BNSF Emission Reduction Initiatives

Blue Skyways Collaborative Meeting

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Michael Clift

Manager Environmental Operations – Fort Worth

BNSF Emission Reduction Initiatives

MVP Fuel Conservation Program

- BNSF used approximately 1.4 billion gallons of diesel fuel in 2007.
- The BNSF Fuel MVP Program is designed to encourage engineers to employ the most fuel efficient train handling practices.
- Ideal fuel use has been determined through detailed modeling for the various track segments and train types.
- Actual fuel use is determined from train handling data that is downloaded from event recorders on locomotives.
- The top 10% and 20% of engineers receive a $100 or $50 fuel card, respectively, on a monthly basis.

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Intermodal Train Fuel Conservation

- One intermodal double stack train can carry as many as 230 containers.
- BNSF and the University of Illinois studied intermodal train movements between Los Angeles and Chicago and their associated fuel use.
- Loading practices (slot utilization) can have a dramatic effect on aerodynamic drag and fuel consumption.
- Optimum loading would have all the slots full or the open slots located at the rear of the train.
- Operating with 10% of the slots empty and located throughout the train caused a 14% increase in fuel use.
- Operating with 10% of the slots empty and optimized at the rear of the train caused a 5% increase in fuel use.

Double Stack Intermodal Train

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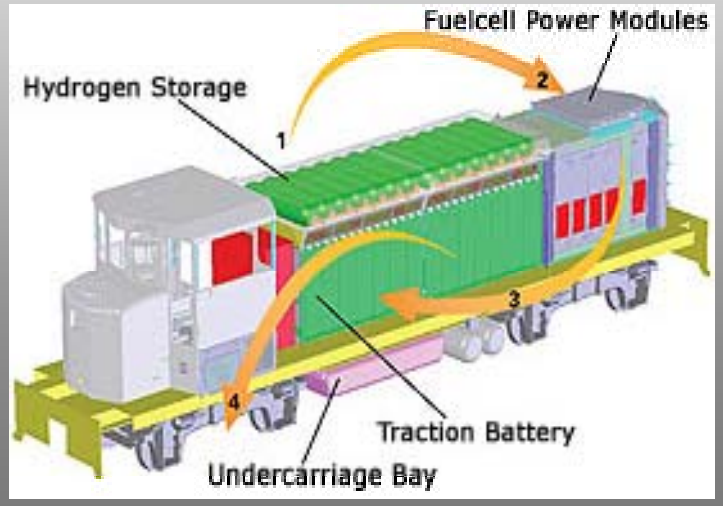
Fuel Cell Locomotive Demonstration Project

- BNSF, with several partners, including the U.S. Army, are developing an experimental hydrogen fueled cell switch locomotive.
- Locomotive construction is approximately 80% complete.



BNSF Emission Reduction Initiatives

Fleet Modernization and Modifications

- Since 2000, BNSF has purchased approximately 2100 new high horsepower, line-haul locomotives at an approximate cost of 4 billion dollars.
- Adjusting maximum train speeds on certain routes to conserve fuel.
- Increased use of rail and wheel flange lubrication to reduce friction.
- Increased use of advanced wheel bearings that reduce friction.
- Since 2000, BNSF fuel efficiency has increased by approximately 5 percent.
- Tier III and IV regulations recently passed by the EPA. These new regulations will decrease locomotive emissions.

Congestion Mitigation

Increased Line and Facility Capacity

- The BNSF Transcon Route from Los Angeles to Chicago is 2,203 miles.
  - Due to aggressive construction since 2000, only a few miles of single main track are left.
- Triple and quadruple track serving the Powder River Basin coal fields.
- Large facility expansions completed at the following locations:
  - Logistics Park Chicago
  - Seattle International Gateway
  - Fort Worth Alliance Intermodal Facility
  - Kansas City Argentine Yard reconstruction
  - Memphis Intermodal Facility

Congestion Mitigation

Road and Rail Grade Separations

- Approximately 8,000 road grade crossings have been closed in the last eight years
  - Reduces vehicle idle time and number of potential collisions.
- Two large flyovers constructed in Kansas City to grade separate rail crossings
  - Sheffield Flyover
  - Argentine Connection
- Tower 55 project in Fort Worth

Argentine Connection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