1998

Response to EPA request for Comments on the Clean Screening Guidelines (R. Slott)

1. Clean Screening Credits have been proposed for I/M programs that wish to excuse certain vehicles from testing at the next inspection. Excusing some vehicles will remove a certain percent of excess emissions[1] from possible reduction through inspection and repair. Three methods for selecting vehicles for Clean Screening are being considered:
   a) Vehicle Age
   b) Remote Sensing
   c) Low Emitter Profiles[2]
2. EPA is estimating the amount of excess emissions which would be lost as a function of vehicles excused from the next inspection for each Clean Screening methodology (i.e., Vehicle Age, Remote Sensing, Low Emitter Profiles). To do this estimate relevant data bases are sought. The most relevant data would be I/M test records from all states with centralized loaded mode tests, and, where available, concurrent remote sensing data.
3. EPA is also concerned that data used in Clean Screening methodology stay up to date. To ensure some Clean Screened vehicles were tested, a random sample of Clean Screened vehicles could be required to be inspected and, if necessary, repaired[3]. If data from one state were applicable to another[4], a national data base could be compiled. The Clean Screening Guidelines would be updated periodically to reflect recent data.
4. EPA would want to evaluate how well the Clean Screening Program (CSP) is working. I/M data bases would have more limited value once a CSP was operating since only a small random sample of Clean Screened vehicles would be available. Fleet remote sensing could be used to evaluate the effectiveness of the Clean Screening Program. Remote sensing would see both Clean Screened vehicles and vehicles in the I/M program[5].
5. An alternative to basing Clean Screening credit loss on excess emissions would be to base Clean Screening credit loss on the emission reductions achieved for failed

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[1] Excess emissions are exhaust emissions in excess of what the vehicle is allow to emit based on the age/mileage of the vehicle and the FTP new car standards, and, if the I/M program is inspecting for evaporative emissions, evaporative emissions estimated based on the evaporative emission control technology in the vehicle and its age/mileage.

[2] Radian International Inc. has developed both High Emitter Profiles and Low Emitter Profiles. These Profiles are predictors of whether a vehicle will pass of fail an I/M inspection based on how well the vehicle itself and similar vehicles have performed in I/M inspections in the past. Remote sensing data and vehicle age also figure into the Profile algorithm. Profiles based on Arizona data could be applied to Colorado data fairly successfully.

[3] Since the failure rate of Clean Screened vehicles would be small, an upper bound could be set, and the number of vehicles which would have to be tested could be based a statistical estimate.

[4] Information from Radian International Inc. shows a correlation between Colorado and Arizona data.

[5] Concurrent remote sensing data could also be used to assess the percent of vehicles driving in the I/M area which are in the I/M test program. States may use this information to increase the percent of I/M tested vehicles through additional incentive programs (i.e., based on parking or other privileges, or through additional enforcement measures), and to monitor the effectiveness of these programs. Additional emissions reduction credits should be awarded for demonstrated success in reducing vehicle emissions through these efforts.

vehicles. In the 1100 car California Undercover Audit the percent of emissions reduced for vehicles that marginally failed the I/M exhaust test was much lower than the percent of emissions reduced for vehicles that failed by a large amount. The California program however used an idle test to detect failure and the vehicle fleet was older than today's or tomorrow's fleet. More recent loaded mode I/M data could be used to establish a relationship between the percent of excess emissions that were actually reduced as a function of a vehicle's excess emissions.

6. Clean Screening should be viewed as a component of cost effective emission reduction rather than merely as a loss of emission reduction potential[6]. The amount of money spent testing clean vehicles should be compared to the amount of money spent testing and repairing broken vehicles. EPA should encourage states to be innovative in capturing the cost that would have been spent testing clean screened vehicles and to use this money to help repair or, if repair were not economically justified, scrap broken vehicles. I/M emission reduction credits should be awarded to I/M programs achieving these additional emission reductions. In this way Clean Screening would increase, rather than reduce, the amount of emission reduction in an I/M program.

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[6] Cost effectiveness of I/M programs should take into account the time between first failure and repair. Cost of repair should include both the cost of repairing and re-testing failed vehicles. Program time should be based on the real average time difference between first tests of failed vehicles in one test cycle, time for repair, and the real time of the next test of that previously failed vehicle. A biennial program may turn out to be a once-every-three-year program on this basis. I/M emission reduction credits should be adjusted to reflect true program length. Program effectiveness should also consider the fate of failed vehicles. Many failed vehicles disappear from I/M programs without getting repaired. If these vehicles are still driving in the I/M area, the program is less effective than would be calculated from emission reductions through repair. If these vehicles were scrapped, or were sold to an area so far removed from the I/M area that the emissions did not affect the air quality in the air basin, then the program is more effective that would be calculated from emission reductions through repair.