

Transport Canada

The Safe Transport of Flammable Liquids in Canada

ACTS, REGULATIONS AND STANDARDS

The following acts, regulations and standards help keep communities and the environment safe when flammable liquids, such as crude oil, are transported in Canada. They establish Transport Canada's safety regime for transporting flammable liquids.

Transportation of Dangerous Goods Act, 1992 (TDG Act)

The TDG Act promotes public safety during the transport of dangerous goods by rail, road, air and marine (non-bulk marine shipments). The act defines public safety as including protection for people, property, health and the environment.

The TDG Act gives the federal government the authority to:

- develop policy
- develop regulations and standards to manage risk and promote public safety, while mitigating the consequences of an incident during the transportation of dangerous goods
- verify compliance
- conduct research to enhance safety and security
- guide and support emergency response

Transport Canada's Transportation of Dangerous Goods program is established under the TDG Act. This program is focussed on prevention of incidents, while making sure appropriate emergency response regime is in place if an incident happens.

All railway companies, whether they are a short line, a provincially or federally regulated railway, must follow the TDG Act, its Regulations and standards.

Transportation of Dangerous Goods Regulations (TDG Regulations)

The TDG Regulations establish the regulatory requirements for importing, handling, offering for transport and transporting dangerous goods by all transportation modes (excluding pipelines) within Canada. They are adopted by all provinces and territories.

Railway Safety Act

This act is responsible for the safe operations of a railway. It addresses, for example, track safety, rail operations, grade crossings and train brake rules.

Canada Shipping Act, 2001

This act:

- promotes safety in marine transportation and recreational boating
- protects the health and well-being of people, including the crews of vessels, who participate in marine transportation and commerce
- protects the marine environment from damage due to navigation and shipping
- sets the guidelines and regulatory structure for preparedness and response to marine oil spills
- establishes the requirements for bulk transport of crude oil by marine transportation

Safe and Accountable Rail Act

Introduced in 2015, this act strengthens the liability and compensation regime for federally regulated railway companies. It sets minimum insurance levels for these companies. It also requires a shipper-financed compensation fund to cover damages from railway accidents involving crude oil.

PREVENTION

Safety requirements under the TDG Act and Regulations

The information that follows outlines the support stemming from the TDG Act to communities across the country.

To protect public safety, before dangerous goods can be transported in Canada, the TDG Act, its associated regulations and standards require that:

- 1) The dangerous goods are properly classified and identified
- 2) The dangerous goods are kept in the correct “means of containment” (i.e., container or packaging), built to the required standard
- 3) Proper safety marks or placards, communicating the hazard associated with the dangerous goods, are applied to the means of containment
- 4) An emergency response assistance plan (ERAP) is in place if an incident happens (not required for all dangerous goods, but is required for transporting by rail flammable liquids such as crude oil, gasoline, aviation fuel, diesel and ethanol)
- 5) Proper shipping documents accompany the dangerous goods during transport; and
- 6) Anyone who handles, offers for transport, imports or transports the dangerous goods is properly trained.

Canadian requirements are harmonized with the United Nations (UN) recommendations and also align with U.S. requirements.

Inspections

Since the Lac-Mégantic tragedy, Transport Canada has tripled the number of inspectors conducting dangerous goods inspections. We have also tripled the number of inspections to approximately 6,000 per year.

New tank car for transport of flammable liquids (TC/DOT 117)

In Canada, crude oil is now only transported in the most robust tank cars in North America. In May 2015, Transport Canada, along with the U.S. Pipeline and Hazardous Materials Administration (PHMSA) and the Federal Railroad Administration, brought forward a new tank car specifically designed for the transport of all flammable liquids.

The TC/DOT 117 tank car is a much more robust jacketed tank car. It is made with:

- thicker steel (9/16 of an inch);
- thermal protection;
- full head shield protection
- top fitting protection; and
- a new bottom outlet valve design

The TC/DOT 117 standard also prescribed retrofit requirements and a phase-out schedule for older tank cars. As of November 1, 2016, all less crash resistant DOT 111 tank cars used at the time of the tragic Lac-Mégantic incident have been removed from crude oil service. As of November 1, 2018, all CPC 1232 unjacketed tank cars used during the time of the Gogama (Ontario) incidents were removed from service.

Other safety actions

Recent actions to enhance public safety during the transport of flammable liquids by rail include new regulatory requirements such as:

- lowered train speeds
- key train and key route requirements
- new classification of dangerous goods requirements
- new requirements to share rail dangerous goods information with municipalities and Indigenous communities with a railway operating in the jurisdiction
- new compensation and liability requirements for railways
- more inspectors to monitor compliance

For a complete list of safety actions taken since the Lac-Mégantic incident, please visit <https://www.tc.gc.ca/eng/mediaroom/infosheets-menu-7564.html>.

INCIDENT RESPONSE

You are not alone! Support begins immediately following a phone call to our 24 hours a day, 7 days a week emergency center called the Canadian Transport Emergency Centre (CANUTEC). CANUTEC supports all communities before and during an incident involving dangerous goods. CANUTEC may be reached at:

Telephone: 1-888-CANUTEC (226-8832) or 613-996-6666

On your mobile phone: *666

In addition, Transport Canada also has a quick reference guide, [You're Not Alone!](http://www.tc.gc.ca/eng/tdg/safety-menu-1318.html) <http://www.tc.gc.ca/eng/tdg/safety-menu-1318.html>, to help communities and first responders understand the help available following an incident. The guide groups essential safety measures into five practical steps to use as part of emergency planning.

CANUTEC SERVICES

Transport Canada's TDG Directorate operates CANUTEC to help emergency response personnel handle dangerous goods emergencies.

CANUTEC is staffed by bilingual scientists. All staff are specialized in emergency response. They are experienced in interpreting technical information and providing advice to first responders.

CANUTEC provides:

- emergency response advice
- dangerous goods hazards assessment
- advice on personal protection equipment
- public safety advice and recommended evacuation distances

- first aid information
- basic plume modelling
- help in accessing to industry technical specialists at no cost
- help in implementing an industry Emergency Response Assistance Plan (also at no cost)
- train consist information
- railway operator() telephone numbers
- access, following registration, to free comprehensive dangerous goods information (through Protective Direction 36)
- access to industry “real time” information from the “Ask Rail” application
- access to Safety Data Sheet information
- conference call services with key stakeholders, following an incident

CANUTEC staff can also participate in your emergency simulation of a dangerous goods incident. They can help simulate a call to get information, or help you design a simulation.

Emergency Response Guidebook (ERG)

The ERG is a comprehensive guide to use at a dangerous goods incident on a highway, aircraft, ship or railway. It helps first responders quickly identify the specific or generic hazards of the material(s) involved in an incident. For example, it provides a list of dangerous goods in numerical order by identification number, or in alphabetical order by name.

The ERG helps first responders make initial decisions when they arrive at the scene of a dangerous goods incident. The guide:

- provides recommended evacuation distances
- describes potential hazards of a dangerous good
- supplies relevant public safety information, including first aid
- recommends types of protective clothing and respiratory protection

The ERG is available online or in a paperback version for your fire trucks. It is updated every four years with the next version to be published in 2020. In 2016, Transport Canada distributed almost 60,000 paperback copies to all Canadian fire departments, including the Aboriginal Volunteer Firefighters Association, police departments, and ambulance services.

If your community’s first responders needs a copy of the guidebook, please contact CANUTEC. They will guide you to the person in your area to get your copy.

Rail Dangerous goods Information

In April 2016, the Minister of Transport issued Protective Direction 36 which provides registered communities access to comprehensive dangerous goods information provided by railway companies, including the volume and nature of dangerous goods being transported by rail. Communities with a railway operating through them can use this information to assess risks, plan for emergencies and guide first responder training.

The information enables communities to conduct proper risk assessments, emergency planning activities and help guide training needs of first responders.

Emergency Response Assistance Plans (ERAPs)

ERAPs are required by the TDG Regulations for certain dangerous goods that need special expertise and response equipment. This includes flammable liquids such as crude oil, gasoline, diesel fuel, aviation fuel and ethanol being transported by rail.

The person who offers the dangerous goods for transport (usually the shipper), or who imports them (occasionally the carrier), must submit a plan to Transport Canada's TDG Directorate. The directorate reviews the plan, and if it is adequate, approves it. A person cannot transport a dangerous good in Canada that requires an ERAP before the plan has been approved by Transport Canada.

ERAPs are intended to assist local emergency responders. They provide responders with technical experts and specialized equipment at an accident site. This includes: pumps, hoses, inductors, fire-fighting foam, Personnel Protection Equipment, non-sparking tools, air quality monitoring equipment and surge personnel capacity. There is no cost to a community following implementation of a plan.

Industry responders are trained in incident command, and are well prepared to support railway emergency response teams.

Railway Emergency Response Plans (ERP)

Railway companies have their own ERP. ERPs are designed to mitigate incidents quickly and professionally. They use the railway companies' own resources (including sub-contracted parties who may bring special expertise and equipment to the scene).

Short line railways also have ERPs and can draw on support at incidents from larger railway operators. There is no cost to a community for any implementation of a railway emergency response plan.

Remedial Measure Specialist (RMS)

An RMS is a Transport Canada employee with special expertise in emergency response. They review and approve every ERAP.

At the site of an incident, an RMS:

- supports the incident commander
- makes sure the ERAP is put in place appropriately
- monitors the response
- monitors compliance with the TDG Act and Regulations

AskRail application

The AskRail mobile app is a safety tool for first responders. It provides immediate access to accurate, timely data about the dangerous goods a railcar is carrying. This information can help responders and communities decide how to respond to a rail emergency.

AskRail is a backup resource if information from the train conductor or a train consist is not available. Alternatively, a call to CANUTEC would also provide you access to the train consist or the information from the AskRail application. For access to industry's AskRail application see www.railcan.ca/racinitatives/askrail.

Incident Command System (ICS)

The ICS is a standardized on site management system designed to help to manage incidents efficiently. It brings together facilities, equipment, personnel, procedures and communications within a common organizational structure.

The ICS can be used to manage an incident or a non-emergency event regardless of size.

Under the ICS, the first to arrive at the scene (usually a first responder) becomes the Incident Commander. This person directs emergency response until relieved of their duties. In cases where there is no first responders at a site, the authority having jurisdiction (e.g., a railway operator) would take on the responsibility of Incident Command.

The Incident Commander:

- assesses the need for more resources
- establishes the command post
- has first authority to direct and control emergency actions, including evacuations
- appoints command and general staff

Together with the Incident Commander, law enforcement sets up security, establishes access, controls traffic flow and helps with evacuation. Where law enforcement does not have the capability to support access controls, other resources will be brought to the scene to support these activities.

Flammable Liquid Training

Transport Canada helped develop a curriculum to train anyone conducting emergency planning or responding to an incident involving flammable liquids. The curriculum includes awareness training, operational training and live fire training for incidents on road and rail.

The awareness level course materials are now available at http://rail.capp.ca/en/story_html5.html?lms=1.

CONSULTATIONS

The Dangerous Goods Directorate at Transport Canada regularly reaches out to Indigenous communities to help us make decisions.

For example, the TDG directorate has representation from the Assembly of First Nations and the Aboriginal Firefighting Association on our General Policy Advisory Council (GPAC). This council:

- reviews proposed regulatory and means of containment changes for dangerous goods
- reviews emergency response initiatives

- provides a forum for members to bring dangerous goods issues to Transport Canada's attention

Indigenous communities have been represented on all of Transport Canada's major emergency response initiatives, including:

- Emergency Response Working Groups
- Emergency Response Sub-Committee of GPAC
- Emergency Response Task Force
- Flammable Liquid Steering Committee and its associated working groups

Transport Canada is committed to a dialogue with all interested stakeholders.

QUESTIONS AND ANSWERS

Q1. Is it safer to transport crude oil by pipeline than by rail?

A1. Transport Canada does not look at different risks between rail and pipeline transport. The department is not involved when industry decides whether crude oil is transported by pipeline or rail.

However, once industry chooses how they will transport crude oil, the TDG Act is there to make sure they do this in accordance to the prescribed safety requirements. Industry must always follow the TDG Act its associated regulations and standards. They also need to have the necessary approved emergency response assistance plan in case an incident happens.

Transport Canada uses inspections to verify that companies comply with the TDG Act, its associated regulations and means of containment standards.

Q2. What happens in event of a train accident with a spill of dangerous goods?

A2. Canada maintains one of the safest rail transportation systems in the world. This is the result of shared efforts between numerous partners, including other levels of government, railway companies and communities.

Should an incident happen, you are not alone. Tools and resources are available to communities and first responders to help them quickly identify the dangerous goods involved in the derailment, and to assist in response and clean-up. In addition following implementation of a railway operators emergency response plan or industry's Emergency Response Assistance Plan, significant additional resources converge on the incident site to provide support to first responders, including:

- technical dangerous goods knowledge and expertise
- surge human resource capacities
- tools, hoses and equipment
- foam
- guidance during the response phase