal lights shall be present and operational. Burned out light bulbs shall not result in a failure of this requirement provided that the operability of the above lighting system can be verified;~~

~~(B) Driver's side window and opposing side passenger window shall be operational. Operability shall be determined by the inspector raising and lowering the windows using~~

~~the window handle, crank, or power window switch located inside of vehicle. Inability of windows to be raised and lowered shall result in noncompliance with this requirement;~~

~~(C) Rear-view mirror and left-hand side-view mirror shall be present and operational;~~

~~(D) The vehicle shall contain interior door panels as originally supplied by the vehicle manufacturer or after market equivalent. Interior door panels shall be attached to the door without the use of any external device or material not designed for the vehicle;~~

~~(E) The vehicle body shall not contain any holes that exceed two inches in length at the widest point;~~

~~(4) (3) The inspector shall complete the following functional inspection, and shall reject the vehicle for credit generation if the vehicle fails to complete any one of the requirements. Prior to implementing the functional inspection, the vehicle engine shall be turned off;~~

~~(A); Insert key, vehicle engine shall start using keyed ignition system. In addition to the keyed ignition switch, ignition or fuel kill switch may be activated if required to start engine the following test.~~

~~(B) Vehicle shall idle without the use of accelerator pedal for a minimum of ten seconds;~~

~~(C) Transmission shall be shifted into forward gear with brake pedal applied. Vehicle engine shall remain operating without use of accelerator pedal for a minimum of ten seconds. Vehicles equipped with manual transmissions shall be exempt from this requirement.~~

~~(D) (A) Insert key, vehicle engine shall start using keyed ignition system. In addition to the keyed ignition switch, ignition or fuel kill switch may be activated if required to start engine. The Vehicle must start readily through ordinary means without the use of starting fluids or external booster batteries. The vehicle shall be driven forward and in reverse for a minimum of 25 feet under its own power;~~

~~(E) Under its own power, the vehicle shall be driven forward for a minimum of 100 feet starting at 0 miles per hour, and the vehicle shall completely stop at the end of this test using the vehicle's braking system. In dry weather conditions, the vehicle shall travel the first 60 feet of this test within 5.5 seconds. In wet weather conditions, the vehicle shall travel the first 60 feet of this test within 8.5 seconds. After 100 feet have been traveled, the vehicle shall turn around and return to its point of origin;~~

~~(5) The inspector shall reject the vehicle for emission reduction credit generation if any of the following occurs during implementation of the functional tests specified in §2603(b)(2), §2603(b)(3), and §2603(b)(4);~~

~~(A) Engine shuts down subsequent to keyed ignition start;~~

~~(B) Emissions of whining, grinding, clanking, squealing, or knocking noises, or noises from engine backfire;~~

~~(C) The brake pedal drops to the floor when the inspector attempts to stop the vehicle.~~

~~(6) (4) Upon satisfactory completion of the inspection, the inspector will issue a certificate of functional and equipment eligibility.~~

~~(A) master copy of the certificate of functional and equipment eligibility is included in the document "Voluntary Accelerated Vehicle Retirement Certificate of Functional and Equipment Eligibility Inspection Form", as specified in Appendix A to this Article 1;~~

~~(7) (5) Vehicles failing the requirements pursuant to §2603(b)(1), and §2603(b)(4)(3), and §2603(b)(5) may be re-tested by the inspector for compliance with these~~

requirements and issued a certificate of functional and equipment eligibility provided the vehicle has traveled a minimum of 50 miles subsequent to the failure determination. Vehicles with inoperable vehicle odometers must be fixed prior to conducting this test. Vehicles failing the requirements pursuant to §2603(b)(2) and ~~§2603(b)(3)~~ may be re-tested by the inspector for compliance with these requirements and issued a certificate of functional and equipment eligibility at any time after modifications have been made to the vehicle;

(c) Districts may adopt vehicle functional and equipment eligibility inspection requirements that are more stringent than those specified in §2603(b). In doing so, districts may not omit or weaken any of the required functional or equipment tests; they may only add additional tests or adopt a more stringent version of a specified test.

NOTE: Authority cited: Sections 39600, 39601, 44101, and 44102, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44103 and 44107, Health and Safety Code.

APPENDIX 2

Air Resources Board

Emission-Related Parts List

Adopted November 4, 1977

Amended May, 1981

Amended June 1, 1990

The following list of components are examples of emission related parts as defined in Section 1900 (b) (3), Chapter 3, Title 13, California Code of Regulations.

I. Carburetion and Air Induction System

A. Air Induction System:

1. Temperature sensor elements
2. Vacuum motor for air control
3. Hot air duct & stove
4. Air filter housing & element
5. Turbocharger or supercharger
6. Intercooler

B. Emission Calibrated Carburetors:

1. Metering jets
2. Metering rods
3. Needle and seat
4. Power valve
5. Float circuit
6. Vacuum break
7. Choke mechanism
8. Throttle-control solenoid
9. Deceleration valve
10. Dashpot
11. Idle stop solenoid, anti-dieseling assembly
12. Accelerating pump
13. Altitude compensator

C. Mechanical Fuel Injection:

1. Pressure regulator
2. Fuel injection pump
3. Fuel injector
4. Throttle-position compensator
5. Engine speed compensator
6. Engine temperature compensator
7. Altitude cut-off valve
8. Deceleration cut-off valve
9. Cold-start valve

D. Continuous Fuel Injection:

1. Fuel pump
2. Pressure accumulator
3. Fuel filter
4. Fuel distributor
5. Fuel injections
6. Air-flow sensor
7. Throttle-position compensator
8. Warm-running compensator
9. Pneumatic overrun compensator
10. Cold-start valve

E. Electronic Fuel Injection:

1. Pressure regulator
2. Fuel distribution manifold
3. Fuel injectors
4. Electronic control unit
5. Engine speed sensor
6. Engine temperature sensor
7. Throttle-position sensor
8. Altitude/manifold-pressure sensor
9. Cold-start valve

F. Air Fuel Ratio Control:

1. Frequency valve
2. Oxygen sensor
3. Electronic control unit

G. Intake Manifold

II. Ignition System

A. Distributor

1. Cam
2. Points
3. Rotor
4. Condenser
5. Distributor cap
6. Breaker plate
7. Electronic components (breakerless or electronic system)

B. Spark Advance/Retard System:

1. Centrifugal advance mechanism:
 - a. Weights
 - b. Springs
2. Vacuum advance unit
3. Transmission controlled spark system:
 - a. Vacuum solenoid
 - b. Transmission switch
 - c. Temperature switches
 - d. Time delay
 - e. CEC valve
 - f. Reversing relay
4. Electronic spark control system:
 - a. Computer circuitry
 - b. Speed sensor
 - c. Temperature switches
 - d. Vacuum switching valve
5. Orifice spark advance control system:
 - a. Vacuum bypass valve
 - b. OSAC (orifice spark advance control) valve
 - c. Temperature control switch
 - d. Distributor vacuum control valve
6. Speed controlled spark system:
 - a. Vacuum solenoid

- b. Speed sensor and control switch
 - c. Thermal vacuum switch
- C. Spark Plugs
- D. Ignition Coil
- E. Ignition Wires

III. Mechanical Components

- A. Valve Trains:
 - 1. Intake valves
 - 2. Exhaust valves
 - 3. Valve guides
 - 4. Valve springs
 - 5. Valve seats
 - 6. Camshaft
- B. Combustion Chamber:
 - 1. Cylinder head or rotor housing⁴
 - 2. Piston or rotor¹

IV. Evaporative Control System

- A. Vapor Storage Canister and Filter
- B. Vapor Liquid Separator
- C. Filler Cap
- D. Fuel Tank
- E. Canister Purge Valve

V. Positive Crankcase Ventilation System

- A. PCV Valve
- B. Oil Filler Cap

⁴ Rotary (Wankel) engines only

C. Manifold PCV Connection Assembly

VI. Exhaust Gas Recirculation System

A. EGR Valve:

1. Valve body and carburetor spacer
2. Internal passages and exhaust gas orifice

B. Driving Mode Sensors:

1. Speed sensor
2. Solenoid vacuum valve
3. Electronic amplifier
4. Temperature-controlled vacuum valve
5. Vacuum reducing valve
6. EGR coolant override valve
7. Backpressure transducer
8. Vacuum amplifier
9. Delay valves

VII. Air Injection System

A. Air Supply Assembly:

1. Pump
2. Pressure relief valve
3. Pressure-setting plug
4. Pulsed air system

B. Distribution Assembly:

1. Diverter, relief, bypass, or gulp valve
2. Check or anti-backfire valve
3. Deceleration control part
4. Flow control valve
5. Distribution manifold
6. Air switching valve

C. Temperature sensor

VIII. Catalyst, Thermal Reactor, and Exhaust System

A. Catalytic Converter:

1. Constricted fuel filler neck
2. Catalyst beads (pellet-type converter)
3. Ceramic support and monolith coating (monolith-type converter)
4. Converter body and internal supports
5. Exhaust manifold

B. Thermal Reactor:

1. Reactor casing and lining
2. Exhaust manifold and exhaust port liner

C. Exhaust System:

1. Manifold
2. Exhaust port liners
3. Double walled portion of exhaust system
4. Heat riser valve and control assembly

IX. Miscellaneous Items Used in Above Systems

1. Hoses, clamps, and pipers
2. Pulleys, belts, and idlers

X. Computer Controls

1. Electronic Control Unit (ECU)
2. Computer-coded engine operating parameter (including computer chips)
3. All sensors and actuators associated with the ECU

Appendix 3

Emission-Related and Drive Train Parts Removal and Destruction Quality Control Check List

Date _____

Dismantler _____

Address _____

Quality Control Inspector _____

Vehicle Make _____

Vehicle Model _____

Vehicle Year _____

Vehicle License Number _____

Vehicle Odometer Mileage _____

Category	Emission-Related Part	Part Removed	Part Destroyed
Air Induction System	Temperature sensor elements		
	Vacuum motor for air control		
	Hot air duct & stove		
	Air filter housing & element		
	Turbocharger or supercharger		
	Intercooler		
Emission Calibrated Carburetors	Metering jets		
	Metering rods		
	Needle and seat		
	Power valve		
	Float circuit		
	Vacuum break		
	Choke mechanism		
	Throttle-control solenoid		
	Deceleration valve		
	Dashpot		

Category	Emission-Related Part	Part Removed	Part Destroyed
Emission Calibrated Carburetors (continued)	Idle stop solenoid, anti-dieseling assembly		
	Accelerating pump		
	Altitude compensator		
Mechanical Fuel Injection:	Pressure regulator		
	Fuel injection pump		
	Fuel injector		
	Throttle-position compensator		
	Engine speed compensator		
	Engine temperature compensator		
	Altitude cut-off valve		
	Deceleration cut-off valve		
	Cold-start valve		
Continuous Fuel Injection:	Fuel pump		
	Pressure accumulator		
	Fuel filter		
	Fuel distributor		
	Fuel injections		
	Air-flow sensor		
	Throttle-position compensator		
	Warm-running compensator		
	Pneumatic overrun compensator		
	Cold-start valve		
Electronic Fuel Injection:	Pressure regulator		
	Fuel distribution manifold		
	Fuel injectors		
	Electronic control unit		
	Engine speed sensor		
	Engine temperature sensor		
	Throttle-position sensor		
	Altitude/manifold-pressure sensor		
	Cold-start valve		
Air Fuel Ratio Control:	Frequency valve		
	Oxygen sensor		
	Electronic control unit		
Intake Manifold	Intake Manifold Assembly		
Distributor	Cam		
	Points		
	Rotor		

Category	Emission-Related Part	Part Removed	Part Destroyed
Distributor (continued)	Condenser		
	Distributor cap		
	Breaker plate		
	Electronic components (breakerless or electronic system)		
Spark Advance/Retard System	Centrifugal advance mechanism: weights and springs		
	Vacuum advance unit		
	Transmission controlled spark system: vacuum solenoid, transmission switch, temperature switches, time delay, CEC valve, reversing relay		
	Electronic spark control system: computer circuitry, speed sensor, temperature switches, vacuum switching valve		
	Orifice spark advance control system: vacuum bypass valve, orifice spark advance control valve, temperature control switch, distributor vacuum control switch		
Spark Plugs	Spark Plugs		
Ignition Coil	Ignition Coil		
Ignition Wires	Ignition Wires		
Drive Train	Engine		
	Flywheel		
	Bell Housing		
	Drive Shaft		
	Transmission		
	Differentials		
	Axles Brakes		

Category	Emission-Related Part	Part Removed	Part Destroyed
Mechanical Components	Intake valves		
	Exhaust valves		
	Valve guides		
	Valve springs		
	Valve seats		
	Camshaft		
	Cylinder head or rotor housing		
	Piston or rotor		
Evaporative Control System	Vapor Storage Canister and Filter		
	Vapor Liquid Separator		
	Filler Cap		
	Fuel Tank		
	Canister Purge Valve		
Positive Crankcase Ventilation System	PCV Valve		
	Oil Filler Cap		
	Manifold PCV Connection Assembly		
Exhaust Gas Recirculation System	EGR Valve: valve body and carburetor spacer,		
	EGR Valve: internal passages and exhaust gas orifice		
Driving Mode Sensors	Speed sensor		
	Solenoid vacuum valve		
	Electronic amplifier		
	Temperature-controlled vacuum valve		
	Vacuum reducing valve		
	EGR coolant override valve		
	Backpressure transducer		
	Vacuum amplifier		
	Delay valves		
Air Injection system	Pump		
	Pressure-relief valve		
	Pressure-setting plug		
	Pulsed air system		
	Diverter		
	Relief, bypass, or gulp valve		
	Check or anti-backfire valve		
	Deceleration control part		
	Flow control valve		
	Distribution manifold		

Category	Emission-Related Part	Part Removed	Part Destroyed
Air Injection system (continued)	Air switching valve		
	Temperature sensor		
Catalytic Converter/Thermal Reactor/exhaust	Constricted fuel filler neck		
	Catalyst beads (pellet-type converter),		
	Ceramic support and monolith coating (monolith-type converter),		
Catalytic Converter/Thermal Reactor/exhaust (continued)	Converter body and internal supports,		
	Exhaust manifold		
	Reactor casing and lining		
	Exhaust manifold and exhaust port liner		
	Manifold		
	Exhaust port liners,		
	Double walled portion of exhaust system,		
Heat riser valve and control assembly			
Miscellaneous Items Used in Above Systems	Hoses, clamps, and pipers		
	Pulleys, belts, and idlers		
Computer Controls	Electronic Control Unit (ECU)		
	Computer-coded engine operating parameter (including computer chips)		
	All sensors and actuators associated with the ECU		

Quality Control Inspector Final Verification All Emission-Related Parts Removed and Destroyed

Quality Control Inspector Signature:

Date:
