

SOURCE INVENTORY

CATEGORY # 936

LOCOMOTIVES

1999 EMISSIONS

Introduction

This source category includes emissions from diesel engines on locomotives used to carry passengers and freight. Emissions occur during rail yard switching and road-hauling service.

Methodology

The methodology is taken from the January 1991 "Locomotive Emission Study " report prepared by Booze Allen and Hamilton Inc. for the ARB. This is part of the feasibility study to control emissions from locomotives in California, and includes 1987 emissions from this source.

Major operators in the Bay Area are Southern Pacific, Union Pacific and ATSF. Amtrak operates through and commuter passenger services through San Jose.

There are currently two major manufacturers of locomotives in the United States, the Electro-Motive Division (EMD) of General Motors Corporation and the General Electric Company (GE).

The type and size of engine used depends upon the type of service. These are line haul, local services and yard switching.

Engine emission factors for each type of engine were supplied by EMD and GE. Locomotive roster data, provided by the operators, were used to obtain weighted average emission factors for the entire California rail operations.

In August 1992, ARB provided the District with statewide emissions data by county for 1987, 2000 and 2010. These are based on the Booze Allen study. Emissions show a downward trend, mainly due to cleaner and more fuel efficient engines replacing older models. 1993 emissions were calculated on this basis.

TRENDS

Historical and future emissions (1970-2010) were estimated based upon the supplied 1987, 2000 and 2010 emissions.

Control

Projected emissions include expected benefits from ARB's Clean Diesel Regulations (beginning 1993).