

DOE/NTTP-008  
U.S. Department of Energy

## National Transportation Program



PUBLIC READING ROOM  
U.S. DEPARTMENT OF ENERGY  
IDAHO OPERATIONS OFFICE

# TRANSCOM

## A Transportation Tracking and Communications System



DDE monitors shipments of some hazardous materials using the Transportation Tracking and Communications system (TRANSCOM). The TRANSCOM transponder (indicated by an arrow) transmits a signal, allowing the shipment to be tracked via satellite.

location. Also, solar-powered portable transponders are used on some rail and barge shipments. Data is relayed to the TRANSCOM Control Center (TCC) through a telecommunications link at 5-minute intervals. This offers near "real time" accuracy. The TRANSCOM central computer uses this data to display the shipment information on a series of computer-generated maps. Authorized users include DOE, the U.S. Nuclear Regulatory Commission (NRC), U.S. Department of Transportation (DOT), and State and Tribal governments.

### Available Shipping Information

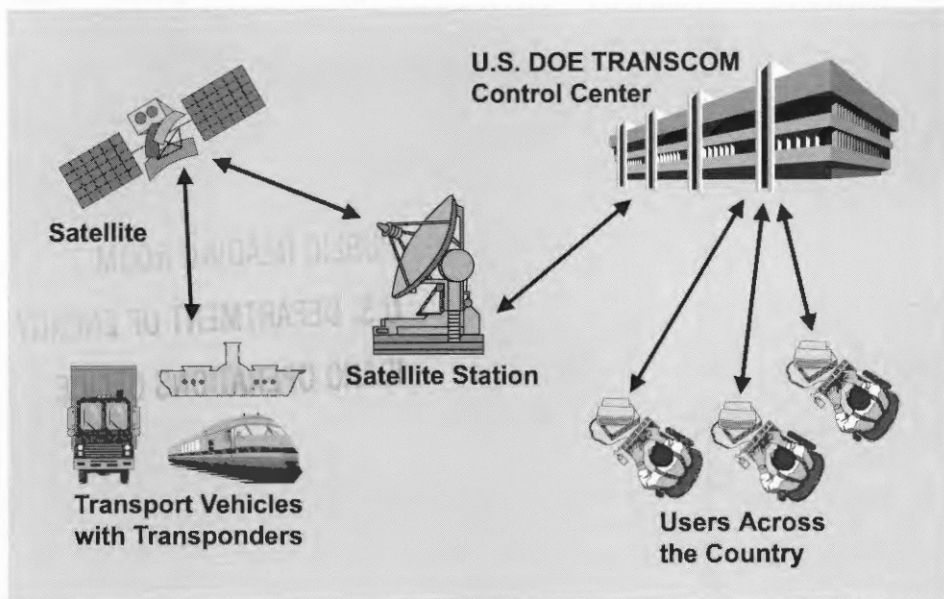
Access to shipment information is based on shipment route. Authorized users can access the TRANSCOM system to obtain unclassified information concerning current and upcoming shipments. This includes specific information such as schedules, planned routes, and the types of materials being transported, as well as emergency response information specific to each shipment being tracked.

The U.S. Department of Energy (DOE) and its predecessor agencies have maintained a record of safe and efficient transportation of radioactive materials for more than 50 years. Contributing to this effort is a transportation tracking and communications system called TRANSCOM. The TRANSCOM system combines satellite communications, computerized database management, user networks, and ground communications to follow the progress of some en route

shipments of hazardous materials (e.g., spent nuclear fuel, high-level radioactive waste, and other high-visibility shipments).

### How TRANSCOM Works

TRANSCOM uses communications equipment and a satellite positioning/reporting system to track truck, rail, ship, and barge shipments. Transponders mounted on transport vehicles send signals to a satellite receiving station that identifies vehicle



TRANSCOM uses communications equipment and a satellite positioning/reporting system to track high-visibility shipments.

#### Customer Base

Although TRANSCOM was developed for internal DOE use in tracking shipments, other users, such as State and Tribal governments, NRC and DOT have also been provided access to the system. This access provides State and Tribal emergency response or law enforcement agencies a tool with which to monitor high-visibility shipments through their jurisdictions while still ensuring only those who have responsibility for shipment safety know where shipments travel.

TRANSCOM provides a central monitoring and communications center for DOE shipments of spent nuclear fuel, high-level radioactive waste, and other high-visibility shipping campaigns. Authorized users are provided with special software to use with their personal computers, modems, and telephone lines. With this system, DOE can continuously monitor the location and status of these shipments both within the continental United States and in international waters. Should an incident or accident occur, TRANSCOM becomes an important

tool in support of existing emergency management systems. It can be used to provide valuable information to response teams and DOE field offices and to alert State responders along the shipping corridor.

TRANSCOM is available to 92 user organizations and has tracked 912 shipments in its lifetime. Since the beginning of Fiscal Year 1999 (10/1/98 - 3/31/99), TRANSCOM has successfully tracked 54 shipments including 34 Waste Isolation Pilot Plant (WIPP) demonstrations, 1 actual WIPP shipment, 9 high flux isotope reactor shipments, and 10 spent nuclear fuel shipments (5 university reactor and 5 foreign research reactor shipments). Training for new TRANSCOM users is provided by the DOE National Transportation Program (NTP) to ensure users have a satisfactory level of proficiency with the system.

#### Summary

The TRANSCOM system has demonstrated its capability to provide reliable tracking and communication between shipment vehicles, the TCC, and other users monitoring high-visibility DOE shipments. TRANSCOM is sponsored by NTP and further information is available at (505) 845-6134.

Additional information on DOE's National Transportation Program may be obtained from:

National Transportation Program  
U.S. Department of Energy  
Albuquerque Operations Office  
P.O. Box 5400, MS SC-5  
Albuquerque, NM 87185-5400

Phone: 505-845-6134  
Fax: 505-845-5508

Website:  
<http://www.ntp.doe.gov/>

DOE Center for Environmental  
Management Information  
P.O. Box 23769  
Washington, DC 20026-3769

1-800-7EM-DATA  
1-800-736-3282

Website:  
<http://www.em.doe.gov/>

Transportation Resource Exchange Center  
ATR Institute  
University of New Mexico  
1001 University Blvd., SE  
Albuquerque, NM 87106-4342

Phone: 1-877-287-TREX (8739)  
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<http://www.unm.edu/~trex>