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# **OBD and Vehicle Emission Compliance Programs**

**EPA**

**Office of Air and Radiation**

**Office of Transportation and Air Quality**

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# Compliance Program Goals



- Ensure Compliance
- Deter non-compliance
- Vehicles are designed and built which meet emission standards throughout their useful life
- Problems are found and fixed early

# Legal Authority



- Clean Air Act
  - Sec. 202 Emission Standards & OBD Requirements
  - Sec. 207 Remedy for non-conformity
  - Sec. 208 Manufacturer Testing
  
- 40 CFR 85 Subpart S
  - Recall Regulations
  
- 40 CFR 85 Subpart T
  - Emission Defect Reporting Requirements
  
- 40 CFR 86 Subpart S
  - General Compliance Provisions
  - In-Use Verification Program

# Certification



- Manufacturers cannot introduce vehicles into commerce without an EPA certificate of conformity
- Manufacturers perform emissions tests and EPA will confirmatory test at the NVFEL
- EPA employees make the decisions on certification and confirmatory testing
- EPA plans to conduct OBD readiness checks when confirmatory testing



# Certification

- OBD system must be described in application and approved by EPA and ARB prior to EPA issuing a certificate
- A vehicle that differs from the certification application is a misbuild and in violation of the CAA
- ARB conducts Durability Demonstration Vehicle testing at OBD threshold levels
  - Results reported to EPA in application

# In-use Compliance Program



- Review Information
- Investigate
- Select classes
- Procure vehicles from public
- Test Emissions and OBD
- Evaluate
- Remedy problems in-use

# Review Information



- Defect reports
  - OBD found many problems
- Voluntary emission recall reports
- OBD - I/M data
- Technical service bulletins
- Warranty information (MIL, components)
- Quarterly reports
- NHTSA
- CARB
- Consumers

# Class Selection



- Demonstrated problems (defect reports, OBD problems, service bulletins, etc.)
- Other data indicating problems (past history, reality check or CAP 2000 data, certification, CARB information, end of line data, I/M information, etc.)
- New standards and/or technology that increase the risk of non-compliance
- Random selections
- Fleet coverage

# Emission Testing

- FTP
- HWFEE
- Evaporative



- Investigate emission failures for potential OBD failures

# OBID Testing



- EPA tests OBID on each in-use class
  - OBID readiness
  - EVAP (lg & sm leaks)
  - Misfire
  
- Additional In-use OBID Testing by EPA
  - Catalyst failure detection
  - Oxygen sensor detection
  - Can test any OBID function



# Recalls

- EPA can order or influence a recall
- Manufacturers can conduct voluntary recalls
- 2 million recalls in CY-2000
  - 340,000 recalls were a result of problems identified by OBD
- Approx. 64 million vehicles built between MY '96 and '00 (12.5% recalled)



# Recent Example

## VW Recall announced - Jan 2002

- 324,000 vehicles
- Emissions failure found at EPA - NVFEL
- Failed Oxygen Sensor - OBD MIL- 6 codes
- MY 1999, 2000 & 2001
- Found by EPA in-use program
- Also identified by Oregon I/M-OBD program

# Future

## ■ OBD Evaluations

- Functional testing of OBD systems using known failing parts to determine if the OBD systems can identify the failure
- Procure vehicles for OBD testing from certification, production, or in-use vehicles or special procurements
- Use OBD information from I/M lanes (beginning in 2002)

# Summary

- Compliance programs are successful
- No certificate if failure to meet standards
- Recall if non-compliance
- Program ensures reliable OBD systems
- OBD system problems are being found and fixed
- OBD uncovers problems in-use
  - warranty claims
  - defect reports
  - I/M