Genesis Pipeline Canada Ltd.

NOVA Chemicals®

Pipeline Emergency Response Team (PERT)

Emergency Procedures Manual

For Canada and United States Pipeline Operations

Prepared and Maintained by the Manufacturing East Pipeline Team

In accordance with

- *National Energy Board Onshore Pipeline Regulations Section 32 (2)*
- *Transportation of Hazardous Liquids by Pipeline 49 CFR 195.402 (e) Emergencies*
- *CSA-Z662: Oil and Gas Pipeline Systems* — Pipeline Emergencies Section

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Revisions Date[1]	Revised By	Revised Section	Description of Revision
2016.03.24	Megan Copley Mark Baxter Nick Robichaud Ryan Hornett	Entire Document	Added “response” to manual purposes. Additional detail reporting requirements. Update to roles and responsibilities. Added Emergency contact list for US. Included MSDS information for product data. Updated first responder checklist. Refined pipeline map references. Included description of emergency response vehicles.
2017.03.13	Lisa Rekman Terry Johnson Nick Robichaud Ryan Hornett	Entire Document	Alignment with Emergency Management Program. Included details on consultation and review/input channels. Included details on TSSA reporting. Internal alignment of roles and responsibilities. Detailed IMS structure. Updated exercise requirements and external resource training. Updated maps to remove references to water pipelines. Update valve stations to align internally. Updated to include spill response trailers. Incorporated feedback based on NEB review of Manual and drill execution.
2018.04.01	Megan Copley Terry Johnson Nick Robichaud Dave Bararuk Jace Plaine	Entire Document	Aligned with updated NEB Event Reporting Guidelines Changed title of Senior Pipeline Coordinator to Regional Integrity Coordinator Updated references from CAER Manual to renamed MEERS Manual Reviewed and revised contact lists, agency descriptions and reporting requirements Reviewed and revised pipelines and products and MSDS
2019.04.01	Megan Copley Terry Johnson Dave Bararuk		Aligned with update TSB reporting guidelines Updated job titles where appropriate Changed MOECC references to MECP Reviewed and revised contact lists, agency descriptions and reporting requirements Reviewed and revised pipelines and products and MSDS Removed references to PL 31 being NEB regulated

[1] Revision log inclusive of 2016 revisions. Initial publication date of PERT Manual: 2003.12.31.

1.1 MANUAL PURPOSE

SCOPE

The purpose of the Pipeline Emergency Response Manual is to minimize the impact of a pipeline incident to the community, property and the environment. NOVA Chemicals owns and operates numerous pipelines along an international waterway — the St. Clair River — which separates Canada and the United States. An emergency planning zone has been defined and an up to date list of residents and industries is maintained by the Public Relations Specialist for Manufacturing East.

References: This manual is not intended to provide procedures for transportation, community or site emergencies; these are captured separately in different manuals (Chemical Valley Emergency Coordinating Organization, Corporate Transportation Emergency Response Manual, County Emergency Response Manual and Manufacturing East Emergency Response System (MEERS) Manual.

This manual is implemented under the NOVA Chemicals Manufacturing East Emergency Management Program.

OBJECTIVES

The objectives of this manual are:

- Identify the NOVA Chemicals Pipeline Emergency Response and Policy.
- Define organization, roles and responsibilities for designated personnel during emergencies.
- Define guidelines for emergency response actions as they relate to pipeline operation.

RESPONSE

When responding to a pipeline emergency, NOVA Chemicals will:

- Protect the public, the environment, and property.
- Isolate and reduce the impact of the emergency as soon as possible.
- Ensure all regulatory agencies are notified, as appropriate.
- 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.
- Secure resources to render pipeline facilities safe for repair as quickly as possible.

1.2 MANUAL DISTRIBUTION

This manual is distributed as outlined below:

Manual No.	Manual Steward	Manual Distribution
C01	Occupational Safety, Emergency Response and Security Coordinator	Central Control Room – Shift Management Vehicle
C02 + e-copy	Occupational Safety, Emergency Response and Security Coordinator	St. Clair Twp. Fire Chief
C03 (e-copy only)	Occupational Safety, Emergency Response and Security Coordinator	Sarnia, Ontario Community Emergency Management Coordinator (CEMC)
C04 + e-copy	Regional Pipeline Integrity Coordinator	LamSar, Inc. USA Office
C05 (7 copies)	Regional Pipeline Integrity Coordinator	LamSar, Inc. U.S. Pipeline Emergency Responder Vehicle
C06	Occupational Safety, Emergency Response and Security Coordinator	Sarnia, Ontario Fire Chief
C07 + e-copy	Regional Pipeline Integrity Coordinator	Marysville, Michigan Fire Chief

Manual No.	Manual Steward	Manual Distribution
C08	Regional Pipeline Integrity Coordinator	Regional Pipeline Integrity Coordinator Office
C09	Pipeline Coordinator	Pipeline Coordinator's Truck
C010	Pipeline Coordinator	Material Flow Foreman's Truck
C011	Regional Pipeline Integrity Coordinator	NEB – distribution as per their direction (Two hard and e-copies, one of each from NOVA Chemicals and from Genesis)
C012 (3 copies)	Occupational Safety, Emergency Response and Security Coordinator	NOVA Chemicals' Emergency Operations Centres (EOC) Corunna, Moore and St. Clair River sites, Ontario
C013	Occupational Safety, Emergency Response and Security Coordinator	County of Lambton Emergency Management Coordinator
C014	Occupational Safety, Emergency Response and Security Coordinator	CVECO Command Bus c/o Sarnia Police Operations Centre
C015	Regional Pipeline Integrity Coordinator	Material Flow Control Room
C016	Regional Pipeline Integrity Coordinator	Pipeline Team Leader's office

Manual No.	Manual Steward	Manual Distribution
C017	Occupational Safety, Emergency Response and Security Coordinator	St. Clair Township Command Vehicle
C018	Regional Pipeline Integrity Coordinator	Canadian Pipeline Maintenance Contractor
C019	Regional Pipeline Integrity Coordinator	Pipeline Day Technician's Office

1.3 MANUAL UPDATING

PIPELINE EMERGENCY RESPONSE MANUAL UPDATING

- Follows NOVA Chemicals procedure SDC00001 *PERT Manual Document Control Process* for preparing, reviewing, revising and control of the PERT manual documentation.

- Reviewed annually by Occupational Safety, Emergency Response and Security Coordinator and Pipeline Team.

- Paper revisions will be distributed to manual holders. Distribution of this manual is provided to all external resources that may respond to a NOVA Chemicals pipeline emergency. Opportunity is given for review by these external resources, and concerns or questions addressed as applicable. Manual holders are required to confirm their familiarity with the updates made on an annual basis.

- Electronic copy of the Pipeline Emergency Response Manual will be the most recent. Electronic copies can be found on both the NOVA Chemicals internal and external websites.

APPROVAL

- The manual is approved by the Regional Pipeline Integrity Coordinator and Occupational Safety, Emergency Response and Security Coordinator.

1.4 PRODUCT LINES & PRACTICES

This manual is applicable to the following feedstock and product pipelines:

	Pipeline Number	NEB Lines	DOT USA	Owner
Ethylene				
NOVA Corunna to NOVA St. Clair (8")	2			NOVA
NOVA Corunna to ARLANXEO/Imperial Oil Ltd. (6")	3			NOVA
NOVA Corunna to NOVA Moore (10")	27			NOVA
NOVA Corunna to Styrolution (6")	43			NOVA
Spent Ethylene				
NOVA St. Clair to NOVA Corunna (4")	21			NOVA
Mixed C_4				
NOVA Corunna to ARLANXEO (6")	4			NOVA
Benzene				
NOVA Corunna to Styrolution (4")	17			NOVA
Suncor to PL17 (4")	17A			NOVA
PL17 to/from Shell (4")	17B			NOVA
Raffinates				
From NOVA Corunna to/from Suncor Meter Compound (10")	9			NOVA
NGL				
From Plains, Suncor, Pembina to/from or Corunna (8")	16	X		NOVA/ GENESIS[1]
To/from DCP, Marysville, Michigan to Pipeline #16 (LaSalle Valve Compound) (8")	16A	X	X	GENESIS
From PL 16 connection to Pembina (8") within Pembina NGL Compound	16B	X		GENESIS
From Plains' EDS Line at Well 5 to 293 meter (on site) (10")	33	X		NOVA
Residual and No. 2 Fuel Oils and Crude				
NOVA Corunna to/from Sun Meter Station (14") (RFO & No. 2 Fuel Oil)	5			NOVA
NOVA Corunna to Enbridge (14") (crude)	5			NOVA
Crude				
From Enbridge Compound (LaSalle Line) to NOVA Corunna (30")	31			NOVA
Fuel Gas				
From Union Gas Rokeby Line Compound to NOVA Corunna (12")	32			NOVA
Toluene Mix				
From Styrolution to NOVA Corunna (4")	44			NOVA

[1] Pipeline 16 is owned by Genesis from NOVA Corunna site to LaSalle compound, then owned by NOVA Chemicals north of LaSalle compound. The portion owned by Genesis is NEB-regulated.

	Pipeline Number	NEB Lines	DOT USA	Owner
Brine Transfer				
NOVA Corunna to Cargill, St. Clair, Michigan (6”)	39	X		GENESIS
Brine				
To/from Pembina HC S&D to NOVA Corunna (6”)	42			NOVA
Ethane				
To NOVA Corunna via Michigan St. Clair River Crossing Valve Pit, Marysville, Michigan (12”)	20	X	X	GENESIS
To NOVA Corunna via Fairview Compound (10”)	20A	X		GENESIS
To Pembina/from Pembina to NOVA Corunna (Bi-Directional line) (10”)	20B	X		GENESIS
To NOVA Corunna from Pembina (6”)	25			NOVA
To NOVA Corunna from Plains Midstream (12”)	51			NOVA

1.5 COMMUNITY AWARENESS AND EMERGENCY RESPONSE (CAER) PROGRAM

The health and safety of all workers, the public and environment are integral to NOVA Chemicals' business planning. Emergency response ensures a timely and appropriate response to emergencies and compliance with applicable laws (domestic and/or international) and industry and legal codes of practice.

NOVA Chemicals is a member the Sarnia-Lambton Community Awareness and Emergency Response (CAER) organization. A key function of CAER focuses on bringing municipal and industrial emergency responders together to identify potential risks associated with industrial operations and to develop emergency plans around them. The Manufacturing East Responsible Care Leader has the ultimate responsibility for this program within NOVA Chemicals.

This shall be done through provision and availability of

- effective Emergency Response plans which encompass necessary on-site responses,
- competent Emergency Response personnel,
- reliable Emergency Response equipment,
- training for site personnel, and
- community liaison.

Input from the public on this manual, and emergency management programs, are received through CAER and NOVA Chemicals community outreach. NOVA Chemicals participates in the annual CAER Emergency Preparedness Day – providing the public with an opportunity to meet with emergency personnel and discuss preparedness strategies.

2.1 EMERGENCY RESPONSE ORGANIZATION

Pipeline Emergency Response Team (PERT)

Regional Pipeline Integrity Coordinator	Terry Johnson
Pipeline Coordinator	Jace Plaine
Senior Reliability Inspection Specialist	Scott Compagnion
Manufacturing East Pipelines Team Leader	Ryan Hornett
Pipeline Regulatory Specialist	Megan Copley
Occupational Safety, Emergency Response and Security Coordinator	David Bararuk
NOVA Chemicals Incident Commander	Corunna Site Shift Supervisors
Pipeline Emergency Resource	Corunna Site Material Flow Foremen

2.2 EMERGENCY AREAS

2.2.1 CANADA

NOVA Chemicals has established an Emergency Planning Zone (EPZ) on our pipelines. The EPZ is representative of the immediate area where losses can be minimized through appropriate and timely action.

A variety of methodologies were used to determine the EPZs of NOVA Chemicals' pipelines, which will differ by the size of the pipeline and the type of product carried. These distances are documented for the length of each pipeline and are available for use during an emergency. The methodologies used include guidance from the Canadian Association of Petroleum Producers, the Emergency Response Guidebook and internal sources.

- The High Vapour Pressure pipelines (including ethylene, ethane, etc.) would have high vaporization rates that can produce plumes of flammable vapour with the potential to drift along the ground.
- Other NOVA Chemicals pipelines (No. 2 Fuel Oil, Crude oil, Raffinates, etc.) contain products with lower flash points.
- Non-hydrocarbon pipelines (including brine) do not have a fire or toxicity risk.

Emergency responders should be familiar with resident locations and local topography within the EPZ.

A list of neighbours resides with NOVA Chemicals Public and Governmental Affairs and is also available through the MEERS Program contact lists. The EPZs have also been built into an interactive map that is accessible by Emergency Operations Centre and all members of the ME Pipeline Team. This Google Earth Pro software is kept up-to-date and is the most accurate representation of the ME pipeline system (including compounds) and planning zone.

The Chemical Valley Emergency Coordinating Organization (CVECO) is the mutual aid resource in the event of a pipeline emergency. NOVA Chemicals is a participating member in this organization and will activate CVECO notifications and support any pipeline emergencies. Section 5 of the CVECO Manual covers incidents outside industry boundaries, e.g. pipelines.

NOVA Chemicals is a sponsor member of ORCGA (Ontario Regional Common Ground Alliance) as well as Ontario One Call System.

2.2.2 UNITED STATES

The High Consequence Area (HCA) around the NOVA Chemicals pipelines in the US, along with a buffer zone based on dispersion modelling on the most volatile of the products carry, make up the emergency contact zone of US residents. This equates to 2250 feet on either side of the pipelines. These parameters were used to determine the

contact list of neighbours. Emergency responders should be familiar with resident locations and local topography within the HCA and are provided copies of these maps.

2.3 LEVELS OF EMERGENCY

A hazard is defined as "a physical situation with the potential for human injury, damage to property, damage to the environment, or some combination of these". Emergency levels define the hazard to the public of a High Vapour Pressure (HVP) release and the Operator's ability to handle the emergency response.

Using common terminology in level identification should result in consistent interpretation of an emergency situation.

The following sections provide further clarification on emergency levels and required notifications.[1]

[1] The following documents were consulted in the development of the spill/release response tables:
NOVA Chemicals Procedure SEM00130 Spill Response and Reporting for Pipeline Spills in USA
NOVA Chemicals Procedure SEM10130A Pipeline Discharge to USA Reporting Flowchart
NOVA Chemicals Procedure SEM00007 Spill Reporting and associated appendices
NOVA Chemicals Procedure SEM00035 Spill Prevention and Contingency Plan and associated appendices
Guide for Communicating Emergency Response Information for Natural Gas and Hazardous Liquids Pipelines
Michigan Facilities' Guide to SARA Title III, Emergency Planning and Release Reporting - 16th Edition - January 2018
National Energy Board Event Reporting Guidelines
The various agencies' websites and publications

Levels of Emergency

Level 1	**Level 2**	**Level 3**
Control of released product	Imminent control of released product is likely but not yet established	Uncontrolled release of product and control is not imminent
Escalation highly unlikely	Escalation unlikely	Escalation possible/unknown
Incident is handled by company personnel	External agencies are likely to be involved	Imminent and significant external agency involvement
Little or no media interest	Local/regional media interest	National/media interest
Minimal environmental effects	Moderate environmental effects	Significant and ongoing environmental effects (includes pollution) Significant pollution
No immediate threats or hazards	Potential threat to people	Ongoing threat to people
No threat to company infrastructure	Potential threat to infrastructure Could result in a significant adverse effect on property, the environment or safety of persons Imminent threat to the safety of a person, installation or support craft	Significant adverse effect on property, the environment or safety of persons
No effects outside company property or Right-of-Way	No immediate threat outside company property but the potential exists to extend beyond boundaries	Effects beyond company boundaries
Near misses	Hazard that may render the pipeline or pipeline infrastructure unsafe to operate. Surrounding area may be unsafe for general public.	Pipeline and/or pipeline infrastructure is inoperable Hazard that renders the surrounding area unsafe

2.4 SPILL/RELEASE NOTIFICATIONS FOR PIPELINES IN CANADA

If the release is a threat to human health or safety, call 911 or your local fire department.

Refer to the Levels of Emergency above and the legend and NEB/TSB incident definitions below

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**Ministry of Labour (MOL) or Federal Labour Affairs (FLA) Health and Safety Officer (Note 7)**	**Other Pipeline Companies in the Corridor**	**CVECO**
NEB Regulated Lines (refer to map 11.5 for NEB regulated pipelines)								
A Level 1 emergency on an NEB pipeline (16, 16A, 16B,18, 19, 20, 20A, 20B, 39, or 33) in Canada	Yes	At the discretion of the Incident Commander	Yes (via OERS) if it qualifies as a pipeline occurrence (see section 2.5 and procedure OPLO-06015)	Possibly. See Notes 1 & 2	Possibly. See Note 1	No	Yes	Yes. Refer to section 3.17 for the appropriate code

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**Ministry of Labour (MOL) or Federal Labour Affairs (FLA) Health and Safety Officer (Note 7)**	**Other Pipeline Companies in the Corridor**	**CVECO**
A Level 2 or 3 emergency including unintended control or release of hazardous liquid on an NEB pipeline (16, 16A, 16B, 18, 19, 20, 20A, 20B, 39, or 33: NOVA-owned connection piping between EDS and Genesis at Corunna site) in Canada	Yes	Yes	Yes (via OERS) if it qualifies as a pipeline occurrence and also by telephone to TSB if it qualifies as an immediately reportable event (see section 2.5 and procedure OPLO-06015)	Likely. See Notes 1 & 2	Likely. See Note 1	Yes, to FLA officer immediately if there are injuries	Yes	Yes. Refer to section 3.17 for the appropriate code

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**Ministry of Labour (MOL) or Federal Labour Affairs (FLA) Health and Safety Officer (Note 7)**	**Other Pipeline Companies in the Corridor**	**CVECO**
Non-NEB Regulated Lines								
A Level 1 emergency on a non-NEB pipeline in Canada	Yes	At the discretion of the Incident Commander	No OEB Pipeline – TSSA Reporting	Possibly. See Notes 1 & 2	Possibly. See Note 1	No	Yes	Yes. Refer to section 3.17 for the appropriate code
A Level 2 or 3 emergency including unintended control or release of hazardous liquid (any amount) on a non-NEB pipeline in Canada	Yes	Yes	No OEB Pipeline – TSSA Reporting	Likely. See Notes 1 & 2	Likely. See Note 1	Yes, to MOL immediately if there are injuries	Yes	Yes. Refer to section 3.17 for the appropriate code

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**Ministry of Labour (MOL) or Federal Labour Affairs (FLA) Health and Safety Officer (Note 7)**	**Other Pipeline Companies in the Corridor**	**CVECO**
Pipeline owned by NOVA Chemicals but emergency occurs on property belonging to another company. See Note 5								
A Level 1, 2 or 3 emergency on an NEB pipeline	Yes	At the discretion of the Pipeline Team Leader	Yes (via OERS) if it qualifies as a pipeline occurrence and also by telephone to TSB if it qualifies as a significant incident (see section 2.5 and procedure OPLO-06015)	Possibly. See Notes 1 & 2	Possibly. See Note 1	Yes, to FLA officer immediately if there are injuries. Employer of the injured worker would make the notification.	Yes, working with the property owner	Yes. Refer to section 3.17 for the appropriate code
A Level 1, 2 or 3 emergency on a non-NEB pipeline	Yes	At the discretion of the Pipeline Team Leader	No OEB Pipeline - TSSA Reporting	Possibly. See Notes 1 & 2	Possibly. See Note 1	Yes, immediately to MOL if there are injuries. Employer of the injured worker would make the notification	Yes, working with the property owner	Yes. Refer to section 3.17 for the appropriate code

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**Ministry of Labour (MOL) or Federal Labour Affairs (FLA) Health and Safety Officer (Note 7)**	**Other Pipeline Companies in the Corridor**	**CVECO**
Pipeline emergency on NOVA Chemicals' property on a pipeline owned by another company. See Note 5								
A Level 1, 2 or 3 emergency on someone else's pipeline located on our property	Yes	Yes	If required, will be made by the owner of the pipeline	If required, will likely be made by the owner of the pipeline	If required, will be made by NOVA Chemicals	Yes, if there are injuries. Employer of the injured worker would make the notification. Whether notification is federal or provincial will be dictated by the regulator of the pipeline.	Yes, working with the pipeline owner	Yes. Refer to section 3.17 for the appropriate code

Note 1: NOVA Chemicals' Environmental Department has established procedures for reporting spills. The Environment Manager is a member of the NOVA Chemicals Emergency Operating Centre (EOC) and will make the MECP and municipal notifications based on these established procedures.

Note 2: The Environment Manager or delegate will use the information provided by the Incident Commander to determine if the abnormal discharge is reportable by using the Discharge Reporting Flowchart located in Appendix SEM30007B and Reporting Guideline Flowchart SEM30007C. Under certain circumstances the Incident Commander can immediately notify the MECP Spills Action Centre and the Municipality, prior to notifying the Environment Manager and the Area Team Leader. Refer to NOVA Chemicals Procedure SEM00007 Spill Response and Reporting for further details on environmental notifications for Canadian releases.

Note 3: It is the responsibility of the EOC and/or the Environment Manager to contact the Legal Department if there is a potential for adverse impact.

Note 4: Reporting to TSSA is completed through Spills Action Centre notification. Reporting an incident to SAC meets the regulatory requirement of reporting to TSSA. If there is an immediate need to disturb any article at the site and you wish to speak to a TSSA representative, you must inform the Spills Action Center operator that you want the TSSA Fuels Safety Program on-call person to contact you.

Note 5: It should be noted the NOVA Chemicals Responsible Care Learning System will be applied during any incident and where required, pipeline failure records will be kept per CSA Z662-15 Annex H.

Note 6: In either case of a NOVA Chemicals-owned pipeline emergency on someone else's property, or someone else's pipeline emergency on NOVA Chemicals' property, it is imperative that both companies work together to ensure proper notifications are made and that the issue is resolved safely and expeditiously. It is possible that both companies' EOCs will be activated and in contact.

Note 7: On provincially regulated pipelines, when applicable the Ministry of Labour notified by the EOC via the Ministry of Labour Health and Safety Contact Centre 1-877-202-0008. If a person, whether a worker or not, has been critically injured or killed at the workplace, the employer and the constructor, if any, must immediately notify the Ministry of Labour Health & Safety Contact Centre, the joint health and safety committee (or health and safety representative) and the union, if there is one. This notice must be by telephone or other direct means. Within 48 hours, the employer must also notify, in writing, a director of the Ministry of Labour, giving the circumstances of the occurrence and any information that may be prescribed.

On NEB-regulated pipelines, under the *Canada Occupational Health and Safety Regulations* and the *Canada Labour Code*, Federal Labour Affairs' Health and Safety Officer must be notified by the EOC of hazardous occurrences. For federally-regulated pipelines, the employer must report to a health and safety officer by telephone (1-800-641-4049 emergency services 24 hours), telex or fax as soon as possible but within 24 hours after becoming aware of an occurrence that resulted in:

- death of an employee (even if it appears to be from natural causes)

- permanent disabling injury of an employee, or temporary disabling injury of two or more employees from the same occurrence
- permanent impairment of a body function of an employee
- an explosion

The employer must also report in writing to a health and safety officer, within 14 days, occurrences that resulted in:

- disabling injuries (temporary or permanent)
- electric shock, toxic atmosphere or oxygen deficient atmosphere that caused an employee to lose consciousness
- rescue, revival or other similar emergency procedures
- a fire or an explosion

The report should either be submitted using the form, Hazardous Occurrence Investigation Report (LAB 1070), or it must contain all the information required by this form and deemed acceptable to the Labour Program. Addresses and telephone numbers for the various district offices are available on the Labour Program website or by calling 1-800-641-4049.

If jurisdiction is unclear, notification to both federal and provincial labour agencies should be made.

Legend

Canadian Municipalities and Agencies – will be notified as required by the EOC via 9-1-1.

EDS – Eastern Delivery System owned by Plains Midstream

FLA – Federal Labour Affairs

NEB – National Energy Board notified via online emergency reporting system (OERS) by EOC. NEB Incident telephone line (403) 807-9473

NOVA EOC – NOVA Chemicals' Emergency Operations Centre notified by Incident Commander

TSB – Transportation Safety Board (Canada) phone: 819-997-7887, fax: 819-953-7876, email: pipelinenotifications@tsb.gc.ca notified via online emergency reporting system (OERS) by EOC and also by phone if it is a significant incident (see section 2.5)

MECP – Ministry of Environment Conservation and Parks notified by Environment Manager (part of EOC) via Spills Action Centre 1-800-268-6060

MOL – Ministry of Labour

For further information on the roles of these groups, refer to PERT Manual section 3.16.

2.5 PIPELINE REGULATORY REPORTING

2.5.1 NATIONAL ENERGY BOARD/TRANSPORTATION SAFETY BOARD REPORTING

If NEB and TSB notification is required per the tables above (incidents happen on federally regulated lines), report to the NEB's Online Event Reporting System (OERS) https:/apps.neb-one.gc.ca/ers/home/index). For example this might include incidents, unauthorized activities, damage, suspension of consent, contraventions under the Damage Prevention regulations, and operations and maintenance activities.[2]

The Online Event Reporting System (OERS) automates the single-window pipeline occurrence notification process that was established by the TSB and the National Energy Board (NEB) in 1999. As soon as possible after the occurrence, enter the information you have about it into the OERS. When the information is submitted, the OERS will automatically notify the TSB and the NEB.

The OERS must be used to report all pipeline occurrences. If the OERS is not available, all pipeline occurrences must be reported by telephone to the TSB at **819-997-7887**.

Under TSB regulations, a "pipeline occurrence" must be reported if

A. the pipeline sustains damage that affects the safe operation of the pipeline as a result of another object coming into contact with it;
B. an unauthorized third party activity affects the structural integrity of the pipeline;
C. a geotechnical, hydrotechnical or environmental activity poses a threat to the safe operation of the pipeline;
D. the occurrence results directly from the operation of the pipeline, where:
    a. a person is killed or sustains a serious injury;
    b. there is a fire, ignition or explosion that
        i. affects the safe operation of the pipeline, or
        ii. poses a threat to the safety of any person, property or the environment;
    c. there is an occurrence that results in
        i. an unintended or uncontrolled release of hydrocarbon gas,
        ii. an unintended or uncontrolled release of HVP hydrocarbons,
        iii. an unintended or uncontrolled release of LVP hydrocarbons in excess of 1.5 m^3 or
        iv. an unintended or uncontrolled release of a commodity other than hydrocarbon gas, HVP hydrocarbons or LVP hydrocarbons;
    d. there is a release of a commodity from the line pipe body;
    e. the pipeline is operated beyond design limits or any operating restrictions imposed by the National Energy Board;

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[2]. Refer to procedure OPLO-06015 *Reporting Pipeline Incidents and Occurrence NEB and TSB* and OPLO-16015A *Recognizing Reportable Pipelines Incidents and Occurrences on NEB-Regulated Pipelines* for details on reporting an event in the OERS.

f. the pipeline restricts the safe operation of any mode of transportation. [3]

Section 52 of the OPR requires companies to notify the Board of all incidents relating to the construction, operation, or abandonment of their pipelines.

An "incident" is defined in section 1 of the OPR as an occurrence that results in:

a) the death of or serious injury to a person;
b) a significant adverse effect on the environment;
c) an unintended fire or explosion;
d) an unintended or uncontained release of low-vapour pressure (LVP) hydrocarbons in excess of 1.5 m^3;
e) an unintended or uncontrolled release of gas or high-vapour pressure (HVP) hydrocarbons;
f) the operation of a pipeline beyond its design limits as determined under CSA Z662 or CSA Z276 or any operating limits imposed by the Board.

There are other notifications to the NEB required under Damage Prevention Regulations; however, unless a pipeline incident results from one of the contraventions, it does not constitute an emergency therefore details on those reporting requirements are not included in this manual.

IMPORTANT
Where regulations require an event to be reported immediately, companies must also consider whether the event meets any of the following definitions:

An Incident that Harms People or the Environment:

- a death;
- a serious injury (as defined in the OPR or TSB regulations);
- an unintended or uncontrolled LVP hydrocarbon release in excess of 1.5 m^3 that leaves company property or occurs on or off the right of way;
- an unintended or uncontrolled sweet natural gas or HVP release >30,000 m^3;
- any unintended or uncontrolled release of sour natural gas or hydrogen sulfide; and/or
- a significant adverse effect on the environment.

A Rupture: an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained.

•**A Toxic Plume**: a band of service fluid or other contaminant (e.g. hydrogen sulfide or smoke) resulting from an incident that causes people, including employees, to take protective measures (e.g. muster, shelter-in-place or evacuation).

Where an event meets any of the above definitions, companies are required to notify the TSB Reporting Hotline at (819) 997-7887 or 1-800-387-3557 (toll-free in Canada). Subsequently, the company is required to input the details required by both the TSB and the NEB into the OERS. **The phone notification and the input of information into OERS are required to occur as**

[3] Per TSB regulations found at http://www.tsb.gc.ca/eng/incidents-occurrence/pipeline/index.asp

soon as possible and no later than three hours of the incident being discovered. The goal of the initial phone notification is to allow the relevant agencies to mobilize a response to an incident, if required. Note that OERS will automatically determine whether the event meets the definition of an "Incident that Harms People or the Environment", however the company will be responsible for specifically indicating whether the incident meets the definitions of "Rupture" and "Toxic Plume".

For all other events or pipeline occurrences that do not meet any of the definitions in this section (An Incident that Harms People or the Environment, a Rupture or a Toxic Plume), companies are not required to phone the TSB Reporting Hotline but must report the event as soon as possible and no later than twenty-four hours after the event was discovered.[4]

There are different reporting timelines and requirements depending on the incident. Those with the potential to discover an incident and those responsible for reporting incidents are trained on the proper notifications and reporting methods.

2.5.2 ONTARIO ENERGY BOARD/TECHNICAL STANDARDS AND SAFETY AUTHORITY

For pipelines which are regulated by the Ontario Energy Board (OEB), operating requirements are administered by the Technical Standards and Safety Authority (TSSA). Reporting incidents to the TSSA is required under the Technical Standards and Safety Act; Regulation 2010/01: Oil and Gas Pipeline Systems.

> **Accidents and occurrences**
> **14.** (1) Where it appears that carbon monoxide poisoning, asphyxiation, explosion or fire has occurred, or an accidental release, vent, leak or spill has occurred because of the use, handling or storage of oil or gas, the certificate/ROT/license holder, operator, contractor or distributor shall notify forthwith an inspector of the occurrence by telephone, facsimile, or any other form of electronic transmission, and a registration/licence holder shall have in place procedures for such notification.
>
> (2) No person shall interfere with or disturb any wreckage, an article or thing at the scene of and connected with the occurrence except in the interest of public safety, saving a life, relieving human suffering, continuity of service or preservation of property.
>
> (3) Where it is permitted to interfere with or disturb any wreckage, an article or a thing under subsection (2), no person shall carry away or destroy any wreckage, article or thing unless an inspector gives permission to do so.

TSSA has an agreement in place with the MECP Spills Action Centre (SAC) to receive notifications under the Act. All reporting of incidents involving hydrocarbon fuels or their utilization equipment is done through the SAC. They can be reached at 1-800-268-6060 or 1-416-325-3000, 24 hrs per day, seven days per week. Reporting an incident to SAC meets the regulatory requirement of reporting to TSSA. If there is an immediate need to disturb any article at the site and you wish to speak to a TSSA representative, you must

[4] Per NEB Event Reporting Guidelines Revised December 2017

inform the Spills Action Centre operator that you want the TSSA Fuels Safety Program on-call person to contact you.

The TSSA published a guideline to further describe the reporting requirements and process. Below are the regulatory requirements for reporting an incident to the TSSA.

- **Pipeline Strikes** — Pipeline strikes shall be reported immediately through SAC where the strike has caused evacuation, injuries, or media attention. All other pipeline strikes must be reported to TSSA within two weeks of the occurrence following a protocol acceptable to TSSA. Homeowner strikes are the only exception and do not need to be reported.
- **Explosions** — Explosions must be reported where they have caused injury, damage to the equipment, or a fire. Minor 'delayed ignitions' would not normally be considered to be reportable.
- **Liquid Petroleum Spills** — Spills are product escapes that result from operating errors. Any spill of a petroleum product in excess of the following amounts must be immediately reported to the SAC.
    - 100 litres at sites restricted from public access (i.e. bulk facility, private fuel outlet, private residence, etc).
    - 25 litres at sites with public access (i.e. retail service station, marina, etc) must be immediately reported to the SAC.
    - Spills of lesser quantities need not be reported to TSSA fuels safety, unless the spill would:
        - create a hazard to public health or safety,
        - contaminate any fresh water source or waterway,
        - interfere with the rights of any person, or
        - allow entry of product into a sewer system or underground stream or drainage system.
- **Leaks** — Leaks are product escapes that result from equipment failures. All confirmed leaks, regardless of quantity released, must be immediately reported to the SAC.
- **Discovery of a Petroleum Product that has escaped to the Environment or Inside a Building** — The discovery of a petroleum product that has escaped to the environment or inside a building must be reported as noted in GA1/99, TSSA's protocol for remediation of contamination. A copy of GA1/99 is available on TSSA's web site, www.tssa.org.

NOTE: It is critical that the Environment Manager or delegate is informed of a call to SAC prior to initiation. Reporting to SAC as a TSSA requirement is significantly different than reporting to SAC for an environmental "spill". The definition of a "spill" under environmental regulations is determined by SEM00007 Spill Response and Reporting, and may not align with the requirements to call SAC under TSSA.

The following is suggested for reporting to SAC strictly for TSSA requirements:

> "NOVA Chemicals is calling to report a pipeline occurrence to the TSSA. This occurrence is reportable to the TSSA under Regulation 2010/01: Oil and Gas Pipeline Systems. This occurrence is ***NOT*** reportable as a spill to the MECP."
>
> Under TSSA, this incident aligns with the reporting requirements for (**pipeline strike, explosion, liquid petroleum release or leak, discovery of petroleum product that has escaped to the Environment or inside a building)"**

The following is suggested for reporting to SAC for a spill under SEM00007 as well as an occurrence to TSSA:

> "NOVA Chemicals is calling to report spill to the MECP and a pipeline occurrence to the TSSA. This incident meets the definition of a spill, requiring reporting to the MECP. This incident is reportable to the TSSA under Regulation 2010/01: Oil and Gas Pipeline Systems."

2.6 SPILL/RELEASE NOTIFICATIONS FOR PIPELINES IN THE US

If the release is a threat to human health or safety, call 911 or your local fire department.

Refer to the legend and CFR 195 accident reporting details below

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**DOT (PHMSA) and NTSB through NRC**	**SCCDC**	**PEAS (covers DEQ and US Municipalities & Agencies)[3&4]**	**DEQ-OWMRP (Line 20 only)**	**LARA –MIOSHA**	**Other Pipeline Companies in the same corridor**
Release of 5 gallons (19 litres) or more on Pipelines 16A, 18, or 19 in the US (see note 9)	Yes	Yes	Yes via National Reporting Center – within one hour of confirmed discovery. 48-hour follow-up.	Yes – within 15 minutes	Yes within 15 minutes – if emergency contact PEAS. If not contact DEQ spills hotline. Municipalities and agencies will be contacted via DEQ/PEAS	No	Yes if the release results in fatality within 30 days or hospitalization within 24 hours. Notification must be within 8 hours for fatality or 24 hours for hospitalization	Yes
Release of 5 gallons (19 litres) or more Pipeline 20 (ethane with possible NORM contamination) in the US (see note 9)	Yes	Yes	Yes via National Reporting Center – within one hour of confirmed discovery. 48-hour follow-up.	Yes - within 15 minutes	Yes within 15 minutes – if emergency contact PEAS. If not contact DEQ spills hotline. Municipalities and agencies will be contacted via DEQ/PEAS	Yes – immediate or 24-hour notice required depending on amount released. See SEM00130 or 10 CFR 20	Yes, if as a result a fatality occurs within 30 days from time of release or a hospitalization occurs within 24 hours from time of release. Notification must be within 8 hours for a fatality or 24 hours for hospitalization	Yes

Pipeline Spill/Release	**Pipeline Team Leader**	**NOVA EOC**	**DOT (PHMSA) and NTSB through NRC**	**SCCDC**	**PEAS (covers DEQ and US Municipalities & Agencies)[3&4]**	**DEQ-OWMRP (Line 20 only)**	**LARA –MIOSHA**	**Other Pipeline Companies in the same corridor**
Release on Pipeline 39 in the US if discharge threatens public health, safety, environment or spill has reached surface water or groundwater	Yes	Yes	Pipeline 39 is not under DOT jurisdiction but calling the NRC should be considered because they are the source of notification for others (including coast guard)	Yes - within 15 minutes	Yes within 15 minutes – if emergency contact PEAS. If not contact DEQ spills hotline. Municipalities and agencies will be contacted via DEQ/PEAS	No	Yes, if as a result a fatality occurs within 30 days from time of release or a hospitalization occurs within 24 hours from time of release. Notification must be within 8 hours for a fatality or 24 hours for hospitalization	Yes
Level 1 release of less than 5 barrels (210 US Gallons, 800 L) on Pipelines 16A, 18, 19 or 20 in the US resulting from maintenance activity. There could be no immediate danger of fire or threat to the public. If there were, it would be upgraded to an emergency scenario.	Yes	No	Note 5	Not if there is no immediate danger of fire or threat to the public	Not if there is no immediate danger of fire or threat to the public	Not if there is no immediate danger of fire or threat to the public. Confirm it doesn't fall within the reportable NORM thresholds (10 CFR 20 – (Standards for Protection Against Radiation).	Not if there is no immediate danger of fire or threat to the public	Unlikely

Note 1: NOVA Chemicals' Environmental Department has established procedures for reporting spills. The Environment Manager is a member of the NOVA Chemicals Emergency Operating Centre (EOC) and will make the environmental notifications based on these established procedures.

Note 2: The Environment Manager or delegate will use the information provided by the Incident Commander to determine if the abnormal discharge is reportable by using the Pipeline Discharge to United States Reporting Flowchart located in Appendix SEM10130A.

Note 3: PEAS is the DEQ Emergency Spills Notification System. PEAS will notify the local authorities, as appropriate (Coast Guard, Police, Fire, Bluewater Bridge, Police, Department of Human Resources, etc.). DEQ accepts notification on behalf of SERC. PEAS is contacted if it's an emergency or after hours; otherwise DEQ contact is acceptable.

Note 4: All spills need to be reported to the DEQ, or other agency with the most urgent need first. This is specified in the Pipeline Discharge to United States Reporting Flowchart (SEM10130A). If there is immediate danger of fire or threat to the public, the St. Clair Central Dispatch Centre must be notified first.

Note 5: CFR 195.50: If the release is less than 5 barrels it is not required to have an accident report submitted if the following are true: it is not otherwise reportable under Section 195.50, it is not described in 195.52(a)(4), it is confined to company property or RoW, and is cleaned up promptly, and it does not result in the death of a person, personal injury requiring hospitalization, or cost more than $50,000. Refer to SEM000130 and CFR 195 sections 50–56 for further details. The timelines for reporting are also found in these two documents.

Note 6: It is the responsibility of the EOC and/or the Environment Manager to contact the Legal Department if there is a potential for adverse impact.

Note 7: Some regulators require immediate telephone notification and follow-up written notification. Refer to SEM000130 and flow chart SEM10130A for further details.

Note 8: It should be noted the NOVA Chemicals Responsible Care Learning System will be applied during any incident.

Note 9: It is not always easy to determine the quantity or extent of the release in the short timeframe required by the DOT. If an initial estimate of the magnitude is difficult to determine, err on the side of caution and report to the applicable agencies.

Note 10: A report filed with NRC must be updated within 48-hours after the confirmed discovery of an accident, as per CFR 195.52(d). If there are no changes or revisions to the initial report, the operator must confirm the estimated in its initial report.

Legend

NRC – National Response Center notified by the EOC (1-800-424-8802). See CFR 195.52(b) for details required to be provided at the time of notification.

SCCDC – St. Clair Central Dispatch Center notified by the EOC (1-810-985-8115). Notification of the St Clair County Office of Homeland Security/Emergency Management occurs through the Central Dispatch Center.

DEQ – Michigan Department of Environmental Quality. EOC to contact the DEQ Spills hotline for non-emergencies (1-800-662-9278). Contact PEAS if it's an emergency.

PEAS – Pollution Emergency Alerting System (1-800-292-4706). EOC to contact the PEAS system for emergencies. Contact DEQ if it's not an emergency.

DOT – Department of Transportation (PHMSA) notified through the NRC by the EOC.

EPA – Environmental Protection Agency notified by DEQ or PEAS.

LARA – Department of Licensing and Regulatory Affairs. Notified via the Bureau of Fire Services or MIOSHA.

LARA Bureau of Fire Services – Notified through PEAS. Alternately, call Michigan State Police (MSP) Hazardous Materials (HazMat) hotline 1-800-525-5555.

LARA MIOSHA – Michigan Occupational Safety and Health Administration Fatality and Catastrophe Hotline (1-800-858-0397). To be notified if there is a fatality or hospitalization.

LEPC – Local Emergency Planning Committee (1-810-989-6327) will be notified by SCCDC.

NTSB – National Transportation Safety Board notified through the NRC by the EOC.

OWRMP – Office of Waste Management and Radiological Protection (part of DEQ) (1-517-284-5185) notification made by NOVA if NORMS are suspected and meet the notification requirements in 10 CFR 20. If after hours and immediate notification is required, contact PEAS.

SERC – State Emergency Response Commission notification made by NOVA through calling PEAS.

US Municipalities and Agencies – will be notified through PEAS.

For further information on the roles of these groups, refer to PERT Manual section 3.16.

2.7 49 CFR 195 ACCIDENT AND SAFETY-RELATED CONDITION REPORTING

US 49 CFR §195.50 Reporting accidents.

An accident report is required for each failure in a pipeline system subject to this part in which there is a release of the hazardous liquid or carbon dioxide transported resulting in any of the following:

a) Explosion or fire not intentionally set by the operator.
b) Release of 5 gallons (19 liters) or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels (0.8 cubic meters) resulting from a pipeline maintenance activity if the release is:
    1) Not otherwise reportable under this section;
    2) Not one described in §195.52(a)(4);
    3) Confined to company property or pipeline right-of-way; and
    4) Cleaned up promptly;
c) Death of any person;
d) Personal injury necessitating hospitalization;
e) Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding $50,000.

US 49 §195.52 Immediate notice of certain accidents.

a) Notice requirements. At the earliest practicable moment following discovery, of a release of the hazardous liquid or carbon dioxide transported resulting in an event described in § 195.50, but no later than one hour after confirmed discovery, the operator of the system must give notice, in accordance with paragraph (b) of this section of any failure that:
    1) Caused a death or a personal injury requiring hospitalization;
    2) Resulted in either a fire or explosion not intentionally set by the operator;
    3) Caused estimated property damage, including cost of cleanup and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding $50,000;
    4) Resulted in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines; or
    5) In the judgment of the operator was significant even though it did not meet the criteria of any other paragraph of this section.
b) Information required. Each notice required by paragraph (a) of this section must be made to the National Response Center either by telephone to 800-424-8802 (in

Washington, DC, 202-267-2675) or electronically at http://www.nrc.uscg.mil and must include the following information:

1) Name, address and identification number of the operator.
2) Name and telephone number of the reporter.
3) The location of the failure.
4) The time of the failure.
5) The fatalities and personal injuries, if any.
6) Initial estimate of amount of product released in accordance with paragraph (c) of this section.
7) All other significant facts known by the operator that are relevant to the cause of the failure or extent of the damages.

c) Calculation. A pipeline operator must have a written procedure to calculate and provide a reasonable initial estimate of the amount of released product.

d) New information. Within 48 hours after the confirmed discovery of an accident, to the extent practicable, an operator must revise or confirm its initial telephonic notice required in paragraph (b) of this section with revised estimate of the amount of product released, location of the failure, time of the failure, a revised estimate of the number of fatalities and injuries, and all other significant facts that are known by the operator that are relevant to the cause of the accident or extent of the damages. If there are no changes or revisions to the initial report, the operator must confirm the estimated in its initial report.

US 49 §195.54 Accident reports.

a) Each operator that experiences an accident that is required to be reported under §195.50 must, as soon as practicable, but not later than 30 days after discovery of the accident, file an accident report on DOT Form 7000-1.

b) Whenever an operator receives any changes in the information reported or additions to the original report on DOT Form 7000-1, it shall file a supplemental report within 30 days.

US 49 §195.55 Reporting safety-related conditions.

a) Except as provided in paragraph (b) of this section, each operator shall report in accordance with §195.56 the existence of any of the following safety-related conditions involving pipelines in service:

1) General corrosion that has reduced the wall thickness to less than that required for the maximum operating pressure, and localized corrosion pitting to a degree where leakage might result.
2) Unintended movement or abnormal loading of a pipeline by environmental causes, such as an earthquake, landslide, or flood, that impairs its serviceability.
3) Any material defect or physical damage that impairs the serviceability of a pipeline.
4) Any malfunction or operating error that causes the pressure of a pipeline to rise above 110 percent of its maximum operating pressure.

5) A leak in a pipeline that constitutes an emergency.
6) Any safety-related condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent or more reduction in operating pressure or shutdown of operation of a pipeline.

b) A report is not required for any safety-related condition that—
1) Exists on a pipeline that is more than 220 yards (200 meters) from any building intended for human occupancy or outdoor place of assembly, except that reports are required for conditions within the right-of-way of an active railroad, paved road, street, or highway, or that occur offshore or at onshore locations where a loss of hazardous liquid could reasonably be expected to pollute any stream, river, lake, reservoir, or other body of water;
2) Is an accident that is required to be reported under §195.50 or results in such an accident before the deadline for filing the safety-related condition report; or
3) Is corrected by repair or replacement in accordance with applicable safety standards before the deadline for filing the safety-related condition report, except that reports are required for all conditions under paragraph (a)(1) of this section other than localized corrosion pitting on an effectively coated and cathodically protected pipeline.

US 49 §195.56 Filing safety-related condition reports.

a) Each report of a safety-related condition under §195.55(a) must be filed (received by OPS) within five working days (not including Saturday, Sunday, or Federal Holidays) after the day a representative of the operator first determines that the condition exists, but not later than 10 working days after the day a representative of the operator discovers the condition. Separate conditions may be described in a single report if they are closely related. Reports may be transmitted by electronic mail to InformationResourcesManager@dot.gov, or by facsimile at (202) 366-7128.

b) The report must be headed “Safety-Related Condition Report” and provide the following information:
1) Name and principal address of operator.
2) Date of report.
3) Name, job title, and business telephone number of person submitting the report.
4) Name, job title, and business telephone number of person who determined that the condition exists.
5) Date condition was discovered and date condition was first determined to exist.
6) Location of condition, with reference to the State (and town, city, or county) or offshore site, and as appropriate nearest street address, offshore platform, survey station number, milepost, landmark, or name of pipeline.
7) Description of the condition, including circumstances leading to its discovery, any significant effects of the condition on safety, and the name of the commodity transported or stored.

8) The corrective action taken (including reduction of pressure or shutdown) before the report is submitted and the planned follow-up or future corrective action, including the anticipated schedule for starting and concluding such action.

2.8 NOTIFICATIONS FOR PIPELINE SPILL/RELEASE UNDER THE ST. CLAIR RIVER WHERE IT IS UNCLEAR WHETHER IT FALLS UNDER US OR CANADIAN BOUNDARIES

If the release is a threat to human health or safety, call 911 or your local fire department.

Refer to the legend and regulations in the previous sections.

Pipeline Spill/ Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**DOT (PHMSA) and NTSB through NRC**	**SCCDC**	**PEAS (covers DEQ and US Municipalities & Agencies)[3&4]**	**DEQ-OWMRP (Line 20 only)**	**LARA –MIOSHA**
Release of 5 gallons (19 litres) or more on Pipelines16A, 18, 19 or 20 under the river (unclear whether it's US or Canada) (see note 9)	Yes	Yes	Yes via OERS	Possibly. See Notes 1 & 2	Yes. Note that the Ministry of Labour must be notified if there are injuries.	Yes via National Reporting Center – within one hour of confirmed discovery. 48-hour follow-up.	Yes	Yes within 15 minutes – if emergency contact PEAS. If not contact DEQ spills hotline	Possibly if the leak is on Line 20 and there is the potential for NORMs.	Yes, if as a result a fatality occurs within 30 days from time of release or a hospitalization occurs within 24 hours from time of release. Notification must be within 8 hours for a fatality or 24 hours for hospitalization

Pipeline Spill/ Release	**Pipeline Team Leader**	**NOVA EOC**	**NEB/TSB**	**MECP**	**Canadian Municipalities & Agencies**	**DOT (PHMSA) and NTSB through NRC**	**SCCDC**	**PEAS (covers DEQ and US Municipalities & Agencies)[3&4]**	**DEQ-OWMRP (Line 20 only)**	**LARA –MIOSHA**
Release on Pipeline 39 in the if discharge threatens public health, safety, environment or spill has reached surface water or groundwater	Yes	Yes	Yes	Yes	Yes. Note that the Ministry of Labour must be notified if there are injuries.	Pipeline 39 is not under DOT jurisdiction but calling the NRC should be considered because they are the source of notification for others (including coast guard)	Yes	Yes within 15 minutes – if emergency contact PEAS. If not contact DEQ spills hotline	No	Yes, if as a result a fatality occurs within 30 days from time of release or a hospitalization occurs within 24 hours from time of release. Notification must be within 8 hours for a fatality or 24 hours for hospitalization

Note 1: NOVA Chemicals' Environmental Department has established procedures for reporting spills. The Environment Manager is a member of the NOVA Chemicals Emergency Operating Centre (EOC) and will make the environmental and/or municipal notifications based on these established procedures.

Note 2: The Environment Manager or delegate will use the information provided by the Incident Commander to determine if the abnormal discharge is reportable by using the Discharge Reporting Flowchart located in Appendix SEM30007B for Canada and the Pipeline Discharge to United States Reporting Flowchart located in Appendix SEM10130A for the US.

Note 3: PEAS is the DEQ Emergency Spills Notification System. PEAS will notify the local authorities, as appropriate (Coast Guard, Police, Fire, Bluewater Bridge, Police, Department of Human Resources, etc.). PEAS is contacted if it's an emergency or after hours; otherwise DEQ contact is acceptable.

Note 4: All spills need to be reported to the DEQ, or other agency with the most urgent need first. This is specified in the Pipeline Discharge to United States Reporting Flowchart (SEM10130A). If there is immediate danger of fire or threat to the public, the St. Clair Central Dispatch Centre must be notified first.

Note 5: CFR 195.50: If the release is less than 5 barrels it is not required to have an accident report submitted if the following are true: it is not otherwise reportable under Section 195.50, it is not described in 195.52(a)(4), it is confined to company property or RoW, and is cleaned up promptly, and it does not result in the death of a person, personal injury requiring hospitalization, or cost more than $50,000. Refer to SEM000130 and CFR 195 sections 50–56 for further details. The timelines for reporting are also found in these two documents.

Note 6: It is the responsibility of the EOC and/or the Environment Manager to contact the Legal Department if there is a potential for adverse impact.

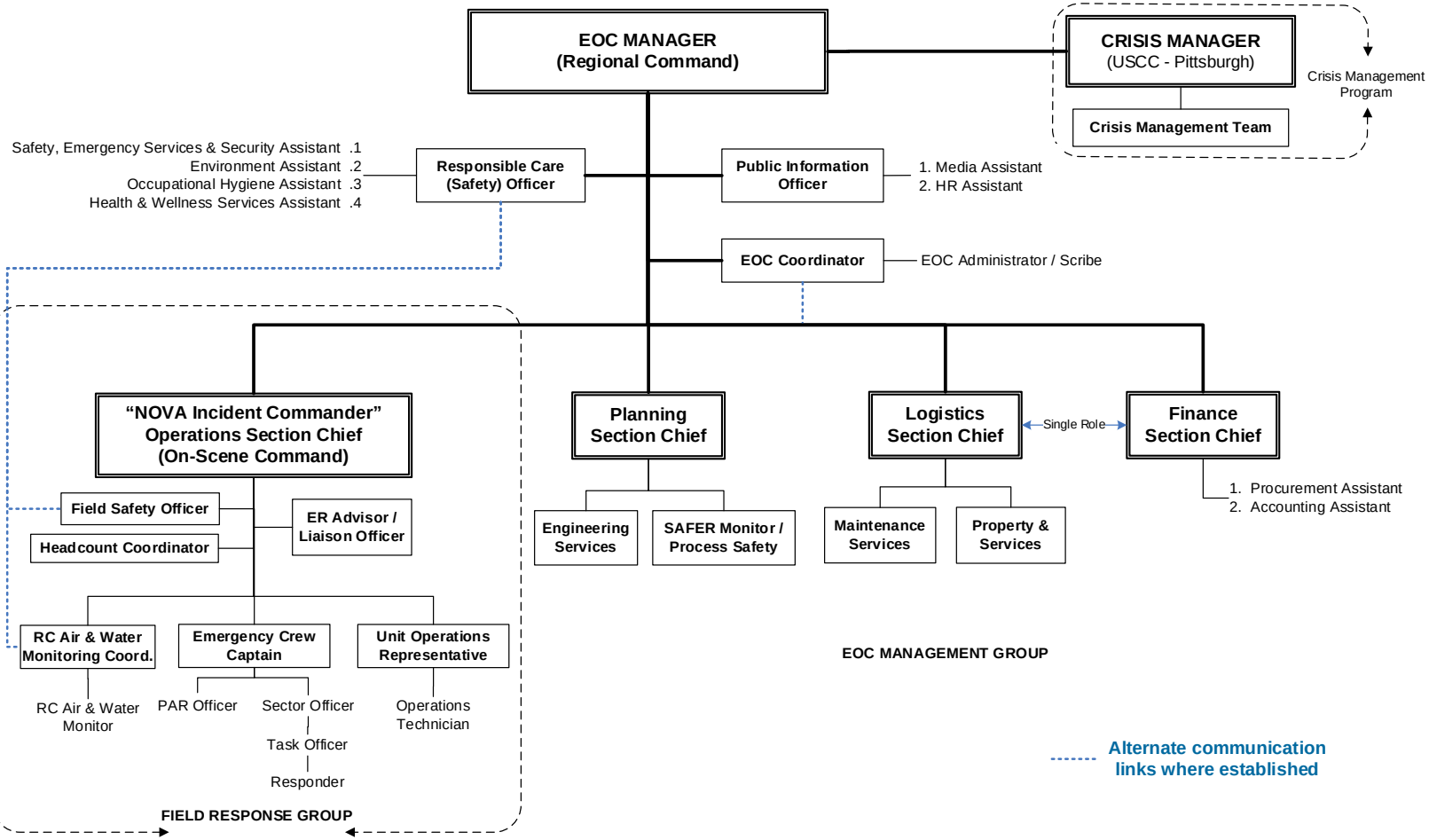
Note 7: Some regulators require immediate telephone notification and follow-up written notification. Refer to SEM000130 and flow chart SEM10130A for further details.

Note 8: It should be noted the NOVA Chemicals Responsible Care Learning System will be applied during any incident and where required, pipeline failure records will be kept per CSA Z662-15 Annex H.

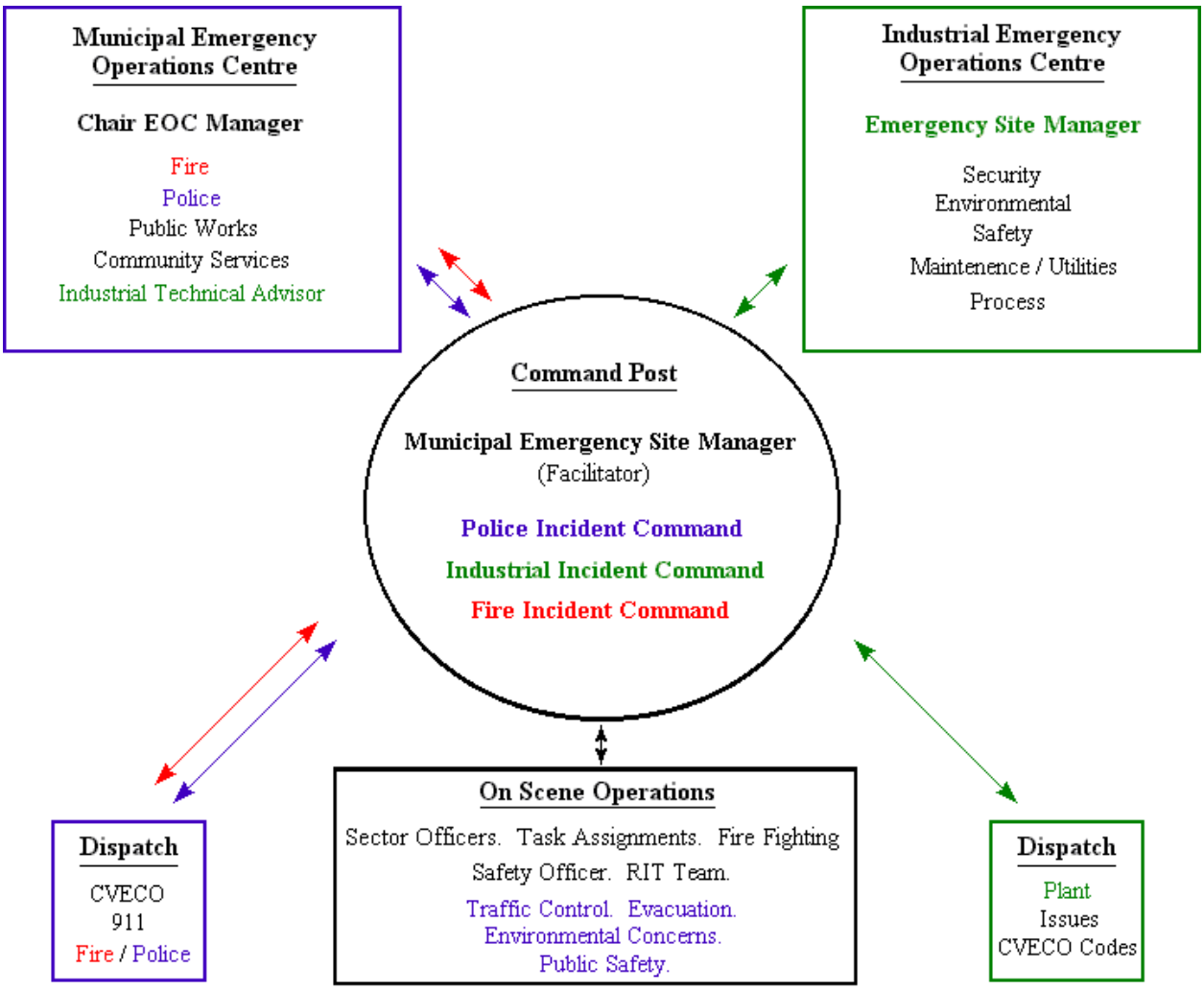
Note 9: It is not always easy to determine the quantity or extent of the release. If an initial estimate of the magnitude is difficult to determine, err on the side of caution and assume that the threshold of notifying additional parties has been reached.

Note 10: A report filed with NRC must be updated within 48-hours after the confirmed discovery of an accident, as per CFR 195.52(d). If there are no changes or revisions to the initial report, the operator must confirm the estimated in its initial report.

2.9 EMERGENCY RESPONSE ORGANIZATION (FROM MEERS SECTION 1 – EMERGENCY MANAGEMENT PROGRAM)



2.10 CVECO MUTUAL AID EMERGENCY MANAGEMENT STRUCTURE (UNIFIED COMMAND)



3.1 INTRODUCTION

This section describes the functions of individuals designated in the Pipeline Emergency Response Organization. Emergency response positions 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.

These group functions and the individual roles that support these groups have their responsibilities outlined in the following segments.

- Material Flow Technician
- Material Flow Foreman
- NOVA Chemicals Incident Commander
- NOVA Chemicals EOC Manager
- Regional Pipeline Integrity Coordinator
- Manufacturing East Pipelines Team Leader
- Occupational Safety, Emergency Response and Security Coordinator
- Pipeline Regulatory Specialist
- LamSar, Inc. First Responder

PIPELINE EMERGENCY RESOURCE:	**Material Flow Technician**

SECTION 3.2

ROLE:

To respond to pipeline emergencies as First Responder, as directed by Material Flow Foreman.

RESPONSIBILITIES:

- To respond to request from the Material Flow Control Room Technician.
- Observe pipeline emergency location, from a safe distance.
- Verify and evaluate the nature of the pipeline emergency.
- To discuss isolation of pipeline with Material Flow Control Room Technician, if required.
- Maintain contact with Material Flow Foreman / NOVA Chemicals Incident Commander

TRAINING / SKILLS PROVIDED:

Knowledge of product, hazards, customer impacts, pipeline operation procedures and emergency response plans.

PIPELINE EMERGENCY RESOURCE:	**Material Flow Foreman**

SECTION 3.3

ROLE:

To respond to pipeline emergencies to support the Material Flow technician, once an emergency has been identified.

RESPONSIBILITIES:

- Observe pipeline emergency location, from a safe distance.
- Verify and evaluate the nature of the pipeline emergency.
- Assist, where appropriate, with the isolation of the pipeline.
- Maintain contact with the NOVA Chemicals Incident Commander
- Recommend CVECO Code Classification.

TRAINING/SKILLS PROVIDED:

Knowledge of product, hazards, customer impacts, pipeline operation procedures, emergency response plan, incident command process and CVECO code awareness.

PIPELINE EMERGENCY RESOURCE:	**NOVA Chemicals Incident Commander**

SECTION 3.4

ROLE:

To coordinate response to all pipeline emergencies.

RESPONSIBILITIES:

- Responsible for overall management of the emergency scene (if located on a NOVA Chemicals Site).
- Verification and evaluation of the pipeline emergency.
- Decide whether to activate NOVA Chemicals EOC.
- Decide whether to notify local authorities.
- When located on NOVA Chemicals' property, assist in securing of the emergency area.
- Decide if vapour cloud ignition is appropriate and if so initiate or recommend to local authorities if at an offsite location.
- Liaise with other responding agencies in field, as required.
- Liaise with NOVA Chemicals EOC.

TRAINING/SKILLS PROVIDED:

Knowledge of product hazards, customer impacts, pipeline facilities, emergency response plans, resources available, operating contingencies, incident command process, and CVECO code awareness.

PIPELINE EMERGENCY RESOURCE:	**NOVA Chemicals EOC Managers**

SECTION 3.5

ROLE:

Corunna Site focal point at the NOVA Chemicals Emergency Operations Centre. Responsible for facilitating the deployment of resources to the scene of pipeline emergencies as requested.

- Assists the Incident Commander with the assembly of response groups and resources to the scene.
- After the initial calls are made, EOC is assembled with EOC resource staff as needed.
- Debriefs and reports on emergency.

RESPONSIBILITIES:

- Requests notification of NEB (National Energy Board), MECP (Ministry of Environment, Conservation and Parks), TSB (Transportation Safety Board) and any other relevant Canadian regulatory agencies based on the advice of regulatory specialists.
- Request notification of PHMSA (Pipeline and Hazardous Materials Safety Administration – DOT, OPS), Michigan Department of Environmental Quality (DEQ) and Environmental Protection Agency (EPA) and any other relevant US regulatory agencies based on the advice of regulatory specialists.
- Provides continued coverage to the NOVA Chemicals Emergency Operation Centre on site.
- Addresses resource request from the NOVA Chemicals emergency organization.
- Provides regular status updates to appropriate groups and individuals within the emergency organization.
- Coordinates off-site media contact and inquiries referring them to the NOVA Chemicals EOC Manager, Communications Department, or Pipeline Team Leader
- Notifies other companies impacted.
- Ensures log of communications, times, etc. is kept at the Operations Centre.
- Arranges for continued role coverage during extended incidents.
- Provides NOVA Chemicals personnel to impacted county or municipality as appropriate and provides personnel to respond to their EOC, as requested.
- Considers use of 3rd party expert.

TRAINING/SKILLS REQUIRED:

Knowledge of the Emergency Response Plan, contacts and available resources, as well as crisis management skills and the ability to effectively communicate with all organizational levels

DEPARTMENTAL CONTACT:

Designated NOVA Chemicals EOC Manager and back-ups / Corporate Call Down

PIPELINE EMERGENCY RESOURCE:	**Regional Pipeline Integrity Coordinator**

SECTION 3.6

ROLE:

To respond to pipeline emergencies and provide technical assistance.

RESPONSIBILITIES:

- Detailed knowledge of Manufacturing East Pipeline System, including pipeline corridors (locations), product hazards, and management systems.
- Provide technical assistance with pipeline isolation if required.
- Assist in pipeline emergency record keeping and reporting as required.
- Work with other responding agencies and the NOVA Chemicals EOC as a technical advisor.
- Coordinate post incident product removal, pipeline repairs and pipeline depressurization, as required.

TRAINING/SKILLS PROVIDED:

Knowledge of pipeline operation, product hazards, pipeline layout, pipeline corridor knowledge (who shares pipeline corridors), and the Pipeline Management System.

PIPELINE EMERGENCY RESOURCE:	**Manufacturing East Pipelines Team Leader**

SECTION 3.7

ROLE:

Leadership presence at pipeline emergencies, provide technical assistance, and interface with local jurisdiction.

RESPONSIBILITIES:

- Manufacturing East leadership presence at the emergency scene.
- Media relations as required.
- Detailed knowledge of NOVA Chemicals Business Policies
- Respond to EOC or pipeline emergency scene (more likely) depending on scenario.
- Knowledge of pipeline products and hazards
- Interface with NOVA Chemicals EOC.
- Interface with Emergency Operations Centre for the Province/County/State
- Customer impact awareness

TRAINING/SKILLS PROVIDED:

Knowledge of business policies, knowledge of product and hazards, Emergency Operations Centre awareness, and incident command awareness.

PIPELINE EMERGENCY RESOURCE:	**Occupational Safety, Emergency Response and Security Coordinator**

SECTION 3.8

ROLE:

To provide training and consultation in preparation of an incident, and provide communication and coordination during an incident.

RESPONSIBILITIES:

- Provide training to internal and external agencies for Manufacturing East Pipeline system emergency response.
- Liaison between agencies and organizations, specifically through participation in CVECO.
- Consult with interested parties on developing and updating emergency response processes.
- Work with other responding agencies and the NOVA Chemicals EOC as a subject matter expert and emergency response advisor.

TRAINING/SKILLS PROVIDED:

Subject matter expert in product hazards, emergency response, and emergency communication.

PIPELINE EMERGENCY RESOURCE:	**Pipeline Regulatory Specialist**

SECTION 3.9

ROLE:

Knowledge of pipeline regulatory reporting requirements. Knowledge of regulatory organizational contacts.

RESPONSIBILITIES:

- Report pipeline emergency to applicable regulatory agency as determined by Pipeline Management System procedures or as requested by the NOVA Chemicals EOC.
- Provide pipeline regulatory guidance and consistency to the NOVA Chemicals EOC, Pipeline Team Leader, or Regional Pipeline Integrity Coordinator.

TRAINING/SKILLS PROVIDED:

Regulatory jurisdiction knowledge, Manufacturing East Pipeline Management System knowledge, regulatory contacts, and knowledge of 3rd party regulatory experts, both internal and external.

PIPELINE EMERGENCY RESOURCE:	**LamSar, Inc. First Responder**

SECTION 3.10

ROLE:

To respond to Material Flow pipeline emergencies for NOVA Chemicals products in St. Clair, Michigan, U.S.A. The LamSar, Inc. representative for NOVA Chemicals is a First Responder for incidents occurring in the US.

RESPONSIBILITIES:

- Knowledge of products shipped to the St. Clair, Michigan area: MSDS Data Sheets will be provided for Ethane, Brine, NGL(s).
- Respond to requests from the Material Flow Control Room Technician.
- Observe pipeline emergency location, from a safe distance.
- Verify and evaluate the nature of the pipeline emergency.
- To discuss isolation of pipeline with Material Flow Control Room Technician, if required.
- Establish/maintain contact with Regional Pipeline Integrity Coordinator, Material Flow Foreman, and/or NOVA Chemicals Incident Commander
- Work with local officials to assist in taking steps to protect people, environment and property.
- Work with responding agencies in incident management
- Remain at the emergency scene until NOVA Chemicals representative arrives, then provide support to the NOVA Chemicals representative.

TRAINING/SKILLS PROVIDED:

Knowledge of product, hazards, pipeline facilities, environmental and emergency requirements and pipeline emergency procedures.

3.11 PROCEDURES FOR FIELD LOCATION OF A PIPELINE LEAK

Before travelling to a suspected leak site, ensure that you have a reliable method of communication (radio and/or cellular telephone) and a Pipeline Emergency Response Manual.

1. Know where you are at all times and update the Corunna Emergency Operations Centre (EOC) periodically. (Update timing to be determined by EOC manager.) Note: First Responder will maintain contact with the NOVA Chemicals Incident Commander.
2. Ensure that you are a safe distance from the pipeline at all times – 1 km (0.6 mi) or more, as wind may be blowing a vapour cloud towards you. If required, approach from upwind.

3. A major leak will produce significant noise, which may be heard 1 km to 3 km (0.6 to 1.86 mi) away. Stop the vehicle, roll down the window at 1 km (0.6 mi) intervals and listen for escaping gas noise.

4. A large high vapour pressure (HVP) leak will produce a visible vapour cloud. This vapour cloud may reach up to downwind 1.1 km (0.6 mi) and may not be visible to the outer extremity of the explosive limit. The lower flash point products will have vapour clouds that may reach up to 300 m (328 yds.). Vapours may be toxic requiring self-contained breathing apparatus.

5. When a leak location is confirmed, relay all information back to the NOVA Chemicals Incident Commander/EOC and restrict travel into the area where possible until municipal services arrive. Request CVECO CODE 5 to be activated (and if required, CODE 6).

FIRST RESPONDER ACTIONS:

The Material Flow Technician and Foreman will respond to the emergency scene and verify the magnitude of the emergency.

Regardless of the magnitude of the emergency, the priorities for any NOVA responder remain the same:

1. Life Safety
2. Incident Stabilization
3. Environment and Property Protection

Public and personnel safety is the foremost priority for the Incident Commander. Most emergency situations will involve provincial and municipal governments as well as local disaster service agencies. Emergencies within the Chemical Valley will involve CVECO. It is of utmost importance that the Incident Commander interact and cooperate with these agencies in the field.

ON-SCENE COMMAND POST RESPONSIBILITIES:

In order to effectively manage an emergency, an On-Scene Command Post needs to be established. The following is a list of responsibilities that will be assumed by the On-Scene Command post for all emergencies.

1. Confirm level of emergency
2. Secure access to emergency area (CVECO Code 6 activation).
3. Recommend evacuations as required.
4. Communicate and liaise with NOVA Chemicals EOC Manager.
5. Take action to minimize the impact of the release. The following must be done:
   - Eliminate all ignition sources in immediate area.
   - Ground all equipment used for handling the product.
   - Prevent entry into waterways, sewers or confined spaces.
   - Stop leak if you can do it without risk.
   - Use a vapour suppressing foam to reduce vapours.
   - Absorb or cover with dry earth, sand or other material and transfer to containers.
   - Use non-sparking tools to collect absorbed material.
   - Dyke for large spills.
6. Ensure a log is maintained (include names, times; use tape recorder if available).
7. Work cooperatively with the emergency response organizations.
8. Ensure a media representative is designated at the site.
9. Monitor impacts of release as it relates to environment and personal safety.
10. On-Scene Commander is usually a public official or CVECO Rep.
11. The magnitude of the emergency will determine the resources required at the scene. Additional resources are available if needed through the NOVA Chemicals EOC Manager.

3.12 SPECIFIC ACTIONS – HVP PRODUCT PIPELINES

HVP product pipelines present hazards that warrant more specific response actions at the scene. With regard to the list of responsibilities, the On Scene Command Post must:

- Secure access to emergency area. NOVA Chemicals pipeline emergency guidelines are to secure a minimum area of at least 1.1 km (0.6 mi) in all directions from a leak site if a vapour cloud exists. Further evaluation to extend beyond 1 km (0.6 mi) will be made by the NOVA Chemicals representative on scene.

- Take actions to minimize the impact of the release. The following must be considered:

  1. Ignition of vapour cloud – all responders must be familiar with the guideline for ignition of vapour clouds (Section 5, Appendix 2).
  2. Use nitrogen to push HVP product past the leak point to a monitored flare system or a storage cavern.

- Recommend evacuations as required.

- Work co-operatively with other emergency response organizations. Most provincial/state, government and local emergency response agencies may not be familiar with products. The NOVA Chemicals representative must communicate and co-operate with these agencies to ensure safe, appropriate and timely response to the emergency

- A NOVA Chemicals EOC representative trained in media relations will be called to act as a media representative at the scene. A leak on an HVP product line may take several hours before the situation becomes safe and repair can be considered. The media will appear at the scene and must be managed. A media centre could be set up with regular update meetings. This may be co-ordinated through other responding agencies.

3.13 SPECIFIC ACTIONS – FLAMMABLE AND COMBUSTIBLE LIQUIDS

All products produce hazardous vapours, which are ignitable from a distance with possible flashback. Personal protective equipment is required in all cases. These liquids also float on water, which increases the potential to travel distances and/or spread fires.

- Secure access to emergency area. NOVA Chemicals pipeline emergency guidelines are to secure a minimum area of 300 m (328 yards) in all directions from a leak site. If there is a fire, consider isolating and evacuating for 800 m in all directions.

- Take actions to minimize the impact of the release. The following must be considered:
  1. Use nitrogen to push product past the leak point to a monitored flare system.
  2. Dyke to prevent runoff to open waterways or storm sewers.

- Recommend evacuations as required.

- Work co-operatively with other emergency response organizations. Most provincial/state, government and local emergency response agencies may not be familiar with products. The NOVA Chemicals representative must communicate and co-operate with these agencies to ensure safe, appropriate and timely response to the emergency.

- A NOVA Chemicals EOC representative trained in media relations will be called to act as a media representative at the scene. A leak on an HVP product line may take several hours before the situation becomes safe and repair can be considered. The media will appear at the scene and must be managed. A media centre could be set up with regular update meetings. This may be co-ordinated through other responding agencies.

3.14 NOVA CHEMICALS EMERGENCY OPERATIONS CENTRE ACTIVITIES

The priorities of the NOVA Chemicals EOC are as follows:

1. Decision on notification of government agencies
2. Support the on scene NOVA Chemicals Representative
3. Notify corporate contacts
4. Maintain log

Local and provincial/state/federal government agencies include:

- Local – CVECO
- National Energy Board (NEB) and Transportation Safety Board (TSB)
- Ontario Energy Board (OEB) and Technical Standards and Safety Authority (TSSA)
- Ministry of Environment, Conservation and Parks (MECP)
- US agencies (DOT/PHMSA, Michigan DEQ and EPA)

Government agencies may be involved in field activities for the large emergencies.

Support to the on scene NOVA Chemicals representative involves:

- Acquiring needed manpower or ER equipment
- Involving outside contractors (i.e. N_2 contractor) if requested
- Providing relief for on scene NOVA Chemicals representative
- Supplying meals, shelter, etc.
- Being involved in decisions with respect to evacuation or ignition
- Maintaining contact with the government EOC
- Provide appropriate environmental/personal monitoring equipment.
- If required, the corporate crisis management team can be activated.

3.15 PERT RACI CHART

See attached RACI Chart

R Responsible – the doer

A Accountable – the owner

C Consult – consult before decisions

I Inform – keep in the loop

PERT RACI

EMERGENCY RESPONSE PROCESS HIGH LEVEL STEP	ACTIVITIES	PIPELINE TEAM LEADER	INCIDENT COMMANDER / LAMSAR, INC.	SECURITY	EMERGENCY OPERATIONS CENTRE MANAGER	AUTHORITIES	SITE EMERGENCY PLANNING COORDINATOR	RESOURCE (External & Internal including Pipelines)	FIRST RESPONDER OP. FOREMAN
Assess Situation CVECO Code Activation	Receive phone call and respond to scene		**AR**						**AR**
Mobilize First Response Teams	Make decision to allocate resources to respond to emergency (mobilize response team)	**I**	**A**		**R**				**R**
	Arrange travel to/from scene		**C**		**AR**			**C**	
Activate NOVA Chemicals Emergency Operations Centre	Contact NOVA Chemicals EOC Manager			**AR**					
Activate NOVA Chemicals Emergency Operations Centre	Establish communications between scene, NOVA Chemicals Emergency Operations Centre (EOC) and Resources/Incident Commander	**C**	**C**		**AR**			**C**	**R**
Notify and Report Internal/External	Internal and external notification				**AR**	**I**		**I**	
	Notify regulatory authorities (see PERT section 2)		**C**		**AR**			**I**	
Implement Response Strategies	Conduct initial assessment at scene	**I**	**AR**		**I**			**C**	**AR**
	Establish NOVA Chemicals Safe Work Plans (Employees and Contractors)	**C**	**AR**		**C**	**C**		**C**	
	Provide advice on material properties and hazards	**C**	**AR**		**C**			**C**	**AR**
	Provide technical advice and support	**C**	**AR**		**C**			**I**	
	Provide record keeping, logs, photo, and reports of people and activity at scene		**AR**		**R**			**R**	**AR**

PERT RACI

EMERGENCY RESPONSE PROCESS HIGH LEVEL STEP	ACTIVITIES	PIPELINE TEAM LEADER	INCIDENT COMMANDER / LAMSAR, INC.	SECURITY	EMERGENCY OPERATIONS CENTRE MANAGER	AUTHORITIES	SITE EMERGENCY PLANNING COORDINATOR	RESOURCE (External & Internal including Pipelines)	FIRST RESPONDER OP. FOREMAN
	Ensure adequate exposure monitoring is in place to protect society		**AR**		**C**	**C**		**C**	
	Assist and provide recommendations with respect to on-scene activities (control measures) to authorities in charge of the incident		**AR**		**C**	**C**		**C**	
	Make decision on critical issues		**R**		**A**	**C**		**C**	
	Interface with media at the scene if required	**RC**	**C**		**AR**	**C**		**C**	
Implement Remedial Strategies	Area clean up (short term)	**C**	**AR**		**C**	**C**		**C**	
	Initiate Repair Plan	**AR**	**C**		**I**			**C**	
	Determine requirements for community dislocation assistance		**C**		**C**	**AR**		**C**	
	Decide all clear and demobilize emergency response (NOVA Chemicals resources)		**R**		**A**	**C**		**I**	
Debrief Emergency Response	Conducts debrief of emergency response	**C**	**C**	**C**	**AR**	**C**	**R**	**C**	
	Report on Emergency Response performance of contractors and resources	**AR**	**C**		**I**		**I**	**I**	
	Issue final report	**AR**	**C**		**C**	**I**	**C**	**C**	
Training	Identify training requirements	**AR**	**I**		**I**		**C**		**I**
	Complete training	**AR**	**R**		**R**				**R**

3.16 GOVERNMENT AGENCY SUPPORT

This section outlines the services that the various departments, boards and agencies can provide during a pipeline release in Canada.

NATIONAL ENERGY BOARD (NEB)

As the lead federal regulatory agency for all incidents that occur on NEB-regulated facilities or activities, the NEB:

- Holds the company responsible for responding appropriately by monitoring, observing and assessing the overall effectiveness of the company's emergency response.
- Participates in single or unified command and other roles within the ICS framework (or similar framework if ICS is not used).
- Investigates the event, either in cooperation with the Transportation Safety Board of Canada, under the Canada Labour Code, or as per the National Energy Board Act or Canada Oil & Gas Operations Acts (whichever is applicable).
- Inspects the pipeline or facility.
- Examines the integrity of the pipeline or facility.
- Requires that appropriate repair methods are being used.
- Requires that an appropriate environmental remediation of contaminated areas is conducted.
- Coordinates stakeholder and First Nations feedback regarding environmental clean-up and remediation through an integrated approach both during and after the emergency phase.
- Confirms that a company is following its Emergency Procedures Manual commitments, plans, procedures and NEB regulations, and identifies non-compliances.
- Initiates enforcement actions as required.
- Coordinates post-incident follow-up meetings with the company to further enforce compliance and to share knowledge obtained during the emergency.
- Approves the restart of the pipeline.

Where the TSB does not investigate, the NEB, as the lead investigator:

- enforces the preservation of failed materials for investigation;
- observes the site, equipment, protective systems and wreckage;
- interviews witnesses and company personnel;
- collects pertinent information;
- reviews documentation;
- requires operational safety prior to a facility being returned to service;
- determines the cause and contributing factors;
- enforces compliance to regulations and company commitments;
- determines whether existing regulations, codes or enforcement and monitoring programs should be changed; and
- recommends appropriate enforcement actions.

The NEB also determines whether additional remedial measures should be implemented by the company involved in the incident, or by all NEB-regulated companies, in order to prevent a similar incident.

TRANSPORTATION SAFETY BOARD

TSB MANDATE

To advance transportation safety in the marine, pipeline, rail and air modes of transportation by

- conducting independent investigations, including public inquiries when necessary, into selected transportation occurrences in order to make findings as to their causes and contributing factors;
- identifying safety deficiencies as evidenced by transportation occurrences;
- making recommendations designed to eliminate or reduce any such safety deficiencies; and
- reporting publicly on our investigations and on the findings in relation thereto.

The TSB may investigate an incident that occurs on an NEB-regulated pipeline. For these incidents, the TSB is the sole agency that determines the cause and contributing factors leading to the incident. During these investigations, the NEB conducts a concurrent and co-operative investigation to determine factors relating to regulatory compliance, trends within industry, and actions necessary to prevent similar occurrences.

ONTARIO ENERGY BOARD (OEB); TECHNICAL STANDARDS SAFETY AUTHORITY (TSSA)

OEB

- Regulatory responsibility for pipeline systems located entirely within the province.

TSSA

- Technical Standards and Safety Authority (TSSA) mandate's administers compliance with all related regulatory requirements of OEB pipelines including the design, operation, maintenance, safety, and integrity requirements.
- Reporting and regulating body for pipeline occurrences.
- Deliver public safety services in an effective and efficient way.
- Responsible for regulating fuels safely in Ontario under the Provincial Energy Act and Gasoline Handling Act.

ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

An Environmental Officer will:

- document the information and actions taken
- assess the environmental and health impacts based on gathered information
- ensure responsible parties respond to spill events as per their legislative responsibility
- track and follow up on required clean-up activities
- provide advice and information related to spills or environmental incidents
- coordinate a response with other agencies, if needed
- initiate government response when required

MUNICIPALITY

- Arrange for temporary accommodation and food facilities.
- Arrange fixed, mobile and portable emergency communications capabilities.
- Assess the municipal fire hazard in the area of the emergency.
- Dispatch representative to affected municipality if required.
- Alert all affected Government departments and municipalities.
- Activate the municipal and county Emergency Operations Centre if required.
- Assist with community notifications.

POLICE (ONTARIO PROVINCIAL / SARNIA)

- Provide traffic control and scene security.
- Assist in implementation of evacuation and re-entry arrangements.
- Set up initial road closures.
- Ensure “Incident Command” set up.
- Determine detour routes.

LAMBTON PUBLIC HEALTH

- Advise the municipality and public on the appropriate remedial health measures to be undertaken.
- Advise the municipality and public on the existing and potential health effects of the incident.

MINISTRY OF LABOUR (OCCUPATIONAL HEALTH AND SAFETY)

- Notified to investigate fatalities or critical injuries that occur on provincially regulated pipelines.

FEDERAL LABOUR AFFAIRS (HEALTH AND SAFETY OFFICER UNDER THE EMPLOYMENT AND SOCIAL DEVELOPMENT CANADA PORTFOLIO)

- Notified to investigate fatalities or critical injuries that occur on NEB-regulated pipelines.

MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS

- Assess impacts of High Vapour Pressure (HVP / LVP) product release on agricultural resources.

This section outlines the services that the various departments, boards and agencies of the government can provide during a pipeline release in the US.

PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA) — PART OF THE DOT

PHMSA's job is to protect people and the environment from pipeline failures by:

- Analyzing pipeline safety and accident data.
- Evaluating which safety standards need improvement and where new rulemakings are needed.
- Setting and enforcing regulations and standards for the design, construction, operation, maintenance or abandonment of pipelines by pipeline companies.
- Educating operators, states and communities on how to keep pipelines safe.
- Facilitating research & development into better pipeline technologies.
- Training state and federal pipeline inspectors.
- Administering grants to states and localities for pipeline inspections, damage prevention and emergency response.

NATIONAL TRANSPORTATION SAFETY BOARD (NTSB)

- Investigates every civil aviation accident the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline.
- Determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents.
- Carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

NATIONAL RESPONSE CENTER (NRC)

- The federal government's national communications center, which is staffed 24 hours a day by U.S. Coast Guard officers.
- The designated federal point of contact for reporting all hazardous substances releases and oil spills.
- Receives all reports of releases involving hazardous substances and oil that trigger federal notification requirements under several laws.
- Reports to the NRC activate the National Contingency Plan and the federal government's response capabilities. It is the responsibility of the NRC staff to notify the pre-designated On-Scene Coordinator assigned to the area of the incident and to collect available information on the size and nature of the release, the facility or vessel involved, and the party(ies) responsible for the release. The NRC maintains reports of all releases and spills in a national database.

POLICE/FIRE (MARYSVILLE, MICHIGAN)

- Provide traffic control and security.
- Assist in implementation of evacuation and re-entry arrangements.
- Set up initial road closures.
- Ensure “Incident Command” set up.
- Determine detour routes.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

- Provide support when requested or when state and local first responder capabilities have been exceeded
- Conduct removal actions to protect human health and the environment.
- Oversee and enforce actions conducted by potentially responsible parties by On-Scene Coordinators (OSCs), including:
  - Assessment
  - Monitoring
  - Response Assistance
  - Evaluation

STATE EMERGENCY RESPONSE COMMISSION (SERC)

- Designates emergency planning districts to facilitate preparation and implementation of emergency response plans.
- Appoints members to Local Emergency Planning Committees within each emergency planning district.
- Supervises and coordinates the activities of Local Emergency Planning Committees.
- Designates an official to serve as coordinator for information.
- Receives and processes requests from the public regarding emergency response plans, Material Safety Data Sheets (MSDS), inventory forms, and toxic chemical release forms and emergency release notices.
- Reviews and makes recommendations on emergency response plans submitted by LEPCs.

ST CLAIR COUNTY CENTRAL DISPATCH CENTER (SCCDC)

NOVA must notify the St Clair County Central Dispatch Center (810-985-8115), immediately following the incident. Notification of the St Clair County Office of Homeland Security/Emergency Management (LEPC) occurs through the Central Dispatch Center.

LOCAL EMERGENCY PLANNING COMMITTEES (LEPC)

- Develops an emergency response plan, reviews the plan at least annually, and provides information about chemicals in the community to citizens. Plans are developed by LEPCs with stakeholder participation. The LEPC membership must include (at a minimum):
  - Elected state and local officials
  - Police, fire, civil defense, and public health professionals
  - Environment, transportation, and hospital officials
  - Facility representatives
  - Representatives from community groups and the media

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)

- Receives information about environmental incidents through the Pollution Emergency Alerting System (PEAS)
- Provides technical advice to first responders and responsible parties on actions they can take to minimize environmental damage.
- Monitors, observes and assesses the overall effectiveness of the company's emergency response
- Investigates the event

POLLUTION EMERGENCY ALERTING SYSTEM (PEAS)

- Receives information about environmental incidents into the DEQ, via the hotline 1-800-292-4706
- Distributes that information to appropriate staff internally, as well as to contacts in partner agencies, such as Michigan Department of Agriculture and Rural Development (MDARD), Michigan Department of Transportation (MDOT), Michigan State Police (MSP), and Michigan Department of Human Services (MDCH), etc.

OFFICE OF WASTE MANAGEMENT AND RADIOLOGICAL PROTECTION (OWMRP)

- The Radioactive Materials Program (517-284-5185) is responsible for naturally occurring radioactive material found in the oil, gas, brine, chemical, and water treatment industries subject to state control under the authority of the Public Health Code - Part 135 of 1978 PA 368, as amended. Michigan's Ionizing Radiation Rules contain the applicable regulatory requirements for protection of health, safety, and the environment.
- Unit staff also respond to incidents and emergencies involving radioactive materials and work with other state and federal agencies on the identification and remediation of contaminated sites and in the safe management of radioactive wastes.

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS (LARA)

Regulator who oversees the Bureau of Fire Services and Michigan Occupational Health and Safety Administration

BUREAU OF FIRE SERVICES (BFS)

- Incidents such as a fire, explosion, spill, leak, accident or related occurrence involving the transportation, storage, handling, sale, use or processing of hazardous material(s) by a firm, person or vehicle shall be reported immediately to the Bureau of Fire Services (BFS) via email to lara-ust-ast@michigan.gov and the Department of Environmental Quality's Pollution Emergency Alerting System (PEAS) at 1-800-292-4706.
- Works with the organized local fire department in which the incident occurred to determine the appropriate emergency measures to be taken.
- Notifies all responsible parties of the incident including federal, state and local authorities and agencies as well as the owner of the firm or vehicle involved in the incident if notification was made by any person other than the owner.
- Conducts investigation to determine the cause and contributing factors of the incident. Following the inspection, findings will be documented and kept on record at BFS.

MIOSHA (MICHIGAN OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION)

- Ensure the safety of personnel against risks at the on-site activity.
- Notified when there is a hospitalization or fatality.

AGRICULTURE

- Assess impacts of High Vapour Pressure (HVP / LVP) product release on agricultural resources.

3.17 MUTUAL AID

CHEMICAL VALLEY EMERGENCY CO-ORDINATING ORGANIZATION – CVECO

Mutual aid support through Industry and Municipal Services

PIPELINE EMERGENCY NOTIFICATION AND ASSISTANCE

LEVEL I: CVECO CODE 8 (Notification of emergency being handled internally)

LEVEL II OR III: MAY REQUIRE SEVERAL CVECO ASSISTANCE CODES INITIATED (5/6/9/91/92/10/10-1)

The function of Chemical Valley Emergency Co-ordinating Organization (CVECO) is to provide mutual aid to the members in case of an emergency beyond the resources of any one company.

In the case of Corunna Operations requesting the CVECO Mobile Command Post to respond to an incident, the Emergency Response Advisor or alternate will co-ordinate and assist the personnel manning the Mobile Command Post.

The Corunna Operations plant borders on Petrolia Line and Highway 40. One or both of these could be subject to closure in case of an emergency. Any person, including our own people, would be stopped by the police. Plant personnel identification (I.D.) cards serve as passes to allow employees of a company which has been cordoned off, to pass through to give assistance to their own plant emergencies. I.D. cards must be carried at all times by anyone who may be called in.

A CVECO Emergency Pass, issued by the Emergency Response Advisor, is distributed for CVECO members from any one plant who provide mutual aid to other plants.

The following are CVECO codes followed at Corunna Site:

Code 5 An incident outside of industry potentially requiring CVECO assistance.

Code 6 Traffic control is required in designated areas. A site has experienced an event which is having or may have an impact on the surrounding community.
(Evacuation or shelter-in-place for the community may also be necessary.)

Code 7 Bomb Threat

Code 8 A member site has experienced an unanticipated emergency event which may be noticeable to the surrounding community but will not adversely impact on it. CVECO will take no action under this code. (Must be activated immediately once site emergency alarm initiated).

Code 9 Request for municipal fire department (building fire, heavy smoke, building rescue resulting from fire or heavy smoke).

Code 91 Request for specific CVECO industry member.

Code 92 Request for all CVECO members with response capability.

Code 10 Spill to waterway that has a **potential** to reach Lake Huron or St. Clair River

Code 10-1 **Verified** spill to Lake Huron or St. Clair River

Additional information on the CVECO agreement can be found in the CVECO Manual. The fact that this manual is in place, maintained and updated by the membership ensures this Mutual Aid Agreement is in place with participating members.

4.1 COMMUNICATIONS

The Corunna Site is committed to operating the business at the highest achievable standards to protect the health and safety of workers, the public and environment.

- The safe operation of our Corunna Site Material Flow Pipelines is integral to our business. The ability to respond to pipeline emergencies is also integral to NOVA Chemicals' business planning. Emergency response ensures a timely and appropriate response to external pipeline emergencies and compliance with applicable laws (domestic and/or international) and industry and legal codes of practice.

- In the event of a pipeline emergency, communication to the public will be initiated through the CVECO Code Notification Process.

- Communication to the public of impending changes, e.g. evacuations, all clear will be managed by the local jurisdictional authorities (Police/Fire).

- Communication to NOVA Chemicals employees and the public will be the responsibility of the NOVA Chemicals Emergency Operations Center (EOC). The EOC Public Information Officer has procedures on communication protocols (internally and externally).

- Communications to NOVA Chemicals Corporate Crisis Management Group is the responsibility of the EOC Manager/delegate.

- Communication networks between the EOC and Incident Commander and between the Incident Commander and County Incident Commander are the responsibility of the Incident Commander. The Incident Commander will ensure communication lines are clearly established. Communications between NOVA Chemicals EOC and the County EOC are the responsibility of the NOVA Chemicals EOC Manager.

- Consultation process includes the public, first responders, industry partners, and other interested parties.
  - Annual PERT revision and distribution with feedback opportunity.
  - Annual internal drill program, including learnings, review and updates as appropriate.
  - Quarterly CVECO pipeline sub-committee participation, tabling industry and public concerns.
  - Annual participation in mutual aid response exercise (Sarnia Area Disaster Simulation (SADS) exercise).
  - Annual participation in CAER Emergency Preparedness Day – providing the public with an opportunity to meet with emergency personnel and discuss preparedness strategies.

4.2 COMMUNICATION TOOLS

Pipeline Emergency Response requires extensive use of mobile and static communication systems. This section describes the alternate and complementary systems currently employed by NOVA Chemicals.

- 1-800-278-0584 on signs in Michigan ring into 519-862-2002 Material Flow Pipeline Control Room
- 1-519-862-2002 on signs in Sarnia area ring into Material Flow Pipeline Control Room
- Cellular Telephones
- Pagers
- Radios
- CVECO notification system
- Near neighbour communications via the communicator
- EOC activation via the communicator
- NOVA Corunna, Moore and St. Clair sites emergency alarm paging systems

St. Clair Township has the NOVA Chemicals' emergency radio channel available in their command center.

4.3 POST-EMERGENCY COMMUNICATIONS

Once the emergency is over, there are a number of follow-up activities that should be considered, e.g. communication to the public, communication to regulatory bodies not yet contacted who have jurisdiction, emergency debriefing, area restoration, CVECO updates, site updates, etc.

4.4 RESPONDER DEBRIEFING

Immediately after the emergency, the Pipeline Team Leader will review and evaluate the response with the personnel involved. This review will focus on improvements to the response procedures and equipment used as well as the effectiveness of the lines of communication. The review should include response agencies or other industry personnel who assisted with the emergency.

4.5 PUBLIC INFORMATION / COMMUNITY AWARENESS

When the public is impacted, they will be briefed by the Public Information Coordinator as soon after the emergency as possible, to answer any questions or concerns. Of prime concern will be the actions that the operator is taking to ensure another incident does not happen again. It is important to update the public immediately after the emergency to identify their concerns and to assure them that their questions will be answered once a proper evaluation of the incident has been completed.

4.6 INCIDENT INVESTIGATION

The Pipeline Team Leader will establish timing to complete the incident investigation on the Responsible Care Learning System (RCLS). The incident investigation process will identify the root cause of the event as well as identify measures to prevent recurrence.

4.7 AFTER A LEVEL II OR III EMERGENCY, A NUMBER OF ITEMS WILL BE CONSIDERED:

- Status updates, as mentioned above.
- Critical incident stress debriefing of the Operations personnel and for members of the public that may have been significantly impacted by the emergency.
- Establishing an information center within the community where the emergency occurred to answer any questions posed by the public.
- Establishing a means of compensating the public who may have had out-of-pocket expenses (such as lodging and meal costs and the like) as a result of the emergency.
- Through the media, providing details of the investigation into the incident that may be pertinent to the public as they become available.

4.8 CRITICAL INCIDENT STRESS DEBRIEFING

The EOC Coordinator is responsible for evaluating the need and initiating Critical Stress Debriefing. This will be done through the Site Employee and Family Assistance Program (EFAP) and/or local emergency services.

Resources to assist with Critical Incident Stress Management can be obtained at:

Corunna Site EFAP telephone number is available to NOVA Chemicals employees but is not published in the public domain for privacy reasons.

4.9 EMERGENCY RESPONSE ACTIVITY DEBRIEF

Purpose:

The emergency response debrief is used to evaluate the incident looking for areas that 'went well' as well as areas for improvement. Debriefs should be done as soon after the incident as possible. The debrief should include all the responders so as to get a total response review. Refer to SER10008A EOC Debrief / After Action Review in the MEERS manual for the debrief procedure template.

Feedback and comments received from the emergency response activity debrief that necessitate an update to the PERT Manual will be incorporated as appropriate.

NOVA Chemicals

FIELD RESPONSE HOT-WASH / AFTER ACTION REVIEW

Facilitator: _____ Date: _____ Type: ☐ Incident ☐ Exercise

1) What was planned? (Incident Objectives & Strategies)

2) What actually happened? (Tactics)

3) What worked well and why? (Assignments, Resources & Safety)

4) What can be improved and how?

NOVA Chemicals

EOC DEBRIEF / AFTER ACTION REVIEW

Facilitator: _____ Date: _____ Type: ☐ Incident ☐ Exercise

QUESTIONS / CONSIDERATIONS	YES	NO	COMMENTS
1. Were the necessary resources available?			
2. Was there adequate support information / data?			
3. Were the roles and responsibilities clearly defined?			
4. Was communication effective?			
5. Was there adequate control of the site/scene?			
6. Were we adequately prepared? (training, resources, etc.)			
7. Were procedures/plans adequate, known, understood, followed?			

8. What worked well?

9. What can be improved, and how?

10. Lessons Learned:

11. Corrective Action Plan

#	Corrective Action Item	Responsible Person	Target Date
1			
2			
3			
4			
5			

5.1 ACTIVATION OF EMERGENCY PLAN

The plan may be initiated as a result of:

- Low pressure alarm activated on any of the high vapor pressure or low pressure pipelines.
- Any unplanned loss of process containment on a pipeline.
- Phone call to the Material Flow Control Room Technician from the public, police, fire authorities or other industrial company representative in the Chemical Valley.
- Phone call from a NOVA Chemicals contract first responder (e.g., LamSar, Inc.)

The Material Flow technician would refer to the attached Isolation Valve closing policy (Appendix 1) for direction, if required.

Note that third-party threats are handled through NOVA Chemicals Security and Emergency Response. If a threat to a pipeline or compound were received, the threat management protocol found in the Security Management Program would be put in place.

5.2 GUIDELINES

Material Flow Response to Pipeline Leak

Step 1 Record details of leak
- location
- leak type vapor/liquid
- caller's name/return phone number, etc.

Step 2 Immediately notify Shift Supervisor (NOVA Chemicals Incident Commander).

Step 3 Notify customers for potential of shutting down pipeline.

Step 4 Immediately dispatch Technician and Foreman to area of leak to verify product (may not be our pipeline). In US, dispatch LamSar, Inc. representative to the emergency location

Step 5 Determine Level of Emergency (section 2.3)

Step 6 If warranted, EOC to be activated (follow criteria in tables in section 2).

Step 7 Confirm leak. Pipeline Control Room Technician closes isolation valves (as appropriate). Consider air monitoring to address direct and incidental damage.

Step 8 Pipeline shut down, depressurized product contained and controlled as per Spill Prevention and Countermeasures Plan. Water management should be addressed as appropriate. For spill control points, see SEM00032: Emergency Monitoring Water Sampling Procedure.

5.2 GUIDELINES (cont'd.)

Step 9 Pipeline secured and all clear initiated. Note: Only the Police or Fire Chief can initiate an All Clear in the community.

Step 10 Take steps to ensure the preservation of evidence to allow for root cause analysis. Refer to Ministry of Labour Notice of Critical Injury or Fatality section of MEERS manual Section 5.

Step 11 Repair plan developed, approved and initiated.

Step 12 Pipeline operation restored.

Step 13 Complete cleanup of area.

Note: See Section 2.3 Levels of Emergency

5.3 EMERGENCIES CAUSED BY 3RD PARTY DAMAGE

Emergency plans cannot identify all potential causes of an emergency on the pipeline system. These, however, are the greatest risk to underground infrastructure.

POTENTIAL CAUSES:

- Third-party companies excavating close to existing pipeline, for another pipeline, cable or road, installation, etc.
- Residents along the pipeline right-of-way (R.O.W.) installing fences.
- Seismic work.
- Farmers deep tilling in fields.

5.4 EVACUATION PLANNING

As previously mentioned, public safety is the top priority when managing a pipeline emergency. This should be addressed with two approaches:

NOVA Chemicals expects local authorities to provide emergency scene securing and evacuations.

1. Emergency scene securing:
   - Roadblocks, Incident Command base established, CVECO called, etc.

2. Evacuations:
   - Immediate evacuations – residents that are in immediate danger. These would occur in a Level II or III emergency only.
   - Subsequent evacuations – residents that could be in danger should the situation worsen such as shift in wind or ignition.

5.5 DISCIPLINED APPROACH TO EMERGENCY RESPONSE (DA2ER)

The DA2ER in Annex G (informative only) in CSA-Z731-03: *Emergency Preparedness and Response* may be used to determine appropriate protective and corrective strategies.

APPENDIX I ISOLATION VALVE CLOSING

PURPOSE

The purpose of this policy is to provide the Material Flow Technicians with a guideline on when to close pipeline isolation valves in emergency situations. The technicians must in all emergency situations use their experience and discretion. Management understands that the decision to close an isolation valve carries enormous impact and this document confirms that management gives the decision to the technician, and will support this decision. Management commits to providing the necessary training, simulations, drill etc. to ensure that technicians are competent on pipeline operation.

POLICY

Corunna Site management supports and recommends the closing of appropriate isolation valves in the following situations:

1. When a leak call is confirmed by any NOVA Chemicals Material Flow Technician or Foreman.

2. When a leak call is received from a recognized public authority such as:
   - Police / Fire Chief 911 / CVECO Code 6 (Traffic Control)
   - Municipal or County public works

   This call must be verified with a return phone call to a phone number identified in the Pipeline Emergency Response Manual or MEERS contact list.

3. When a leak call is received from an industrial company representative in the Chemical Valley and verified by NOVA Chemicals Material Flow personnel.

4. When a leak is called in by someone in the public and verified by NOVA Chemicals Material Flow personnel.

The Material Flow technician must follow the appropriate operating procedure, notifying customers of the situation.

APPENDIX 2 VAPOUR CLOUD IGNITION PROCEDURE

When responding to a pipeline emergency, the Incident Commander must take measures to minimize the impacts of the emergency. One action that needs to be considered is igniting the vapour cloud.

It is the responsibility of the Incident Commander (NOVA Chemicals or municipality, depending on who has jurisdiction) to evaluate the merits of igniting the vapour cloud. For emergencies at NOVA Chemicals sites, the NOVA Chemicals EOC Manager makes the decision regarding ignition.

SITUATIONS WHERE THE VAPOUR CLOUD WILL NOT BE IGNITED:

- Potential for injury and death to the public located inside and outside residences.
- Inability to control the resulting fire, especially with ripened crops or permanent, flammable structures.
- The expectation that wind speed will increase and reduce the size of the flammable cloud, making ignition more attractive at a later time.
- Potential for employees or the public to inadvertently enter the cloud prior to or during the ignition.
- Heavily wooded areas, which may cause transition to detonation.

THE FOLLOWING MUST BE CONSIDERED BEFORE IGNITION CAN TAKE PLACE:

- Has the perimeter of the danger zone been secured with roadblocks?
- Have all personnel been evacuated from the area?
- Has the wind direction been established and is it being monitored?
- Is fire control equipment ordered and/or available at the site?
- Is personal protective equipment available?
- Have the proper authorities been notified and involved where appropriate?
- Are contingency plans in place to deal with the effects of ignition?
- Are all facilities, equipment, supplies, medical response mobilized to look after the people?
- Is there a safe retreat from the fire area?
- Is there protection from the initial blast by distance (300m) or cover?
- Will the ignition take place crosswind from the cloud?
- What time of day is it?

Ignition is an option that must be considered in the field in an emergency situation. Safety of first responders must not be compromised when considering this option.

APPENDIX 3 INCIDENT MANAGEMENT SYSTEMS (IMS)

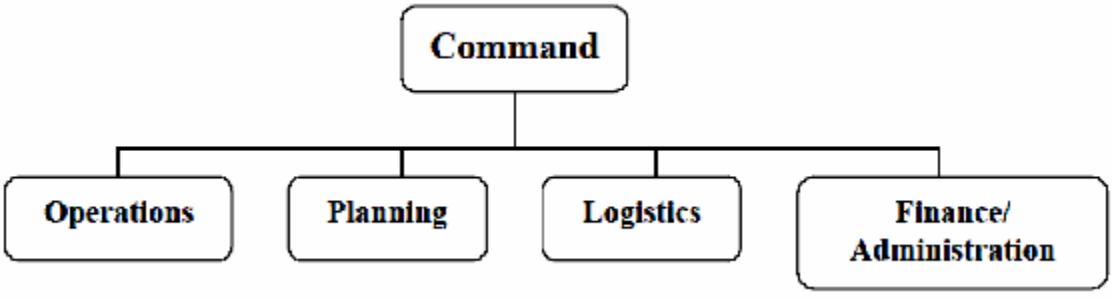
Manufacturing East has adopted Ontario's Incident Command System (ICS) platform and structure, which is modular and scalable, having the ability to expand and contract with the size or complexity of the incident. Further information about Ontario's IMS is available through Emergency Management Ontario.

*"The **Incident Management System (IMS)** is a standardized approach to emergency management encompassing personnel, facilities, equipment, procedures, and communications operating within a common organizational structure. The IMS is predicated on the understanding that in any and every incident, there are certain management functions that must be carried out regardless of the number of persons who are available or involved in the emergency response."*

~ Emergency Management Ontario

ICS/IMS Functions

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 provided below. Each function may be organized in a section. Only those sections that are necessary to managing the incident need be established. In some circumstances, other functions may also be recognized and staffed. Manufacturing East has taken this structure, and designated specific roles for the most appropriate functions at each site, allowing for further expansion if needed.



Taken from Incident Management System (IMS) for Ontario, which is employed for managing incidents.

6.0 EMERGENCY CONTACT LIST

An Emergency Contact List is maintained as part of the Manufacturing East Emergency Response System (MEERS) Program. It is maintained by the Responsible Care group to ensure it is kept up to date. It includes contact information for NOVA Chemicals (regional and corporate including the crisis management team), neighbours, external (including emergency), industry partners, ministry, municipality, agency, suppliers and members of parliament. The list below includes a sample of emergency contacts, but the location of the emergency and the pipeline will dictate further contacts, as discussed in other sections of this manual.

Contact information has been removed from this section for external publication. However, personal contact information is included in the copies of the manual that are distributed to those who need access to that information.

IN CASE OF TAMPERING OR EMERGENCY ON THE PIPELINE, IMMEDIATELY NOTIFY:

911
Marysville Police / Fire in US
NOVA Corunna Shift Supervisor/Emergency Number
Applicable partner's control room
LamSar Inc. in US

Refer to tables in Section 2 of the PERT Manual for detailed notification requirements

7.0 PRODUCT DATA

This section contains product information, specifications, physical properties, characteristics and spill control measures.

Hard copies of this manual will include printed out copies of safety data sheets, but electronic copies may not. Please use the links to ensure you are always using the most up-to-date document.

7.1 NOVA CHEMICALS' PRODUCTS CARRIED IN NOVA CHEMICALS PIPELINES[1]

Benzene
Brine Solution
C6-C8 Raffinates (Gasoline Blendstock)
C9-200 Hydrocarbons (Gasoline Blendstock)
Ethylene
Ethylene, Spent Gas
Mixed C4 Product
Toluene/Xylene mixture

7.2 OTHER COMPANIES' PRODUCTS CARRIED IN NOVA CHEMICALS PIPELINES[2]

Crude Oil – LSB/MSW/OSH/Synthetic/UHC
Ethane
Mixed Benzene/Toluene Stream
Natural Gas/Fuel Gas
NGLs (Butane) (Normal Butane)
NGLs (Propane)
No. 2 Fuel Oil (ULSD)
No. 6 Fuel Oil (Syn Tower Bottoms, Fuel Oil Heavy)

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[1] Safety Data Sheets for commercial products and co-products produced by NOVA Chemicals and shipped in our pipelines can be found on our external website here: http://www.novachem.com/pages/markets-and-applications/markets-and-applications-co-products-other-sds.aspx. Safety Data Sheets for non-commercial co-products can be found here: http://ishare.novachem.com/rc/sites/programs/prodstew/prodlit/SitePages/NonCommercial.aspx. Please ensure you are always using the most-up-to-date version by verifying against what is available in the online link.

[2] Safety Data Sheets for products produced by others but shipped by NOVA Chemicals pipelines can be found on our internal website here: http://ishare.novachem.com/rc/sites/ref/msds/SitePages/Home.aspx.
The SDS in this database are intended for the use of NOVA Chemicals site employees, contractors, partners, or other personnel working under the direction of NOVA Chemicals. Due to possible breaches of confidentiality and/or liabilities associated with distributing SDS which may not meet the regulatory requirements of certain jurisdictions, they shall not be copied and/or circulated to groups external to NOVA Chemicals. As a result, the link is only for internal use within NOVA Chemicals; however, those who require the information have been provided hard copies of the SDS documentation.

8.1 PERT MEMBERS/OPERATIONS TRAINING

The NOVA Chemicals Training Department manages a training matrix that includes the assigned training requirements and frequency of training for the following personnel on PERT:

- Corunna Site Incident Commander
- Manufacturing East Pipelines Team Leader
- Regional Pipeline Integrity Coordinator
- Pipeline Field/Metering Coordinator
- Senior Operations Coordinator
- Material Flow Foremen
- Material Flow Technicians

The training program includes computer based training (CBTs), procedure, classroom and field training. In order to ensure that employees have a working knowledge of the training modules, quizzes and/or in-field testing must be passed. Frequency of training is dictated by the Training Department.

The training department keeps records of training profiles and has a system in place to ensure employees remain up-to-date in required courses and recertification. All personnel training is tracked, and an annual review is conducted to ensure all PERT members are current with their training.

Manual holders are required to confirm their familiarity with the updates made on an annual basis. Training materials are updated annually to reflect current manual.

8.2 EOC TRAINING

Internal training for the Emergency Operations Centre (EOC) targets the following:

- EOC Training, Communication and Decision Making
- Pipeline PERT Manual Familiarization
- Pipeline Product Data
- Drill Participation – field and/or tabletop

8.3 EXERCISE REQUIREMENTS

The NOVA Chemicals PERT and Material Flow Technicians will follow the defined Emergency Response Drill Program.

Abnormal Operating Condition tabletop/functional drills are conducted annually by the Material Flow Foremen and Material Flow Technicians. Participation by the NOVA Chemicals Incident Commander and/or the EOC Manager(s) is completed directly, or in debrief.

Under NEB jurisdiction, field exercises are conducted at least once every three years. Tabletop and/or functional exercises are conducted annually, and incorporate all levels of the organization.

NOVA Chemicals will ensure that the drills are held with sufficient frequency and meet the expectations for the NEB OPR and DOT in regards to emergency response exercise requirements. Exercises will be varied to confirm that all aspects of potential emergencies are tested and simulate a wide range of potential geographic, weather conditions and worse-case scenario spill or gas release scenarios.

In addition to other DOT and NEB regulated requirements, under NEB jurisdiction, at least one simulated exercise will be held annually, and a full scale exercise will be held at least once every three years.

Drill frequency is augmented by participation in industrial peer exercises.

8.4 EXTERNAL RESOURCES TRAINING

NOVA Chemicals is a member the Sarnia-Lambton Community Awareness and Emergency Response (CAER) organization. A key function of CAER focuses on bringing municipal and industrial emergency responders together to identify potential risks associated with industrial operations and to develop emergency plans around them. The Chemical Valley Emergency Organization (CVECO), oversees these activities. As a member of CVECO, NOVA Chemicals participates in exercises and training for external resources. This includes municipal and provincial police, municipal fire departments, public participants, and industrial partners. Exercises may be held by NOVA Chemicals for external participation; or NOVA Chemicals may participate in industry peer exercises. A mutual aid response exercise (Sarnia Area Disaster Simulation (SADS) exercise) is conducted annually with partnership from all industrial peers. It is a vital training activity designed to simulate a real incident and provide experience and knowledge to those taking part.

NOVA Chemicals is committed to ensuring external response personnel are adequately trained in fire-fighting. NOVA Chemicals provides funds for training local municipal fire department(s) at top training facilities – including Lambton College Fire & Public Safety Centre of Excellence and Texas A&M Engineering TEEX.

See attached checklists:

1. Pipeline Emergency – First Responder (Material Flow Technician and/or Foreman) Checklist
2. Pipeline Emergency – First Responder Vehicle Checklist

Return completed checklists to the Regional Pipeline Integrity Coordinator

PIPELINE EMERGENCY — FIRST RESPONDER (MATERIAL FLOW TECHNICIAN AND/OR FOREMAN) CHECKLIST

Emergency Activation:

- ☐ Assess/analyze emergency scene.
- ☐ Confirm weather conditions.
- ☐ Approach site from upwind. Stay a safe distance from the leak, vapour cloud and low areas downwind.
- ☐ Determine level of emergency and activate Emergency Plan as required.
- ☐ Communicate with Material Flow Foreman/Incident Commander.
- ☐ Request local jurisidiction (fire or police, etc.) be notified, as required.
- ☐ Initiate isolation of the pipeline as directed by the Material Flow Foreman/Incident Commander.
- ☐ Establish a site command post if not already completed.

Operational Actions

- ☐ Monitor the condition of the pipeline emergency as it de-escalates (air monitoring, etc.)
- ☐ Act as liaison with local jurisdiction until Pipeline Team Leader and/or Regional Pipeline Integrity Coordinator arrives.
- ☐ Communicate emergency needs/information to the EOC Manager,

  i.e. road closures, equipment, communication, repair plan

Demobilization:

- ☐ Participate in investigations being undertaken (pictures, documentation, etc.).
- ☐ Assist with recovery plan.

Return completed checklists to the Regional Pipeline Integrity Coordinator

PIPELINE EMERGENCY — FIRST RESPONDER VEHICLE CHECKLIST

- ☐ Vehicle with communications equipment (i.e., two-way radio)
- ☐ Pipeline Emergency Response Team (PERT) manual containing maps, locating pipeline and isolation valve sites, as well as pertinent telephone numbers
- ☐ Binoculars
- ☐ Gas Detector

Return completed checklists to the Regional Pipeline Integrity Coordinator

PIPELINE EMERGENCY CALL FORM

Material Flow Pipeline Operator

Time of Call

Date of Call (MM/DD/YYYY)

Name of caller

Location of caller

Caller return phone number

Inform caller that NOVA representatives will be there within 10–15 minutes

Will caller remain at scene?

Where will caller meet NOVA rep?

Emergency location (area, road, development, address, etc.)

Emergency Specifics

Wind direction: _____Proximity to public: _____

Are there any injuries?	Yes		No
Visible vapour?	Yes Big	Yes small	No
Visible liquid?	Yes Big	Yes small	No
Noise?	Yes Loud	Yes slight	No
Fire?			
Trespasser/suspicious package?			
Police/Fire on scene?	Yes		No

NOTE:

Trespasser/Suspicious package incident:

- If Police are required, notify Corunna Site Main Gate 2290 request 911 call, advise type of emergency and compound location
- If Fire department is required, notify Corunna Site Main Gate 2290, request CVECO Code 9 call, advise type of emergency and compound location.

Additional Notes:

Return completed forms to the Regional Pipeline Integrity Coordinator

MAPS

PIPELINE DISTRIBUTION THROUGHOUT THE REGION

11.1 Pipeline Corridors

11.2 Pipelines and Valve Stations/Compounds

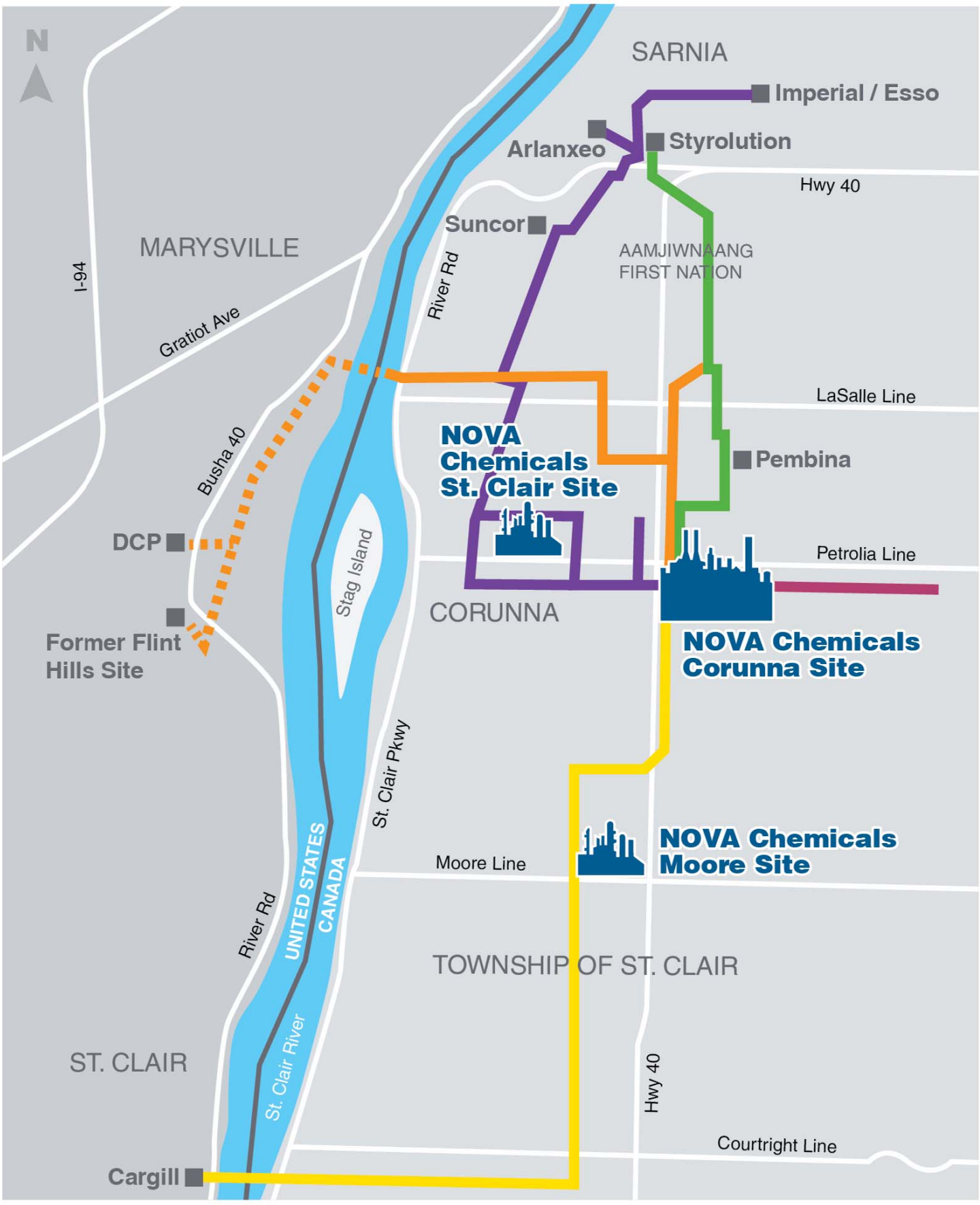
11.3 US Topographic Lines 16A, 18, 19 & 20

11.4 NOVA US Planview Maps

11.5 NEB Regulated Lines

Note that maps 11.2, 11.3, 11.4 and 11.5 have been removed from the web version of the manual as they contain security information where a risk of disclosure will impair security of the pipelines. However, the maps are included in the hard copy manual that is distributed internally and to external responders, so those who require access to that information have it available

Main Pipeline Corridors



Pipeline Corridor A
Pipeline Corridor B
Pipeline Corridor C
Pipeline Corridor D
Pipeline Corridor E
U.S. Pipeline Corridor

12.0 CORUNNA PIPELINE VALVE STATIONS/COMPOUNDS

Corunna pipeline distribution has twenty-two (22) valve stations/compounds located throughout the region. Each valve station/compound is fenced in with identifying emergency numbers to report emergencies. The number on the sign rings into the NOVA Chemicals Corunna Material Flow Pipeline Control Room (519-862-2002).

Valves stations located in Michigan have 1-800-278-0584 on the signs, which rings through to the NOVA Chemicals Corunna Material Flow Pipeline Control Room.

Note that the list of valve stations has been removed as it is considered security information where a risk of disclosure will impair security of the pipelines. However, the full list is included in the hard copy manual that is distributed internally and to external responders, so those who require access to that information have it available.

13.0 EMERGENCY RESOURCES AND EQUIPMENT

13.1 Safer Real Time Dispersion Modeling: NOVA Chemicals has a Real Time Dispersion modeling system for use during emergencies. This system allows NOVA Chemicals to establish impacted zones, vapour cloud profiles based on real time meteorological readings.

13.2 Emergency Response Vehicle: Available for immediate response to a scene, equipped with analyzing equipment, e.g. LEL, H_2S, Benzene, etc.; self-contained breathing apparatus (in Canada), personal protective equipment, etc. Note that fully equipped emergency response vehicles are available in both Canada and the US.

13.3 Spill Response Trailers: NOVA Chemicals maintains three spill response trailers stocked with adequate spill containment and clean-up materials. Three trailers are located in Canada, and are maintained by documented internal procedures.

13.4 Maintenance Contractor: NOVA Chemicals has maintenance contracts in place with local maintenance contractors to complete pipeline repairs. Operations procedures provide for pipeline isolation, product de-inventorying and providing terminal isolations for maintenance work.

13.5 As a member of CVECO, NOVA Chemicals has 24/7 access to the CVECO mutual aid inventory of emergency response equipment and vehicles. A database that lists the equipment and the site locations/owners is maintained and available for public access at the following website http://www.caer.ca/wp-content/uploads/2014/01/Capp-A-Mutual-Aid-Inventory.pdf.