



**TRANSPORTATION
OF DANGEROUS GOODS**

YOU'RE NOT ALONE!

Emergency Response Planning
for Rail Incidents Involving
Flammable Liquids



© Her Majesty the Queen in Right of Canada, represented by the Minister of Transport, 2019.
Cette publication est aussi disponible en français sous le titre *Vous n'êtes pas seuls!*

TP No. 15367-E

PRINT

Cat. No. T86-37/2019
ISBN 978-0-660-33352-6

PDF

Cat. No. T86-37/2019E-PDF
ISBN 978-0-660-33350-2

Permission to reproduce

Transport Canada grants permission to copy and/or reproduce the contents of this publication for personal and public non-commercial use. Users must reproduce the materials accurately, identify Transport Canada as the source and not present theirs as an official version, or as having been produced with the help or the endorsement of Transport Canada.

To request permission to reproduce materials from this publication for commercial purposes, contact: TCcopyright-droitdauteurTC@tc.gc.ca.

This document was originally prepared by the International Association of Fire Chiefs (IAFC) for the Renewable Fuels Association (RFA) which has agreed to its modification by Transport Canada for dissemination to communities in Canada.

▶ TABLE OF CONTENTS

INTRODUCTION	1
PLANNING AND PREPAREDNESS	2
PRE-PLANNING	2
PLANNING	2
PREPAREDNESS	3
ELEMENTS TO TAKE INTO CONSIDERATION	4
FLAMMABLE LIQUIDS PROPERTIES AND INITIAL RESPONSE	5
FLAMMABLE LIQUIDS PROPERTIES	5
INITIAL RESPONSE	6
FIRST RESPONDERS' TOOLS AND RESOURCES	6
TOOLS FOR PRODUCT IDENTIFICATION DURING THE INITIAL PHASE OF AN INCIDENT ...	6
RESOURCES FOR ASSISTANCE	8
INCIDENT COMMAND	10
INCIDENT COMMAND SYSTEM	10
UNIFIED COMMAND	11
DIRECTION AND CONTROL	12
OTHER CONSIDERATIONS	12
ROLES AND RESPONSIBILITIES OF KEY PLAYERS DURING A RESPONSE	13
REPORTING REQUIREMENTS	15
YOU'RE NOT ALONE!	16
ADDITIONAL EMERGENCY RESOURCES	16
ADDITIONAL PLANNING AND TRAINING RESOURCES	17
REMEDIATION/RECOVERY	18
THE WAY FORWARD	19
ANNEX A – FAQ	20
ANNEX B – SHIPPING DOCUMENT: SAMPLE OF A TRAIN CONSIST	21
NOTES	23

EMERGENCY RESPONSE PLANNING FOR RAIL INCIDENTS INVOLVING FLAMMABLE LIQUIDS

▶ INTRODUCTION

Petroleum products are widely used commodities transported by rail across the country on a daily basis. Amongst all petroleum products, flammable liquids, such as gasoline, diesel, ethanol and crude oil, represent a large portion of the products being transported in our country. In contrast to many other dangerous goods, flammable liquids present a different level of risk during a rail incident due to their flammability and the large volume involved during transport.

Rail incidents can vary in severity, however, even a minor rail incident in or near a community could cause disruptions to the community. For example, rail incidents could result in blocked rail tracks, vehicle traffic disruption, and personal injuries or casualties. A major rail incident could include massive wreckage, casualties and the uncontrolled release of dangerous goods cargo requiring extensive response resources. Consequently, any kind of rail incident could overwhelm local resources if the community is not adequately prepared.

Emergency response falls under the local community's jurisdiction¹ and as such, local officials are in command of response operations pertaining to the response and recovery of the municipality and its residents. Provincial and local response organizations, while operating under their own command and control structure, must coordinate their activities with local community officials. Community authorities should be aware that there is guidance and assistance available from agencies and specialized response teams that are trained, staffed and equipped to handle large scale incidents. Nevertheless, the first priority in the response must be to ensure the safety of emergency responders and the public. In all cases, preparedness is the key to ensuring an appropriate response to incidents of any magnitude.

The purpose of this document is to assist local communities to plan and prepare for potential rail incidents involving the transportation of dangerous goods, specifically flammable liquids, such as crude oil, diesel fuel and gasoline. It is designed to be used by local emergency planners as a template that can be tailored to address identified hazards as they pertain to flammable liquids being transported by rail through or near the community as a component of a local emergency response plan.

This document also offers a generic plan for police, rescue, medical and firefighting operations to combat the effects of a major rail incident involving flammable liquids occurring within the community. It is a useful template to establish procedures designed to protect life, property and the environment.



This symbol is intended to indicate important information.

¹ Means a municipality and any other similar form of local government that have primary emergency planning responsibilities over a geographical area.

▶ PLANNING AND PREPAREDNESS

PRE-PLANNING

Pre-planning is the process that identifies the key elements of a possible rail incident involving flammable liquids and determines in advance the steps that may need to be taken.

These steps include:

- Conducting a hazard identification and risk assessment (HIRA) for dangerous goods in transport;
- Identifying available response resources;
- Networking with rail carriers, shippers and response organizations; and
- Developing the necessary knowledge and skills within local response organization.

A critical element of pre-incident planning involves communication with all relevant organizations, particularly the shippers and carriers, in order to learn about the products being transported through or near the community and the availability of emergency response resources.

Traditional structural firefighting strategies and tactics may not be appropriate when dealing with situations involving massive amounts of flammable liquids. Such incidents need to be approached and managed by involving different response protocols that take into account the dangerous goods involved. This concept must be addressed in emergency response plans, procedures and training programs.



In the event that an incident occurs, response partners will need to be prepared and informed. Critical information on best practices related to preparedness and response to rail incidents involving Class 3 Flammable Liquids, such as crude oil and ethanol, must be communicated in a timely manner.

PLANNING

Know the risks – Although the transportation of dangerous goods (TDG) by rail is strictly regulated and controlled, there are still potential risks. Local communities located along rail tracks need to prepare accordingly for dangerous goods being transported within their jurisdiction. In order to assist communities in their planning efforts, Transport Canada issued Protective Direction 36 (PD36) that grants emergency planners the authority to request information regarding the transportation of dangerous goods from any rail operator in Canada. Upon request, any Canadian Class 1 railway company (i.e., Canadian National Railway and Canadian Pacific Railway) that transports dangerous goods must provide the designated Emergency Planning Official of each jurisdiction through which dangerous goods are transported by rail, with aggregate information on the nature and volume of dangerous goods the respective carrier transports by rail through the jurisdiction. They must also provide statistical information to the municipality, including the percentage of railway cars that operate through the jurisdiction containing dangerous goods and the top ten dangerous goods by volume transported within the jurisdiction.

Any railway operating in Canada, **that is not a Canadian Class 1 railway company**, must also provide the designated Emergency Planning Official of each jurisdiction through which dangerous goods are transported by railway vehicle with:

- Aggregate information on the nature and volume of dangerous goods the company transports by railway vehicle through the jurisdiction; and
- Any significant change to the information provided as soon as it is known.

Certain conditions and obligations are attached to the Protective Direction, therefore, communities should refer to the official document. The document is available on the Transportation of Dangerous Goods' Website available at: www.tc.gc.ca/eng/tdg/safety-menu.htm. A summary of this document can also be viewed in the Safety Awareness Kit for Communities/Municipalities available at: www.tc.gc.ca/eng/tdg/safety-awareness-kit-communities-municipalities.html in the "Safety Awareness and FAQ" tab of this website.

Once you know what moves through your community, you can direct your training and resources more effectively.

In the planning stage for the response:

- Describe the critical tasks pertaining to initial site management in responding to a rail transportation incident involving Class 3 Flammable Liquids dangerous goods, such as crude oil and ethanol;
- Identify the subordinate command and general staff positions that might be utilized for a rail incident ensuring consistency with the National Incident Management System (NIMS), the Incident Command System (ICS), or any other incident command system as a framework to manage the incident;
- Describe how federal and private sector response partners may provide assistance in managing complex incidents;
- Establish a flexible set of processes and procedures that emergency responders will use to conduct response operations; and
- Ensure all agencies are involved and understand the Incident Action Plan (IAP) to enable responders at all levels to work together effectively and efficiently to manage incidents.

PREPAREDNESS

Preparedness involves actions designed to save lives and mitigate damages. It includes planning and training prior to an incident.

All emergency response planners should oversee the following:

- Maintain an inventory of human and material resources, including specialized equipment.
- Develop and maintain the municipal/community emergency response plan (ERP):
 - Train personnel in the responsibilities and emergency duties required under the plan;
 - Conduct periodic exercises that will test the effectiveness of the plan;
 - Review and update the plan as needed, based on exercises, emergency response or changes in policy; and
 - Follow the established communications network identified in the plan when implemented.
- Be knowledgeable of the tools available, including CANUTEC, Transport Canada's 24/7 Transport Emergency Centre. CANUTEC technical advisors are highly-trained in emergency response and can provide immediate and professional advice on all aspects of incidents involving dangerous goods.
- Be knowledgeable about Transport Canada's Emergency Response Assistance Plan (ERAP) program. This program is further explained in the "First Responders Tools and Resources" section of this document.

ELEMENTS TO TAKE INTO CONSIDERATION

- Identification of agencies and organizations that could provide technical assistance for enhancements to the community's ERP.
- Discussion on the elements that should be included in a Flammable Liquids Emergency Response by Rail Annex to your community's ERP.
- Establishment of relationships between response agencies at various levels of government.
- Inclusion of a list of dangerous goods that are being transported through your community by rail in your community's ERP.
- Provision of means to conduct an emergency response capabilities assessment.
- Identification of gaps in equipment and training.
- Incorporation of tools from Transport Canada and Transportation Community Awareness and Emergency Response (TRANSCAER®).
- Maintain a list of Canadian Class 1 rail carriers' Emergency Operations Centre contacts and/or contacts for short-line railways.
- Assurance that the Flammable Liquids Emergency Response by Rail Annex has considered railroad emergency response to include:
 - Hazard analysis that identifies the potential risks to people and property;
 - Emergency contact lists;
 - Resource listings;
 - Equipment inventories, such as foam supplies, foam delivery equipment;
 - Foam and water supply requirements for operations at remote sites;
 - Incident Management System roles and responsibilities;
 - Mutual aid response assets;
 - Law enforcement scene security and control operation;
 - Support and recovery assets; and
 - Commodity Preparedness and Incident Management Reference Sheet.
- Engagement with railway companies during planning and preparedness phase to understand companies' capabilities to respond.
- The ERP must distinguish the various dangerous goods that pass through the community as each has their own unique response protocols.



Understand the toxicity of the dangerous goods passing through the community. In the case of an incident involving crude oil for example, toxic gases may be present in the air in high concentrations, creating an inhalation hazard.

- Familiarization with local businesses and plants that ship, use or receive dangerous goods in large quantities. Keep in mind that dangerous goods may be simply 'passing through' town.
- Knowledge of your Mutual Aid Agreements; know the assets and capabilities that can be obtained from other jurisdictions. Participation in joint planning, training and exercises whenever possible.

▶ FLAMMABLE LIQUIDS PROPERTIES AND INITIAL RESPONSE

FLAMMABLE LIQUIDS PROPERTIES

Should an incident occur, response partners will need to be prepared and informed about the properties of the dangerous goods.

Flammable liquids have varying properties. Gasoline, diesel, ethanol, crude oil and bitumen are all flammable, but they behave differently under spill and fire conditions. When dealing with flammable liquids, the most important properties to know are: viscosity, density, flash point and toxicity. Detailed information on flammable liquids properties can be found in the *Competency Guidelines for Responders to Incidents of Flammable Liquids in Transport, High-Hazard Flammable Trains*, published by Transport Canada in 2016, available on the TDG website: http://www.tc.gc.ca/media/documents/tdg-eng/TC-Competency_Guidelines-e.pdf.

Crude oil

Special considerations should be given to crude oil. This petroleum product is a mixture of flammable liquids and gases. It is volatile and its properties are variable. Nevertheless, crude oils can be categorized into:

- **Lighter crudes (sweet crudes):**
 - They have a lower density, which means they float on water.
 - They have a lower viscosity, which means they tend to flow more easily, depending on environmental conditions.
- **Heavier crudes (sour crudes):**
 - They have a higher density, which means they tend to sink when spilled on water.
 - They have a higher viscosity, which means they tend to flow less easily, depending on environmental conditions.



Toxic gases will be released from spilled product (e.g., hydrogen sulfide (H₂S), benzene). Air monitoring is an important aspect of safety at the scene. Note that heavier crudes contain a greater content of H₂S than lighter crudes, and therefore pose a much greater risk when spilled or on fire.

Additional considerations for crude oil:

- Physical and chemical properties vary depending on the source of the product, where it was extracted.
- Behavior of crude oil may vary depending on its composition.
- Thorough knowledge of the properties of the product is critical during a hazard assessment on scene.

INITIAL RESPONSE



First Responders **should not** rush in at the scene. On scene, they should make a preliminary assessment from a safe distance and notify the dispatcher of all information available. The dispatcher will immediately notify agencies according to an established protocol. Refer to the aide-memoire at the end of this document for the five key steps to follow when dealing with flammable liquids incidents.

Identification of the product(s) involved in an incident is key to planning the appropriate response. There are a number of indicators and tools that will help identify the dangerous goods that have been released. These are addressed in the following section.

A free e-learning titled *Emergency Preparedness for Rail Incidents Involving Flammable Liquids in Canada* is available at: <http://rail.capp.ca/>. This online presentation, developed by the Canadian Association of Petroleum Producers in collaboration with the Canadian Association of Fire Chiefs, provides awareness information to First Responders in order for them to be better prepared to respond safely and effectively to rail incidents involving flammable liquids.

▶ FIRST RESPONDERS' TOOLS AND RESOURCES

Valuable and immediate information from Transport Canada and industry leaders is available to help First Responders identify the products involved when a dangerous goods incident occurs.

TOOLS FOR PRODUCT IDENTIFICATION DURING THE INITIAL PHASE OF AN INCIDENT

Emergency Response Guidebook (ERG)

The Emergency Response Guidebook (ERG) was developed jointly by Transport Canada, the United States Department of Transportation, the Secretariat of Transport and Communications of Mexico and with the collaboration of CIQUIME (*Centro de Información Química para Emergencias*) of Argentina, for use by firefighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving dangerous goods.

The ERG is primarily a guide to aid First Responders in quickly identifying the specific or generic hazards of the dangerous goods involved in the incident and protecting themselves and the general public during the initial response phase.

CANUTEC

CANUTEC is Transport Canada's Canadian Transport Emergency Centre which is available 24/7. The Centre is staffed by scientists who are fully trained in emergency response and Incident Command Systems. CANUTEC's advisors can assist emergency response personnel by providing advice over the phone during an incident involving dangerous goods. They can also help locate the train consist, which is the shipping document listing the goods transported in each rail car (see ANNEX B for a sample of a train consist). CANUTEC may be reached at:

- *666 (any cell-phone in Canada), 613-996-6666 or
- 1-888-CAN-UTEC (226-8832)

CANUTEC provides 24/7 advice on all dangerous goods incidents.

AskRail®

The AskRail® app is a safety tool for First Responders that provides immediate access to accurate, timely data about what dangerous goods a railcar is carrying so that an informed decision can be made on how to respond to a rail emergency.

AskRail® is a backup resource of information from the train conductor or if a train consist is not available.

Access to the app is granted only to qualified emergency responders who have successfully completed a railway emergency response training course. For information on AskRail®, see <http://www.railcan.ca/rac-initiatives/askrail/>.



The Train Consist and the Shipping Document

Rail carriers will provide the train consist immediately to CANUTEC upon being informed of an incident. The consist lists each car, in the order in which they are placed in the train, and shows the UN number (as on the placards) of the cars' contents. CANUTEC can forward the train consist to the Incident Commander².

Additionally, each shipment of dangerous goods must be accompanied by a shipping document. This document must provide mandatory information as required in the *Transportation of Dangerous Goods Regulations (TDGR)*. If an Emergency Response Assistance Plan (ERAP) is required for the product involved in the rail incident, an ERAP reference number and the ERAP telephone number will be displayed on the shipping document. Anyone can call this phone number for information and assistance.

² Incident Commander: Person in charge of an incident in an Incident Command System (ICS) Structure. ICS is further explained in this document.

Note: If the shipping document is not accessible, CANUTEC can find the ERAP reference number and the ERAP telephone number using alternate sources of information.

An example of a train consist showing the ERAP reference number and ERAP telephone number can be found in Annex B.

Without being a tool, the *Transportation of Dangerous Goods Regulations* requirement to display placards with the product's four-digit UN number provides valuable information to First Responders. These internationally recognized placards:

- Inform First Responders of the class of dangerous good being transported; and
- Identify the specific dangerous good (UN number) and its level of risk.

The UN numbers can be easily interpreted with the ERG, the AskRail® application, or by calling CANUTEC at 1-888-CAN-UTEC (226-8832), 613-996-6666 or *666 on a cellular phone.

RESOURCES FOR ASSISTANCE

Rail Companies' Emergency Response Plans (ERP)

A railway dispatcher will typically be the first to be alerted to an impending or actual emergency through their normal communications network. Depending on the location of the emergency and the materials involved, there may be a need to implement emergency response plans (ERP).

Railway companies have their own emergency response plans (ERP)³. The ERP are designed to mitigate incidents quickly and professionally, using the railway companies' own resources (including sub-contracted parties who may bring special expertise and equipment to the scene). Note that ERP are not reviewed and/or approved by Transport Canada.

Emergency Response Assistance Plans (ERAP)

Companies that handle, offer for transport, transport or import flammable liquids by rail may be required to have an approved ERAP if the quantity in the tank car exceeds 10,000L and is one of the listed dangerous goods in Subsection 7.2(1)(f) of the *Transportation of Dangerous Goods Regulations*. ERAPs are reviewed and approved by Transport Canada and are designed for incidents involving dangerous goods that require special technical knowledge and/or equipment that may not be available to First Responders.

The plan must include information such as, but not limited to:

- The ERAP holder's technical advisor(s);
- The level of training and experience of the technical advisor, team leaders and response team members regarding flammable liquid releases;
- The location(s) of available specialized equipment for the response; and
- The approximate time to respond.

An ERAP response team may consist of employees of the ERAP holder or a third party response organization that is contracted to respond on behalf of the ERAP holder.

Regardless of which model the ERAP holder uses, ERAP responders must be trained in an incident command system.

³ Private industry and carriers will often have ERPs of their own, not to be confused with ERAPs, which are plans required for the transportation of high-risk dangerous goods and approved by Transport Canada.

WHAT IS AN EMERGENCY RESPONSE ASSISTANCE PLAN?

An Emergency Response Assistance Plan (ERAP) is required by certain persons such as manufacturers, producers or distributors of dangerous goods in accordance with the *Transport of Dangerous Goods Regulations*. Dangerous goods subject to an ERAP are considered a greater risk for harm and require technical expertise and specialized equipment not normally held by firefighting services. Transport Canada approves ERAP that are deemed effective for the response to incidents involving particular dangerous goods.

ERAP technical advisors (TA) are representatives of the ERAP holder and have specialized knowledge of the dangerous goods involved in an incident. TA have been trained in Incident Command System (ICS) as well as specialized training related to the dangerous goods in their plan.

For each dangerous good requiring an ERAP, the shipping document will indicate the ERAP number (X-YYYY-(ZZZ)) as well as the ERAP telephone number. After calling that number, a TA will be available by phone within approximately 10 minutes of the initial call. Based on the discussion and the severity of the situation, the level of assistance may range from assistance over the phone to the deployment of a specialized response team or equipment. When the TA attends the incident, he or she can be expected to be on-site within six hours of the initial request*.

Transport Canada can assist by providing technical advice on the types of products involved. Once an incident has been made safe, Transport Canada may also monitor the removal of waste. A Remedial Measures Specialist (RMS) will monitor the situation over the phone or by attending on site. Every RMS has a technical and chemical background, has been trained in ICS, rail tank car emergencies and emergency response and can provide technical and emergency advice to First Responders responding to dangerous goods incidents.

*An ERAP can be implemented to tier 1 or tier 2, depending on the actions that need to be taken. Implementing your ERAP to tier 1 means that the ERAP holder is responding, generally by telephone, by remotely monitoring the response to the release or anticipated release. Implementing an ERAP to tier 2 means that the ERAP holder is responding at the site of the incident by monitoring the response to the release or anticipated release on site or remotely, and bringing ERAP emergency response resources to the location of the release or anticipated release. When an ERAP is implemented, ERAP holders are required to exercise due diligence and mobilize and deploy as soon as possible. Response times may vary given the site location, weather conditions, accessibility, or other circumstances.

INCIDENT MANAGEMENT ACTIVITIES

An incident management system is an established process for logging, recording and resolving incidents. An effective response to an incident involving dangerous goods is based on the following incident management activities:

- Describe the critical tasks pertaining to initial site management and control in managing the response to a rail transportation incident.
- Identify the subordinate command and general staff positions that might be utilized for a rail incident, ensuring consistency with an incident command system as a framework to manage the incident.
- Establish a scalable and flexible set of processes and procedures that emergency responders will use to conduct response operations.
- Enable responders at all levels to work together effectively and efficiently to manage incidents.
- Coordinate with neighboring communities. Initial site command and control.

► INCIDENT COMMAND

INCIDENT COMMAND SYSTEM



A rail emergency or other large scale catastrophes may create a situation that overwhelms the normal resources of a community and surrounding communities.

The Incident Command System (ICS) is a standardized on-site management system designed to enable effective, efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

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

Under the Incident Command System, the first to arrive (usually First Responder) becomes the Incident Commander and will direct all emergency response actions until relieved of his or her duties. The Incident Commander will assess the need for additional resources and will establish the command post. He or she has the initial authority to direct and control emergency actions including evacuations.

The Incident Commander appoints command and general staff as appropriate. In coordination with the Incident Commander, law enforcement will set up security, establish access, control traffic flow and assist with evacuation.

Command Post and Staging Area: The Incident Commander will establish a command post and staging areas and request relevant agencies to join where needed.

Responsible parties: Any involved railway company, shipping company and ERAP responders.

Local police service (municipal/band/provincial): The local police service has responsibility to secure and control access to the scene for the duration of the incident. They may also assume Incident Command, as appropriate, during the course of the incident if identified by the Authority Having Jurisdiction (AHJ)⁴.

Communications and Media: The news media will assemble near the incident site and, when the Incident Commander deems the site accessible, will be escorted to the scene staging area. The Emergency Operations Centre (EOC) Public Information Officer (PIO) will disseminate information in conjunction with the Incident Command PIO staff.

A Community EOC should be activated for incidents that could overwhelm its resources. The activities of the EOC may be coordinated by the Provincial Emergency Management Office, if requested.

Note: An Emergency Medical Services (EMS) Branch Director should be the first qualified person on scene from the EMS responding agencies. This person shall retain EMS command until it is passed to a superior from the Director's agency, or the Director relinquishes command to someone else.

⁴ Authority Having Jurisdiction is the organization, office, or individual having statutory responsibility for enforcing the requirements of a standard. Most provinces/territories have designated an AHJ as the responsible organization for ICS within their jurisdictional boundaries.

The Incident Commander will:

- Establish a command post from which to direct and oversee all emergency operations.
- Have the emergency site secured in order to limit access and reduce risks to public safety. Mutual aid may be requested from other available police agencies (identify Mutual Aid Agreement or Memorandum of Understanding).
- Designate a Joint Information Centre (JIC) for the press/media representatives.

ICS Canada is a Pan Canadian command and control structure used to help manage emergency incidents and planned events. Information and free training are available at: <http://www.icscanada.ca>.

The Incident Command System is a proven management system based on successful business practices.

UNIFIED COMMAND

Unified Command (UC) will be employed to facilitate a coordinated response by all local, provincial and federal agencies, as well as private entities.

UC offers the following advantages:

- A shared understanding of priorities and restrictions;
- A single set of incident objectives;
- The use of collaborative strategies;
- Improved internal and external information flow;
- Less duplication of effort;
- Better resource utilization;
- An on-scene Incident Commander from the local fire service;
- Railway company emergency responders trained and prepared to operate within ICS as part of a UC;
- Resource provision by railway companies and dangerous goods shippers; and
- Engagement with railway companies during planning and preparedness phase to understand capabilities.

Incident Command System



The Incident Command System (ICS) is a standardized on-site management system designed to enable effective, efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

The ICS is used to manage an incident or a non-emergency event, and can be used equally well for both small and large situations.

Transport Canada's response personnel (CANUTEC advisors and Remedial Measures Specialists (RMS)), as well as ERAP responders and railway company responders have standardized training on the program offered by ICS Canada.

In addition, the Canadian Class 1 Railways, have adopted the ICS Canada program as their standard.

DIRECTION AND CONTROL

The Incident Commander controls and directs all activities at the scene in accordance with the ICS. If an emergency is declared, the Authority Having Jurisdiction (AHJ) will exercise executive authority over emergency operations in the community, in accordance with the priorities identified in the incident action plan.

The command post will be established at a location near the scene. Staffing for the command post, as directed by the Incident Commander, should be limited to primary responders: fire, law enforcement, EMS, representatives from the AHJ communications, and others who may be appointed by the Incident Commander.



The local community is responsible for responding to any incident within their jurisdiction. This local community is known as the AHJ. In many small AHJs within Canada, the local fire service holds this responsibility. Regardless of who performs this function on a regular basis, it is the community's responsibility to identify an Incident Commander for all incidents including fire, explosion, vehicle accidents and dangerous goods incidents.

The Incident Commander should be fully trained in ICS as well as UC. Most provinces/territories have standard ICS/UC and can provide training on them.

OTHER CONSIDERATIONS

Closure of rail tracks: The rail dispatcher will stop all rail traffic in the affected area. If this has not been done, the Incident Commander can request the closure of rail tracks around the incident by asking the railway representative on site or by calling CANUTEC to obtain assistance on this matter.

Closure of Roads: The Incident Commander can request the closure of roads around the incident. If a temporary road closure is granted, the police service for the AHJ will be responsible for the direction of road traffic in proximity to the scene, with immediate closure of roads around the area.

Closure of Air Space: The Incident Commander can request the closure of airspace around the incident by asking CANUTEC to relay the request to Transport Canada's Civil Aviation Directorate. Note that this closure will also apply to aircraft used in support of the response (i.e., a helicopter used to assess the incident). Closure of air space should be considered when there is a risk of explosion due to the incident as well as in densely-populated areas where aircraft not involved in the response may congregate.



If a temporary airspace closure is granted, Transport Canada's Civil Aviation Authority will be responsible for air traffic in proximity to the scene, with immediate regulatory control of airspace around the area. They will keep the airspace clear of intrusive air traffic, to the limits of the regulations.

ROLES AND RESPONSIBILITIES OF KEY PLAYERS DURING A RESPONSE



The **INCIDENT COMMANDER** is responsible for:

- ✓ Assessing the magnitude of the scene and reporting it to the 911 dispatcher;
- ✓ Establishing and staffing a command post and operations post as needed;
- ✓ Designating the emergency site boundary to limit access and reduce risks to public safety;
- ✓ Directing and controlling all tactical operations;
- ✓ Assessing the need for additional resources (i.e., other available police agencies identified in Mutual Aid Agreement or Memorandum of Understanding);
- ✓ Conferring with the AHJ community representative;
- ✓ Evacuating the vulnerable population from the emergency site;
- ✓ Requesting utility shut-offs for the affected area; and
- ✓ Designating a Joint Information Centre (JIC) for the press/media representatives.



The **RESPONDING FIRE SERVICES** are responsible for:

- ✓ Establishing initial incident command in accordance with the Incident Management System and Unified Command;
- ✓ Establishing operational control of fire and rescue operations;
- ✓ Conducting and coordinating evacuation as necessary;
- ✓ Conducting search and rescue operations;
- ✓ Assuming responsibility for the safety and well-being of all involved firefighters;
- ✓ Assisting in body recovery as needed or requested by the Coroner;
- ✓ Staffing both the command post and the EOC;
- ✓ Identifying, securing and managing necessary resources; and
- ✓ Utilizing technical representatives and resources available from other agencies.



The **EMERGENCY MEDICAL SERVICES** are responsible for:

- ✓ Providing treatment to those in need of urgent medical care, with the goal of treating the presenting conditions, or arranging for timely removal of the patient to the next point of definitive care.
- ✓ In an Incident Command System structure, the medical unit is responsible for developing a medical plan, providing first aid and light medical treatment for personnel assigned to the incident and preparing procedures for major medical emergencies.



The **RAILWAY COMPANY** is responsible for:

- ✓ Complying with reporting requirements, as required by the *Transportation of Dangerous Goods Regulations*;
- ✓ Designating a representative to report to the command post and/or EOC for a briefing on the incident;
- ✓ Appointing a liaison to report to the EOC/Transportation Operations Centre (TOC) to assist in coordinating response and recovery operations;
- ✓ Designating a spokesperson to coordinate with Joint Information Centre (JIC⁵); and
- ✓ Designating a telephone number as a point of contact for inquiries from the public.
- ✓ Making the ERAP Incident Report as per Part 8 of the TDGR to the ERAP holder, when there is a release or anticipated release of dangerous goods that require an ERAP.



COMPANIES SUCH AS MANUFACTURERS, PRODUCERS and DISTRIBUTORS are responsible for:

- ✓ Ensuring that the dangerous goods are properly classified and in standardized means of containment;
- ✓ Ensuring the ERAP reference number is shown on all shipping documents for flammable liquids being transported by rail, if applicable;
- ✓ Having a Transport Canada-approved ERAP, including an ERAP telephone number that is available 24/7 when the dangerous goods that require an ERAP are in transport;
- ✓ Ensuring that technical or emergency response advice is provided as soon as possible when it is requested; and
- ✓ Implement the ERAP to tier 1 or tier 2, when there is a release or anticipated release.

⁵ JIC: A Joint Information Centre is a physical location used to coordinate critical emergency information, crisis communications and public affairs functions.

▶ REPORTING REQUIREMENTS

Emergency response begins as soon as a rail incident is identified or reported. If there is a release or an anticipated release of dangerous goods, an emergency report is required under the *Transportation of Dangerous Goods Regulations* by the person having charge, management or control of the dangerous goods. This report must be made as soon as possible to the local authority responsible for emergency response if the dangerous goods are, or could be, in excess of the set quantity in Section 8.2 of the *Transportation of Dangerous Goods Regulations* and thus a potential danger to public safety.

The emergency report must include as much of the following information as is known at the time of the report:

- The name and contact information of the person making the report;
- In the case of a release of dangerous goods, the date, time and geographic location of the release;
- In the case of an anticipated release of dangerous goods, the date, time and geographic location of the incident that led to the anticipated release;
- The mode of transport used to carry the dangerous goods;
- The shipping name or UN number of the dangerous goods;
- The quantity of dangerous goods that was in the means of containment before the release or anticipated release;
- In the case of a release of dangerous goods, the quantity of dangerous goods estimated to have been released; and
- If applicable, the type of incident leading to the release or anticipated release, including a collision, roll-over, derailment, overfill, fire, explosion or load-shift.

A release or anticipated release report may also be required if an emergency report is made and listed conditions in Section 8.4 of the *Transportation of Dangerous Goods Regulations* are met.

Section 8.20 of the *Transportation of Dangerous Goods Regulations* requires that an ERAP incident report be made after an incident has occurred, which causes an actual or anticipated release of the dangerous goods that need an ERAP. The report is made by the person who has who has the charge, management or control of a means of containment (typically the carrier) to the person at the ERAP telephone number required to be included in a shipping document. This report is intended to inform the person who has the ERAP that a release or anticipated release has occurred, so that they can respond.

Section 8.22 of the *Transportation of Dangerous Goods Regulations*, requires that an ERAP holder make an implementation report as soon as possible to CANUTEC by telephone each time they implement an approved ERAP to tier 1 or tier 2.

Part 8 of the *Transportation of Dangerous Goods Regulations* specifies the requirements for additional reporting requirements, such as:

- 30-Day Follow-Up Report;
- Loss or Theft Report; and
- Unlawful Interference Report.

▶ YOU'RE NOT ALONE!

When an incident occurs, there are tools and resources available to First Responders to quickly identify the dangerous goods involved in the derailment and to assist in the response. In addition to these tools, key players are available and may converge on the incident site to provide knowledge, human resources, equipment and guidance during the response phase of the incident. These additional resources need to be known by the emergency planners of a municipality.

ADDITIONAL EMERGENCY RESOURCES

Representatives from the responding Fire Service

The responsible Fire Department (assigned by the AHJ) will assume Fire Command in conjunction with the Incident Commander and set-up the Fire Incident Command structure under the Operations function. The Fire Branch Director shall establish the fire ICS structure, direct firefighting strategies and communicate the need for additional resources to the Incident Commander.

Emergency Medical Services (EMS)

EMS shall assume command and, in conjunction with the Incident Commander, set-up the EMS incident command structure under the Operations function, in accordance with the jurisdiction's Mass Casualty Incident plan (or equivalent). The EMS Branch Director shall appoint supervisors to EMS Divisions and Groups. The Incident Commander will instruct emergency response personnel not to move property and debris associated with the wreckage unless there is imminent danger of items being destroyed, or unless they inhibit access to passenger rescue.

Transport Canada (TC) Inspectors (as the Primary Government Oversight Agency)

TC's Inspectors, from the Transportation of Dangerous Goods Directorate and/or the Rail Safety Directorate may attend as they are either responsible for the oversight of the response or responsible for the audits and inspections of railway companies. The role of TC's Inspectors is not to assume control of the incident, but to provide assistance to the Incident Commander.

Further, **TC Inspectors** have the authority to detain railcars to prevent any movement, to direct an action (i.e., cause a railcar to be moved) as well as other powers to ensure public safety, including the safety of workers at the incident site. In addition to TC Inspectors, TDG may deploy one or more **Remedial Measures Specialists (RMS)** to oversee the incident remediation. RMS have a technical and chemical background who can provide specialized advice during emergency response involving dangerous goods. Every RMS has been trained in ICS, rail tank-car emergencies and emergency response and can provide technical and emergency advice to First Responders during emergency response involving dangerous goods.

RMS have all the powers of a TC Inspector and are especially trained and equipped to attend dangerous goods incidents, specifically those by rail.

Minister's Observer (MO)

This position is appointed by Transport Canada to serve as the Department's liaison to ongoing Transportation Safety Board of Canada (TSB) investigations. The MO provides the Minister with an initial report on TSB's investigation, as well as subsequent interim and final reports.

Transportation Safety Board of Canada (TSB)

This body is mandated to investigate transport-related incidents to determine cause. One or more TSB investigators may attend the scene of an incident, but are not a formal part of the Incident Command System.

The TSB is one of the lead agencies responsible for investigating probable cause and reporting of all rail incidents within Canada. The TSB investigators attending the scene must report to the Incident Commander to ensure coordination of operations and the safety of the investigation personnel.

Coroner or medical examiner

This representative is responsible for the identification and movement of the deceased. In the event a body has been moved prior to the Coroner's approval, personnel moving the body shall make careful note of the location and condition of the body for the Coroner.

Canadian Railway Companies' Operations Centers:

Canadian National (CN) Railway 1-800-465-9239

Canadian Pacific (CP) Railway 1-800-716-9132

Emergency Response Assistance Plan (ERAP) Holder

The ERAP holder will provide assistance for the emergency response of dangerous goods incidents in complement of all other ERP. The ERAP holder's response should be in accordance with the ERAP submitted and approved by Transport Canada.

ADDITIONAL PLANNING AND TRAINING RESOURCES

Competency Guidelines for Responders to Incidents of Flammable Liquids in Transport, High-Hazard Flammable Trains

Transport Canada's Emergency Response Task Force (ERTF) developed the *Competency Guidelines for Responders to Incidents of Flammable Liquids in Transport, High-Hazard Flammable Trains* in partnership with the National Fire Protection Agency. These Guidelines are designed to enhance first responder safety during an incident involving flammable liquids transported by rail, frequently referred to as "High-Hazard Flammable Trains" (HHFT). These Guidelines address product- and incident-specific competencies for first responders and private sector personnel when responding to HHFT incidents. They also provide information on flammable liquids properties and response strategies.

NFPA Hazmat FLIC

The National Fire Protection Association (NFPA) NFPA's HAZMAT FLIC is an application that provides the on-scene incident commander with pertinent guidance materials, including two Fire Protection Research Foundation reports, a multi-tiered size-up checklist, and a collection of additional resources for managing emergency responses for high hazard flammable train and liquid petroleum pipeline emergencies. The app can be downloaded for free and more information is available at: www.nfpa.org.

TDG Directorate Safety Awareness Program

This program provides awareness to targeted audiences on the TDG program, the services Transport Canada can provide, and information on the Transportation of Dangerous Goods Act & Regulations requirements.

For more information, contact the TDG Safety Awareness Team at:

TC.TDGSafetyAwareness-SensibilisationalasecuriteduTMD.TC@tc.gc.ca.

TRANSCAER Canada

TRANSCAER®

The Transportation Community Awareness and Emergency Response initiative (TRANSCAER®) was started in Canada in 1985 by the Chemistry Industry Association of Canada (CIAC). Today, it is led by CIAC and the Railway Association of Canada (RAC).

TRANSCAER® exists to ensure that communities are informed about the products being moved through their area by road and rail, and what measures are in place to ensure their safe transportation.

TRANSCAER® members work with municipal officials, emergency responders, and residents along transportation routes, to assist them in developing and evaluating their community emergency response plans. TRANSCAER® also hosts dozens of outreach events across Canada each year. Their Safety Training Tank Car (a classroom on wheels) helps to train firefighters, police, and emergency medical personnel, so they are better prepared in the event of a transportation incident involving dangerous goods.

CIAC and the RAC also partner with other associations (i.e., manufacturers, distributors, transportation companies, and emergency responders) in Canada and the U.S. to ensure that transportation safety best practices are shared, and that consistent, state-of-the-art training and emergency preparedness activities are carried out across North America.

www.transcaer.ca

▶ REMEDIATION/RECOVERY

Recovery immediately follows emergency response. It involves direction from the AHJ to restore to acceptable conditions and may include:

- Maintaining access control;
- Clearing debris (could include garbage pick-up and special transportation needs, such as out of order freezers and fridges);
- Restoring public utilities (i.e., potable water, electricity);
- Removing wreckage;
- Providing emergency social services (shelter, clothing, food, etc.);
- Investigating the incident;
- Demobilizing emergency personnel and resources, which may include emergency worker counseling;
- Adjusting traffic control perimeters;
- Continuing the provision of public information;
- Maintaining security in restricted areas;
- Providing long-term counselling to residents;
- Overseeing cleanup operations, such as chemical decontamination and removal of contaminated soils.

▶ THE WAY FORWARD

This template is meant to be used by emergency planners of municipalities and communities to better prepare their community in the case of a rail incident involving dangerous goods. Many tools and resources are available to assist in preparing for such incidents.

Municipalities and communities should regularly review their emergency response plan and establish procedures designed to protect life and property in the event of a rail incident within or near the community.

And remember, you're not alone!



▶ ANNEX A – FAQ

1. How can I prepare adequately if I have no knowledge of the dangerous goods being transported in my municipality?

Under Protective Direction 36 available at: <https://www.tc.gc.ca/eng/tdg/safety-menu-1281.html>, an Emergency Planning Officer (EPO) can register with CANUTEC in order to receive the information pertaining to dangerous goods being transported in his or her municipality. With this information, the EPO will be able to plan adequately if a dangerous goods incident was to occur in his or her municipality.

2. How can we coordinate the response of a dangerous goods incident when there are multiple agencies/ organizations/stakeholders present on site?

Transport Canada strongly recommends to include an incident management system during the planning phase of the municipality's emergency response plan (ERP). Incident Command System (ICS) and Unified Command (UC) are examples of incident management systems that can be used during an emergency and that have proven to be effective.

3. What does CANUTEC mean and what services can they provide to my municipality and first responders?

CANUTEC is the Canadian Transport Emergency Centre. Its advisors can provide advice on the phone and help in many areas, like locate a train consist. In collaboration with the U.S., Mexico and Argentina, they develop the Emergency Response Guidebook (ERG), a valuable tool for First Responders.

They also participate in training exercises with fire departments, public authorities and industry.

4. In addition to CANUTEC's services, can Transport Canada provide resources during a dangerous goods incident?

Absolutely. In addition to CANUTEC, Transport Canada may send Remedial Measures Specialists (RMS) or TDG inspectors to incident sites to support and oversee the remediation and provide guidance to the person in charge of the incident response (generally, the incident commander). RMS have a technical and chemical background and are trained in ICS, rail tank cars and emergency response.

5. What would be the single thing we need to remember from this document?

If there is one thing you need to remember after reading this document, it's that you're not alone. Many resources, including those found in this document, may provide help and guidance during a dangerous goods incident.

6. What can an Emergency Response Assistance Plan (ERAP) do for me? What is found in an ERAP?

An ERAP can provide technical expertise as well as specialized equipment to First Responders dealing with incidents involving dangerous goods. The contents of an ERAP can be found on the ERAP Webpage: http://www.tc.gc.ca/eng/tdg/guide-help-prepare-emergency-response-assistance-plan.html#_What_to_include_in_your_ERAP

7. Where can I get ICS information?

Information on ICS can be found on the ICS Canada website: <http://www.icscanada.ca/>. You will find information on topics such as training, standards and forms.

8. Can First Responders call CANUTEC to simulate dangerous goods incidents?

Yes. If a fire service wishes to simulate a dangerous goods incident, CANUTEC can assist in pre-planning and participate in training exercises with fire departments. Contact CANUTEC prior to doing the simulation by calling the information line at 613-992-4624.

ANNEX B – SHIPPING DOCUMENT: SAMPLE OF A TRAIN CONSIST

Note: This train consist is a sample of what it may look like. Each rail company uses different templates to display the information.

```

K K EEEEE Y Y      TTTT RRRR AAA IIIII N N
K K E   Y Y      T  R  R  A  A  I  NN N
KKK   EEE   Y      T  RRRR  AAAAA  I  N N N
K K E   Y      T  R  R  A  A  I  N N N
K K EEEEE Y      T  R  R  A  A  IIIII N N
    
```

 * S U M M A R Y *
 * SPECIAL DANGEROUS - 1 DANGEROUS - 16 A RESIDUE - 1 B *
 * BAD ORDER - 2 DIMENSIONAL - 16 SPEED RESTRICTED - 1 *
 * POISONOUS INHALATION - 1 C ESTOPPEL - 0 HEAVY AXLE LOAD - 5 *
 * ERAP - 17 D RSSM - 1 *

1 ATW 318337 FB7 L LUMBER SUPERI UP 129 80 IDAHOTIMLLC _____
 MOVING ON MWB - REQUIRES FULL BILL TO DELIVER

2 TILX 280985 TSI L FLMLQD PULJCT NS 133 59 CRUESUPP _____
 A2 HAZMAT-US TRAIN PLACEMENT GROUP 2
 JC CDN MARSHALLING GROUP C
 JR ERAP PULLBY REQUIRED (CANADA)

 * DANGEROUS *

W/B 691984 - 2016-11-21 ** DANGEROUS GOODS SHIPPING DOCUMENT **

TO: DUCK LAKE MS FROM: APPA AB
 CRUDE OIL SUPPLY CO CRUDE CO
 2100 JOHN BEAMER PARKWAY S HIGHWAY 180 EAST RANGE ROAD 8
 TUSCALOOSA AL 35102 APPA AB 50H2T0

1 TANK CAR / 82528 KG

UN1267
 PETROLEUM CRUDE OIL
 (PETROLEUM CRUDE OIL)
 CLASS 3//PG II

EMERGENCY 24-HOUR NUMBER USA (800) 424-9300
 CCN 1234
 EMERGENCY 24-HOUR NUMBER CDN (613) 996-6666
 2-A-1234

ERAP 2-1933-078 TEL (800) 265-0212

HAZMAT STCC 4910165

SHIPPERS CERTIFICATION: BOB SMITH
 I hereby declare that the contents of this consignment are fully
 and accurately described above by the proper shipping name, and
 are classified, packaged, marked and labeled/placarded, and are in
 all respects in proper condition for transport according to applicable
 international and national governmental regulations.

3 BCOL 730298 FB7 L LUMBER SUPERI UP 118 79 HOMEDEPOT _____
 4 CRDX 20384 C3G L ASHES FTRoug 128 41 LAFARGCANADA _____
 5 FRPX 11300 A36 L PLYND DARTMO 106 66 CANWELBUIMAT _____

Train Consist Legend

ITEM	DESCRIPTION
1	Train descriptor: “Key Train” means that this train is carrying either one loaded Toxic Inhalation Hazard (TIH) rail car OR 20 or more rail cars loaded with dangerous goods.
2	Train Summary: This shows the number of rail cars that fall under the <i>Transportation of Dangerous Goods Regulations</i> and/or have some other risk associated with them (i.e., heavy axle load). Relevant information in the summary includes: <ul style="list-style-type: none"> A. The number of rail cars containing commodities that are considered to be dangerous goods. Special dangerous goods have an increased public safety risk. B. The number of rail cars containing the residue of a dangerous good. C. The number of rail cars containing commodities with a toxic inhalation hazard (TIH). D. The number of rail cars containing commodities that require an ERAP.
3	Rail Car Information: From the consist on the previous page the rail car information is given as “2 TILX 280985 T5I L”. This grouping indicates the following key pieces of information: <ul style="list-style-type: none"> • 2 is the rail car’s position in the train counting from the locomotive end. In this instance, this car would be the second car after the locomotive. • TILX 280985 is the unique car identification number. This pairs the rail car with the consist, such that each rail car’s contents can be known at any time. • T5I is railway coding for the type of rail car. In this case it is a general service tank car. • L is the load status. L stands for loaded, as in loaded with commodities. E stands for empty. However, if an empty car contains residue of a dangerous good that it once contained, this will be indicated as such on the consist (see 4 below).
4	Dangerous Marking: This indicates that the contents of this rail car are considered to be dangerous goods. RESIDUE will replace the DANGEROUS in the marking for an empty tank car containing dangerous goods residue.
5	Shipper and consignee information: This shows by whom the dangerous goods were shipped and from where, as well as their destination and whom they will be received by.
6	Package Type and Quantity: This describes the primary means of containment for the commodity (i.e., tank car, hopper car, drums, etc.) as well as its total mass.
7	Product Information: This section will contain the UN Identification Number, Proper Shipping Name, Hazard Class and Packing Group (if applicable) of the dangerous good.
8	Emergency Telephone Number: This is the 24 hour phone number supplied by the shipper of the dangerous goods.
9	ERAP Information: If the dangerous goods being carried in this rail car require an Emergency Response Assistance Plan (ERAP) for transport in Canada, the ERAP plan number and the telephone number to talk to a person associated with the plan are included here.
10	Shipper’s Declaration: Each person who offers a dangerous good for transportation shall certify that the commodity is being offered for transport in accordance with the regulations.

