# Norfolk Southern Hazmat Emergency Response Plan

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0   INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2.0   PREVENTION</td>
<td>2</td>
</tr>
<tr>
<td>3.0   PREPAREDNESS</td>
<td>3</td>
</tr>
<tr>
<td>3.1 Coordination with Norfolk Southern Staff</td>
<td>4</td>
</tr>
<tr>
<td>3.2 Top 25 Rail Transported Hazardous Materials</td>
<td>4</td>
</tr>
<tr>
<td>3.3 Training and Exercises</td>
<td>7</td>
</tr>
<tr>
<td>3.4 Local Norfolk Southern Rail Lines</td>
<td>7</td>
</tr>
<tr>
<td>4.0   RESPONSE</td>
<td>8</td>
</tr>
<tr>
<td>4.1 Incident Levels (I,II,III)</td>
<td>8</td>
</tr>
<tr>
<td>4.2 On-Scene Command</td>
<td>10</td>
</tr>
<tr>
<td>4.3 Notification Procedures</td>
<td>11</td>
</tr>
<tr>
<td>4.3.1 Initial Notification – Local Fire and Police</td>
<td>11</td>
</tr>
<tr>
<td>4.3.2 Norfolk Southern Responsibilities</td>
<td>11</td>
</tr>
<tr>
<td>4.4 Norfolk Southern Response Resources</td>
<td>13</td>
</tr>
<tr>
<td>4.5 External Response Resources</td>
<td>14</td>
</tr>
<tr>
<td>4.6 Local Resources</td>
<td>14</td>
</tr>
<tr>
<td>4.7 Hazard Identification</td>
<td>15</td>
</tr>
<tr>
<td>4.7.1 Rail Car Identification</td>
<td>15</td>
</tr>
<tr>
<td>4.7.2 Shipping Papers</td>
<td>16</td>
</tr>
<tr>
<td>4.7.3 Placarding and Hazard Classes</td>
<td>19</td>
</tr>
<tr>
<td>4.7.4 Shipping Containers</td>
<td>19</td>
</tr>
<tr>
<td>4.8 Emergency Response Information Resources</td>
<td>22</td>
</tr>
<tr>
<td>5.0   POPULATION PROTECTION</td>
<td>24</td>
</tr>
<tr>
<td>5.1 Pre-Emergency Identification of At-Risk Populations</td>
<td>24</td>
</tr>
<tr>
<td>5.2 Recommended Practices for Shelter in Place Populations</td>
<td>24</td>
</tr>
</tbody>
</table>

---

For emergencies involving Norfolk Southern track or equipment

Call the Police Communications Center (800) 453-2530
EXHIBITS

Exhibit 1  Norfolk Southern Rail Operating System Map................................................. 5
Exhibit 3  Guide for Determining Incident Level and Response ..................................... 9
Exhibit 4  Local and Norfolk Southern Notification Procedures ......................................12
Exhibit 5  Location of Rail Car Initials and Number (Reporting Marks) .........................15
Exhibit 6  Sample Norfolk Southern Train Consist..........................................................17
Exhibit 7  Sample Norfolk Southern Waybill .................................................................18
Exhibit 8  UN/DOT Hazard Classes..................................................................................20
Exhibit 9  Distribution of Hazardous Commodities Transported by
          Norfolk Southern in 1997, by Hazard Classes......................................................21

Acknowledgement is hereby given to a similar Hazmat Emergency Response Plan prepared by ICF Kaiser Incorporated for use by CSX Transportation, Inc. (CSXT). Portions of the CSXT Plan are incorporated herein.
LIST OF ACRONYMS

AAR, BOE  Association of American Railroads, Bureau of Explosives
CFR      Code of Federal Regulations
CL       Combustible Liquid
DOT      Department of Transportation
EBS      Emergency Broadcasting System
EMS      Emergency Medical Services
EPA      Environmental Protection Agency
FRA      Federal Railroad Administration
GST      General Superintendent Transportation
HAZMAT   Hazardous Material
HAZWOPER Hazardous Waste Operations and Emergency Response
ICS      Incident Command System
LEPC     Local Emergency Planning Committee
MSDS     Material Safety Data Sheet
NA       North American
NA ERG   North American Emergency Response Guidebook
NRC      National Response Center
NS       Norfolk Southern
NTSB     National Transportation Safety Board
OSHA     Occupational Safety and Health Administration
PIH      Poison by Inhalation
RQ       Reportable Quantity
TRANSCAER® Transportation Community Awareness and Emergency Response
UN       United Nations
USCG     United States Coast Guard
1.0 INTRODUCTION

This Plan has been developed by Norfolk Southern Railway Company (Norfolk Southern) to assist local emergency response organizations in their efforts to plan for and respond to railway related incidents or emergencies. Because this Plan is designed to augment the local response plan(s), it is purposely brief to cover only the key information that would be needed by planners and response organizations if an incident involving Norfolk Southern should occur. This Plan is subdivided into four main sections, addressing Prevention, Preparedness, Response, and Population Protection. Important components of the Plan include:

T Important phone numbers and points of contact in the event of a Norfolk Southern related incident;

T Important notification procedures in the event of a hazardous materials incident;

T Rail car placarding/labeling information and sources of additional information on hazardous materials and hazard identification;

T Listing of the top 25 rail transported hazardous materials nationwide, and Norfolk Southern contacts for acquiring similar information for local communities;

T Important information on how to identify ownership of local rail lines;

T Additional resources available to Norfolk Southern and the Local Emergency Planning Committees (LEPCs) in the event of an incident; and

T Potential training and emergency response exercise opportunities available from Norfolk Southern.

The information that follows will assist local planners prepare for and respond to any potential rail incident or emergency. This Plan is also designed to provide responders with accurate and efficient access to Norfolk Southern staff and resources, so that the necessary local and private resources can be engaged should the need arise.
2.0 PREVENTION

Accident and incident prevention are the primary focus and challenge of Norfolk Southern’s Hazardous Materials Risk Management Program, with the goals of minimizing risks and maximizing employee and transportation safety and protection of the environment. These goals are accomplished throughout Norfolk Southern through a strict program of effective employee training, regulatory and rule compliance, and risk assessment. Other prevention measures implemented by Norfolk Southern include the “Go for Four Program”, which requires that cars carrying hazardous materials not be coupled at speeds over 4 mph. In addition, Norfolk Southern has a dedicated maintenance program designed to ensure ongoing proper maintenance of the operating system infrastructure. This includes frequent inspections and upgrades to rail equipment and track. In addition, Norfolk Southern coordinates with the shipper following any rail incident to ensure against reoccurrence of the situation and controlling factors.

In 1997, Norfolk Southern handled 269,640 loads of hazardous materials traffic across its operating system, which represents 5.6% of the total Norfolk Southern loads transported that year. In 1997, Norfolk Southern had a total of only 99 DOT F 5800.1 reportable incidents, of which only five were accident related (i.e., derailment related). This works out to an incident per shipment ratio of only 0.3672 incidents per 1000 shipments. This is a significant decrease from the ratio of almost 0.92 incidents per 1000 shipments from a decade ago (1987). The dedicated implementation of Norfolk Southern’s Hazardous Materials Risk Management Program has resulted in a significant overall improvement in the company’s safety and hazardous materials incident record.

For emergencies involving Norfolk Southern track or equipment
Call the Police Communications Center (800) 453-2530
3.0 PREPAREDNESS

The primary goal of transporting hazardous materials is to move each and every shipment in a timely manner from origin to destination safely and without incident. In the event of a hazardous materials incident, the goal becomes to (1) effectively prevent injuries, (2) minimize property damage, and (3) safeguard against significant environmental impact.

Preplanning and preparedness are essential to achieving timely and effective incident response. An effective state of preparedness is accomplished through good emergency planning and training, comprehensive emergency response exercises, and the performance of regular evaluations of the effectiveness of response plans.

To better facilitate emergency preparedness activities with local communities, Norfolk Southern is an active participant in the TRANSCAER® Program (Transportation Community Awareness and Emergency Response). TRANSCAER® is a nationwide community outreach program designed to address community concerns about the transportation of hazardous materials through planning and cooperation. The program provides assistance for communities to develop and evaluate their emergency response plans for hazardous materials transportation incidents.

For information about TRANSCAER® efforts at the local level, or to obtain information about training opportunities with Norfolk Southern for their community, local planners may contact the Norfolk Southern Environmental Protection Department, Attention: Manager, Hazardous Materials, 110 Franklin Road, S.E., Roanoke, Virginia 24042-0013.

To assist local emergency planners and responders in their preparedness related to Norfolk Southern, this section discusses (1) coordination with Norfolk Southern environmental and response staff; (2) the top 25 hazardous materials carried by rail in the U.S and Canada; (3) exercises and training conducted by and available from Norfolk Southern; and (4) how to identify rail line ownership.
3.1 Coordination with Norfolk Southern Staff

Norfolk Southern has a professional staff of hazardous materials managers who can respond as necessary to any incident or emergency. These managers are strategically located throughout the Norfolk Southern Operating System and are available to assist company personnel and emergency responders in the mitigation of emergency situations. Exhibit 1 is a map of the Norfolk Southern Operating System, showing regional coverage areas for the hazardous materials managers.

The hazardous materials managers have a variety of response tools and resources available for use in an emergency. The Norfolk Southern hazardous materials manager will work with other company officials and the local incident command personnel to ensure safe and efficient handling of the incident.

3.2 Top 25 Rail Transported Hazardous Materials

Data on the common types and volumes of hazardous materials being transported through local communities are useful for local emergency planners in developing effective and realistic emergency response plans. In general, the types of hazardous materials transported by rail through local communities do not vary significantly from the national average. The typical variance may be in the ordering of the “top ten” products that are transported through various communities. A listing of the top 25 hazardous materials transported nationwide, as measured by tank car loaded originations in the U.S. and Canada in 1997, is summarized in Exhibit 2.

Norfolk Southern provides similar traffic flow information to local emergency planners upon request. Hazardous Material Density Study reports list each commodity by name, hazard class, and United Nations/North American (UN/NA) Number. Frequency information is generally provided by number of carloads for the top fifty most often transported products in the locale. Hazardous Material Density Study reports for the new, merged Norfolk Southern system should be available by Fall 1999. **Local planners may contact the Norfolk Southern Environmental Protection Department, Attention: Manager, Hazardous Materials, 110 Franklin Road, S.E., Roanoke, Virginia 24042-0013, if they wish to obtain this information for their local community.**
EXHIBIT 1  Norfolk Southern Operating System Map
Exhibit 2. Top 25 Transported Hazardous Materials Nationwide (1997)\(^1\)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Hazmat Code</th>
<th>Commodity (DOT Proper Shipping Name)</th>
<th>DOT Hazard Class</th>
<th>Total Tank Car Originations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4935240</td>
<td>Sodium Hydroxide, solution</td>
<td>8</td>
<td>92,031</td>
</tr>
<tr>
<td>2</td>
<td>4905752</td>
<td>Petroleum Gases, liquefied</td>
<td>2.1</td>
<td>88,917</td>
</tr>
<tr>
<td>3</td>
<td>4930040</td>
<td>Sulfuric Acid</td>
<td>8</td>
<td>78,258</td>
</tr>
<tr>
<td>4</td>
<td>4904210</td>
<td>Ammonia, Anhydrous, liquefied</td>
<td>2.2</td>
<td>66,155</td>
</tr>
<tr>
<td>5</td>
<td>4961605</td>
<td>Elevated Temperature Liquid, Not Otherwise Specified</td>
<td>9</td>
<td>62,478</td>
</tr>
<tr>
<td>6</td>
<td>4920523</td>
<td>Chlorine</td>
<td>2.3</td>
<td>52,469</td>
</tr>
<tr>
<td>7</td>
<td>4945770</td>
<td>Sulfur, molten</td>
<td>9</td>
<td>44,512</td>
</tr>
<tr>
<td>8</td>
<td>4905792</td>
<td>Vinyl Chloride, inhibited</td>
<td>2.1</td>
<td>32,223</td>
</tr>
<tr>
<td>9</td>
<td>4909230</td>
<td>Methanol</td>
<td>3</td>
<td>29,308</td>
</tr>
<tr>
<td>10</td>
<td>4917403</td>
<td>Sulfur, molten</td>
<td>4.1</td>
<td>27,153</td>
</tr>
<tr>
<td>11</td>
<td>4930247</td>
<td>Phosphoric Acid</td>
<td>8</td>
<td>24,397</td>
</tr>
<tr>
<td>12</td>
<td>4912210</td>
<td>Fuel Oil</td>
<td>3</td>
<td>24,326</td>
</tr>
<tr>
<td>13</td>
<td>4908175</td>
<td>Gasoline</td>
<td>3</td>
<td>22,181</td>
</tr>
<tr>
<td>14</td>
<td>4905421</td>
<td>Propane</td>
<td>2.1</td>
<td>21,798</td>
</tr>
<tr>
<td>15</td>
<td>4909152</td>
<td>Denatured Alcohol</td>
<td>3</td>
<td>21,326</td>
</tr>
<tr>
<td>16</td>
<td>4907265</td>
<td>Styrene Monomer, inhibited</td>
<td>3</td>
<td>20,450</td>
</tr>
<tr>
<td>17</td>
<td>4904509</td>
<td>Carbon Dioxide, refrigerated liquid</td>
<td>2.2</td>
<td>19,420</td>
</tr>
<tr>
<td>18</td>
<td>4930228</td>
<td>Hydrochloric Acid, solution</td>
<td>8</td>
<td>18,503</td>
</tr>
<tr>
<td>19</td>
<td>4914164</td>
<td>Fuel Oil</td>
<td>CL</td>
<td>12,499</td>
</tr>
<tr>
<td>20</td>
<td>4905423</td>
<td>Butane</td>
<td>2.1</td>
<td>12,078</td>
</tr>
<tr>
<td>21</td>
<td>4905704</td>
<td>Butadienes, inhibited</td>
<td>2.1</td>
<td>11,247</td>
</tr>
<tr>
<td>22</td>
<td>4921598</td>
<td>Phenol, molten</td>
<td>6.1</td>
<td>10,431</td>
</tr>
<tr>
<td>23</td>
<td>4914166</td>
<td>Diesel Fuel</td>
<td>CL</td>
<td>9,910</td>
</tr>
<tr>
<td>24</td>
<td>4912217</td>
<td>Fuel Oil</td>
<td>3</td>
<td>9,011</td>
</tr>
<tr>
<td>25</td>
<td>4905784</td>
<td>Propylene</td>
<td>2.1</td>
<td>8,949</td>
</tr>
</tbody>
</table>

2.1 Flammable Gas
2.2 Non-Flammable Gas
2.3 Poison Gas
3 Flammable Liquid
9 Misc. Hazmat/ORM

\(^1\)(Top 25 Hazardous Commodity Movements as Measured by Tank Car Loaded Originations in the U.S. and Canada, 1997. Source Transportation Technology Center, Inc.)
3.3 Training and Exercises

Regular training and exercising of emergency response plans facilitates effective operations during an actual response.

Norfolk Southern has emergency response plans in place to control and remediate hazardous materials incidents and to minimize the damage caused by them. However, due to the nature of the railroad network, Norfolk Southern recognizes that local emergency response personnel, such as firefighters, Emergency Medical Services (EMS), and police, will most likely be the first to arrive at the scene of a hazardous materials incident. Therefore, the best developed plans in place throughout the Norfolk Southern operating system will not be 100% effective unless an efficient incident response capability is maintained by local communities along the right-of-way.

In response to this need, Norfolk Southern is an active participant in the TRANSCAER® initiative. A portion of this program includes training for fire departments and other local emergency response organizations. In fact, since 1997 Norfolk Southern has provided hazardous materials training to over 4,000 state and local emergency responders.

Norfolk Southern regularly conducts two levels of emergency preparedness exercises: tabletop exercises and full-scale exercises. Tabletop exercises are designed to have the participants practice problem solving, generate discussion, and resolve questions about handling an incident, through the tabletop analysis of various incident scenarios. Full-scale exercises put the Norfolk Southern System Emergency Action Plan and Divisional Emergency Action Plans through a practical evaluation, via the enactment of a full response to a mock incident.

In general, Norfolk Southern works with LEPCs through the TRANSCAER® program to coordinate exercises, both tabletop and full-scale. Norfolk Southern is currently developing a program to coordinate emergency response drills and exercises with local emergency response agencies at major rail yards within the Norfolk Southern operating system.

3.4 Local Norfolk Southern Rail Lines

It is important for local emergency planners to familiarize themselves with the local rail lines to know the ownership of the line and potential access routes for emergency response vehicles. As part of its grade crossing safety program, Norfolk Southern has posted a telephone hotline number (1-800-946-4744), along with the Federal Railroad Administration (FRA) unique Crossing Identification Number, at each Norfolk Southern crossing. This program allows people to report malfunctions in crossing safety devices to Norfolk Southern, but can also be used by emergency responders to identify Norfolk Southern rail lines in the event of a railroad incident. A listing of the railroad crossings within a community can be obtained by contacting the Police Communications Center (1-800-453-2530).
4.0 RESPONSE

Norfolk Southern will respond to all known hazardous material incidents that occur in the course of transportation over the Norfolk Southern Railway system. Norfolk Southern’s primary objectives at the scene of a hazardous materials incident are to:

- Protect life and health;
- Protect property and the environment;
- Cooperate with and assist governmental authorities; and
- Comply with local, state, and federal regulations.

4.1 Incident Levels (I, II, III)

Norfolk Southern has developed an incident level response system based upon the designation of hazardous materials incidents as either Level I, II, or III Incidents. The Level of a hazardous materials incident is based on certain hazard assessment criteria, which include:

- Nature of commodity or hazard class;
- Leak severity;
- Potential threat to life or safety;
- Fire/Explosion potential;
- Potential environmental impact to water, land, and air;
- Container integrity;
- Tank car derailment status; and
- Oil discharge (locomotive spills).

Exhibit 3 is a guide for determining Incident Levels, and lists various incident conditions and decision-making guidelines. A clear understanding of the Incident Level system utilized by Norfolk Southern will help in response coordination efforts between the Local Emergency Planners and Responders and Norfolk Southern staff and resources.

For emergencies involving Norfolk Southern track or equipment
Call the Police Communications Center (800) 453-2530

Version 1: October 1998
## EXHIBIT 3

### GUIDE FOR DETERMINING INCIDENT LEVEL AND RESPONSE

<table>
<thead>
<tr>
<th>INCIDENT CONDITIONS</th>
<th>INCIDENT LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td><strong>COMMODITY OF HAZARD CLASS</strong></td>
<td>LOW HAZARD RQ = 5000 OR 1000 POUNDS 2,2,3,8,9,CL</td>
</tr>
<tr>
<td><strong>LEAK SEVERITY AMOUNT RELEASED</strong></td>
<td>MINOR: CAN BE CONTAINED OR CONTROLLED WITH READILY AVAILABLE RESOURCES</td>
</tr>
<tr>
<td><strong>LIFE/SAFETY IMPACT</strong></td>
<td>NO LIFE THREATENING SITUATION FROM MATERIAL INVOLVED, NO EVACUATION</td>
</tr>
<tr>
<td><strong>FIRE/EXPLOSION POTENTIAL</strong></td>
<td>LOW</td>
</tr>
<tr>
<td><strong>ENVIRONMENTAL IMPACT (WATER, LAND, AIR)</strong></td>
<td>MINIMAL NO LONG TERM DAMAGE</td>
</tr>
<tr>
<td><strong>POTENTIAL PROPERTY DAMAGE</strong></td>
<td>LOW &lt; $10,000</td>
</tr>
<tr>
<td><strong>CONTAINER INTEGRITY</strong></td>
<td>NOT DAMAGED</td>
</tr>
<tr>
<td><strong>TANK CAR DERAILMENT STATUS</strong></td>
<td>CAR ON RAIL OR WHEEL(S) DERAILED WITH CAR UPRIGHT</td>
</tr>
<tr>
<td><strong>OIL DISCHARGE (LOCOMOTIVE SPILLS)</strong></td>
<td>A FUEL SPILL OF LESS THAN 1,000 GALLONS INTO ENVIRONMENT</td>
</tr>
</tbody>
</table>
4.2 On-Scene Command

Norfolk Southern recognizes the authority of local emergency response officials to take command of any incident that poses a threat to the health and safety of the general public or the environment. All Norfolk Southern management employees understand that it is their role at an emergency to work with local officials to bring an incident to a safe conclusion.

Norfolk Southern personnel and contractors working on the scene of a hazardous materials incident are covered by the U.S. Occupational Safety and Health Administration (OSHA) 29 CFR (Code of Federal Regulations) 1910.120 “Hazardous Waste Operations and Emergency Response” (HAZWOPER) regulations. As instructed in these regulations, Norfolk Southern will utilize an Incident Command System (ICS) for its employees and contractors. Further, they will work with local officials in a Unified ICS as recognized by the U.S. Environmental Protection Agency (EPA) and U.S. Coast Guard (USCG) and cited in the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300. Only fully trained and qualified individuals will be permitted to conduct offensive, hands-on, technical response activities. Specialized contractors working at the scene will be covered by these regulations and are considered "specialized" employees.

The senior or designated Norfolk Southern representative will be in charge of all Norfolk Southern employees, contractors or other company resources. The Norfolk Southern official will coordinate with the local emergency response official in charge. Norfolk Southern will make resources and information available to the local emergency response official to aid in the safe and efficient mitigation of the incident.

It is understood that no Norfolk Southern official may commit any resources to any task which would violate local, state, or federal laws or statutes or which would pose an unreasonable risk or safety hazard to any personnel working for Norfolk Southern.

Norfolk Southern Operating and Safety rules will be strictly adhered to by all Norfolk Southern employees during re-railing or emergency response operations. The senior or designated Norfolk Southern official on scene is fully responsible for the enforcement of the rules and the conduct of all employees, both Norfolk Southern and contractor personnel.
4.3 Notification Procedures

This section outlines the local and Norfolk Southern notification procedures when a railroad hazardous materials incident occurs. Please see Exhibit 4 for a flow chart depicting the Norfolk Southern notification procedures.

4.3.1 Initial Notification – Local Fire and Police

Norfolk Southern incident notification procedures vary slightly depending on whether or not the incident occurs in a railyard or on the mainline (i.e., between railyards). In the yard, Norfolk Southern employees report all incidents to the Yardmaster or Terminal Trainmaster, who then contacts the Division Chief Dispatcher, and local Fire and Police using 911 if available. On line of road, Norfolk Southern employees report all incidents directly to the Division Chief Dispatcher, who then contacts the Norfolk Southern Police Communications Center in Roanoke, Virginia, to contact local Fire and Police.

4.3.2 Norfolk Southern Responsibilities

After being notified of a hazardous materials incident, the Division Chief Dispatcher may call on several sources for assistance, including: the General Superintendent Operations (GST) in Atlanta, Georgia; the applicable Engineer Environmental Operations (see Exhibit 1); the AAR-TTCI Bureau of Explosives Field Inspectors; and appropriate State and Local Government Agencies. The Division Chief Dispatcher, also notifies the Shipper by utilizing the 24-hour emergency contact number found on the shipping documents. Often the CHEMTREC number 1-800-424-9300 is used to establish this contact.

CHEMTREC is a 24-hour public service of the chemical industry that provides immediate emergency response information and assistance during emergencies involving chemicals. The GST contacts the National Response Center, who notifies the appropriate federal agencies, such as EPA, FRA, and NTSB. After initial notifications are complete, the Division Chief Dispatcher will continue to coordinate the response by providing a central point of contact, until command can be established on-site.
EXHIBIT 4  Local and Norfolk Southern Notification Procedures

INCIDENT OBSERVER

LOCAL FIRE AND POLICE  YARDMASTER/TRAINMASTER

LOCAL FIRE AND POLICE  YARDMASTER/TRAINMASTER

NS POLICE COMMUNICATIONS CENTER  DIVISION CHIEF DISPATCHER

GENERAL SUPERINTENDENT OPERATIONS CONTROL CENTER  ENVIRONMENTAL PROTECTION DEPARTMENT  AAR BOE INSPECTOR  SHIPPER (CHEMTREC) 1-800-424-9300  STATE AND LOCAL GOVERNMENT  DIVISION RAILROAD OFFICIALS

FEDERAL AGENCIES  ENVIRONMENTAL CONTRACTORS

For emergencies involving Norfolk Southern track or equipment
Call the Police Communications Center (800) 453-2530
4.4 Norfolk Southern Response Resources

In the case of most derailments or spills, local responders do not have the equipment or expertise to handle large spill clean up or railroad re-railing operations. Norfolk Southern recognizes its role in providing this specialized expertise and equipment to mitigate an incident. Norfolk Southern maintains standing contracts and agreements with various suppliers of these services. While on-scene, these contractors act as agents of Norfolk Southern and work directly under Norfolk Southern’s control. Examples of these contractors are provided below.

- Railroad re-railing and wreck response contractors provide heavy equipment such as cranes, off track lifting equipment, heavy earth moving equipment, and the operators and ground crews to lift and re-rail damaged rail cars and locomotives.

- Emergency response (Hazmat) contractors provide vacuum equipment, pumping equipment, and cargo tanks for the recovery of spilled products.

- Containers and heavy equipment are available for recovery of solid materials.

- Personnel are trained and equipped with all levels of protective equipment for operations in close proximity to spilled products, and leak and spill control equipment to contain product from leaking containers.

- Environmental recovery contractors provide technical expertise in the on-site remediation or removal of contaminated water, soil, or debris from the incident site.

- Industrial hygiene and public health contractors provide technical expertise and equipment to perform on- and off-site air and water sampling.

  These contractors are also used to develop exclusion zones and work zones, and to document public health exposure safety.

Norfolk Southern’s internal resources include:

- Transportation, Mechanical, and Engineering Departments;
- Environmental Protection Department;
- Damage Prevention and Auto Distribution;
- Norfolk Southern Casualty Claims Offices;
- Norfolk Southern Risk Management;
- Norfolk Southern Law Department;
- Public Relations Department; and
- Norfolk Southern Police.

All Norfolk Southern Resources can be accessed through the Senior or designated Norfolk Southern Representative at the scene.
4.5 **External Response Resources**

There are several private and governmental organizations capable of providing emergency response assistance in the event of emergencies involving hazardous materials. These organizations include:

- Association of American Railroads, Bureau of Explosives (202-639-2100);
- CHEMTREC (1-800-424-9300);
- U.S. Coast Guard National Response Center (1-800-424-8802);
- Federal Railroad Administration (1-800-RAIL-990);
- Nuclear Regulatory Commission (1-301-951-0550)

- Department of Energy (1-202-586-8100); and
- U.S. Environmental Protection Agency (by region).

4.6 **Local Resources**

Norfolk Southern is a rail transportation company. It does not maintain resources such as fire fighting or water supply equipment, emergency medical personnel or medical transport services, command posts and canteens, or large-scale communications equipment.

During an emergency operation, Norfolk Southern relies upon local emergency officials to provide these types of resources. The senior or designated Norfolk Southern official will coordinate with the local Incident Commander to obtain these local resources. Local resources will remain under the control of the local authority.
4.7 Hazard Identification

Prior to entering an incident site, identification of the materials and containers involved is essential. Once the commodities have been positively identified, the emergency response information for the hazardous materials involved can be reviewed to assist in making good judgements and decisions in determining the initial response actions required. This section addresses how to recognize and identify hazardous materials, and how to use the information resources available.

4.7.1 Rail Car Identification

Every rail car has a unique initial and number painted on the top left-hand corner of each side of the car. Using the car’s initials and number, shippers, carriers, and Norfolk Southern can determine the tank car’s contents from shipping papers or computer data. Exhibit 5 is a graphic depiction of the location of the rail car initials and number on a rail car (reporting marks).

Exhibit 5. Location of Rail Car Initials and Number (Reporting Marks)
4.7.2 Shipping Papers

The best way to identify hazardous materials present in a rail incident is to consult the shipping papers. For Norfolk Southern, the shipping papers are called the Waybill and/or Train Consist. The train crew is required to have a copy of all hazardous materials shipping papers in their possession. Generally, both the Waybill and Consist identify the contents of the car; and the Consist identifies where these cars are located numerically in the train. If either of these documents are not readily available from the train crew, they can be retrieved from the Norfolk Southern mainframe computer.

**Train Consist.** The primary shipping paper used by Norfolk Southern in railroad operations is the Train Consist. The Consist lists each car in the train, beginning with the lead car. If hazardous materials are part of a car’s load, the Consist also lists the contents of that car. For a hazardous materials car, the shipping description in the Train Consist contains the following:

- The car’s placement (numerically counting from the front of the train);
- The initial and number of the car (a unique identifier);
- The loaded or unloaded status of the car;
- The name of the substance being carried, or last carried in the car;
- The hazard class, the United Nations/North American (UN/NA) ID number, and Packing Group Number, where applicable;
- A telephone number to call in case of emergency (i.e., CHEMTREC);
- The standard transportation commodity code for the substance carried; and
- The name and location for both the consignee and the shipper.

The Consist is kept by the train’s conductor, who is responsible for adding and deleting cars from the document as cars are picked up or set off. A sample Train Consist is provided as Exhibit 6.

**Waybill.** A Waybill is the shipping document for a single car. A Waybill will be made available to responders as required. When the train is operating on the main line, the Consist should be reviewed for applicable hazardous material information. A sample Waybill is provided as Exhibit 7.

**Hazardous Material Special Handling Instructions.** In addition to Waybills and Train Consists, the train crew is also required to have a copy of the emergency response information for all the hazardous materials contained in the train. Generally, in addition to the North American Emergency Response Guidebook, the crew will have commodity specific emergency response information printed out at the bottom of the Train Consist for each hazardous material in the train.
EXHIBIT 6  Sample Train Consist
EXHIBIT 7  Sample Waybill
4.7.3 Placarding and Hazard Classes

The Code of Federal Regulations (CFR), 49 CFR Part 172, prescribes that diamond shaped placards must be placed on the outside of certain bulk container rail cars carrying hazardous materials, or residues of such materials. Placards must also be placed on the exterior of some intermodal containers carrying amounts of hazardous materials in excess of certain regulatory thresholds. Placards can tell the responder the DOT hazard class involved and thus provide a general idea of the hazards present and preliminary response requirements. Keep in mind that many materials possess characteristics of more than one hazard class, and therefore hazard class information should generally not be used independently. Please see Exhibit 8 for a listing and descriptions of the various DOT hazard classes. Exhibit 9 provides a percentage breakdown of the total volume of hazardous materials carried by Norfolk Southern in 1997 by hazard class.

4.7.4 Shipping Containers

Some information about the commodity being shipped may be available from the container type. For example, by determining whether a tank car is a pressure or non-pressure tank car, you may be able to determine if the tank contains compressed gases and possibly even unregulated materials. Additionally, stenciling on the car may actually describe the specific commodity contained in the car. Please see the AAR, Bureau of Explosives, Field Guide to Tank Car Identification provided in the front pocket of the Plan.
**Exhibit 8. UN/DOT Hazard Classes**

<table>
<thead>
<tr>
<th>CLASS</th>
<th>DIVISION</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPLOSIVES (1)</td>
<td>1.1</td>
<td>Substances and articles, which have a mass explosion hazard</td>
</tr>
<tr>
<td></td>
<td>1.2</td>
<td>Substances and articles, which have a projection hazard but not a mass explosion hazard</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>Substances and articles that have a fire hazard and either minor blast hazard or both, but not a mass explosion hazard</td>
</tr>
<tr>
<td></td>
<td>1.4-1.6</td>
<td>Other materials with explosive potential</td>
</tr>
<tr>
<td>COMPRESSED GASES (2)</td>
<td>2.1</td>
<td>Gases which ignite and burn easily</td>
</tr>
<tr>
<td>Flammable Gas</td>
<td>2.2</td>
<td>Gases that may asphyxiate or cause frostbite</td>
</tr>
<tr>
<td>Non-Flammable Gas</td>
<td>2.3</td>
<td>Gases which are poisonous by inhalation (PIH) [Subdivided by Hazard Zones]</td>
</tr>
<tr>
<td>Poison (Toxic) Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLAMMABLE LIQUIDS (3)</td>
<td>3</td>
<td>Liquids with flash points below 141 °F</td>
</tr>
<tr>
<td>Flammable Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combustible Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLAMMABLE SOLIDS (4)</td>
<td>4.1</td>
<td>Substances which are easily ignitable or burn readily</td>
</tr>
<tr>
<td>Flammable Solids</td>
<td>4.2</td>
<td>Substances that can self-ignite on exposure to air</td>
</tr>
<tr>
<td>Spontaneously Combustible</td>
<td>4.3</td>
<td>Substances that upon contact with water can either become spontaneously combustible, or can give off flammable or toxic gases</td>
</tr>
<tr>
<td>Dangerous When Wet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OXIDIZERS (5)</td>
<td>5.1</td>
<td>Substances that will react to support combustion even in the absence of air</td>
</tr>
<tr>
<td>Oxidizer</td>
<td>5.2</td>
<td>Substances sensitive to heat, shock, and friction, or may decompose and self-ignite</td>
</tr>
<tr>
<td>Organic Peroxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POISONS (6)</td>
<td>6.1</td>
<td>Materials toxic enough to create a health hazard (other than zone A)</td>
</tr>
<tr>
<td>Poison (Liquid or Solid)</td>
<td>6.1</td>
<td>Poison liquids or solids, PIH, Hazard Zone A</td>
</tr>
<tr>
<td>Poison (Inhalation Hazard)</td>
<td>6.1</td>
<td>Materials that give off dangerous or irritating fumes</td>
</tr>
<tr>
<td>Keep Away From Foodstuffs</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Infectious Substances</td>
<td>6.2</td>
<td>Infectious substances and regulated medical wastes</td>
</tr>
<tr>
<td>RADIOACTIVE MATERIALS (7)</td>
<td>7</td>
<td>Substances which emit ionizing radiation</td>
</tr>
<tr>
<td>CORROSIVE MATERIALS (8)</td>
<td>8</td>
<td>Substances which corrode steel and damage tissue</td>
</tr>
<tr>
<td>MISCELLANEOUS HAZARDS (9)</td>
<td>9</td>
<td>Hazardous substances that do not meet the definition of any other hazard class</td>
</tr>
</tbody>
</table>
Exhibit 9. Distribution of Hazardous Commodities Transported by Norfolk Southern in 1997, by Hazard Classes

- 2.1 Flammable Gas: 7%
- 2.2 Non-Flammable Gas: 6%
- 2.3 Poison Gas: 4%
- 3 Flammable Liquids: 15%
- 3 Combustible Liquids: 2%
- 4.1-4.3 Flammable Solids: 2%
- 5.1-5.2 Oxidizers: 4%
- 6.1-6.2 Poisons: 2%
- 8 Corrosives: 25%
- 9 Misc. Hazards: 15%
- Other: 18%
4.8 Emergency Response Information Resources

In addition to the already identified methods for Hazard Identification, there are several other resources available for obtaining emergency response information and procedures.

**Shipper 24-hr Contact Number or CHEMTREC.** The shipper can be reached through the 24-hour Emergency Contact Number required on all hazardous material shipping documents. CHEMTREC can also be contacted for specific chemical response information, and is often listed as the shipper 24-hour emergency number. The shipper or CHEMTREC can fax a copy of the Material Safety Data Sheet (MSDS) and provide advice about how to handle the product.

**North American Emergency Response Guidebook.** The North American Emergency Response Guidebook contains general emergency response information for hazardous materials. To use the guides (orange pages), you must know either the DOT 4-digit Identification Number (yellow pages), the Proper Shipping Name (blue pages), or the Placard affixed to the car. The North American Emergency Response Guidebook also contains initial isolation and protective action distances (green pages) for some commodities.

For emergencies involving Norfolk Southern track or equipment

*Call the Police Communications Center (800) 453-2530*
Operation Respond. On-scene responders with access to “Operation Respond Emergency Information System (OREIS)” software may use this system to obtain product information about the contents of a particular car. This software may be installed in local emergency communication centers, mobile command posts, or with hazardous materials units. It provides local responders with quick access to the Norfolk Southern computer for specific data on the products carried in hazardous material cars, and the emergency response information for the product. Local responders will need the initial and number of the rail car(s) at risk to search for this information on Norfolk Southern’s computer system. Remember—These reporting marks are found on the upper left corner of the rail car.
5.0 POPULATION PROTECTION

In the event of a rail incident, protection of life and health must be the first concern. In cases of doubt the safest course of action must be taken. However, decisions to evacuate potentially affected populations must be based upon facts and not fears.

Key factors in deciding upon an evacuation must include situational, location, and resource factors:

Situational factors include:

- Actual situation and conditions (leak, fire, spill);
- The products involved (physical and chemical properties);
- Hazards of the products;
- Status of the containers; and
- Ability of the products to migrate off site.

Location factors include:

- Location of the incident and containers;
- Size of affected population;
- Risks of moving people;
- Types of affected population; and
- Ability to shelter in place non-ambulatory populations.

Resource factors include:

- Ability to shelter evacuated populations; and
- Ability to notify and move the affected population.

5.1 Pre-Emergency Identification of At-Risk Populations

During the tactical pre-emergency planning process, facilities such as schools, day cares, hospitals, nursing homes, and high rise occupancies should be identified. Local emergency response officials should meet with facility managers and review problems expected with an evacuation, as well as the resources needed to move the facility population.

Norfolk Southern recommends adoption of the Shelter in Place guidelines issued by the U.S. Department of Transportation (in the 1996 North American Emergency Response Guidebook); the Federal Emergency Management Agency; and the U.S. EPA. Shelter in place tactics can provide greater safety and health protection to affected residents than mandatory evacuations, in certain situations.

The key to successful Shelter in Place operations is developing individual facility plans with facility managers and safety personnel. Instructing residents what to do and not to do in the event of an emergency and communicating information to them during an emergency are all-important components of a shelter in place plan.

5.2 Recommended Practices for Shelter in Place Population Protection

The purpose of sheltering in place is to protect people from the affects of a natural disaster or to prevent people from being exposed to a hazard from an
industrial or transportation-related chemical release. The following steps represent recommended practices for sheltering in place as recommended by the U.S. Department of Transportation and other agencies.

1. Remain calm.

2. If you are outdoors, gather your family members and pets and go inside immediately. If you are in a car, close windows and vents.

3. In the event of a chemical emergency, try to make your building airtight so that outside air cannot enter. For example:
   - Close all doors to the outside and close and lock all windows.
   - Close all fireplace dampers.
   - Building superintendents should set all ventilation systems to 100% recirculation so that no outside air is drawn in to the structure. Where this is not possible, ventilation systems should be turned off.
   - Turn off all heating systems.
   - Turn off all air conditioners and switch inlets to the “closed” position.
   - Seal gaps under doorways and windows with wet towels and duct tape.
   - Seal gaps around windows and air-conditioning units, bathroom and kitchen exhaust fans, and stove and dryer vents with duct tape and plastic sheeting, wax paper or aluminum foil.
   - Turn off all exhaust fans in kitchens, bathrooms and other spaces.
   - Minimize use of elevators in buildings, as these tend to “pump” outside air in and out of a building as they travel up and down.
   - Close as many internal doors as possible.
   - Close as many internal doors as possible.
   - Minimize use of elevators in buildings, as these tend to “pump” outside air in and out of a building as they travel up and down.

4. Move to an interior room (or hallway) with no windows or doors to the outside. You may want to bring a cooler with drinks and snacks, a battery-powered flashlight, and a battery-powered radio into the place that you have chosen.

5. If an explosion is possible, close drapes, curtains and shades over windows. Stay away from external windows to prevent potential harm from flying glass.

6. Stay indoors until you receive official notice it is safe to go out or until you are asked to leave the area. Tune into the Emergency Broadcasting System (EBS) on the radio or television for further information and guidance.

   It is vital to maintain communications with competent persons sheltering inside buildings to advise them about changing conditions.

Sources:

(c) FEMA Fact Sheet: Hazardous Materials Accidents [http://www.fema.gov]