

NOVA Chemicals Pipeline Operations Preparation for an Emergency Response

October 2020

Introduction

At NOVA Chemicals we care about the safety of our employees, neighbours, landowners, communities and the environment along the pipeline systems we operate and at all our petrochemical facilities. We are committed to Responsible Care® which includes Community Awareness and Emergency Response, and the highest standard for health, safety, security, pipeline and facility integrity, and environmental performance.

All of our pipeline operations focus on prevention of incidents, such as leaks, and we make safety a priority. For example:

- Experienced panel operators monitor our pipelines 24 hours per day, 365 days per year. They continuously monitor pipeline pressure, temperature and flow conditions. Computerized systems immediately sound an alarm if any abnormalities are detected.
- Aerial and ground patrols are complemented by integrity inspections and a corrosion protection system.
- If a potential problem or leak is detected, field operators located at strategic points along the pipelines are dispatched immediately to safely deal with the situation. In addition, a rotational 'on-call system' has been implemented to ensure members of the field operations team are available to respond to emergencies 24 hours per day, 365 days per year.

- All of the pipelines we operate were constructed in accordance with all applicable regulatory requirements including Federal, Provincial and State depending on the jurisdiction that governs the pipeline.

In the event of a leak or other incident such as a fire, security breach or natural disaster, we are prepared to respond immediately with trained personnel and, as required, in co-operation with mutual aid responders and agencies. In all cases, we implement our detailed Emergency Response Plan specific to that location (also known as an Emergency Procedures Manual in CSA Z246.2) to ensure a timely, effective response and to minimize the effect of a potentially hazardous situation. As relevant to the location, NOVA Chemicals has firefighting and safeguard equipment in place, including spill response trailers.

The Emergency Response Plan is reviewed internally on an annual basis in conjunction with our community outreach programs to ensure continuous improvement.

The first priority in any emergency response is the safety of neighbours and employees.

Key Public Safety Information

Through NOVA Chemicals' public awareness and engagement programs, we have established co-operative working relationships with:

- Counties and municipalities through which our pipeline systems run;
- Emergency responders and agencies;
- Industry associations;
- Neighbouring industries;
- Landowners;
- Residents; and
- Indigenous communities.

These programs provide an opportunity to meet with emergency personnel and discuss preparedness strategies while encouraging residents or other stakeholders to feel comfortable contacting us at any time. All stakeholders can access information regarding the general safety of our products through our safety data sheets which are included in the product data section of our [emergency response manuals](#). Fact Sheets are also available containing information and precautions applicable to the product transported in pipelines in their community.

To further support our commitment to public and environmental safety, NOVA Chemicals works closely with outside agencies to identify all wetlands and water bodies along our pipeline routes and to identify critical habitats for endangered or threatened species along the pipeline corridors. NOVA Chemicals' Regional Air Program ensures that air emission sources are identified, evaluated and in compliance with all applicable air regulations. The better we are prepared, the better equipped we are to avoid or mitigate impacts to the air or water supply should an incident occur.

In our communications materials we provide information on:

- Our Emergency Response Plan for the area;
- Products carried in our pipelines and associated potential hazards;
- How to contact NOVA Chemicals in the event of an incident;
- What actions to take in the event of an emergency; and
- How to update contact and other resident information.

Please see our [regional brochures](#) for more information specific to each area.

Emergency Response Plans

Emergency preparedness and response requires a systematic approach to ensure that all hazards are anticipated and proactively prepared for facilitating a response that is rapid, effective and protective of the public and the environment. An emergency response involving NOVA Chemicals and first responders is guided by an Emergency Response Plan (also known as an Emergency Procedures Manual).

Our Emergency Response Plans are reviewed annually. The plans are location-specific, identify first responders in the area of the

pipeline and are regularly practised through field and tabletop emergency response exercises. These plans can be accessed on our [company website](#). In alignment with [Canada Energy Regulator \(CER\) regulations](#), portions of the document are not available where there is personal information or information that can affect the security of the pipeline or particular properties.

Our Emergency Response Plans are a part of a larger Emergency Management Program which is described in the following sections.

Emergency Management Program Summary

Our Emergency Management Program (EM Program) guides us to provide the best emergency response under foreseeable circumstances. It is also designed to provide a continuous cycle of improvement as mandated by the *Canadian Energy Regulator Onshore Pipeline Regulations*.

Our EM Program is a comprehensive set of policies, procedures, and processes. It addresses roles and responsibilities, decision-making, resource mobilization and communications, among other procedures. Site-specific emergency training includes testing and response activities for a variety of emergency scenarios. We conduct regular emergency response exercises in collaboration with local public safety authorities and conduct annual refresher training for on call staff that will be involved in emergencies. The following sections summarize key elements that NOVA Chemicals employs to protect our stakeholders.



Policy and Commitment

An effective EM Program requires the commitment of all those involved in an emergency. That commitment starts with the NOVA Chemicals Management Team and the policies we have put in place related to safety and emergency response. Our [Responsible Care® and Sustainability Policy](#) states that we “*Manage our business with the belief that products and processes can be managed in a sustainable manner and that personal and process incidents that could harm people, property or the environment can be prevented.*” Supporting this policy and our Responsible Care standards, we have a comprehensive EM Program and location-specific Emergency Response Plans.

Goal and Objectives

NOVA Chemicals EM Program goal is to be prepared to effectively respond in the event of an emergency and to minimize negative impact on the community, property and the environment.

When responding to a pipeline emergency, NOVA Chemicals aims to:

- Protect the public, the environment, and property;
- Ensure appropriate personnel are notified within the required response times;
- Isolate and reduce the impact of the emergency as soon as possible;
- Ensure all regulatory agencies are notified, as appropriate, within the required response times;
- Provide advisory support and technical advice to the provincial/state, municipal and industrial emergency/disaster services responding to emergency;
- Advise on and, if necessary, arrange for appropriate clean up or other mitigative actions; and
- Secure resources to render pipeline facilities safe for repair as quickly as possible.

To ensure our success, NOVA's objectives include:

- Annual review and update of our Emergency Response Plans;
- Execution of emergency exercises and drills, including learnings, review and updates as appropriate;
- Provision of annual emergency response refresher training for our pipeline personnel;
- Development of our emergency response plan in collaboration with landowners, residents, community officials, police, fire and other first responders and mutual aid groups;
- Ensure emergency response equipment and vehicles are in place;
- Utilization of the corporate incident management system to manage emergencies; and
- Establishing Emergency Planning Zones (EPZ) which represents immediate areas closest to our pipelines requiring additional attention to minimize negative impacts, through appropriate and timely action.

Our EM Program is integrated with other pipeline programs aimed at preventing and mitigating releases of substances from our pipelines:

- **Safety Management Program** — identification and mitigation of occupational and industrial safety hazards for the protection of people and property.
- **Security Management Program** — monitoring for security threats to prevent third-party impacts that could cause an injury or incident.
- **Integrity Management Program** — hazard evaluation and risk assessments to determine threats to the pipeline and what mitigation is required to prevent releases.
- **Damage Prevention Program** — monitoring and public awareness programs to prevent third-party damage that could cause an injury or incident.
- **Environmental Protection Program** — guidance for the clean-up of soil and groundwater in the event of a release as well as reclamation or restoration of vegetation and soils.

Hazard Identification, Risk Assessment and Controls

When managing hazards and risks in the context of emergency preparedness and response, NOVA Chemicals' priorities are:

- Life Safety;
- Environment and Property Protection; and
- Incident Stabilization.

NOVA Chemicals uses a hazard identification and evaluation process that assesses probabilities and consequences connected with hazards arising from human activities, technological events, and natural perils. Based on our products and geography, our hazards/potential hazards include, among others:

- Loss of containment (hazardous materials spills, releases, pipeline ruptures);
- Fire/explosions (process and non-process related);
- Fatality or critical injury;
- Situations requiring unusual rescue efforts (confined spaces, working at heights, excavations, etc.);
- Third party emergencies (e.g. hazardous release from industry neighbour/truck);
- Natural perils such as severe thunderstorms, tornadoes, earthquakes, severe winter storms;
- Multi-hazard emergencies (e.g., natural gas break causes fire/explosion/injury);
- Pandemic; and
- Security-related hazards, such as:
 - Bomb threat,
 - Acts of terrorism (bio-hazard, nuclear, cyber, etc.),
 - Sabotage,
 - Workplace violence,
 - Labour disruption,
 - Civil unrest,
 - Vandalism,
 - Criminal Acts.



Comprehensive risk assessments have been conducted for NOVA Chemicals' pipeline systems using our Integrated Risk Assessment Approach (IRAP). These risk assessments have been used to identify and develop mitigation strategies and response procedures for a variety of potential pipeline failures (through modeling).

Examples of risk analyses and evaluation tools and processes used in the identification of hazards are:

- WHAT-IF (Workplace Hazard Assessment Tool – In Field)
 - A structured process and portable document that is used to proactively identify and address job hazards completed at the work location;
- Processes to identify and assess pipeline integrity hazards including:
 - Semi-Quantitative Risk Assessments (SQRA) performed as needed
 - Targeted engineering studies (stress corrosion cracking, fatigue cracking, etc.)
 - In-line Inspections (ILI) or direct inspection and analysis;
- Security Vulnerability Assessments, Facility Self Assessments and Internal Audits
 - Threats to the security of NOVA Chemicals' pipelines are identified and assessed;
- Process Hazard Risk Assessments (PHRA) performed regularly at plant sites;
- Incident and Injury Investigations:
 - NOVA Chemicals investigates all near hits, incidents, and injuries to determine underlying cause(s) and develop corrective actions to prevent reoccurrence. These are tracked through the corporate Responsible Care Learning System (RCLS);
- Process Safety Lifecycle Management (PSLM);
- Includes hazard and risk analysis, operations and maintenance, management of changes, validation and audits; and
- Occupational Safety and Environmental Protection Program
 - Provides tools and procedures to assist employees in the identification and mitigation of occupational safety and environmental hazards before and during planned work.

When responding to an emergency NOVA Chemicals has access to resources and equipment to assist in managing the situation:

- Safer Real Time Dispersion Modeling:
 - This system allows NOVA Chemicals to establish impacted zones, vapour cloud profiles based on real time meteorological readings;
- Emergency Response Vehicles:
 - Available for immediate response to a scene, equipped with analyzing equipment;
- Spill Response Trailers:
 - NOVA Chemicals maintains spill response trailers stocked with adequate spill containment and clean-up materials;
- Maintenance Contractors:
 - NOVA Chemicals has maintenance contracts in place with local maintenance contractors to complete pipeline repairs; and
- Mutual Aid Agreements:
 - As a member of a mutual aid organization, NOVA Chemicals has 24/7 access to the mutual aid inventory of emergency response personnel, equipment and vehicles.

If an incident does occur, NOVA coordinates post incident product removal, pipeline repairs and pipeline depressurization, as required. NOVA Chemicals in Manufacturing East is a member of a Community Awareness and Emergency Response organization which brings local municipalities and industry together to mitigate any emergency which may occur.

Controls are detailed within the various programs noted above under Goal and Objectives.

Stakeholder Liaison to Prepare for Emergencies

Stakeholders that may be involved in responding to a pipeline incident (e.g. first responders and municipalities) are consulted as needed when we review and update our Emergency Response Plans.

During these consultations we include discussion of pipeline operation details in each specific area, isolation capability, release rates (including worst-case scenarios with a rupture), location and types of markings, Emergency Planning Zones, municipal capabilities and location of potential evacuation and reception centres. Roles and responsibilities of the various stakeholders involved are reviewed, including local incident command, local disaster services, pipeline incident command and NOVA Chemicals Emergency Operations Centre (EOC). Procedures for contacting the public and road-blocks are outlined and updated. Contact information for residents and others along our pipelines is maintained and updated through our public awareness programs and is included in each Emergency Response Plan.

Continuing Education

NOVA Chemicals provides continuing education for emergency responders, local public officials, excavators, industry and the public residing adjacent to our pipeline to inform them of pipeline locations, potential hazards and emergency situations, procedures to be followed in the case of an emergency and circumstances for evacuation and / or sheltering.

Depending on the stakeholder, or regional applicability, there are various methods and frequencies for continuing education. Outreach occurs through mailings, near-neighbour visits, meetings, open houses, and collaborative initiatives facilitated through industry partnerships. The frequency of outreach activities varies.



Training, Drills and Field Exercises

Regular training is an essential aspect to any effective EM Program.

The NOVA Chemicals Pipeline Emergency Response Teams annually conduct exercises with drills specific to each pipeline. These exercises are designed to ensure rotation of tabletop, functional, and full scale (major) drills to encompass a variety of scenarios and response personnel. Whenever possible and appropriate, local emergency response agencies and regulatory representatives are invited to participate and/or observe the exercises.

NOVA Chemicals also conducts tailored training for our personnel and designated emergency responders commensurate with their responsibilities. Training elements include:

- **Basic Emergency Response Plan Familiarization** — Basic information about the Emergency Response Plan(s) is provided to all NOVA Chemicals' employees who may be affected by a pipeline emergency. The training consists of a plan overview and actions expected from the employee. Refresher training is provided once a year.

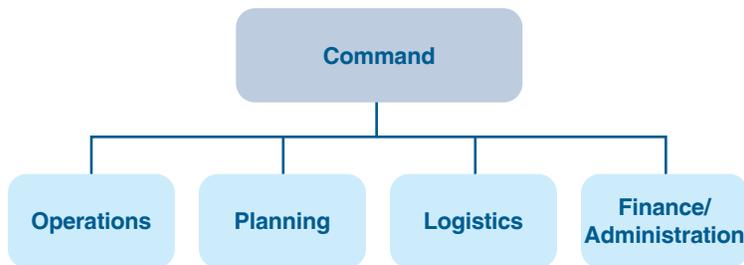
- **Emergency Operations Centre (EOC) Training** — NOVA Chemicals' personnel assigned responsibilities for pipeline emergency operations are trained in the principles and terminology of the Incident Command System (ICS). The ICS is widely employed by municipal emergency response agencies and many of NOVA Chemicals' industrial partners. This training enables our personnel to work effectively with municipal, government and industrial partners in response situations. Persons assigned to the EOC are trained in techniques and theories for managing emergency operations; updates are provided regularly.
- **Media and Public Communications** — All pipeline employees know how they will be advised of an emergency, how communications are to be handled, and who is responsible for public and media communications.

We also routinely identify opportunities for joint training with other organizations such as external contractors, municipal emergency services and offsite resources such as the Fire School.

Incident Management System

NOVA Chemicals Pipeline Emergency Response Team uses the Incident Command System (ICS) and Incident Management System (IMS) to manage all emergency response activities involving our pipelines. This system is modular and scalable, having the ability to expand and contract with the size or complexity of the incident.

Every incident, regardless of size, requires that certain management functions be performed. There are five major management functions that are the foundation upon which the ICS/IMS organization develops, regardless of what the incident is. These are:



Emergency response positions at NOVA Chemicals have been designed around the availability of personnel on a 24-hour/day basis. All positions in the Emergency Response Organization are filled by people who can be reached through call-out systems. All leadership positions in the Emergency Response Organization will have some level of designated backup.

When we manage incidents outside of NOVA Chemicals' property, we follow the IMS structure of municipal authorities. Each site has designated, trained Incident Commanders who will assess the situation, determine the level of the emergency, activate resources, and carry out the function of On-Scene Command. Each site also has a designated Emergency Operations Centre (EOC). The EOC will be established at the most appropriate site, based on the hazards. Once established, overall Command of the incident is transferred to the EOC Manager (Regional/EOC Command). The EOC utilizes various section chiefs to communicate with respective provincial and federal regulatory agencies as required.

Contact us anytime for more information or in the event of an emergency:

**Pipelines Serving Manufacturing East
(Sarnia / Lambton, Ontario):**

NOVA Chemicals 24 / 7 Pipeline Emergency Line:
In Canada / US: **1-519-862-2002** or **1-800-278-0584**

General Inquiries: In Canada / US: **1-519-862-2911** or **1-844-346-3202 (press 0 for an attendant)** or **manestcomm@novachem.com**

**Pipelines Serving Manufacturing West
(Joffre, Alberta):**

**NOVA Chemicals 24 / 7 Pipeline Emergency and
Non-Emergency Line:** Toll Free: **1-800-780-6682**

Community Information: www.novachemicals.com/joffre or joffresite@novachem.com