Guidance Incentives

Implementation Meeting

March 17, 2004

Atlanta, GA

Guidance Goals

- Provide States with an incentive (SIPs, transportation conformity) to implement idle reduction projects
- Provide emission reduction credit guidance for projects that reduce diesel idling emission to achieve air quality goals.

Step 1: Preliminary Assessment

- Determine if you have a long duration idling problem in your area
  - Conduct on-site observations and surveys of idling trucks and locomotives
  - Truck Stop: average nightly truck occupancy, average number of idling trucks, and average number of idling hours per truck
  - Switch Yard: number of committed engines, average daily idling hours per engine
  - Account for increases/decreases due to weather

Step 2:
Decide on State Action

- Implement Voluntary Idle Reduction Measures
  - Build an Investment Team: EPA/DOT/DOE, state/local counterparts, idle reduction technology (IRT) manufacturer, energy provider, truck/rail companies, truck stops, community groups.
  - Evaluate locations or fleets
  - Leverage financial resources (Supplemental Environmental Projects, Federal grants, program funds, private investments, pay-back loans) to implement projects

Step 2 (cont.)

- Requiring Idling Reduction Measures
  - Issue rule or regulation
    - Site specific rule at locations (truck stops) or on vehicles; or
    - State-wide rule (applies to all locations or vehicles)
      - Doing both would raise issues of double-counting
  - Require no idling (anti-idling law)
    - See California's Proposed Airborne Toxic Control Measure to Limit Commercial HDDV idling or
  - Require trucks be sold with IRTs
    - See California's Proposed Adoption of HDDV Idling Emission Reduction Requirement

Step 3: Historic Idling Activity

- Truck Stop Electrification Projects
  - Conduct independent on-site survey to determine annual occupancy rate and average daily idling hours per truck
- Rail Yard Projects
  - Use event recorder data or conduct independent on-site survey to determine the average daily idling hours per locomotive engine
- Fleet Projects
  - Use engine control module data per truck to determine average daily idling hours coupled with GPS data to determine where this idling occurred

Step 4:
Idle Reduction Technology

- Select a commercially available technology
  - Avoid R&D technologies
- Select an IRT that has the capability of tracking its performance in terms of number of hours it operated
  - See Locomotive Case example where ZTR's SmartStart has the ability to measure the main engine's performance
  - The greater the data acquisition the greater the confidence in actual emission reductions

Step 5: Calculate Idling Emission Reductions

- One Truck Parking Space
  - Baseline: 0.43 NOx tpy per space
    - (EPA Idling EF) (Estimated Idling Hrs/Yr)
    - (135 g/hr) (2,920 hrs/yr) / conversion factor = .43 tpy NOx
  - Determining TSE emission is not necessary for SIP/conformity calculations
    - Assumed as part of utility growth within cap
    - Rough calculation of TSE technology shows over 90% reduction of NOx.

Step 5 (cont)

- One Locomotive Switcher
  - Baseline: 2.6 tpy per switcher
    - (EPA Idling EF) (Estimated Idling Hrs/Yr)
    - (800 g/hr) (3,000 hrs/yr) / conversion factor = 2.6 tpy NOx
  - Determine APU emission
    - Typical locomotive APU certified under 40 CFR Part 89, and found to emit about 71 g/hr
    - (71 g/hr) (3000 hr/yr) / conversion factor = .23 tpy (assumes 100% idle reduction)
    - APU can result in a 92% NOx decrease over baseline emission

Step 6: Reporting

- Voluntary Projects
  - State validates and reconciles emission reduction shortfalls per 1997 Voluntary Measures Policy
    - For TSE, determine # hours technology operated to reduce main engine idling
    - For truck APU project, determine ECM and GPS data to determine # hours technology operated and where it operated
- Involuntary Projects
  - "Responsible Party" records data and maintains it for 5 years: includes truck fleet or location owner (or third party lessee of property with TSE technology)

Other Considerations

- Combining rules (anti-idling laws) and voluntary projects
  - Avoid double-counting of emission reductions
- When determining historic idling activity, account for seasonal changes in weather and idling pattern
- For truck projects, EPA's modeling for long duration idling will be updated in the next model

Projections

- Truck Stop Electrification Spaces
  - 50 TSE Spaces = 21 tpy NOx
  - 100 TSE Spaces = 42 tpy NOx
  - 150 TSE Spaces = 64 tpy NOx
- Switch Yard Engines
  - 10 switchers w/ APUs = 24 tpy

EPA-DOT Assistance

- EPA & DOT will assist each state interested in implementing a voluntary idle reduction project in SIPs/conformity
  - Contacts:
    - Project Development: Paul Bubbosh (202-343-9322)
    - SIPs: David Solomon (919-541-5375)
    - SIPs/Transportation Conformity: Meg Patulski (734-214-4842)
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