PM Control Measure: On-Road Heavy Duty Diesel-Fueled Vehicles Owned Or Operated By Public Agencies And Utilities

December 8, 2005
Sacramento CA

Health Impacts of Diesels in California

- Every Year Exposure to Diesel PM Causes
  - 2,900 Premature Deaths
  - 3,600 Hospital Admissions
  - 240,000 Asthma Attacks or Respiratory Symptoms
  - 600,000 Lost Work Days

Diesel Risk Reduction Plan (DRRP)

- Goal:
  - Reduce 75% diesel PM risk by 2010
  - Reduce 85% diesel PM risk by 2020
- Strategies:
  - Clean fuels
  - Stringent standards for new engines
  - Ensure in-use compliance
  - **Substantial reductions from in-use engines**

Rule's Applicability

- Diesel vehicles over 14,000 GVWR
- Model year engines 1960 to 2006
- Vehicles owned (or leased) and operated by a municipality or utility
- Special provisions for low population counties

Best Available Control Technology (BACT)

- Engine certified to 0.01 g/bhp-hr PM standard (2007 engine) or
- Engine certified to 0.10 g/bhp-hr PM plus retrofit with highest level verified DECS or
- Alternative-fuel, gasoline, or heavy-duty pilot ignition engine certified to lowest optional PM standard or
- Existing engine retrofit with highest level verified DECS

Regular Fleet Implementation Schedule

Group	Model Years	BACT %	Deadline as of December 31st
1	1960 – 1987	20	2007
		60	2009
		100	2011
2	1988 - 2002	20	2006
		60	2008
		100	2010
3	2003 –2006 (includes dual/bi-fuel	50	2009
		100	2010

Compliance Extensions

- Early implementation
- No verified DECS
- Dual-fuel or bi-fuel engine
- Engine near retirement
- Engine experiment/demonstration participation

Low Population Counties Special Provisions

- Counties with less than 125,000 population as of July 1, 2005
- Counties are listed in the regulation
- Allowed two compliance options
  - Alternate compliance schedule
  - Accelerated turnover
- Other special provisions

Low Population Counties Implementation Schedule

Group	Model Years	% Fleet with BACT	Compliance Deadline (Dec 31st)
1	1960 – 1987	20	2009
		40	2011
		60	2013
		80	2015
		100	2017
2	1988 - 2002	20	2008
		40	2010
		60	2012
		80	2014
		100	2016
3	2003 –2006 (includes dual/bi-fuel engines)	20	2011
		40	2012
		60	2013
		80	2014
		100	2015

Low Population Counties Accelerated Turnover Option

- Replace all 1993 and older with 1994 and newer engines by 2020
- Apply BACT to 1994 to 2006 engines by 2025

PM Emission Benefits

Year	Baseline (tpy)	Rule's Reductions (tpy)	% Redux
2006	131	7	6%
2010	91	55	60%
2015	62	37	59%
2020	44	18	42%

Total Benefit: 510 Tons PM

Health and Other Emission Benefits

- 37 premature deaths avoided by 2020 at $3 million per death avoided
- Cost benefical when compared to U.S. EPA value of $5 to $7 million per death avoided
- Numerous other adverse health effects due to PM exposure will be avoided
- 1,478 Tons of NOx + Hydrocarbons reduced

Cost-Effectiveness

- **Total Cost**
  - $59 million from 2006 - 2010
  - $213 million from 2006 - 2020
- **Cost-Effectiveness 2006 - 2020**
  - PM: $159/pound
  - NOx + HC: $11/pound

Remaining Issues

- Unfunded mandate?
- Application to federal fleets
- Use of biodiesel
- Moyer funding vs mandates

Unfunded Mandate Reimbursable Costs

- New program or an increased level of service in an existing program?
  - No
- Unique to local governments?
  - No. The proposed regulation is equally applicable to investor-owned private utilities and local agencies

Federal Fleets Application

- Military tactical vehicles exempted
- Congress waived its sovereign immunity with respect to state or local air pollution laws
- All state, county and local governments fleets included
- Private fleets providing similar functions included
- One exception, private package delivery companies are not now subject to the rule but will be in the near future on similar timeframes

Biodiesel and EPAct Compliance

- Biodiesel used for compliance with the Energy Policy Act (EPAct)
- Comply with EPAct and ARB rule? Yes
- SB975 allows use of B20 with verified DECS
- Johnson-Matthey CRT DPF is Verified on B20, others likely to follow
- ARB's Biodiesel Working Group working on ASTM approved methods for fuel specifications

Carl Moyer Program Principles

- Early &/or extra emissions
- Three years ahead of implementation

- Potential for funding exists

Availability of Moyer Funds
Large Counties

Example of Fleet of 100 Group 2 Vehicles (1988-2000 Model Years) Total compliance cost = $1 million		
Calendar Year	**% Fleet > 3 Years from Compliance**	**Moyer Funding Available**
2006	40%	$32-216K[1]
2007	40%	$24-164K
2008+	0%	$0

[1] Depends on usage and timing.

Recent Issues

- Rural fleets
- Implementation schedule
- Early compliance

Fleets Located in Rural Areas

- **Small rural city fleets within large counties allowed to opt-in to low population county fleet options**
- **Counties with less than 325,000 population when subtracting large cities are less than 125,000 can opt into low population options**
- Exempt Low Population Counties

Schedule Changes

- **Delay first implementation deadline for Group 2 vehicles by one year to 2007**
- Move implementation schedule for Group 1 vehicles up by one year (begin in 2006)

Expanded Early Compliance Changes

- **Early compliance**
  - **If BACT applied to 100% of Group 1 and 2 vehicles implemented by 2008 (2-3 years ahead of schedule)**
  - **Delay Final Compliance Deadline for Group 3 by two years to 2012**
- **Optional credits or extended implementation for early implementation of advanced technology**
- Double credits for alternative fuel vehicles purchased in 2000 – 2003 timeframe
- **Minor clarifying changes for records and applicability**

Staff's Recommendation

- Adopt staff proposal
- Consider modifications listed in **Green** on previous slides