UPRR Commerce Yard

• Facility Overview

• Sources of Emissions

• Comparison with Air Basin and Other Area Emissions

• Emission Reduction Measures

• Emission Trends – Past and Future
Union Pacific System Overview

Fast Facts

- Miles of Track
  - 32,300 in 23 States
  - 3,455 in California
  - 1,272 in Los Angeles area

- Employees
  - 50,000+ in US
  - 5,900 in California
  - 1,900 in Los Angeles area

South Coast is a Major Gateway
UPRR Commerce Yard
Facility Overview

• 160-acre Cargo-handling Facility

• Yard Includes:
  – 5 Receiving Tracks
  – 6 Tracks Used to Sort Rail Cars by Destination
  – 9 Tracks Used to Maintain or Repair Rail Cars or Locomotives
  – 8 Tracks Used to Load and Unload Containers or Trailers From Rail Cars, and for Train Departures

• Facility Operates 24 Hours a Day, 365 Days a Year

• About 40 Trains a Day Operate Through or Originate / Terminate at UP’s Commerce Yard
Commerce Area Yards
Comparison with Other Sources of DPM Emissions

Total DPM Emissions – All South Coast Sources: 7750 tons per year
All Commerce Area Yards
Sources of Diesel Particulate Matter (DPM) Emissions

- Locomotives: 34%
- On-road Diesel Trucks: 33%
- Cargo-handling Equipment: 20%
- Other: 14%

Total DPM Emissions – All Commerce Area Yards: 40.5 tons per year
UPRR Commerce Yard
Sources of Diesel Particulate Matter (DPM) Emissions

- 44% Locomotives
- 19% On-road Diesel Trucks
- 35% Cargo-handling Equipment
- 3% Other

Total DPM Emissions – UPRR Commerce Yard: 11.2 tons per year
UPRR Commerce Yard
UP Emission Reduction Measures

• Increased Use of Idle Control Devices (ICD’s) for Auto Start-Stop of Locomotives
  – 76% of L.A. Area Intrastate Fleet Equipped Now
  – 100% of CA Intrastate Units Equipped by June, 2008
  – 35% of UPRR Total Fleet
  – All New Locomotives Since 2001 Have Factory ICD’s

• Aggressive Fuel Conservation Efforts – Since 1995
  – 12% Improvement in Fuel Efficiency
UPRR Commerce Yard
UP Emission Reduction Measures

• Modernizing Cargo-handling Equipment
• Continued Acquisition of Refrigerated Freight Cars As Fleet Is Upgraded
• Dispensing only CARB Ultra-low Sulfur Diesel in CA
• Continued Aggressive Employee Training
  – Fuel Conservation Via Use of Simulators
  – Locomotive Shutdown Procedures
  – Visible Emissions
• Continued Aggressive Acquisition & Use of Tier 2 Road Locomotives With Advanced Emission Controls
  – 820+ Tier 2 Locomotives by December, 2007
  – 2,600+ Tier 0, 1, or 2 From 2000 Thru 2006

• Continued Remanufacture of Older Locomotives With New, Lower Emitting Components
  – 1,800 Units Since 2000

• On Target for Tier 2 Fleet Average in SoCal by 2010
UPRR Commerce Yard
UP Emission Reduction Measures

• Ultra Low Emitting Locomotives (ULEL’s)
  – Reduce NOx & PM Emissions by +/- 85%
  – Reduce Fuel Consumption by Over 16 %

• Expanded Use of Technologically Advanced Switch Locomotives
  – Gensets - 10 in Commerce NOW
  – Gensets - 61 in South Coast by July
  – Green Goats - 12 in South Coast NOW
UPRR Commerce Rail Yard
DPM Emissions by Source (Calendar Years 2000-2020)

Emissions (Tons / Year)

<table>
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<th>Year</th>
<th>Other</th>
<th>On-road Diesel-fueled Trucks</th>
<th>Cargo-handling Equipment (CHE)</th>
<th>Locomotives</th>
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UPRR Commerce Yard - Emission Trends

• 19% Reduction From 2000 to 2005 (ARB Baseline Year)

• 63% Reduction From 2005 to 2020

• Overall 70% Reduction From 2000 to 2020, Including Growth

• 80% Reduction in DPM Emissions From 2005 to 2020 Per Ton of Cargo Handled
THE ROAD TO THE FUTURE ISN'T A ROAD AT ALL.