SCL Pipeline
Operated by Sarnia Manufacturing Centre
Emergency Management Program

Version 2

March 2020

Table of Contents

Shell Canada

Sarnia Manufacturing Centre

IMPORTANT SITE CONTACTS			
POSITION	**NAME**	**OFFICE**	**CELL**
General Manager	[redacted]	[redacted]	[redacted]
Operations Manager	[redacted]	[redacted]	[redacted]
Production Supervisor (Ops)	[redacted]	[redacted]	[redacted]
Production Supervisor (DUCP)	[redacted]	[redacted]	[redacted]
Health & Safety Manager	[redacted]	[redacted]	[redacted]
Production Team Leader Shift Supervisor / Incident Commander	[redacted]	[redacted]	[redacted]
Security	*24/7 Site Contact*	*519-481-1245*	

Reporting			
ORGANIZATION	**LOCATION**	**PHONE**	**DESCRIPTION**
SHELL Emergency Telephone #	*Shell Pipeline Emergency Reporting # Sarnia*	*519-862-2822*	*PUBLIC: 24/7 Pipeline Reporting in Shell Sarnia, Ontario*
Site Security	*Shell Main Gate Security – Corunna*	*519-481-1245*	*24hr Site Security in Sarnia, Ontario*
Shell Americas Emergency Management	*North America Reporting #*	*713-241-2532*	*INTERNAL: 24/7 on-call Shell duty personnel*
Production Team Leader Shift Supervisor / Incident Commander	*Sarnia Manufacturing Center*	[redacted]	*24hr on-call personnel in Sarnia, Ontario*

Introduction

Shell Canada Sarnia Manufacturing Centre owns and operates a Refinery, Chemical plant, Marine Loading Dock and Pipelines, with in both St Clair Township & City of Sarnia in Ontario, Canada. The Sarnia Manufacturing Centre exports products from these operations via pipeline, bulk truck, rail and marine cargo vessels

Emergency Response Number 519-862-2822

Section One
Introduction

SCL Pipeline is operated by Sarnia Manufacturing Centre (SMC), Shell Canada Products. SMC has a comprehensive response organization that provides for a management structure and process to effectively respond to pipeline emergencies involving the SCL Pipeline. The se procedures describe how the SMC organization would respond to incidents involving the SCL in accordance with the Incident Command System organization approach. Details of this organization are found in the SCL Pipeline Emergency Response Procedure. A public copy of this publication can be found under the ***Emergency Response and Safety*** tab at the following location: *http://www.shell.ca/en_ca/about-us/projects-and-sites/sarnia-manufacturing-centre.html*

In addition to the Emergency Response Procedures, SCL Pipeline has developed this document as an overview of the Emergency Response Management System. Per (CER)NEB Order MO-006-2017

The purpose of SCL Pipeline is to transport liquefied gas (butane) from the Marysville Underground Storage Terminal located at Marysville, Michigan to the Shell's SMC located at Corunna, Ontario. The butane is piped from underground storage caverns in Marysville to SMC's storage spheres in Corunna. The SCL Pipeline crosses underneath the St. Clair River and, being part of the international boundary between the United States and Canada, are under the jurisdiction of the Canadian Energy Regulator(CER)for its Canadian portion.

SCL Pipeline was built in 1989 and comprises of a single pipe bundle containing four 168.3 mm (6.625 inches) individual pipelines. This single pipe bundle was fabricated prior to its underground installation; and it was pulled backwards by a boring machine situated on the Michigan side of the St. Clair River. The bored line is at a depth approximately 12 meters (40 feet) below the river's bottom.

The installation bundle containing four pipelines—known as pipelines "A", "B", "C" and "D" is approximately 900 meters (3,000 feet) long and is equipped with manually operated block valves. See below for further technical data. The total SCL volume (if all four pipelines were filled) is approximately 100 m_3 (629 barrels).

Currently Pipeline "A" is actively used to transport butane. For Pipeline "B", which had been used for propane, SMC has de-inventoried, depressurized and removed it from service. Pipelines "C" and "D" have remained capped, and are under nitrogen purge, since the original installation in 1989. The SCL is inspected internally every five (5) years.

Pipeline - Canadian Portion Technical Data	**Pump Station to St Clair River**	**St. Clair River to Int. Border**
Pipeline code	ASTM B31.3	CSA 2.183-M86 & *Onshore Pipeline Regulations (1988*)
Location Class	HVP- Zone 2	HVP- Zone 2
Line Diameter (O.D.)	168.275 mm (6.625")	168.275 mm (6.625")
Wall Thickness	0.28"	0.25"
Material Grade	A-53-B Seamless	API-SL-42-II ERW
Coating	High Build Epoxy Paint	Fusion Bond Epoxy
Pipe Length		682 meters (2240 feet)
Installation	Pipe rack	Buried min. 1.5 meters (5 feet)
Field test Pressure	2160 psi	2195 psi
Max. Operating Press.	1440 psi	1405 psi
Radiography	10%	100%
Corrosion Control	None	Impressed current

Section Two
Policy and Commitment
Health, Safety, Security, Environment & Social Performance Policy & Commitment

Shell Canada - Sarnia Manufacturing Center is committed to:

- Pursue the goal of no harm to people.
- Protect the environment and pursue the goal of prevention of pollution.
- Use material and energy efficiently to provide our products and services.
- Develop energy resources, products and services consistent with these aims.
- Publicly report on our performance and engage in stakeholder consultation.
- Play a leading role in promoting best practice in our industry.
- Manage health, safety and sustainable development as any other critical business activity.
- Promote a culture in which all Shell employees share this commitment.

Shell Canada - Sarnia Manufacturing Center:

- Has a systematic approach to health, safety and environmental management designed to ensure compliance with the law and to achieve continuous performance improvement.
- Sets targets for improvement and measures, appraises and reports performance.
- Requires contractors to manage in accordance with this policy.
- Requires joint ventures under its operational control to apply this policy and uses its influence to promote this policy in its other ventures.
- Includes health, safety and environmental performance in the appraisal of all staff and rewards accordingly.
- We strive to achieve a health, safety and environmental performance that we are proud of, to earn the confidence of customers, shareholders and society at large, to be a good neighbour and to contribute to sustainable development.

Robin Mooldjik
EVP Manufacturing

Mark Pattenden
VP Canada

Huibert Vigeveno
Downstream Director

Guy Hackwell
General Manager, Sarnia Refinery

March 24, 2020

Section Three
Goals & Objectives

Shell Canada – Sarnia Manufacturing Center revolves around a backdrop of continuous improvement in process safety, increasing external and internal expectations, and post-incident and business reviews indicating gaps in capability, has fostered an environment for Shell Canada – Sarnia Manufacturing Center to be the forerunner within Emergency Response across the Industrial Sector.

This is achieved through having site and corporate 'Goals & Objectives' using the Centre of Expertise in Emergency Response (CEER) and the Shell Americas Emergency Management groups and local site training & infrastructure improvements.

CEER focuses on three themes to drive emergency preparedness & response capabilities through continuous improvement across Shell by:

Building local capability – through training, exercises, planning, and skill pool management

Global Standards and systems – including staffing, equipment, training, exercises, ICS

Leverage Expertise – including 24/7 hotline support for real-time tactical advice from subject matter experts, and organizing cross-business regional mutual aid capability

Shell Canada – Sarnia Manufacturing Center follows an internal Shell Emergency Preparedness & Response guideline referred to as the Downstream Manufacturing Emergency Preparedness Standard.

This Standard (ST):

1. Provides requirements and guidance for Downstream Manufacturing (DSM) Emergency Response (ER) involving fires, releases and rescue emergencies and applies to operations within sites in the preparedness, planning and response to emergency incidents. The organization structure described is also intended to work seamlessly for managing oil spill, medical response and other emergencies.

2. Is aligned and supports the Shell Health, Safety, Security, Environment & Social Performance Control Framework Emergency Response Manual.

Specification include:

- Emergency Response Management
- Spill Preparedness & Response

3. Has a scope of ER and does not include crisis management.

Section Four
Hazard Identification, Risk Assessment and Controls and Clean-up and Remediation

Hazard Identification
Butane (C3H10) - Pipeline Leaks and Hazards

- The degree and extent of the hazard from a pipeline failure will vary with the rate of leakage, the type of product and the atmospheric conditions. An outflow of high vapour pressure material such as butane will expand over the ground and into depressions, creating an extreme hazard.

- The greatest danger to persons and property will result from the flash burning, following delayed ignition of the vapour air plume formed from a large leak. If ignition is delayed, there may be sufficient confinement to cause detonation of the flammable vapour plume and increased damage in the area.

- If the flammable plume is not ignited, mixing with air continues and the vapour becomes diluted below the lower flammability limit.

- The butane stream will form a colourless, nearly odourless gas heavier than air at N.T.P. Some critical characteristics of butane are:

Density	~0.5942 Kg/L
Boiling Point	<1 °C (Deg C)
Critical Temperature	287 degrees C
Vapour Pressure (absolute)	1823 mm Hg @ 25 °C
Flammability Limits	1.9% and 8.5%

- Butane is highly flammable within the flammability limits. Escaping butane is an extreme fire hazard. In addition to the fire hazard, there is also a health hazard due to the low temperatures that develop when the liquid is released. A serious hazard may also develop from oxygen deficiency when the rapidly expanding gas displaces air.

- A small leak of butane will not usually present a serious hazard in open air, but will if the vapour can collect in a confined space and mix with air. A small butane leak is usually detected from reports of discoloured or dying vegetation or frost forming at the leak location over the pipeline.

- Detection of a small leak is difficult and a "gas sniffer" should be used in any suspicious area. A system volume balance will not detect small leaks until over 24 hours. Butane has only a faint odour and small quantities cannot be reliably detected by smell.

- A small to medium size leak of butane will be detected by killed vegetation and frost at the leak location. Condensed water vapour surrounding the butane vapour may also be visible. A medium

sized leak may be indicated by a large enough difference in the pipeline volume balance to initiate investigation for leakage.

- Any leaks of a size such that the vapour forming from escaping liquid does not disperse within a small area, create a very hazardous condition. The cold vapour, being heavier than air, will tend to flow downwind and into low areas and form flammable mixtures.

- The area downwind of a leak or adjacent lower areas should be approached only with an explosion meter to avoid flammable concentrations of vapour mixtures. A weak gas smell should be regarded as a warning of the presence of some butane gas.

- If a quantity of liquid has escaped and vaporized, all sources of ignition, such as car and truck engines, must be kept well away from the probable hazard area.

- The area for approximately .8 km (½ mile) downwind of the leak should be evacuated of all persons until it can be checked out with an explosion meter as having no indication of gas present.

- A large leak of butane probably caused by damage to the pipe by external sources should show at the control center by changes in the operating pressure and through put volume.

- Shutdown time after the occurrence of the failure is critical to limit the duration of the hazard. There will be an immediate outflow of liquid at the failure followed by intermittent slugs of liquid and vapour. About ⅓ of the liquid will flash into vapour. The remainder will form a pool of super cooled liquid and vaporize as rapidly as the heat flow from the surrounding air and ground will permit.

- If the vapour-air plume from the leak ignited immediately, all efforts should be directed to minimizing fire damage and keeping the public out of danger until the line fill that can flow to the leak is exhausted and the fire dies from lack of fuel.

- If the flammable vapour-air plume formed at the leak has not ignited, it will have reached its greatest size within the first ½ hour from the time the leak occurred. Every effort should be made to prevent ignition of the vapour-air plume while the line fill available to the leak is depleted and the plume becomes diluted below the lower flammability limit.

- The danger exists of detonation of the flammable part of the vapour-air plume from any source of ignition and all persons should be kept will away from the area to avoid injury.

- The extent of the flammable plume will vary from approximately 600 meters (1968 feet) downwind of the failure site, under stable atmospheric conditions, (as at night with less than 3 km wind) to less than 300 meters (984 feet) under neutral conditions, (as during the day with 9 km winds or better). Unstable conditions, (as in daytime with light winds) will produce a lesser plume length. Due to the wide variation in conditions governing plume length and size, a downwind flammability length of approximately .8 km (½ mile) should be assumed until the actual limits can be determined.

- The area for .8 km (½ mile) downwind of the leak may contain flammable vapour-air mixture. This area should be evacuated as much as possible without men entering any area indicating any gas content approaching the lower flammability limits on an explosion meter.

- The area .8 km (½ mile) downwind of the leak must not be re-entered until the leak is under control and explosion meter readings show there is not gas concentration approaching the lower flammability limit.

Control of a Butane Leak Hazard with Fire

Accidental Ignition of Butane Leak:

1. The hazard from a butane leak is reduced and controlled if the vapour is ignited when the leak occurs. The fire should be allowed to burn itself out and not be prematurely extinguished.

2. Planned Firing of Butane Vapour Plume. Firing of a vapour plume to reduce the hazard must only be done after careful evaluation of the situation and with the explicit AUTHORIZATION of the Incident Command Team.

3. The flammable plume formed from a butane leak will probably reach its greatest extent with the first half hour. The beneficial effect of firing is limited to reducing or eliminating the potential hazard due to changing conditions such as:
   A. shifting wind direction, which would tend to drift the vapour plume over houses or other buildings.
   B. changing of atmospheric conditions to a stable state, which would enlarge the area covered by a plume and endanger persons. Intentional firing of a butane vapour cloud must only be considered:
   C. the area of the flammable plume has been determined accurately with explosion meter.
   D. there is no persons within the plume area or within 300 meters (984 feet) of the periphery of the plume.
   E. there is no apparent danger of detonation of the flammable plume when ignited.
   F. ignition would reduce the potential hazard
   G. the firing is authorized by the respective Operations Manager.

The actual firing of a vapour plume may be carried out by using a shotgun flare shell from upwind of the vapour plume and with all other persons well removed from the periphery of the plume.

HEMP - Hazards and Effects Management Process

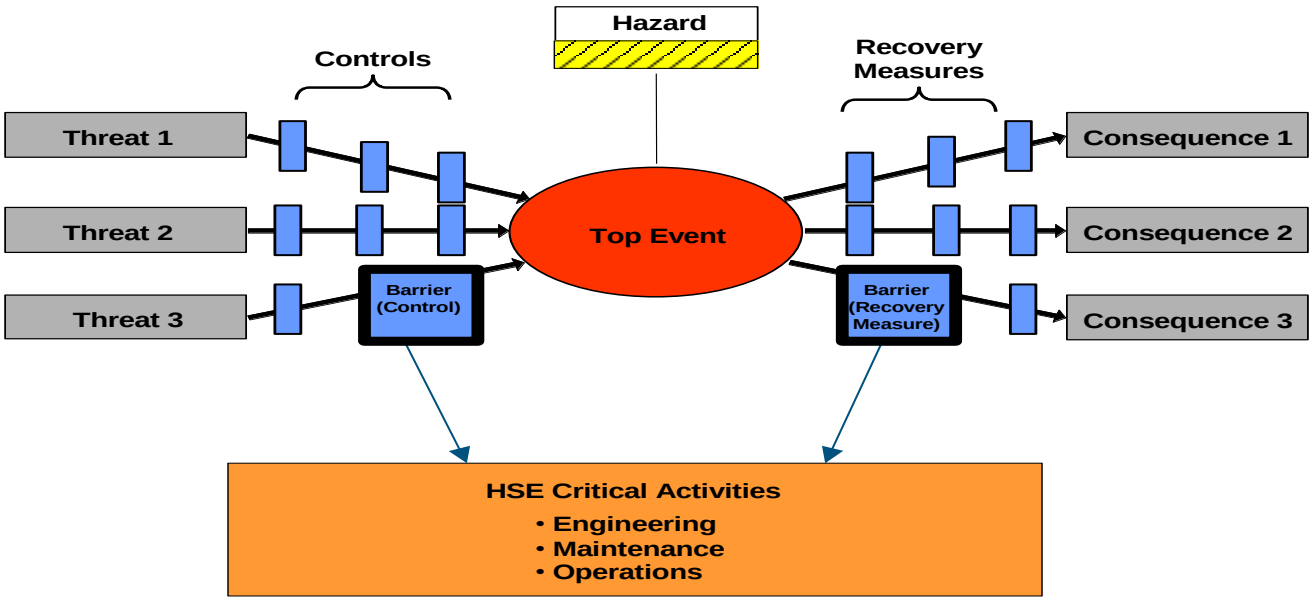
The Hazards and Effects Management Process (HEMP) provides a structured manner for the identification, assessment, and mitigation of Health, Safety, Security, Environment & Social Performance Policy risks to as low as reasonably practicable (ALARP). In compliance to the Shell HSSE&SP Control Framework, the Downstream HSSE Management System and the Downstream Manufacturing Site Requirements Manual, the goal of the application of the HEMP process at SMC is to identify and reduce risks to as low as reasonably practicable.

Hazard & Effects Management Process (HEMP) at Site

PURPOSE: Ensure sufficient barriers are in place to control significant incident scenarios to ALARP.
Does HEMP support LEAN? Yes – it maximizes the use of already existing processes such as ESP, IPF, ME, MOC, PEI, RCM, etc.

1. IDENTIFY AND ASSESS
    a. Identify incident scenarios – risk studies, incidents.
    b. Access the risk – Risk Assessment Matrix (RAM).

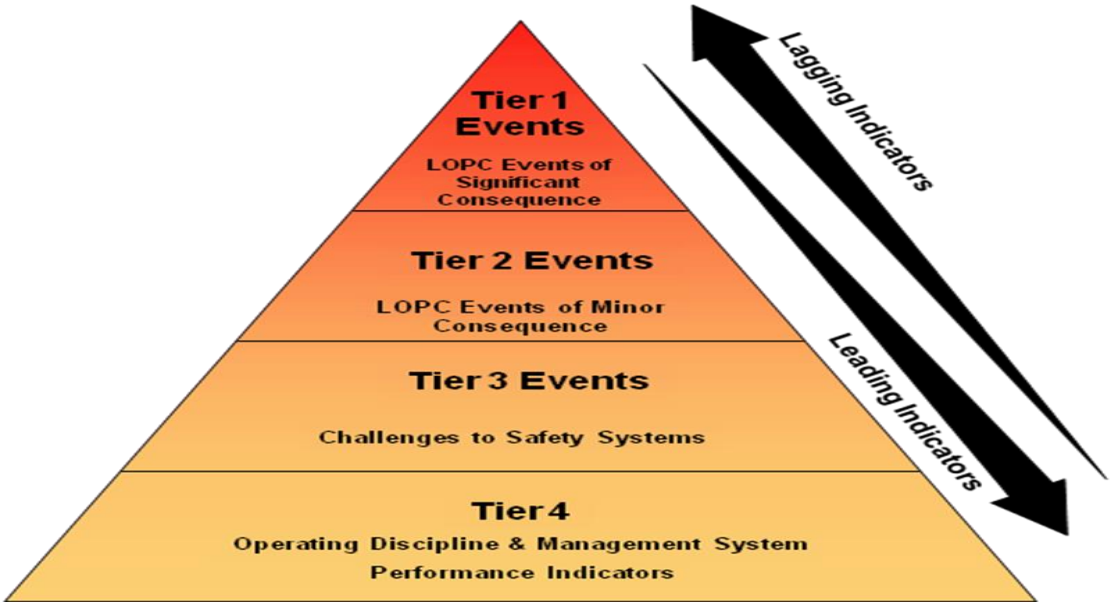
2. ANALYSE
    a. Evaluate validity of existing barriers – effective, independent, auditable?
    b. Determine if additional barriers are required – guidance: bowties, Shell standards, legislation.
    c. Identify critical activities required to maintain the barriers.



3. REVIEW & HANDSHAKE
    a. Conduct handshake meetings
        i. Management accepts hazards & effect register.
        ii. Asset manager accepts hazards analysis results and commits resources to closing gaps.
        iii. Responsible individual and process owner accept actions and critical activities for execution.

4. IMPLEMENT & EXECUTE
    a. Execute project, MOC for additional barriers – execution timing determined by HEMP prioritization tool.
    b. Define operator actions for critical human barriers in ESP/operating guidelines – includes responsibilities and competence assurance training.
    c. Implement and execute critical activities to maintain the safety critical equipment barriers by the work processes.
        i. Critical activities supported by well-established work processes. Rely on existing work processes to maintain barriers.
        ii. Critical activates not supported by well-established work processes. Implement PM and CM in maintenance management system.
    d. Execute interim mitigation for failed or broken barriers
        i. Safety system impairment permit/MOC required for out of service safety critical equipment

5. CHECK & IMPROVE
    a. Establish and monitor key performance indicators
        i. LOPCs by failed barriers
        ii. Process safety dashboard metrics
        iii. PM and CM execution



b. Audit critical activities
    i. Process safety field observations
    ii. Process effectiveness reviews
    iii. Internal assurance

Conduct ALARP review at end of implementation plan

Acronyms:

ALARP – as low as reasonably practicable
CM – corrective maintenance
ESP – ensure safe production
LOCP – loss of primary containment
MOC – management of change
PM – preventive maintenance

This detail for Downstream Manufacturing (DSM) HEMP Structure includes but is not limited to the following guidance or requirements:

a. Creating the Site Hazards and Effects Register, this is input for a suite of HSSE hazard analysis processes,

b. Documenting that the risk being evaluated is managed to “As Low as Reasonably Practicable”,

c. The competence and composition of the teams involved in creating the Site Hazards and Effects Register and carrying out the hazard analysis,

d. The handshakes of the outputs of these HSSE Hazard Analysis processes to their appropriate owner, to assure that these are embedded in the HSSE-MS, and

e. A prioritization tool to implement Recommendations

Table 1 gives an overview of the process steps covered by this SP (in red). The SP does not cover the process steps in black. The Bow Tie Analysis is covered in the “Hazards and Effects Management Process (HEMP)” and the other HSSE Hazard Analysis processes are described in other Group or DSM documents.

Table 1: Overview of Process Steps covered by this SP

Note: See Figure 1 in HEMP ST

a. Hazard Identification & Risk Assessment	b. Hazard Analysis	c. Management Handshakes
Site Hazards and Effects Register Team Composition	Team Composition ALARP Determination 1. Eliminate or Reduce the Hazard 2. Apply an existing standard or industry work practice 3. Risk based approach using an existing Model Bow Tie 4. Risk based approach creating a Bow Tie with Barrier Counting 5. Risk based approach creating a Bow Tie with Layers of Protection Analysis (LOPA) Examples of hazard analysis tools and processes: - Bow Tie (covered in HEMP RP-01) - Quantitative Risk Assessments - Hazard and Operability Method (HazOp) - Process Safety Assessment (PSA) - Process Hazard Analysis (PHA) - Health Risk Assessment (HRA) - Environmental Impact Assessment (EIA)	1. Handshake - Hazards and Effects Register 2. Handshake - Hazard Analysis 3. Handshake - Recommendations, Critical Equipment Barriers, Critical Human Barriers, and Critical Activities

Clean-up and Remediation
Emergency Response Equipment

CVECO Mutual Aid Inventory

2 - PUMPERS			
Picture & Identification	Water		Owner
	Pump (USGPM)	Tank (USG)	
 Engine 1	1,900	500	[redacted]
	L/MIN	LITRES	
	7,000 (Class A & B foam system)	1,900	
 Engine 5	1,900	500	
	L/MIN	LITRES	
	7,000 (Class A & B foam system)	1,900	
 Rescue 1	1,250	500	
	L/MIN	LITRES	
	4,500	1,900	
 Engine 3	1,585	750	
	L/MIN	LITRES	
	6,000	2,839	

2 - PUMPERS

Picture & Identification	Water		Owner
	Pump (USGPM)	Tank (USG)	
 No. 31 - Courtright	1,500	800	[redacted]
	L/MIN	LITRES	
	5,700	3,000	
 No. 38 - Courtright	1,250	1,000	
	L/MIN	LITRES	
	4,500	3,800	
 No. 11 - Brigden	1,000	1,000	
	L/MIN	LITRES	
	3,800	3,800	
 No. 54 – Port Lambton	1,500	800	
	L/MIN	LITRES	
	5,700	3,000	

2 - PUMPERS

Picture & Identification	Water		Owner
	Pump (USGPM)	Tank (USG)	
 No. 41 - Wilksport	1,250	800	[redacted]
	L/MIN	LITRES	
	4,500	3,800	
 No. 23 - Corunna	1,800	1,000	
	L/MIN	LITRES	
	5,700	3,000	
 No. 1	1,750	700	[redacted]
	L/MIN	LITRES	
	6,600	2,700	

3 – FOAM PUMPERS

Picture & Identification	Water		Foam		Owner
	Pump (USGPM)	Tank (USG)	Type	Tank (USG)	
 Unit 175	1,250	N/A	AR AFFF	1,000	[redacted]
	L/MIN			LITRES	
	3,800			3,800	
 Unit 237	1,000	N/A	AR AFFF	350	**NOTE** Unit 237 has additional water & foam solution flow capability of 2,000 USGPM from the deck monitor when directly connected to a high pressure hydrant.
	L/MIN			LITRES	
	4,800			1150	
 #2	1,800	N/A	AFFF	1,000	[redacted]
	L/MIN			LITRES	
	7,000			3,800	
 #1	3,800	N/A	AR AFFF	1,000	
	L/MIN			LITRES	
	13,250			3,800	

3 – FOAM PUMPERS

Picture & Identification	Water		Foam		Owner
	Pump (USGPM)	Tank (USG)	Type	Tank (USG)	
 Pumper #4	1,250	N/A	AR AFFF	1,000	[redacted]
	L/MIN			LITRES	
	4,700			3,800	
	2,000	N/A	AFFF/ ATC	1,200	[redacted]
	L/MIN			LITRES	
	7,570			4,500	
	L/MIN			LITRES	
	4,000			3,800	
 FT1	3,800	N/A	AR AFFF	1,200	[redacted]
	L/MIN			LITRES	
	13,250			4,500	

4 - TELESQUIRTS

Picture & Identification	Aerial Ladder (Ft)	Water		Foam		
		Pump (USGPM)	Tank (USG)	Type	Tank (USG)	
 Reserve 1	50’	1,800	500	N/A	N/A	[redacted]
		L/MIN	LITRES		LITRES	
		7,000	1,900		N/A	
 Reserve 2	50’	1,800	500	N/A	N/A	
		L/MIN	LITRES		LITRES	
		7,000	1,900		N/A	
 Ladder 2	75’	2,000	440	AR FFFP	40	
		L/MIN	LITRES		LITRES	
		7,600	1,651		150	
 Ladder 4	75’	2,000	440	AR FFFP	40	
		L/MIN	LITRES		LITRES	
		7,600	1,651		150	

4 - TELESQUIRTS

Picture & Identification	Aerial Ladder (Ft)	Water		Foam		
		Pump (USGPM)	Tank (USG)	Type	Tank (USG)	
 Ladder 4	75'	2,000	440	AR AFFF	40	[redacted]
		L/MIN	LITRES		LITRES	
		7,600	1,651		150	
 #3	54'	1,500	N/A	AR AFFF	1,000	[redacted]
		L/MIN	LITRES		LITRES	
		5,800	N/A		3,800	
 No. 21 (Corunna)	75'	1,250	400	N/A	N/A	[redacted]
		L/MIN	LITRES		LITRES	
		4,700	1,500		N/A	
 Ladder 2	75'	1,500	500	N/A	N/A	[redacted]
		L/MIN	LITRES		LITRES	
		5,800	1,900		N/A	

4 - TELESQUIRTS

Picture & Identification	Aerial Ladder (Ft)	Water		Foam		
		Pump (USGPM)	Tank (USG)	Type	Tank (USG)	
 FT4	75'	1,800	N/A	AR AFFF	1,200	[redacted]
		L/MIN	LITRES		LITRES	
		7,000	N/A		4,550	
	75'	2,000	N/A	1 X 3 AFFF ATC	500	[redacted]
		L/MIM	LITRES		LITRES	
		7,570	N/A		1,8907	

5 – AERIAL PLATFORMS

Picture & Identification	Aerial Ladder (Ft)	Water		Foam		Owner
		Pump (USGPM)	Tank (USG)	Type	Tank (USG)	
 Tower 4	104'	2,000	350	N/A	N/A	[redacted]
		L/MIN	LITRES		LITRES	
		7,600	1,325		N/A	

6 – Quick Response Units

Picture & Identification	Dry Chemical		Foam Solution		
	Tank (lbs)	Type	Tank (USG)	Type	
 #3	450	Purple K BC Rated	100	3% AFFF	[redacted]
	KILOS		LITRES		
	205		380		

7 – FOAM TANKERS

Picture & Identification	FOAM			Owner
	Type	Tank (USG)	Pump (USGPM)	
 #91	AR AFFF	1,800	150	[redacted]
		LITRES	L/MIN	
		6,800	570	
 R257	AFFF ATC 1% x 3%	3,500	200	[redacted]
		LITRES	L/MIN	
		13,250	760	
 CVECO Foam Tanker	AR AFFF	6,200	N/A	[redacted]
		LITRES	L/MIN	
		23,470	N/A	

8 – WATER TANKERS			
Picture & Identification	Water		Owner
	Tank (USG)	Pump (USGPM)	
 Tanker 4	2,100	750	[redacted]
	L/MIN	LITRES	
	7,950	2,850	
 No. 12 (Brigden)	1,800	300	[redacted]
	L/MIN	LITRES	
	6,800	1,140	

Contact Information

[redacted]

Section Five
Stakeholder Liaison to Prepare for Emergencies
Description of Levels of Emergency

Emergency Definition

For the Procedures, an emergency is any potential or real developing situation that may result in serious injury, loss of life, property damage and/or potential impact on the environment, which calls for immediate action.

Tiered Response

The Shell Canada – Sarnia Manufacturing Center Emergency Response Organization is based upon a three-tiered response structure. Incidents would be identified and categorized into one of three tiers depending upon the nature and severity of the incident. Each tier would be managed by an escalating degree of management seniority and assistance from outside the department. The ICS based Emergency Response System provides the flexibility to tailor the size of response organization to the specifics of the incident and allows for rapid adjustments as the incident evolves.

Most incidents are not severe enough to warrant classification and would be handled in the normal course of business by local personnel. Local management would make the initial determination of the classification of the event when notified with input from other personnel. However, the event could be subsequently reclassified upon review. It is essential to define as a quickly as possible the level of response required always erring on the high side if any uncertainty exists. The following definitions provide guidance in the early classifications of incidents.

Tier One	A Tier One response is one in which the potential public and environmental exposure is moderate, and the problem can be primarily corrected with local resources and some third-party assistance. Although the incident is managed by local management and resources, the Shell Sarnia Emergency Response Team and members of the Shell Response Action Team may be called upon to provide necessary response and expertise in certain emergency situations. Government involvement and media interest would be relatively low and would be restricted to the local level during a Tier One incident.
Tier Two	If the incident is beyond the control of the local management, it becomes a Tier Two Incident. A Tier Two incident is one with regional implications and potentially significant public and environmental exposure. Government involvement and media interest would be moderately high, but primarily at the regional level. The Site Incident Management Team assembling in an Emergency Operations Center would manage a Tier Two incident. The Incident Commander may also call on other technical groups for assistance if the incident warrants. The Incident Commander would be in communication with the appropriate Business Function Manager, and may call upon more specific technical advice from members of Country Crisis Management Team.
Tier Three	A Tier Three incident is one with national or global implications, where potential public or environmental exposure is significant and media interest is intense. An employee

	or third party fatality would automatically become a Tier Three incident. Maximum Shell and third party resources would be activated to respond to a Tier Three incident. In the event of a Tier Three incident, the Country Crisis Management Team would be activated. However, the Site Incident Management Team would continue to manage the incident, with support, guidance and specialist advice from the Country Crisis Management Team.

External Notifications

The Shell Canada – Sarnia Manufacturing Center utilizes the Chemical Valley Emergency Coordinating Organization (CVECO) to complete external and mutual aid notifications for all site emergencies.

Information CVECO Members Will Provide:

> When initiating a CVECO code on the notification channel, callers should first state who they are calling (Sarnia Police), then identify themselves with the name of their company, and then the geographical area in which they are located.

Sample Transmission on the CVECO radio:

> "Sarnia City Police XJF-743, this is Shell Canada Products -XJF 737".
>
> "Code 8 -Shell Canada Products - LXJF 737 - Area 2 issuing a code 8 for a fire in the Chemical Plant"
>
> I repeat this is Shell Canada Products -XJF 737".
>
> "Code 8 - Shell Canada Products - LXJF 737 - Area 2 issuing a code 8 for a fire in the Chemical Plant"

Sarnia Fire/Police Communications Center will then notify all CVECO members of the situation by a repetition of the message on the CVECO notification channel.

Each CVECO member will complete the "CVECO Code Notification Checklist" when they initiate any CVECO code.

The checklist will be faxed to the four Dispatch Centers, with the Police Service serving the area of the industry initiating the code being notified first.

If the community or near neighbors require notification the following procedures are followed:

PUBLIC / COMMUNITY ALERTS AND INFORMATION BROADCASTS

When Used:

The sirens will be sounded when there is a need to advise the public to take immediate action in response to an event which poses a threat to their health and safety - e.g., take shelter, vapour release. The sirens may be sounded on the advice of industry in the event of a chemical release, which has the potential to have a harmful impact on nearby residents.

Who Activates: 1) Sarnia 911 on duty N.C.O., or

2) St. Clair Township Fire Department (back up only).

3) Sarnia Airport (back up only).

How Activated:

A request to activate the community alert system may be made by placing a telephone call to 519-344-8881 ext. 5200 or by broadcasting over the C.V.E.C.O. radio channel. The Sarnia dispatch operator receiving the call will accept all information provided by the caller (in an industrial incident it will be the industrial incident site commander, a senior manager or an individual acting on their behalf) and immediately relay the information to the Sarnia Police N.C.O. on duty.

Required Information

The caller from industry must provide an emergency contact name and telephone number, state the nature of the emergency, identify the affected areas and the recommended course of action (see CVECO notification checklist for required information). If the emergency is of an industrial nature, a copy of the C.V.E.C.O. Notification Checklist must be faxed to 9-1-1 dispatch at 519-344-8779.

Upon receipt of a recommendation from industry to activate the alert system, the Sarnia Police will review the information and decide whether to activate the sirens and alert residents in the area identified to be at risk. The police will base their decision on the information provided and may expand the alert area if such action is felt to be warranted (including into Aamjiwnaang, Point Edward and St. Clair Township).

As a precautionary measure, the siren system may also be used to alert residents (prior to receiving information from industry) if there is evidence that a release has occurred and there is impact on the community.

Changing Situation:

If after the initial siren sounding the situation changes requiring further action, the sirens are to be sounded again alerting the community to again monitor their radio for additional instructions. The Sarnia Police will, in collaboration with unified command, arrange to have the appropriate new message broadcast.

Siren Alerts: Sirens will alert the public to tune their radio to:

-1070 CHOK AM, or

- 99.9 FOX FM, or

-106.3 CHKS FM

-103.9 CHOK FM

All Clear: is given by radio and television broadcasts by Sarnia Police, NOT by Siren.

Section Six
Continuing Education

Continuing Education and Training are the cornerstones of continuous improvement in Emergency Services within Shell Canada Sarnia Manufacturing Center.

With increasing external and internal expectations and post-incident after action reviews, periodic gaps in training or equipment within the Sarnia Manufacturing System has yielded improvements to the Emergency Response training programs and response capabilities through:

Building local capability – through training, exercises, planning, and skill pool management

Global Standards and systems – including staffing, equipment, training, exercises, ICS

Leverage Expertise – including 24/7 hotline support for real-time tactical advice from subject matter experts, and organizing cross-business regional mutual aid capability

The training requirements for the Shell Canada – Sarnia Manufacturing Center are captured in the Downstream Manufacturing Emergency Preparedness Standard referred to as Emergency Response

Section Seven
Training and Exercises

Exercises and drills are conducted on an annual basis; each shift is responsible for the completion of 4 table top exercises and 4 field exercises These exercises are designed to test the responders in a variety of HEMP based response scenarios.

The Emergency Operations Center personnel and building occupants also receive annual simulations & drills

Emergency Response Drill Schedule – 2020 – Page 1

Area	Date Due	Date Drill Sched	Classificatio	Tier of Emerge	Drill Scenario	Reason for Dr	Responsibility f Completion	Crew	Date Complet
Dock	Q1		Notification	1	Call Out List		Production Specialist/Security		
Loading Rack - Critical Injury	Q1		Emergency	2	Top 10 ER Actions / Mustering Drill	ER	HSSE Manager	4	
Pipeline	Q1		Field Exercise	tier 2	Vapour release from Salmon Pipeline	vapour release & fire	Shift FIRE CAPTIAN & Shift PTL / PIPE LINE Manager	1	
CR3	Q1		Emergency	1	Tube rupture on any of heater EH-1/2/3/4/5/6	HEMP	Shift FIRE CAPTIAN & Shift PTL	2	
Dock	Q1		Emergency	2	Allision	CEPA & Medical	Shift FIRE CAPTIAN & Shift PTL	EOC	
Storage Wells	Q1		Emergency	1	Vapour release	CEPA & Spill drill	Shift FIRE CAPTIAN & Shift PTL	3	
Sulphur Recovery Unit (SRU)	Q1		Emergency	1	release of liquid sulphur to grade	Spill drill	Shift FIRE CAPTIAN & Shift PTL	4	
Visbreaker Unit	Q1		Emergency	1	Fire	OFC	Shift FIRE CAPTIAN & Shift PTL	1	
Brine Ponds	Q1		Emergency	1	Line carrying brine from pond 1 to 2 corrodes releasing brine to ground	Spill drill	Shift FIRE CAPTIAN & Shift PTL	2	
Security Drill	Q1		Security Drill	1	Security Lock Down for ER simulation	Security	Security Supervisor		
Dispatching	Q1		Emergency		External floating roof tank rim seal fire	HEMP		3	
Sats Gas	Q2		Table Top	1	Liquid release of butane	CEPA	Shift FIRE CAPTIAN & Shift PTL	4	
Solvent Hydrogenation Unit (SHU)	Q2		Table Top	1	fire due to release of D80	CEPA, OFC	Shift FIRE CAPTIAN & Shift PTL	1	
Sour Water Stripper	Q2		Table Top	1	Release of sour water	SPCP, CEPA	Shift FIRE CAPTIAN & Shift PTL	1	
Crude 1	Q2		Table Top	1	Damaged nuclear guage on Atmospheric Bottoms	IH	Shift FIRE CAPTIAN & Shift PTL	2	
#1 Crude	Q2		Table Top	1	Fire melts nuclear guage on AA-2 Tower	IH, OFC	Shift FIRE CAPTIAN & Shift PTL	3	
#2 Crude	Q2		Table Top	2	MEDICAL DRILL component**** Man down on thrid floor platform	medical	Shift FIRE CAPTIAN & Shift PTL	4	
Above Ground Propane/Butane Storage - Spheres	Q2		Table Top	1	our release of butane due to piping failure from vibration or corros	HEMP, CEPA	Shift FIRE CAPTIAN & Shift PTL	2	
Waste Water Treatment Plant	Q2		Table Top	1	Release of benzene to south storm pond	CEPA	Shift FIRE CAPTIAN & Shift PTL	3	
Security Drill	Q2		Security Drill	1	Suspicious Package found at Dock		Security Supervisor		
Dock	Q2		Table Top	1	Allision		Security Supervisor		
Tank Farm	Q2		Field Exercise	2	Well Release	HEMP, SPCP			
Dispatching	Q3		Emergency	1	overfill gasoline tank tank 71 or 72	HEMP	Shift FIRE CAPTIAN & Shift PTL	1	
Dock	Q3		Emergency/ Operational	2	ECRC Training Day		Production Specialist		

Emergency Response Drill Schedule – 2020 – Page 2

FCCU	Q3		Table Top	2	FCCU catalyst release to the public	HEMP, SPCP	Shift FIRE CAPTIAN & Shift PTL	4	
Flare	Q3		Table Top		#2 Crude Charge line road Crossing 4-5	HEMP	Shift FIRE CAPTIAN & Shift PTL	3	
PCB Storage Building	Q3		Table Top	1	fire drill	Regulatory	Shift FIRE CAPTIAN & Shift PTL	EOC	
Gasoline Hydrotreater	Q3		Emergency	1	Fin fan leak resulting in vapour release	SPCP	Shift FIRE CAPTIAN & Shift PTL	2	
Girbitol	Q3		Emergency	1	Liquid release of DEA	SPCP	Shift FIRE CAPTIAN & Shift PTL	1/EOC	
IPA - Feed Prep Unit	Q3		Emergency	1	Flange failure	SPCP	Shift FIRE CAPTIAN & Shift PTL	4	
BTEX/UDEX	Q3		Table Top	1	Jet/high pressure flange/pin hole leak fire	HEMP, SPCP	Shift FIRE CAPTIAN & Shift PTL	2	
IPA - Flare	Q3		Emergency	1	Release of liquid from the flare causing a fire at the base of the flare	HEMP, SPCP	Shift FIRE CAPTIAN & Shift PTL	3	
A Buildings	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
Dockside	Q3		Evacuation	1	Activation of building fire alarm				
D Buildings	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
A Buildings	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
57 Buildings	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
New Mtce Shop	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
Old Mtce Shop	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
Foster Wheeler Bldg	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
Chem Plant - Admin Bldg	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
A Building Contractor Lunch	Q3		Evacuation	1	Activation of building fire alarm	OFC	ER Specialist		
Security Exercise	Q3		Security Exercise	1	Suspicious mail delivery		Security Supervisor		
Security Drill	Q3		Security Drill	1	Bomb threat		HSSE Specialist		
Rescue Drill	Q4		Table Top	2	HAR / CSE Rescue		Shift FIRE CAPTIAN & Shift PTL	3	
Rescue Drill	Q4		Table Top	2	HAR / CSE Rescue		Shift FIRE CAPTIAN & Shift PTL	2	
Rescue Drill	Q4		Table Top	2	HAR / CSE Rescue		Shift FIRE CAPTIAN & Shift PTL	4	
Rescue Drill	Q4		Table Top	2	HAR / CSE Rescue - Water Treatment		Shift FIRE CAPTIAN & Shift PTL	1	
IPA - Plant	Q4		Emergency	1	Release of cylohexane from tank	CEPA, SPCP	Shift FIRE CAPTIAN & Shift PTL	3	
IPA - Rail Car Storage	Q4		Emergency	2	BLEVE	CEPA, SPCP	Shift FIRE CAPTIAN & Shift PTL	4	
IPA - Tank Farm	Q4		Emergency	2	IPA tank fire	CEPA, SPCP	Shift FIRE CAPTIAN & Shift PTL	2	
Isomax	Q4		Emergency	1	Loss of containment on reactor effluent due to salt corrosion	HEMP, SPCP	Shift FIRE CAPTIAN & Shift PTL	1	
Dock	Q4		Notification	2	Call Out List	OPEP	Production Specialist/Security		
Security Drill	Q4		Security Drill		ER Manual Call Out verification		HSSE Specialist		

TRAINING

Attach is a Corporate training matrix Model for Incident Commander, First Responders, Rescuer, Apparatus Driver and Hazmat Responder:

DSM Emergency Response (Fire/Hazmat/Rescue/Oil Spill) - Overview of competency requirements

Team	Role	Initial Competency Standard			Annual Refresher Training		Drills / Exercises		Incident Command	
		Equivalent to	Comments	Refresher	Frequency	Comments	Frequency	Comments	Training Standard	Comments
Fire/hazmat/rescue - First Intervention Team 24/7	Fire Responder (incl FITL & Safety Officer)	NFPA 1081	40hrs at approved External fire school	3 Years	24hrs annually (6hr/quarter)	Includes 8 hrs live fire training + 8hrs Field activities	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200/220	CEER to conduct train the trainer courses at Site
	Hazmat Responder	NFPA 472	40 Hours	N/A	Quarterly - 8 Hours	N/A	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200	CEER to conduct train the trainer courses at Site
	Rescue Responder	NFPA 1006	40 Hours	N/A	Quarterly - 8 Hours	N/A	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200	CEER to conduct train the trainer courses at Site
	Fire Apparatus Driver	NFPA 1002	N/A	N/A	Annual	Specific to the apparatus that they will operate	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200	CEER to conduct train the trainer courses at Site
Operators		N/A	N/A	N/A	N/A	N/A	Quarterly	Red & Green Tag drill	N/A	N/A
Fire/hazmat/rescue - Incident Command 24/7 Shift	Incident Commander	NFPA 1081 and NFPA 472 and Emergency Responder Training	Knowledge Level (8 Hrs ERT)	N/A	N/A	N/A	Quarterly	Quarterly drills, simulation, training, actual event	ICS 100/200/220	CEER to conduct train the trainer courses at Site
	Incident Command Staff	Trained in position(s) they are assigned	4-8hrs Emergency Responder orientation recomended	N/A	N/A	N/A	Quarterly	Quarterly drills, simulation, training, actual event	ICS 100/200/220	CEER to conduct train the trainer courses at Site
Fire/hazmat/rescue - Incident Command (12-24hrs +)	Incident Commander	NFPA 1081 and NFPA 472 and Emergency Responder Training	Knowledge Level (8 Hrs ERT)	N/A	N/A	N/A	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200/300	Delivered by OSEC (no cost for >20pers)
	Incident Command Staff	Trained in position(s) they are assigned	4-8hrs Emergency Responder orientation recomended	N/A	N/A	N/A	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200/300	Delivered by OSEC (no cost for >20pers)
	EOC Staff	Trained in EOC position(s) they are assigned	N/A	N/A	N/A	N/A	Quarterly	From table top to pre-incident plan scenarios	ICS 100/200/775	N/A
All Site (Fire/Hazardous Release)		N/A	N/A	N/A	N/A	N/A	Annual	Designed to test all parts of the emergency plan and the organisations and departments that are involved in actual events	N/A	N/A
Oil Spill - Incident Command	Oil Spill - GRSN Core Staff	IMO 3 Oil Spill Management level	Recommended but not mandatory	N/A	N/A	N/A	2 Years	Regional Exercise	ICS 100/200/300	Delivered by OSEC (no cost for >20pers)
	Oil Spill - GRSN General Staff	IMO 3 Oil Spill Management level	Recommended but not mandatory	N/A	N/A	N/A	2 Years	Tier 1/2/3 at own location	ICS 100/200/300	Delivered by OSEC (no cost for >20pers)

TRAINING

Attach is a Sarnia SMC SHELL training matrix for Incident Commander, First Responders, Rescuer :

Sarnia Refinery
EMERGENCY MANUAL
2.02 Fire Chief and Crew Information Aug 2017

EMERGENCY RESPONSE TRAINING MATRIX

Firefighter, Fire Captain and Incident Commander			Fire Captain			Incident Commander (PTL, FC, Fire Chief)		
			4 Table Top Drills per year					
			4 Field Drills per year					
Course	Duration (hrs)	Expiry (yrs)	Course	Duration (hrs)	Expiry (yrs)	Course	Duration (hrs)	Expiry (yrs)
Intro to Fire School	24	0	ICS 220	16	0	ICS 775	16	0
Intro to Rescue	16	0	ICS 775	16	0	ICS 300	16	0
ICS 100	30	0	Corporate Fire School	32	3	Industrial Incident Command Systems	32	3
ICS 200	30	0				Corporate Fire School	32	0
First Aid Level C with AED	16	3				Vapour Plume Ignition	32	3
First Aid Level C with AED (Refresh)	8	3						
Interior Fire Fighting	8	1						
Exterior Fire Fighting	8	1						
High Angle Rescue	8	1						
Confined Space Rescue	8	1						
Hazmat Technician	40	0						
Hazmat Refresher	8	1						
Pleasure Craft Operator Card (PCOC)	4	0						
Marine VHF Radio	8	0						
Boat Handling	8	1						
Marine Spill Response (ECRC)	8	1						
Apparatus Training	8	1						
Site Equipment Training	8	1						
Alternate Training not captured in SOU								
DZ training (Driving License)								

EOC		
2 Table Top		
2 Field Exercise		
Course	Duration (hrs)	Expiry (yrs)
ICS 100	30	0
ICS 200	30	0
ICS 300	16	0
ICS 775	16	0

Section Eight
Incident Management System

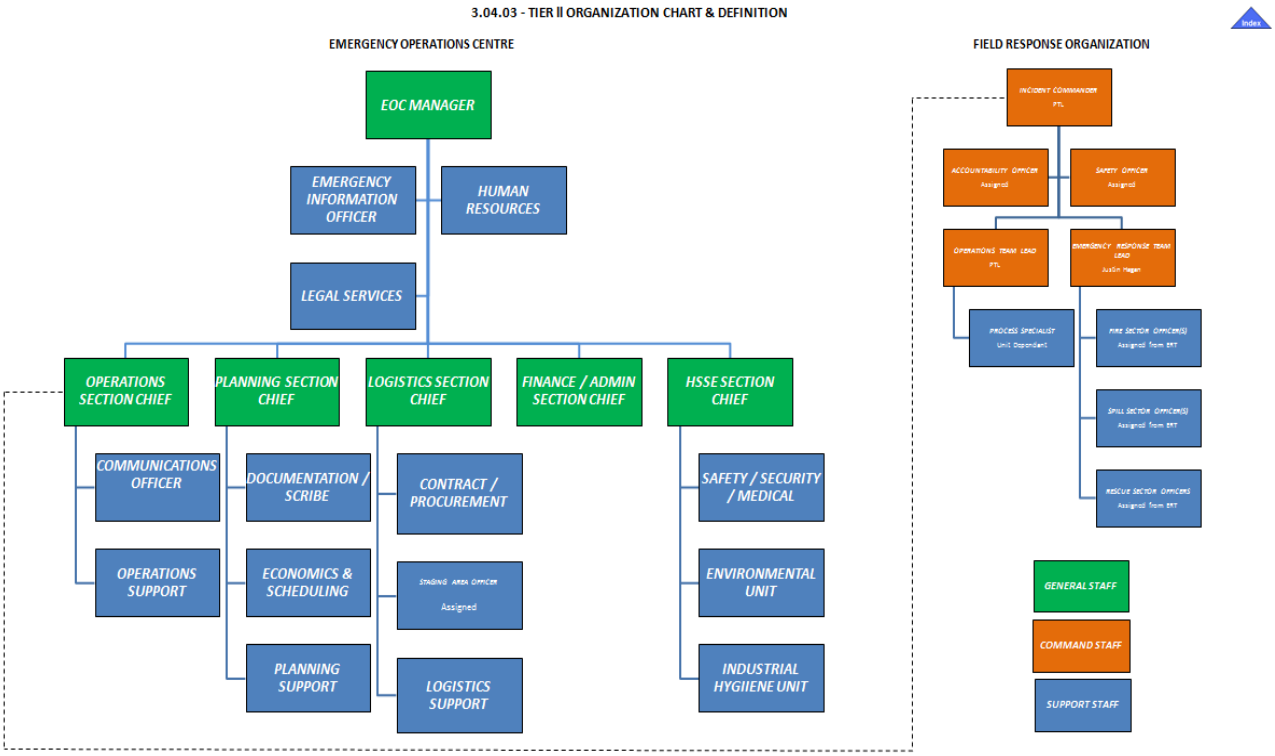
SHELL INCIDENT MANAGEMENT SYSTEM (IMS)

Emergency response incidents require timely action and 'prudent over-response' to ensure the protection of people and the environment, and to prevent unnecessary escalation of the incident. By integrating a combination of facilities, equipment, personnel, procedures, and communications within a common organizational structure and planning process, the Shell IMS enables effective and efficient management of emergency response incidents, such as fires, medical cases, spills, and security threats across all company businesses.

The Shell IMS is based principally on the internationally recognized and used “Incident Command System” outlined in the IPIECA/OGP “Incident Management System for the Oil and Gas Industry” Good Practice Guidelines and the United States Federal Emergency Management Agency (FEMA) Incident Command System. The Shell IMS is not a new system or a separate system, but rather the Company’s customization to fit our emergency environment; and is used to organize emergency response operations for small to complex emergency response incidents, lasting from hours to months.

The Shell IMS includes a set of proven organizational and management principles, which are essential to the success of emergency response management and premises under which it is used in Shell.

Primary location of our incident command post is at Shell – Sarnia Manufacturing Centre, back up location is the Shell – Chemical Plant.



A **Tier II** incident is a serious event and may include an impact off the refinery site. As such, more personnel are required both for the field response and for the Emergency Operations Centre (EOC) support activities.

This type of incident will likely involve response organizations outside of Shell such as fire departments from the municipality as well as those from CVECO, the local mutual aid organization. Local police and EMS may also be involved meaning that the field response will be headed by a “**Unified Command**” group (Shell, St. Clair Fire, OPP & Lambton EMS).

The organization depicted here shows the Shell IMS at its highest Tier II level so that all functions can be shown. However, IMS organizations are designed to be flexible to match the severity of the emergency event. Therefore a simpler Tier II event may combine several of the functions shown here into one position.

INCIDENT MANAGEMENT SYSTEM REFERENCES

The following references provided the foundation for, and are used in combination with the Shell IMS:

- International Association of Oil and Gas Producers – IPIECA – Report 517
- Spill consult (Response Consult) Ltd – Incident Management Handbook (IMH)
- U.S. Federal Emergency Management Agency (FEMA) Incident Management Handbook (IMH)
- U.S. Coast Guard Incident Management Handbook (IMH)

Note: The Shell IMS takes precedence where it differs from these references.

SHELL IMS PRINCIPLES

1. **Establish & Maintain Command**: A single integrated organization to manage the emergency response must be clearly established from the beginning of an incident, and maintained throughout the lifecycle of the incident. The Shell IMS requires that one individual/person maintain authority and responsibility over all company's emergency response activities – The Command Function. In certain circumstances, the Command responsibilities may be carried-out through single, coordinated or unified command structure.

2. Organization by Function: The Shell IMS requires that functional responsibilities (i.e. Command, Operations, Planning, Logistics, Safety, etc.) be clearly identified in the structure of the emergency response organization, which allows all responders to operate more efficiently; and, facilitates organizational growth, as needed.

3. Chain of Command and Unity of Command: Critical during an emergency response incident, chain of command refers to the orderly line of authority within the organization and, unity of command means that each responder takes direction from only one designated leader within the organization.

4. Modular Organization: A modular approach allows the response organization to be appropriately scalable for the size and complexity of the emergency response incident. The organization can expand as the size and/or complexity of the incident increases; and organizational elements (Sections, Branches, Divisions, Groups, Units, etc.) can be added to the structure, as needed.

5. Objectives-driven Response: An effective and successful response requires a clear set of objectives, consistent with Company's priorities: People, Environment, Asset and Reputation (PEAR). Incident objectives are established by Command and, depending on the size of the emergency response organization, cascaded down through the organization.

6. Incident Action Planning: Each emergency response incident under the Shell IMS requires an Incident Action Plan (IAP) that provides a coherent means of describing the operational and support activities. Under a simplified operational planning process, the resulting emergency response activities are recording in the Incident Briefing form, with additional IMS forms attached, as needed.

7. Common and Consistent Terminology: The Shell IMS uses a common set of terms to define organizational functions, incident facilities, resource descriptions, and position titles; as well as other emergency response incident management terms**.**

8. Span of Control: Span of control refers to the number of individuals or resources than can be effectively managed by a supervisor during an incident. The Shell IMS recommends a leader's span of control should range from three to seven individuals, with five representing the optimal level.

9. Coordination and Management of Resources: Incident Resources are defined as personnel, teams, equipment, supplies, and facilities in support of emergency response incident management activities. Centralized resource coordination helps to maintain an accurate and up-to date picture of the resources in use, available or potentially available for assignment.

10. Integrated Communications: Incident communications are facilitated through the development and use of a common communications plan that adequately supports the operations structure and appropriately links operations with support personnel.

11. Accountability: After Command, has been established, personnel and equipment should only respond to the incident when requested by Command or designee. All responding resources should be "checked-in"; and all arriving personnel are appropriately briefed and outfitted prior to assignment.

12. Information and Intelligence Management: The Shell IMS has an established process for gathering, analyzing, sharing, and managing incident-related information and intelligence. The Shell Common Operating Picture or "COP" has been designed to ensure all data collected on scene is properly analyzed, vetted and shared in a variety of ways to suit the needs of the various organizational functions.

SHELL IMS PREMISES

In addition to the Shell IMS Principles, there are specific aspects that differ from the above references, as well as some additional IMS topics that have specific Company application. Collectively, these Company IMS Premises outline and govern how the IPIECA/OGP Good Practice Guidelines and other references are implemented globally as the Shell Incident Management System

Section Nine
Revisions Log

Revision	Author	Date	Implementation Date	Next Review	Summary
1	*M. Wedemire*	*07.31.2017*	*07.31.2017*		
2	*J. Hagan*	*03.06.18*			*Minor verbiage changes* *Drill updates*
3	*J. Hagan* *M. Wedemire* *Brad Law* *Macy Gauvin*	*03/24/2020*	*03.31.2020*	*03.31.2021*	*Minor verbiage changes* *Drill updates*