ASTARA
ENERGY CORP.

Emergency Management Program

Prepared by:

BLACK GOLD Emergency Planners Inc

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TABLE OF CONTENTS

Table of Contents ii
Program Administration 1
Title and Copyright 1
Disclaimer 1
Manual Receipt Form 2
Management of Change Request Form 3
Management of Change Log 4
Distribution List 5
Emergency Management Commitment Statement 1
Security Management Commitment Statement 1
1.0 Introduction 1
1.1 Purpose 1
1.2 Scope 2
1.3 Expectations 3
2.0 Leadership Commitment and Participation 4
2.1 Integrated Management System 4
2.2 Environment, Health and Safety Policy 5
2.3 Legal Requirements 5
2.4 Goals and Objectives 6
2.5 Roles, Responsibility, Accountability and Authority 7
2.5.1 Documentation 8
2.6 Organizational Structure for Emergency Management 9
2.6.1 Incident Command System (ICS): 10
2.6.2 Incident Command Roles 12
2.6.3 Emergency Management Program Requirements 12
3.0 Hazard & Risk Management - Hazard Identification, and Assessment 14
3.1 Introduction 14
3.2 Purpose and Scope 14
3.3 Responsibilities 14
3.4 Requirements 15
3.5 Planning and Response Zones 15
4.0 Emergency Preparedness and Response 18
4.1 Introduction 18
4.2 Purpose and Scope 18
4.3 Responsibilities 18
4.4 Requirements 18
4.4.1 General 18

4.4.2 Emergency Response Procedures 19
4.4.3 Resources 20
5.0 Management of Change 20
5.1 Introduction 20
5.2 Purpose and Scope 20
5.3 Responsibilities 20
5.4 Requirements 21
6.0 Competence 22
6.1 Introduction 22
6.2 Purpose and Scope 22
6.3 Responsibilities 22
6.4 Requirements 23
7.0 Emergency Response Training 24
7.1 Introduction 24
7.2 Purpose and Scope 24
7.3 Responsibilities 24
7.4 Training Objectives 25
7.5 Requirements 25
7.6 Training Requirements 27
7.6.1 General Training Requirements 27
7.6.2 Exercises 27
7.6.3 Exercise Scenario Development 28
8.0 Document Control 30
8.1 Introduction 30
8.2 Purpose and Scope 30
8.3 Responsibilities 30
8.4 Requirements 30
9.0 Records Management 32
9.1 Introduction 32
9.2 Purpose and Scope 32
9.3 Responsibilities 32
9.4 Requirements 32
9.4.1 General Requirements 32
10.0 Incident Response 33
10.1 Introduction 33
10.2 Responsibilities 33
10.3 Requirements 34
10.3.1 Internal Incident Reporting 34

10.3.2 Immediate Response....35
10.3.3 External Emergency Notification Flowchart....36
10.3.4 Reportable Event....37
10.3.5 Incident Reporting....37
10.3.6 Regulatory Notification....38
10.3.7 Public Protection....38
10.3.8 Incident Management Database Entry....40
10.3.9 Incident Classification (Assessment Matrix)....41
10.3.10 Share Learning....44
11.0 Evaluations....45
11.1 Introduction....45
11.2 Purpose and Scope....45
11.3 Responsibilities....45
11.4 Requirements....45
12.0 Corrective and Preventive Action....47
12.1 Introduction....47
12.2 Purpose and Scope....47
12.3 Responsibilities....47
12.4 Requirements....47
13.0 Public Awareness and Involvement....48
13.1 Introduction....48
13.2 Purpose and Scope....48
13.3 Responsibilities....48
13.4 Requirements....49
13.4.1 Notification and Consultation....49
13.4.2 Public Awareness and Involvement....49
13.4.3 Conducting Consultation....51

PROGRAM ADMINISTRATION

Title and Copyright

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All information in this manual is considered company confidential.

Disclaimer

The Emergency Management Program has been designed to provide a series of guidelines for responding to emergency situations. This EMP identifies, defines and recommends actions for dealing with incidents that could impact facilities within the EMP.

Verification of the information contained in this manual is the sole responsibility of Astara. Black Gold Emergency Planners Inc. does not accept any liability arising from the implementation or use of this EMP.

This document is administered by:

BLACK GOLD Emergency Planners Inc

B5, 6020 – 2nd Street SE
Phillips Park
Calgary, AB T2H 2L8

Office: 403-216-7052
Fax: 403-216-7053

Manual Receipt Form

Upon receipt of this Emergency Management Program Manual, this Receipt Form must be completed and returned to the John Drennan in the Corporate Office. The Manual holder is responsible for ensuring that the Manual is kept current by inserting the latest revisions as they are issued.

Recipient Name (please print):_____

Position:_____

Field Area Name (if applicable):_____

Date:_____

Signed:_____

Return signed copy to: Astara Energy Corp.
1600, 205 - 5th Avenue SW

Calgary, AB T2P 2V7

Phone: 1-825-540-7200

Attention: John Drennan
EH&S Coordinator
Email: jdrennan@astaraenergy.ca

Management of Change Request Form

Astara Energy Corp.

Attn: John Drennan, EH&S Coordinator

1600, 205 - 5th Avenue SW

Calgary, AB T2P 2V7

Email Address: jdrennan@astaraenergy.ca

Section Number: _____

Page Number: _____

Copies of revised pages attached: ☐ yes ☐ no

If any of the following items have changed, please check the box beside it and provide a description of the change in the space provided.

☐ Company information ☐ Mapping or site information

☐ Employee information or capacity changes

☐ Policy and/or Procedures ☐ Other

Description of Amendment:

_____

_____

_____

_____

_____

_____

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Please attach additional pages and / or support documentation as required.

Requested By: _____

Address: _____

_____

_____

Request Numbered and Logged ☐ yes ☐ no

Correspondence Required ☐ yes ☐ no

Request Acknowledgement By: _____

Approved By: _____

Approval Date: _____

Revision Date:: _____ Issue Date: _____

Management of Change Log

Date	Revision #	Reason for Revision	Section	Affected Pages
20/01/2022		Creation of a new EMP		

Distribution List

EMP #	Name/Title	Company	Location

EMERGENCY MANAGEMENT COMMITMENT STATEMENT

Astara Energy Corp. is committed to operating in a safe, secure, responsible and reliable manner.

Astara is prepared to manage all emergencies or any unplanned events and is prepared to protect the public, employees and contractors, Company assets, including the property and the environment. To achieve this, the Emergency Management Program (EMP) will:

- Be built on the foundations of Prevention & Mitigations, Preparedness, Response and Recovery.
- Exceed or meet all regulatory and legal requirements.
- Consider all hazards when identifying and mitigating risks.
- Ensure Astara employees and contractors have appropriate emergency preparedness and response training and resources.
- Ensure standardized objectives during a response:
    - Life Safety,
    - Stabilize Incident and
    - Minimize Impacts.
- Ensure an emergency response is coordinated with regulators, first responders, government agencies, First Nations and to promote Unified Command.
- Be continually improved.
- Integrate and align with corporate commitments, processes, programs and procedures as an element of the overall Operations Management System (OMS).

This applies to all Astara employees and contractors while at any Company place of work and conducting work related duties or activities.

All levels of Astara management will be accountable for providing leadership and demonstrating conformance to this commitment.

SECURITY MANAGEMENT COMMITMENT STATEMENT

Astara Energy Corp. and its affiliates (collectively Astara) are committed to maintaining a high standard of corporate governance and ethical practices throughout our operations. Our corporate governance practices are designed to ensure:

- Our businesses are effectively managed.
- We meet our obligations to all regulatory bodies, business partners, customers, stakeholders, employees and shareholders.
- We operate in a safe, reliable and environmentally responsible manner.

Astara is regulated by the Canada Energy Regulator (CER) under the Onshore Pipeline Regulations (OPRs). CER regulated companies need to have, within a corporate management system, various programs to meet the requirements of the OPRs. A security management program is required under the OPRs to be compliant with Canadian Standards Association (CSA) Standard Z246.1 (Security Management for Petroleum and Natural Gas Industry Systems).

The Astara Security Management Program (SMP) consists of policy, processes, procedures, goals, standards and guidelines to manage security risks, threats and incidents in support of our commitment to:

- Provide safe and healthy working conditions.
- Protect the environment.
- Protect all corporate assets from harm.

The SMP integrates with other programs under the Astara Operations Management System. The fundamental objective of the SMP is to protect assets, including business operations, by undertaking proactive and ongoing activities in efforts to prevent incidents from occurring by managing potential security threats or incidents in a reasonable and measured manner.

The SMP will undergo regular review and corporate audits to ensure program objectives and regulatory requirements are met. Reviews and audits will also provide opportunity to ensure the program is continually being improved, as necessary.

1.0 INTRODUCTION

1.1 Purpose

This document describes Astara Energy Corp. (Astara) Emergency Management Program (EMP). The Company Emergency Management Program (EMP) describes the system for responding to incidents and emergencies that could impact the health and safety of employees, the public, the environment and property. The Program combines systems and procedures from across the organization enabling a quick, effective response to any emergency. The EMP provides direction and governs emergency management activities, which include:

- Establishing clear roles and responsibilities for achieving Emergency Management objectives and performance targets.
- Providing an EMP that aligns with applicable industry standards and achieves safe, environmentally responsible, and reliable operations.
- Anticipating, recognizing, evaluating, and controlling emergency management specific hazards and risks.
- Preparing Astara to respond to emergency situations.
- Evaluating and continually improving the management of the EMP.
- Measuring, monitoring, and reporting emergency management performance.
- Demonstrating and reinforcing the priority of emergency management in all business activities.

The Emergency Management Program Coordinator is responsible for oversight of all activities related to emergency response and recovery and ensuring Astara has the capability, resources, and training to effectively manage emergencies.

Specific terms are used to indicate whether an action is mandatory or recommended. The following words have specific meanings:

- “” is used where an action is mandatory.
- “Should” is used where an action is recommended.
- “May” is used where alternatives are equally acceptable.

Some additional terms are capitalized, but do not appear on the list of defined terms, such as the job titles of Company personnel and departments.

Certain Sections within this Manual are supported by additional policies, standards, practices, processes, documentation and forms. These be referenced where applicable.

In some cases, the Manual calls out specific SOPs which are referenced to provide further guidance on a specific topic that may be further complicated by:

- jurisdictional or regulatory requirements,
- facility design criteria for Asset Areas, and/or
- operational controls.

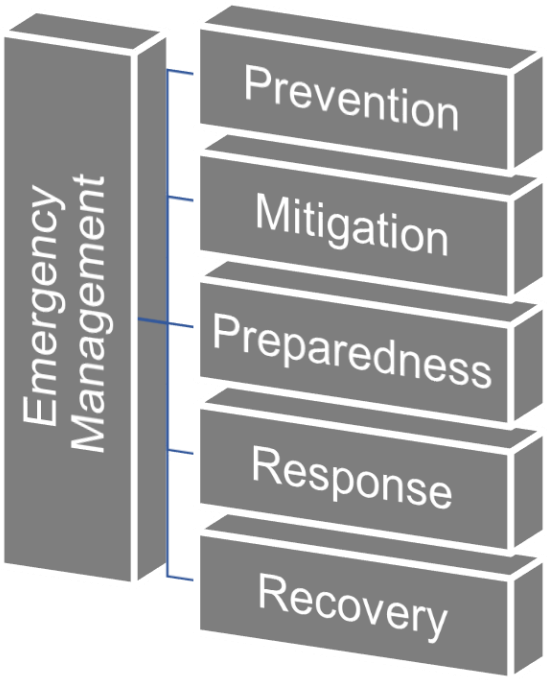
1.2 Scope

This Manual applies to all Astara Employees and Contractors engaged in design, construction, operation, gathering, processing, storage maintenance, decommission and abandonment activities at Company facilities, as well as visitors to these worksites.

Astara takes an **all hazards approach** for emergencies; we define this as non-routine events that exceed the normal operating capacity of the affected department(s) or the organization. The EMP establishes the framework for preparing for, responding to, and recovering from non-routine incidents, regardless of the nature or severity.

Astara follows the principles of the Alberta Energy Regulator (AER) Directive 071 and CSA Z246.2 Emergency Preparedness and Response for Petroleum and Natural Gas Industry System which are provided to ensure a coordinated and organized approach to emergencies and disasters. This EMP has been designed to align with industry best practices to meet the following applicable regulatory requirements:

- Canadian Energy Regulator (CER) Onshore Pipeline Regulations
- Alberta Energy Regulator (AER) Directive 071: Emergency Preparedness & Response Requirements for the Petroleum Industry
- Canadian Standards Association (CSA):
    - CSA Z246.1: Security Management for Petroleum and Natural Gas Industry Systems
    - CSA Z246.2: Emergency Preparedness & Response for Petroleum and Natural Gas Industry Systems
    - CSA Z662: Oil and Gas Pipeline Systems
- Canadian Environmental Management and Protection Act



1.3 Expectations

Company Management recognizes that the establishment of an effective safety culture cannot be realized through this Manual alone. Employees at all levels, including contractors and visitors, must carry out their individual responsibilities to provide a safe and healthful work environment.

Everyone must therefore become familiar with this Manual with respect to his or her work duties.

The Emergency Management Program is responsible for the development, compilation, and issuance of procedures and guidelines contained in this Manual. The contents of this Manual are subject to further development and revision.

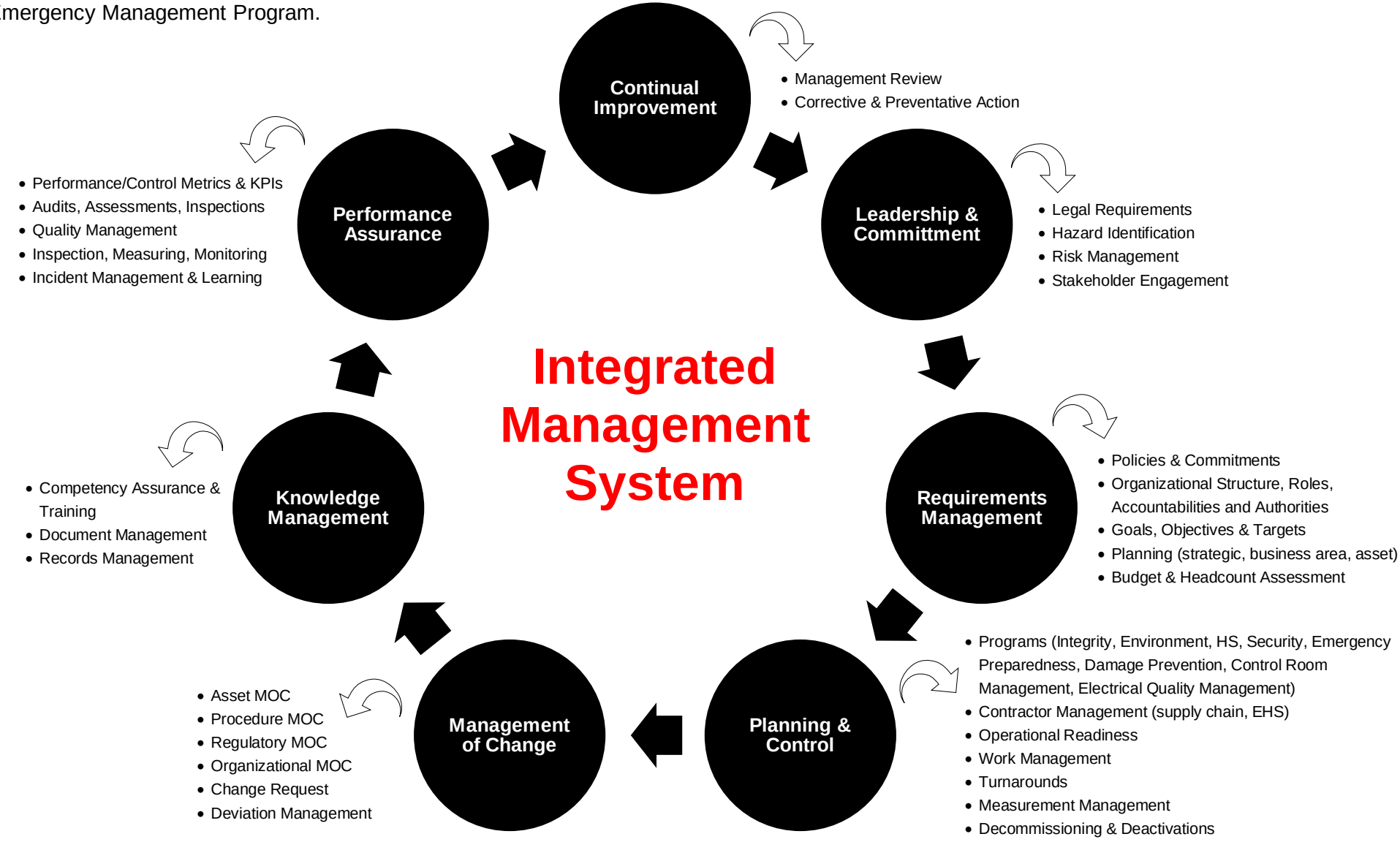
This Manual is issued electronically to all locations and departments within the Company. As updates are provided, the facility Supervisor is responsible for ensuring that Employees are informed of any changes.

Each Employee is encouraged and expected to take an active role in the implementation and future development of this Manual. This includes following the procedures and guidelines as well as providing oversight to Contractors and Visitors to follow the same practice.

2.0 LEADERSHIP COMMITMENT AND PARTICIPATION

2.1 Integrated Management System

Astara Energy Corp. has adopted an integrated management system to provide coordination between the company's management and protection programs. The IMS ensures that hazards that are identified through the safety management program are considered in the Emergency Management Program.



2.2 Environment, Health and Safety Policy

Astara Energy Corp. is committed to the health and safety of all stakeholders. This includes but is not limited to, preventing personal injury, preventing negative environmental impacts, preventing the loss of its resources or physical assets.

In fulfilling of this commitment to protect people, environment and property, Astara Energy Corp. will provide and maintain a safe and healthy workplace. Astara Energy Corp. will direct work in accordance with industry standards and adhere to all applicable legislative requirements. Employees, contract workers and all contractors must strive to eliminate hazards which may result in personal injury or illness, negative environmental impacts, incidents, and property damage.

Astara Energy Corp. supports all workers:

- Right to Know
- Right to Participate
- Right to Refuse Work

All employees, contract workers and all other individuals conducting work for Astara Energy Corp. or on Astara Energy Corp. worksites will be equally responsible for refusing dangerous work and/or work they are not competent to perform.

All employees, contract workers and all other individuals conducting work at Astara Energy worksites are responsible for working in a healthy and safe manner, participate in the improvement of safety measures and following all safe work practices & procedures and applicable legislation.

Loss can be mitigated through adhering to safe work practices and procedures in combination with active involvement by all persons.

No Task Is So Urgent That It Cannot Be Done Safely

2.3 Legal Requirements

This Emergency Management Program document contains a comprehensive set of procedures required to fulfill the legal requirements found in:

Alberta: The AER Directive 071 – Emergency Preparedness and Response Requirements for the Petroleum Industry prescribes three core principles:

1. Emergency Response Plans (ERPs) are in place to respond to incidents that present significant hazards to public and the environment.
2. Ensures that there is an effective level of preparedness to implemented ERPs.
3. Ensures that there is the capability in terms of trained personnel and equipment to carry out an effective emergency response to incidents.

Federal Regulations: The Canadian Energy Regulator (CER), formally known as the National Energy Board (NEB) - regulates the construction and operation of oil and gas pipelines that cross provincial and international boundaries through the Onshore Pipeline Regulations (SOR/99-294). At Astara we have developed, implemented, and maintain an emergency management program, which includes developing and submitting applicable Emergency Response Plans annually and updating as required. Emergency exercises are conducted annually with a full scale exercise conducted every three years. At the federal level, Public Safety and Emergency Preparedness Canada, through the Emergency Management Act, develops programs and policies to prepare for national disasters.

Environment and Climate Change Canada: Environment Canada (EC) regulates business operations that may have an environmental impact, including propane and LNG storage facilities,

in accordance with the Canadian Environmental Protection Act and the Environmental Emergency Regulation. Astara has included environmental emergency response in accordance with the Environmental Emergency Regulation.

Transport Canada (TC): Astara has transportation Emergency Response Assistance Plans (ERAP) relating to the transportation of dangerous goods. The ERAP is submitted to TC for approval in accordance with Part 7 of The Transport of Dangerous Goods Regulation and are included in Astaras regular drills and exercises.

CSA Z246.2 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems: the CSA Standard establishes criteria for emergency preparedness and response for the petroleum and natural gas industry.

CSA Z731-03 Emergency Preparedness and Response: the AER expects this CSA standard to be used by the petroleum industry in conjunction with the AER Directive 71.

2.4 Goals and Objectives

The goal and objectives of the Emergency Management Program are to:

- Protect the public and minimize impacts to the environment through the implementation of the EMP.
- Prepare and maintain an emergency response program.
- Prepare and maintain emergency response plans.
- Complete required emergency response training, exercises and drills
- Protect people, property and the environment by establishing a framework of emergency preparedness, planning and response capabilities.

2.5 Roles, Responsibility, Accountability and Authority

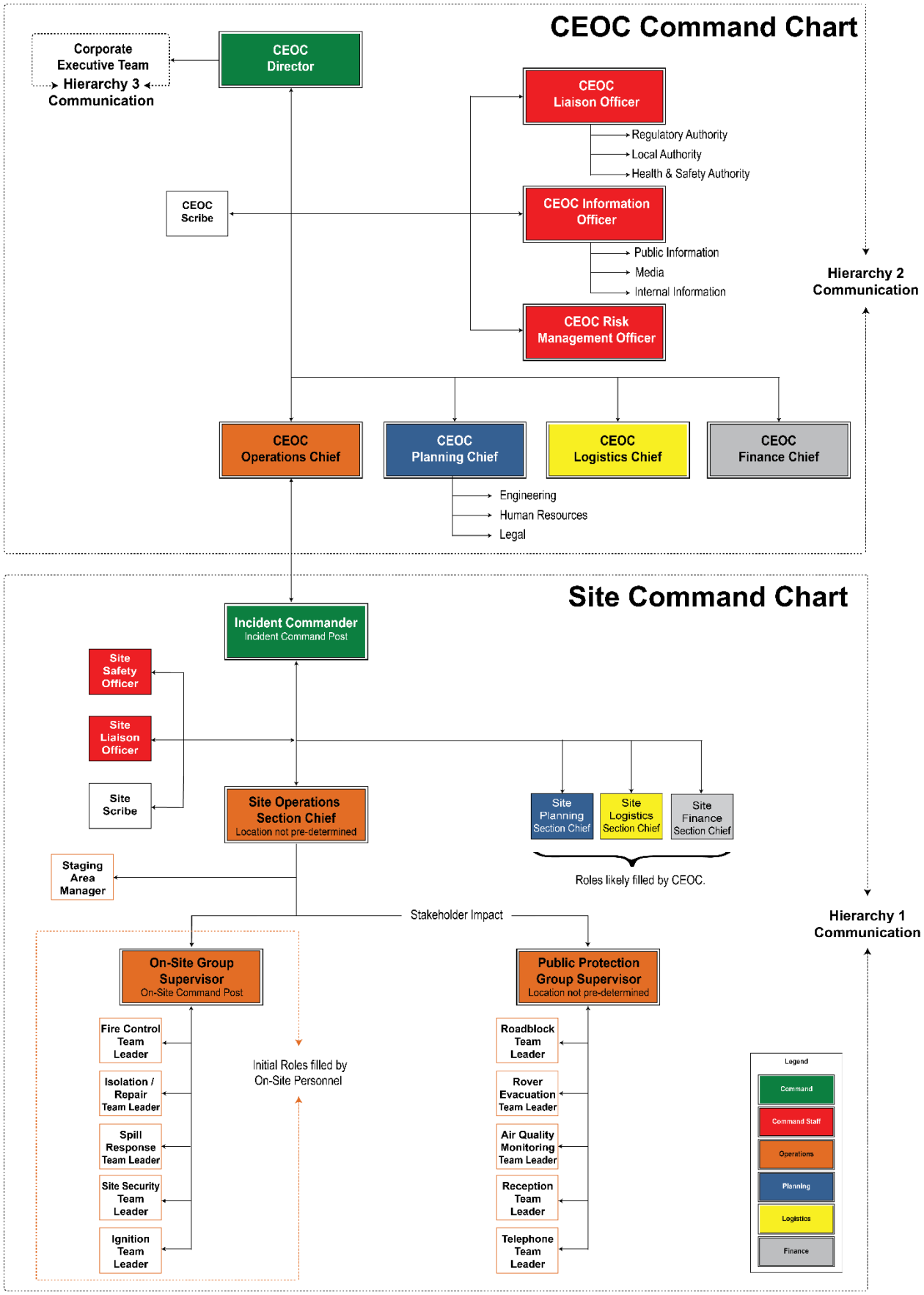
- Ensure the health and safety of all contract workers and other contract workers present at the workplace.
- Comply with either the Alberta Occupational Act, Regulation and Code.
- Remedy any workplace conditions that are hazardous to the health or safety of contract workers.
- Make contract workers aware of all known and reasonably foreseeable health and safety hazards to which they are likely to be exposed by their work.
- Make contract workers aware of their rights and duties under the act and regulations.
- Establish health and safety policies and programs in accordance with the regulations.
- Provide and maintain in good condition personal protective equipment, devises and clothing as required by the regulations.
- Provide to the contract workers information, instruction training and supervision necessary to ensure the health and safety of those contract workers and other contract workers.
- Make a copy of the act and regulations readily available for review.
- Consult and cooperate with the joint committees and health and safety representatives.
- Cooperate with the board, officers of the board and other persons carrying out a duty under the act and regulations.
- Prepare and maintain an Emergency Management program in accordance with CSA Z246.2.
- Appoint an Emergency Management Program Coordinator.
- Ensure submission and maintenance of the contact information for the emergency management program coordinator.
- Ensure all field operations staff is trained to respond to emergencies.
- Review and if necessary, update the program:
    - Every three (3) years, or
    - After a significant change occurs in the type of hazards and risks arising from the activities identified in the emergency response plan(s), or
    - After an evaluation of a response to a level 3 incident, or
    - When Astara becomes aware of a deficiency in the program that risks the safety of emergency response personnel, employers or the public.
- Develop a training plan to ensure employees are trained to respond to emergencies.
- Conduct full scale exercise every three (3) years.
- Conduct tabletop or functional exercises in the years between full scale exercise or,
- Report emergency incidents as per the Incident Reporting procedure.
- Fulfill the General Staff and Emergency Support team Roles for level 3 emergencies.
- Ensure Astara is a member of the Western Canada Spill Cooperative (WCSS).
- Ensure the Emergency Response plans are developed, reviewed, revised, updated and maintained on an annual basis.
- Maintain revision history for all Emergency Management documents.
- Maintain Emergency Management Documentation Distribution lists.
- Ensure that incidents are reported to that appropriate regulatory agency.
- Ensure that Emergency Response training is provided to all staff as appropriate.
- Review and verify that the content of the emergency response training courses is appropriate.
- Assume the role of Emergency Operations Center (EOC) director for level 3 emergencies.
- Activates level 3 emergency response plans.
- Manage and staff the Emergency Operations Center (EOC) for level 3 emergencies.
- Fulfill public safety roles (Rovers, Telephoners, Roadblock Personnel, Air Monitors and Reception Center Staff).
- Participate in ERP exercises.

- Review the area emergency response plans each year.
- Report emergency incidents as per the Incident Reporting procedure.

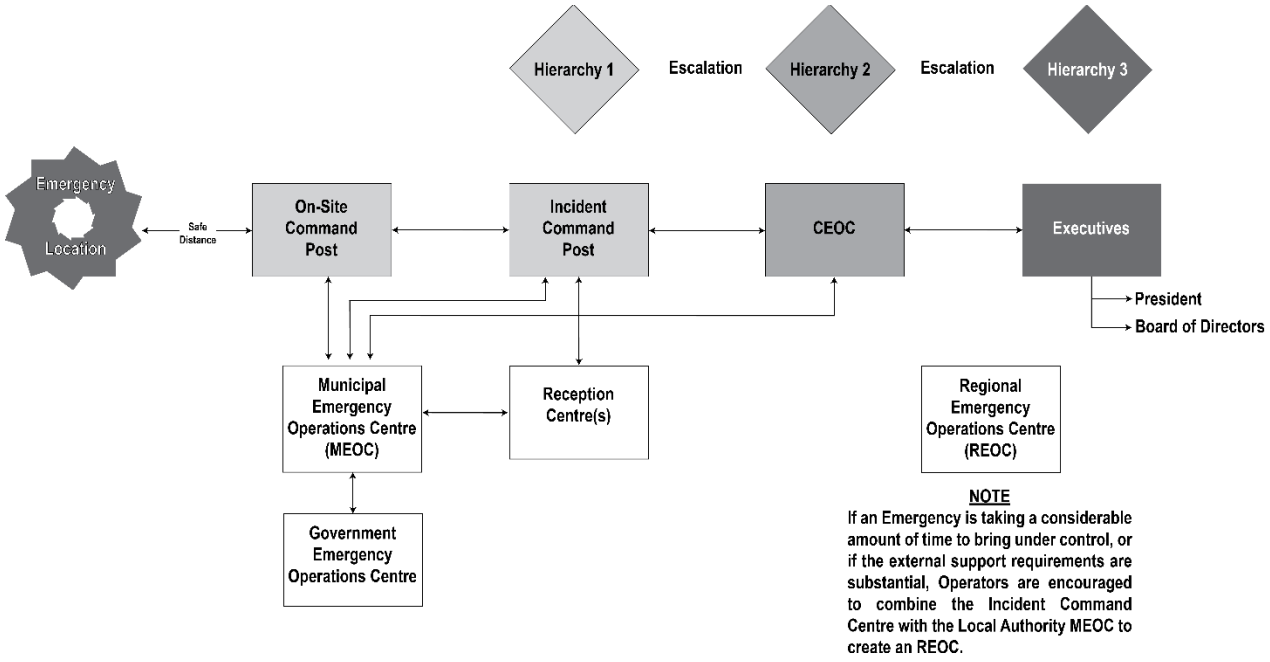
2.5.1 Documentation

- Company Emergency Response Plan – Command Staff Roles
- Company Emergency Response Plan – General Staff Roles – Operations Section
- Company Emergency Response Plan – General Staff Roles – Planning Section
- Company Emergency Response Plan – General Staff Roles – Logistics Section
- Company Emergency Response Plan – General Staff Roles – Finance/Admin Section
- Company Emergency Response Plan – Operations Section – Public Safety Roles:
    - Public Safety Group Supervisor
    - Air Monitors
    - Reception Center Representative
    - Roadblock Personnel
    - Rovers
    - Telephoner
- Company Emergency Response Plan – Lead Agency Roles
- Company Emergency Response Plan – Alberta Health Services – Oil and Gas Industry Emergency Preparedness and Response Roles and Responsibilities
- Company Emergency Response Plan - Ministry of Transport Roles and Responsibilities
- Company Emergency Response Plan – Supporting Agency Roles
- Company Emergency Response Plan – Federal Agency Roles

2.6 Organizational Structure for Emergency Management



Communication Methods Between EOC Emergency Support Team, Field Response Team and Regulatory Agencies.



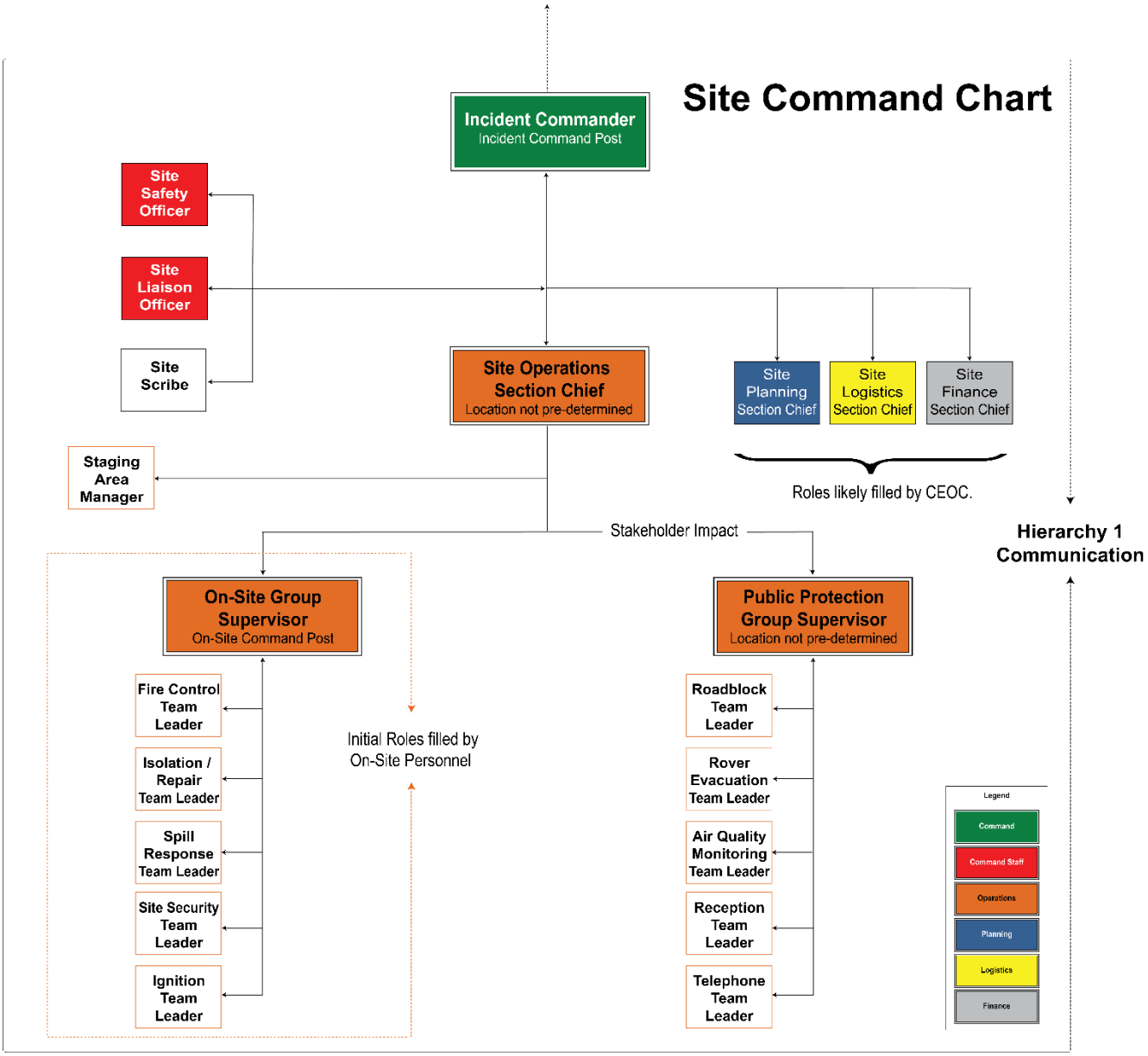
2.6.1 Incident Command System (ICS):

Astara has adopted ICS model as organizational structure for responding to emergencies. The ICS will ensure that Astara is:

- Complying with applicable regulations and legislation.
- Aligning with industry standards and best practices.
- Emergency procedures for identifying potential emergency situations and planning for mitigation and control.
- Minimizing consequences of emergency events by ensuring prompt and effective actions.
- Providing appropriate training to ensure employees understand their roles and responsibilities under the Emergency Response Plans.
- Conducting operational and discussion-based exercises to test the readiness of the organization.
- Supporting response efforts by proving on-call support and emergency management leadership.
- Providing stakeholders with relevant information regarding emergency management activities.
- Reviewing emergency management procedures and evaluating emergency responses to ensure continual improvement.

Field Response Team (Contract Operators)

See CEOC Command Chart



2.6.2 Incident Command Roles

EOC Director	The EOC Director is responsible for coordination of response efforts from corporate to support the Field Response Team (FRT) and for efforts to ensure business continuity during the incident. The EOC Director determines the level of activation of the Emergency Support Team (EST) and assigns all positions to meet the required level of activation.
Communications & Media	Serves as the coordination point for all public information, media relations and internal information sources. Communications & Media is responsible for preparing the FRT and the EST to deal successfully with internal and external communication.
Regulatory / Government Liaison	Provides regulatory guidance and advice to the EST as well as to be a liaison between responding government agencies and the company. The Regulatory / Government Liaison is responsible for providing support to the field Liaison Officer.
Incident Support Manager	The Incident Support Manager is the main link between the FRT and the EST and is the main informant for the EST. The Incident Support Manager speaks directly with the field Deputy Incident Commander, if assigned, or the field Incident Commander. The Incident Support Manager provides operational, public safety, planning and logistics advice and support to assist the FRT with developing an effective field Incident Action Plan (IAP).
Business Impact Support Manager	The role of business impact is to identify and work to mitigate all of the negative impacts of the incident on the business as well as to provide business advice and support. The Business Impact Support Manager provides support to the Company in the areas of finance / accounting, legal, marketing, risk management and insurance.
Admin Support Manager	The Admin Support Manager provides administrative and technical support to the Company in the areas of human resources, information technology, travel, security and reception.
Health, Safety & Environment Support Manager	The Health, Safety & Environment Support Manager is responsible for providing Health, Safety & Environmental support to the FRT. The Health, Safety & Environment Support Manager is also responsible for managing the health / safety / environmental / planning / documentation activities of the EST.

2.6.3 Emergency Management Program Requirements

- Policy
- Management Commitment
- Roles, Responsibility, Accountability and Authority
- Legal Requirements
- Goals and Objectives
- Organization Structure
- Emergency Management Program Coordinator
- Document and Document Control
- Records Management
- Competence and Training

- Exercises and Drills
- Hazard Risk and Vulnerability Assessment
- Emergency Response Plans
- Public Awareness and Liaison
- Communications Planning
- Emergency Management Resources
- Situational Awareness
- Crisis Management (Business Continuity) Plans
- Distributions Lists (Internal and External)
- Continuous Improvement

3.0 HAZARD & RISK MANAGEMENT - HAZARD IDENTIFICATION, AND ASSESSMENT

3.1 Introduction

Astara takes an all hazards approach for emergencies; we define this as:

- An event or imminent event outside the scope of normal operations that requires prompt coordination of resources to protect people, the environment, and property.

The EMP establishes the framework for preparing for, responding to, and recovering from non-routine incidents, regardless of the nature or severity.

The following sections describe the hazard identification procedures used to systematically identify, control, or eliminate potential or actual hazards. Supervisors and Contract workers can prevent hazards from causing harm when they:

1. Eliminate the hazard,
2. Reduce the hazard, including substitution or isolation,
3. Engineering,
4. Administration by way of following procedures or applying training, or
5. Wear personal protective equipment.

3.2 Purpose and Scope

The objective of the hazard assessment process is to identify, assess, and quantify the consequential emergency events which may result from Astara specific activities. This is achieved by identifying all relevant substances currently under process / storage containment within a defined area. From that, the realistic worst-case scenario resulting from an incident which could directly or indirectly impact public safety has been determined.

Utilizing best practices in the field of emergency management and with consideration of CSA Z246.2 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems, this hazard assessment process will permit Astara to deliver an effective and timely response protocol for each identified consequential emergency event in order to protect the public, the environment and assets.

This document also intends to meet the following regulations:

- Canadian Energy Regulator Onshore Pipeline Regulations – SOR/99-294
- Canadian Environmental Protection Act, 1999

Note: as the requirements for an Emergency Planning Zone are not materially different Astara will primarily utilize the acronym EPZ when documenting information on the planning zone.

3.3 Responsibilities

- Ensure that contractors hired:
  - To identify, assess and control known, and reasonably foreseeable hazards are trained, qualified and competent to complete the hazard identification calculations.
  - To document the hazards and describe the controls used to prevent the hazard from causing harm.
- Ensure Hazard assessments of work activities and worksites are completed as required.
- Ensure that documented hazard assessments are retained and made available to all personnel in the organization and affected stakeholders.

Contractors:

- Understand the hazard assessment and control processes and specific responsibilities as they apply to each emergency response plan.
- Actively participate in the hazard identification, assessment and control process and ensure that an appropriate level of controls is documented in each emergency response plan.
- Communicate the results of the hazard identification and assessment to the emergency management program coordinator.

3.4 Requirements

- Risk and hazard assessments are reviewed regularly to consider changing circumstances and situations and are used in all stages of emergency planning and response activities.
- Astara has developed & implemented a process for the identification of its Emergency Planning Zones (EPZs) associated with the hazards posed by its pipelines and associated facilities.
- Astara re-validates its EPZs on a regular basis.
- The Management of Change (MOC) process is in place where new assets, licensing changes, integrity issues (i.e. ESDs not working) are communicated and EPZ calculations are updated to reflect that.
- EPZs are being utilized in the development of other Emergency Management related activities including public awareness, emergency responder continuing education & liaison programs.

3.5 Planning and Response Zones

- The planning and response zone is based upon the greatest hazard present, or expected to be normally present, for which the Emergency Response Plan has been developed. In many cases, oil and gas operations will have a number of products associated with their operation, such as propane bullets, condensate storage, containment for produced water, etc. that create a hazard area. When present, H_2S is typically the greatest hazard and will often determine the extent of an EPZ.
- Astara calculates the hazard planning distance for fluids containing hydrogen sulphide using Schedule A of the EMR (for facilities), Schedule B of EMR (for wells) or Schedule C of the EMR (for pipelines).
- For pipelines carrying low volatility, low toxicity product with an EPZ distance equal to or less than the Right-of-Way, the right of way distance may be used, extending the length of the pipeline. In no case should the EPZ be less than the right of way.
- For pipelines carrying a high volatility or high-hazard product, the EPZ distance should be calculated from the edge of the right-of way.
- When multiple pipelines share a right of way, or when rights-of-way overlap, the EPZ distance must consider the cumulative effect of each pipeline, using maximum licensed values.
- For H_2S, the calculations provided in Schedule C of the EMR must be used, however it may be possible with very low percentages of H_2S that other hazards will determine the EPZ distance.
- Astara calculates Planning Zones for all of its wells, pipelines & facilities based on the following methodologies:
    - Alberta - EPZ Calculations are completed for any well, pipeline or facility with hydrogen sulphide (H_2S) concentration of 0.1 moles per kilomole (mol/kmol) (0.0001 mole fraction or 100 ppm). The EPZs are calculated using the ERCBH_2S models.
    - Vapour Flammability HPZs - are calculated utilizing the ALOHA modelling system for all sweet and sour wells and Thermal Radiation HPZs are calculated for all sweet and sour pipelines. The larger of the HPZs is applied as the final EPZ.

- HVP Pipelines - EPZs for High Vapour Pressure (HVP) pipelines are determined using the Proposed EPZ Distances for Selected Pipeline Diameters provided by the Working Group in Project No. 1022345 the Effects of HVP System Parameters on Dispersion and Thermal Radiation Hazard Extents.

Pipeline Size		Ethane, Propane, and Butane Mix (No Ethylene)	Ethylene
3”	88.9 m**m**	250 m	250 m
4”	114.3 m**m**	300 m	350 m
6”	168.3 m**m**	500 m	550 m
8”	219.1 m**m**	700 m	750 m
10”	273.1 m**m**	900 m	1000 m
12”	323.9 m**m**	1100 m	1200 m
16”	406.4 m**m**	1600 m	1600 m

  - CER Regulated Pipelines - EPZ Calculations are completed for any pipeline with hydrogen sulphide (H_2S) concentration of 0.1moles per kilomole (mol/kmol) (0.0001 mole fraction or 100 ppm). The EPZs are calculated using the ERCBH_2S models.
  - Thermal Radiation EPZs are calculated utilizing the ALOHA modelling system for all sweet pipelines.
  - Environment Canada Regulated Facilities - Hazard zones for Environment Canada regulated propane / butane / NGL bullets & condensate tanks are calculated utilizing RMP*Comp™.
  - Facility EPZs - The facility EPZ is the largest of the following:
    - Largest EPZ of any pipeline entering or leaving the facility.
    - Environment Canada calculated hazard zone
    - The EPZ of any well on-site at the facility
  - Astara ensures its HPZs / EPZs are kept current via the following methods.
    - HPZs / EPZs are calculated for all new assets.
    - HPZs / EPZs are re-calculated for any changes to licensing / operating conditions.
    - HPZs / EPZs are re-calculated due to any integrity issues.
    - A complete refresh of EPZs occurs during the annual update of the ERP.
- If there are changes to the HPZs / EPZs that result in an increase in the hazard zone and new members of the public are impacted, then the ERP will be updated immediately.
- If there are changes to the HPZs/ EPZs that do not impact new members of the public or reduce the HPZs / EPZs then these changes will be rolled into the annual ERP update when it comes due.
- If there is additional public impact, the ERP must be updated prior to Astara bringing on any new assets, changing licensing or changing operating conditions.

4.0 EMERGENCY PREPAREDNESS AND RESPONSE

4.1 Introduction

This procedure is developed to support the company's requirement to have Site Specific Emergency Response Plans.

4.2 Purpose and Scope

This procedure describes the requirements for each area to have a site-specific Emergency Response Plan.

4.3 Responsibilities

Supervisors:

- Ensure the site-specific emergency plan is readily available for all locations.
- Ensure that emergency evacuation maps, phone contacts and other support documents are posted in prominent locations or available at each Company facility.
- Understand and follow the Crisis Communication and Media Response procedures.

Contract workers:

- Attend emergency response training, as required.
- Provide feedback following emergency drills or exercises.

Emergency Management Program Coordinator:

- Ensure development of site-specific emergency plans per the provincial requirements for all Company facilities.
- Ensure that all areas have access to the emergency response plans.
- Ensure the emergency response plans are maintain, reviewed, updated and distributed as per this EMP.
- Ensure each ERP list key Company contacts.

4.4 Requirements

4.4.1 General

- Each operating site must have a written emergency response plan that addresses the major unplanned events or exposures that could threaten the facility or public.
- Each plan will contain:
    - A statement of purpose, scope, and objectives;
    - A description of assets and operational activities covered by the ERP;
    - Emergency Response Plan Distribution List;
    - Emergency Response Map, with an appropriate level of detail to allow for effective planning and response;
    - Roles and responsibilities for each internal and external position in accordance with the incident management system;
    - Emergency contact information for an individual, group, or organization that has a role in the management of an emergency;
    - Emergency contact lists for:
        - Notifying directly impacted public; and
        - Enabling the public to contact the operator (e.g., 24 hour emergency contact phone number);
    - A method for classification of incidents and response actions for specific incidents;
    - Response procedures and guidelines to manage site-specific risks;
    - Command and coordination (reception) centers, and other facilities as appropriate;
    - Procedures for communication with response team, support services and government;
    - Procedures for communication with external stakeholders, public and media;
    - Critical resources, Equipment list, and a means of activation;

  - References to copies of mutual aid agreements;
  - Detailed hazardous product information;
  - Internal and external reporting requirements;
  - Documentation processes;
  - Processes and criteria for:
    - Determining the incident classification, including escalation and de-escalation;
    - Activation of the ERP; and
    - Deactivation (downgrading and stand-down of emergency levels);
  - Processes for the preservation of evidence; and
  - Debrief procedures.
- The emergency response plan must conform to the requirements set forth by regulatory agencies and emergency response program requirements.
- The emergency contact list be reviewed quarterly to confirm the accuracy of the emergency response phone numbers and accuracy of individual names.
- Emergency planning provisions will be incorporated into each facility's Employee orientation training program.
- All facilities conduct an emergency exercise at least annually.
- Following the emergency exercise, the involved employees be debriefed, and the site emergency plan be revised as appropriate.

4.4.2 Emergency Response Procedures

Each Emergency Response plan includes specific emergency response procedures for the following events:

- Public Protection Measures
  - Air Quality Monitoring
  - Shelter in Place
  - Evacuation
  - Ignition
  - Road and Airspace Closures
  - Establishing and Isolating a Perimeter (Isolation)
- Spill Response
- Medical Emergencies
- Responder Safety
- Fire/Explosion
- Transportation Incidents
- Weather and Natural Disasters
  - Earthquake
  - Floods
  - Thunderstorm and Lightning
  - Tornados
  - Winter Storms, Blizzards, Freezing Rain, Heavy Snow, Blowing Snow
- Security Incidents
  - Bomb Threats
  - Suspicious Packages
  - Trespassing
  - Vandalism
  - Terrorism
  - Cyber-Attacks
- Animal Encounters
- Drinking Water Emergencies

4.4.3 Resources

- Each operating facility will identify appropriate emergency response resources available for deployment in an emergency.
- The location of personnel, equipment services will be described in the emergency response plan.
- Equipment identified will include:
    - Primary communication method (equipment, radio frequency etc.);
    - Back up emergency communications equipment;
    - Roadblock kits;
    - Ignition equipment;
    - Gas monitoring equipment; and
    - Spill response equipment.

5.0 MANAGEMENT OF CHANGE

5.1 Introduction

Management of Change is a systematic approach to ensuring proposed changes are assessed for risk, and that change is effectively implemented to achieve targeted results.

5.2 Purpose and Scope

Disciplined Management of Change identifies and mitigates risks associated with changes to operations, procedures, site standards, facilities and the organization to ensure that risks associated with change are well understood and addressed.

A Management of Change (MOC) process is in place to address the risks introduced into the workplace through changes (e.g. materials, people, vendors, procedures).

This procedure applies to changes for requests to procedures in this Manual.

5.3 Responsibilities

Contract workers:

- Follow the management of change procedure to request changes to:
    - Emergency Response Plans.
    - Emergency Planning Zones (EPZs).
    - Public Awareness brochures.
    - Liaison Information.
    - Mutual Aid Agreements.

Emergency Management Program Coordinator:

- Review pipeline and facility MOCs to determine if there is an impact to an existing Emergency Planning Zone.
- Ensure all Emergency Planning Zones are updated as a result of changes to:
    - Pipeline design;
    - Flow;
    - Pressure;
    - Product;
    - Size (diameter);
    - Length;
    - Location; and
    - Activation or deactivation.
- If there are changes to the HPZs / EPZs that result in an increase in the hazard zone and new members of the public are impacted, then the ERP will be updated immediately.
- If there are changes to the HPZs/ EPZs that do not impact new members of the public or reduce the HPZs / EPZs then these changes will be rolled into the annual ERP update

when it comes due. If there is additional public impact, the ERP must be updated prior to Astara bringing on any new assets, changing licensing or changing operating conditions.

5.4 Requirements

All Company programs follow the Company Integrated Management System Management of Change processes.

6.0 COMPETENCE

6.1 Introduction

Competency assurance is using a variety of means to ensure that individuals have the necessary qualifications, training, and experience to safely respond to emergencies.

6.2 Purpose and Scope

The purpose of competency assurance activities is to ensure individuals on Company worksites are sufficiently qualified, trained, and experienced for the duties they are assigned; or that they are receiving sufficient supervision, training, and experience for duties they will be expected to perform in the future.

Astara's Training Matrix identifies the training required for those that may fill Emergency Response Roles to ensure that personnel have the appropriate knowledge and skills to comply with regulations and respond to emergencies as per Astara's Emergency Response Plans. This includes levels of ICS training, participation in emergency response exercises, role specific training, media training and emergency response related software training.

Astara utilizes a rolling Three Year Training Schedule to ensure that staff are moving towards achieving these training targets. Training requirements and completion rates for each individual are tracked utilizing Astara's Learning Management System housed in the HR Success Factors system.

6.3 Responsibilities

Astara:

- Assess the competency of Contract workers who report to them through a variety of means as applicable, including but not limited to:
    - Confirming any specialized and/or regulated qualification for work assignments has been achieved by the person assigned this type of work.
    - Performing an annual review of Training requirements, matching training assignments to the work assigned, and ensuring training was completed as per required deadlines.
    - Regular worksite visits and/or inspections to allow for firsthand observation of worker competency.
- Ensure that new, inexperienced, or transferred contract workers work under the direct supervision of another Worker who is sufficiently competent until such a time as they are deemed to be competent in the work assigned at a given worksite.
- Ensure Contract workers are encouraged to raise concerns about competency, especially if they believe they are not qualified or sufficiently experienced to manage the hazards of an assigned task.

Contractors:

- Provide Contract workers with sufficient competency for the work they are assigned. To that end, Contractors must provide proof of qualification and training records for individual Contract workers.

Contract Operators:

- Participate in competency assessment or assurance exercises as requested.
- Report to their People Leader(s) any concerns regarding competency issues, especially if they believe they may not be sufficiently qualified or experienced for an assigned task and the hazards it represents or if a required qualification has or is about to expire.

6.4 Requirements

- Supervisors assess the competency of Contract workers under their control. This should include activities such as:
    - Confirming existing qualifications, training, and experience through the onboarding process for new or transferring contract workers.
    - Performing an annual review of H&S Training requirements for individual contract workers, matching training assignments to the work assigned, and ensuring training was completed as per required deadlines.
- The Key Response Personnel Document in Section 2 of each ERP identifies those likely to fill specific positions on the Field Response Team.
- The Emergency Support Team Leads Callout List identifies those likely to fill specific positions on the EST.

7.0 EMERGENCY RESPONSE TRAINING

7.1 Introduction

The purpose of this procedure is to establish expectations for Emergency Response Training. This procedure will assist in ensuring Company personnel receive appropriate emergency response training.

7.2 Purpose and Scope

Emergency response training is provided to Company employees who may be involved in responding to an incident. Training is provided in various forms such as, formal training, table-top exercises, plan reviews, and workshops.

External agencies, stakeholders and subject matter experts are invited to participate in training when applicable to ensure a comprehensive and cohesive response effort. Training requirements are determined by operational and regulatory requirements.

Astara's Incident and Emergency Management team collaborates with the Company Training department in the development of training materials.

Astara's EMS Team regularly attends workshops, courses, and conferences for professional development to review industry best practices with a view to continually develop, enhance and improve the Program. to emergencies.

7.3 Responsibilities

Supervisors:

- Ensure Employees under their direction are assigned and complete the Emergency Response Training that is:
- Support Learning and Development processes and requirements related to training completion records.
- Provide feedback to the Emergency Management Program Coordinator:
    - Whether the Training is relevant and meeting the needs of Employees.
    - Whether additional or different Training offerings are required to meet the needs of these Employees.

Employees:

- Complete the training assigned to them within the required timelines.
- Alert Supervisors if they believe their training on a specific workplace hazard or topic is insufficient for the work they do.
- Provide feedback on the training programs they complete.

Emergency Management Program Coordinator:

- Revise the Company Training Matrix in consultation with:
  - Area Operations personnel.
  - Area Safety Advisors.
- Ensure applicable regulatory requirements regarding training are being met by Training program.
- Provide oversight on Emergency Response Training content to ensure accuracy, quality and consistency.
- May, under certain circumstances, coordinate and/or conduct Emergency Response Training.

7.4 Training Objectives

- Astara completes Emergency Response Exercises in a frequency that meets or exceeds regulatory requirements as per Astara's 5 Year Exercise Schedule. Each exercise has specific learning and coordination objectives that are measured as being achieved / not achieved for each exercise. Attendance at emergency response exercises is tracked for each individual employee via Astara's learning management system.
- A Functional/Full Scale Exercise Audit Form or Tabletop Exercise Audit Form is shared with each area at the next Safety Meeting following each emergency response exercise to review the positive observations, opportunities for improvement, other learnings and action items.

The objectives of the Emergency Response training include:

- Review of response actions and priorities.
- The emergency response program.
- Review of the Incident Command System (ICS) - structure, roles and responsibilities.
- Hazards and risk identification, including on-scene assessment.
- Use of the AER / OGC's incident classification matrix.
- Public protection measures used during an emergency.
- Ignition as mitigation.
- Communication methods.
- Map reading / use of mapping tools.
- When and how to report a security threat or incident.
- Use of equipment (both Company held, as well as that provided by third parties such as Western Canada Spill Services (WSCC) or other mutual aid agreements) used to contain and control an incident.

7.5 Requirements

Training Requirements will be set out in the Astara Training Matrix. This matrix provides the following:

- Training requirements for Employees by operations type and role. Individual training courses or activities will be broken into two categories:
  - REQUIRED: This includes any Training that is mandatory for all Company employees, an Asset Area or operation type in Astara due to core Company commitment or regulation that affects all Contract workers in each operation type.
  - OPTIONAL: These are any training activities that are only applicable to a subset of Contract workers within a type of operation or facility. For example, on facilities with a forklift and then only forklift operators within those facilities would be required to take "Forklift Operator" training.
- Training timing and frequency.
  - Each course or training activity on the Training Matrix will specify whether it needs to be provided on initial hire or on taking on a new role.

- All completed Training by an Employee must be electronically recorded.
- The specific processes and requirements for electronic recording are specified by Learning and Development.
- Hard copy training documentation may be used as part of instructor-led training, but all records must be transferred to the Learning and Development electronic system to allow for accurate Training reporting.

The Emergency Management Program Coordinator must perform a review of the Training requirements and potentially individual courses or training activities:

- At least once a year and timed to allow any changes made to take affect the following calendar year.
- In consultation with Operations Support and Area Operations input.
- when any of the following occurs:
    - New regulatory requirements.
    - Revised procedures.
    - Incident reviews, investigation findings, or action plans.
    - Audit results.

7.6 Training Requirements

7.6.1 General Training Requirements

Frequency / Action	As Required	Semi Annually	Annually*	Every Three (3) Years**	Every Five (5) Years***
Training					
Employee Orientation New / Transfer	√				
On-the-job Training	√				
Response Discussion During Pre-Job Meetings	√				
Drills	√				
Tabletop Exercise			√		
Communication / Partial Mobilization Exercises			exercises		
Major (Full Scale) Exercise				√	√
Post Incident (Actual) Review	√				
ERP Review / Self Audit		√			

***** Must be held annually.

****** CSA Z246.2, CER, AER, OGC requires Major Exercises be held every three (3) years.

******* Environment & Climate Change Canada (ECCC) requires Major Exercises be held every five (5) years for facilities with E2 required substances.

7.6.2 Exercises

Emergency exercises are designed to evaluate and validate Company emergency response plans. Astara utilizes tabletop, drill based, functional and full-scale exercises in the emergency exercise program in order to test and evaluate the full range of the Company's emergency processes and procedures that ensure response priorities are achieved and regulatory requirements are met.

These exercises simulate disruptive events and provide the participants with the opportunity to practice their individual roles and responsibilities.

Typical aims of the exercises can be but are not limited to:

- To develop the necessary skills for individuals and organizational units to effectively respond to and manage emergency situations.
- To familiarize individuals and organizations with their roles under the relevant Emergency Response Plans.
- To validate existing plans and identify areas of opportunity.
- To build employees' confidence with respect to making decisions in an emergency situation.
- To practice and enhance interagency cooperation and communication.

Note: Alberta Energy Regulator (AER) & Oil & Gas Commission (OGC) requires 30 days advance notice of scheduled exercise.

Annual exercise plans are developed, outlining exercise dates, locations and types, based on organizational needs and regulatory requirements.

7.6.3 Exercise Scenario Development

Operations leadership will meet annually for a series of meetings to discuss, review, and develop exercise content, determine responsibilities and tasks, and make logistical arrangements and finally participate.

Tabletop Exercises (Annual)

Tabletop exercises are semi-formal, facilitated discussions where participants discuss responses to a theoretical/simulated emergency situation. The focus is to have participants apply specific plans, policies, procedures, and training by discussing how they would respond to a specific emergency event. This type of exercise is designed to validate procedures and to familiarize participants with their roles under the plan. These exercises may test and validate coordination between the Emergency Operations Centre and other entities such as internal departments (e.g. Operations Support). Tabletop exercises may include representatives from stakeholder organizations such as emergency services and government agencies.

Functional Exercises (Annual)

Functional exercises validate and evaluate multiple functions at a single site. The focus is to have participants apply plans, policies, procedures, and training in responding to a specific simulated emergency scenario. Functional exercises may test and validate coordination between the Emergency Operations Centre and other entities such as internal organizations (e.g. Operations Support) and external stakeholders (e.g. fire departments).

Drills (Annual)

Drills are exercises that validate and evaluate a specific operation or function (e.g. Fire Drill or Muster Drill). The focus is to have participants display a level of proficiency and comfort when executing a response plan. Regular drills are scheduled in the field to ensure that immediate actions and emergency response can become second nature for potential responders.

Full Scale Exercises (Every three Years)

Full-scale exercises are the most complex and involved exercises. The focus is to have participants at multiple locations apply plans, policies, procedures, and training in response to a simulated large-scale emergency event. These exercises test both the on-site, tactical response to an emergency by operational personnel and the deployment and coordination of corporate-level and external resources in supporting the site event. Full Scale Exercises thoroughly test and evaluate emergency response procedures across the Company, as well as identify areas of opportunity that serve improve interagency cooperation and communication. The roles of other

agencies are filled by representatives from those agencies when possible however some roles are simulated in order to minimize real-time operational impacts on external emergency organizations. Exercise scenarios generally include an incident at a Astara facility or asset and where appropriate, have an impact on external stakeholders and other third parties in order to test possible outcomes.

8.0 DOCUMENT CONTROL

8.1 Introduction

The purpose of this section is to outline the requirements for retention all safety related documentation to comply with regulatory and Company policies.

Documentation must be made readily available hard copy or electronic.

8.2 Purpose and Scope

The section applies to emergency management program related material at all Company facilities. Onsite retention establishes a trend of compliance and management review. Once a record has exceeded its onsite retention period, the records management department begins the process of offsite record retention.

8.3 Responsibilities

Supervisors:

- Request changes to procedures or practices when required.
- Ensure all required documentation is stored at facility locations.
- Ensure all documentation is readily available hard copy or electronic.
- Contact records management department once the onsite documentation retention period has expired.

Employees:

- Know the location where documentation is stored.
- Store documentation in the correct location.

Emergency Management Program Coordinator:

- Assist in the evaluation of changed Emergency Management procedures and plans.
- Assist operations with emergency management documentation storage. (Location, length of time to keep records etc.)

Deviations:

- Any Variance or Deviation to a section, practice or requirement from this Manual is required to be approved by the owner of the manual.
- All Deviations are applicable only to a specific project or requirement and do not create policy.
- A Deviation always comply with Applicable Legislation.

8.4 Requirements

- Documentation should be reviewed and revised annually and immediately where changes are required as a result of legal requirements or where failure to make immediate changes could result in negative consequences. Documentation should include:
    a) Organizational structure;
    b) Roles and responsibilities;
    c) Policies, processes, and procedures;
    d) Emergency response plans;
    e) Exercise plan; and
    f) Training plan.
- The company's Corporate and Site-Specific ERPs are to be updated annually and submitted to the CER on or before April 1st of each year, or when significant changes (either operational or identified from exercises/incidents and resulting debriefs) occur or are identified.
- If an update occurs outside of the January 1st to April 1st period, a letter must be submitted to the CER indicating that there have been no changes to operations since the ERP was last submitted.

- ERP updates are performed by a third-party company (Black Gold Emergency Planners Inc.), whose expertise in the field provides company personnel with the education, training, and resources to excel in Emergency Response.
- Approvals for ERP updates will be carried out by the company's Emergency Management Coordinator.

9.0 RECORDS MANAGEMENT

9.1 Introduction

The purpose of this procedure is to establish expectations for the management of Emergency Response Records.

9.2 Purpose and Scope

This procedure applies to all records identified in this Manual.

9.3 Responsibilities

Program Coordinator:

- Maintain all records of activities and decisions related to the EMP.
- Follow the Company records management procedure for the identification, storage, protection, retrieval, retention and disposition of records.

9.4 Requirements

9.4.1 General Requirements

Records should include, but not be limited to

- Actions taken to prepare for emergencies;
- Actions taken to respond to emergencies;
- Debrief reports;
- Training records;
- Response equipment records;
- Changes or improvements made to the EMP; and
- Reports of exercises conducted by the operator.

10.0 INCIDENT RESPONSE

10.1 Introduction

The purpose of this section is to ensure that all incidents and events that occur on Company property or while conducting Company business are reported and investigated. The procedures found in this section will help ensure that accurate and up-to-date incident records are documented, maintained, posted, submitted, and that notifications are made as required.

10.2 Responsibilities

Astara will respond to incidents and Emergencies in accordance with following order of priorities:

1. Protection of emergency response staff.
2. Protection of employees.
3. Protection of the public.
4. Protection of property.
5. Protection of the environment.

Astara is responsible for carrying out the response activities until the incident is resolved.

Supervisors:

- Ensure this procedure is implemented and followed by all Contract workers.
- Communicate this procedure to all personnel under their supervision.
- Assume the role of Incident Owner.
- Ensure all incidents are reported to the proper levels of management.
- Ensure the incident is entered into the Incident Database.
- Consult with Regional Health and Safety in the proper incident classification and risk ranking.
- Provide appropriate resources to ensure Corrective and Preventive Actions (CAPA) are identified and resolved in a timely manner.

Contract workers:

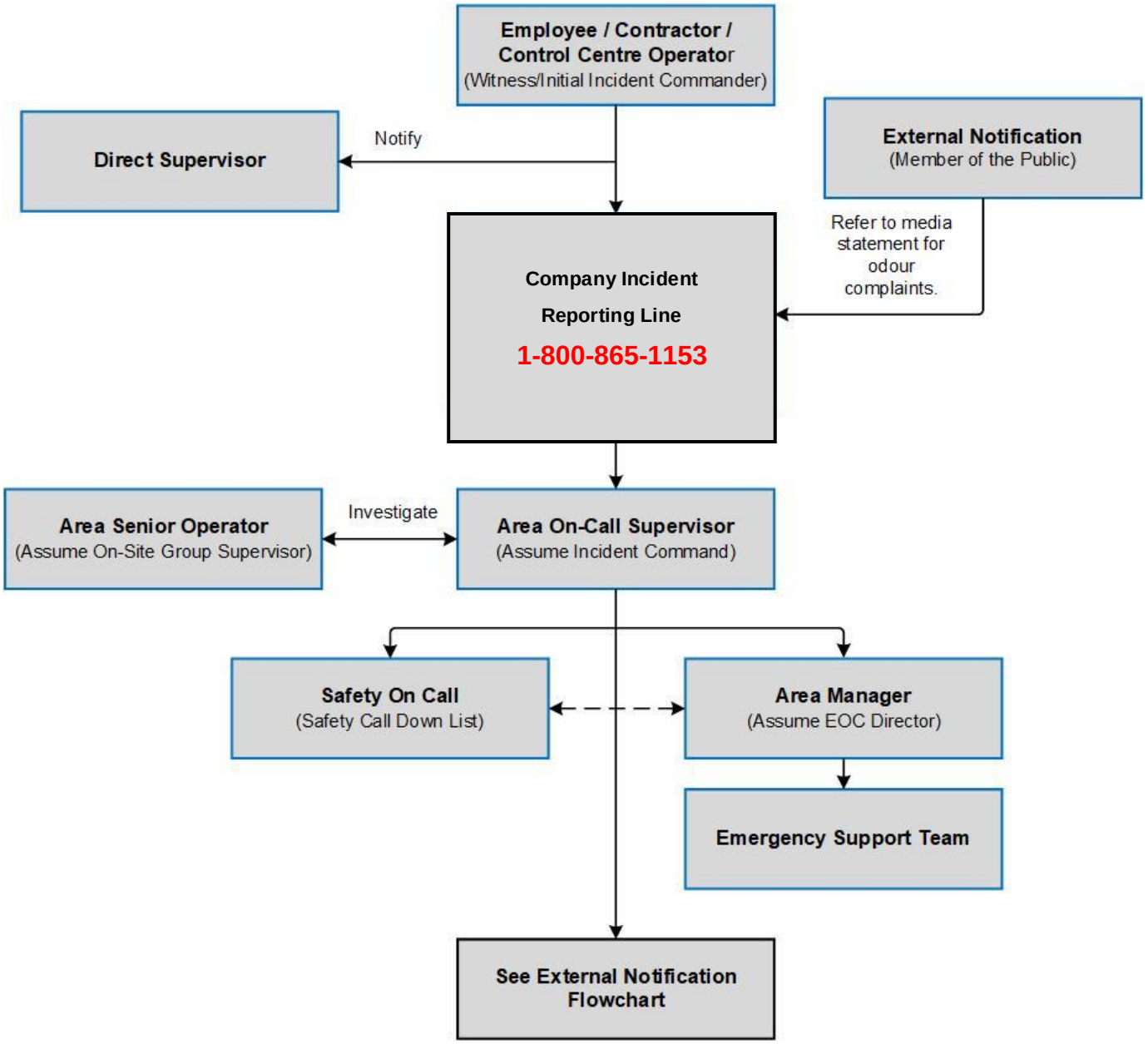
- Immediately report all incidents to your immediate Supervisor.
- Assist with the incident investigation process.
- Emergency Management Program Coordinator:
- Assist in the development of CAPA plans from the emergency response.
- Assist in the proper incident classification and risk ranking.
- Ensure post incident reports are submitted to the appropriate regulatory within 60 days of the event.

Emergency Management Program Coordinator:

- Assist in the development of CAPA plans from the emergency response.
- Assist in the proper incident classification and risk ranking.
- Ensure post incident reports are submitted to the appropriate regulatory within 60 days of the event.

10.3 Requirements

10.3.1 Internal Incident Reporting

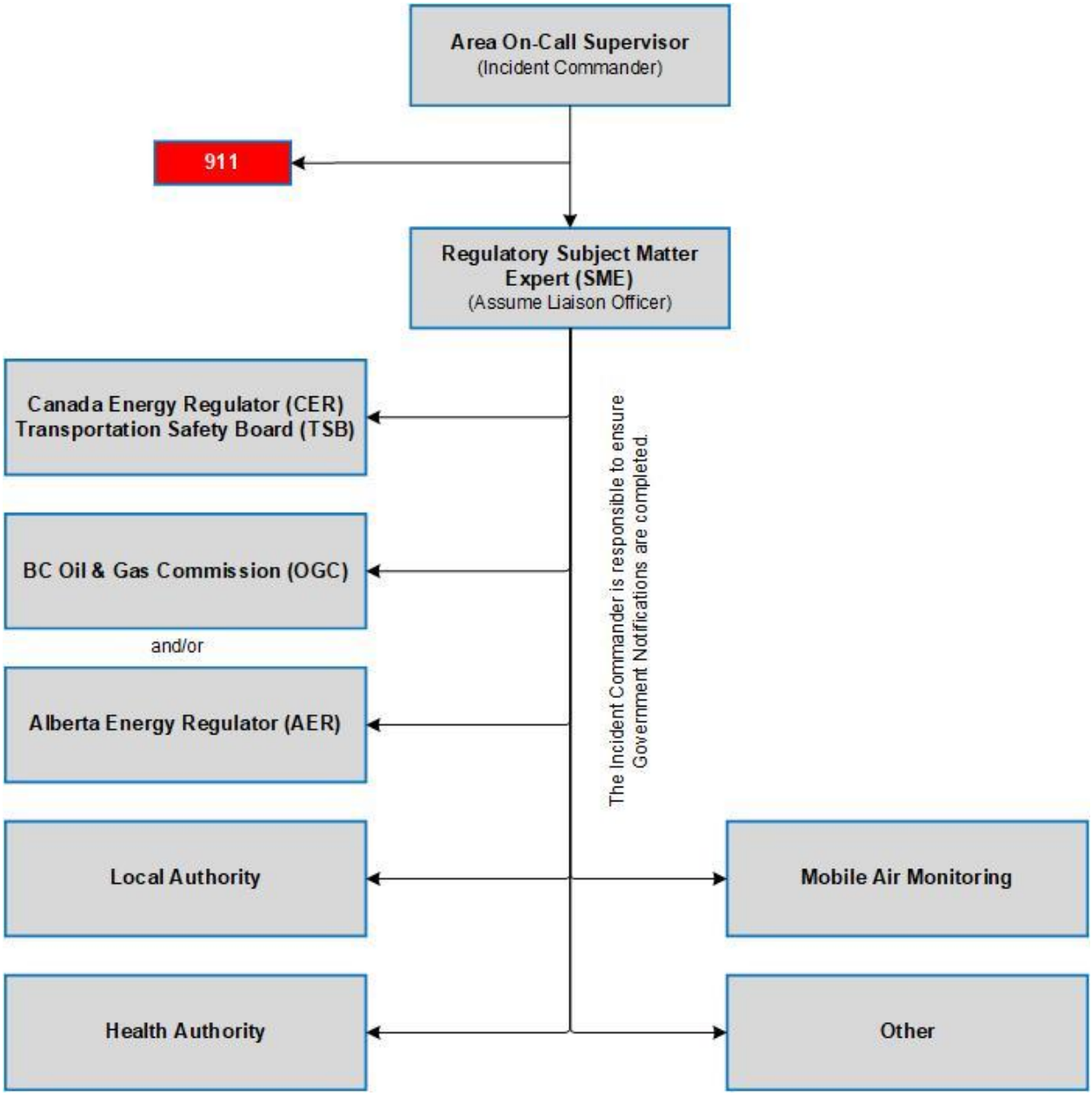


10.3.2 Immediate Response

If the event is an emergency or requires immediate response, the Incident Owner will initiate the Emergency Response Plan and if required the regulatory reporting process. Examples include:

- Injuries or illnesses requiring medical treatment.
- Exposures to chemicals, biohazards or radiation.
- Unplanned Fires or Explosions.
- Spills, leaks, unplanned/uncontrolled emissions.
- Emergency flaring from processing plants.
- Contact with, or damage to a pipeline, equipment or facility.
- Unauthorized Activity(s) (e.g., Ground Disturbance, Construction of a Facility, Vehicle Crossings).
- Events involving or affecting pressure equipment.
- Events involving electrical equipment.
- Maximum operation pressure (MOP) excursions.
- Events impacting wildlife.
- Public complaints.
- Security related incidents (any Police, Sherriff, or RCMP contact).
- Environmental Permit or license deviations.
- Events involving a major structural failure or collapse of a building, bridge, tower, crane, hoist, temporary construction support system or excavation; or TDG occurrences.

10.3.3 External Emergency Notification Flowchart



Prior to commencing contact of the above listed agencies make sure to have an Initial Incident Report Form on hand to reference.

All Agency numbers are located in section 10 of the ERP.

10.3.4 Reportable Event

An event is an unplanned occurrence that interrupts a work activity. Astara requires these events to be tracked in the Incident Database. Reportable events include:

- People:
  - Injuries or illnesses to Contract workers or Visitors.
- Environment:
  - Unauthorized or unplanned releases; or
  - Impacts to air, land, water, or wildlife.
- Property Damage:
  - Ruptures, fires, or explosions;
  - Motor Vehicle, aircraft, or watercraft incidents involving Company Contract workers;
  - Damage to Company, Contractor, or third-party property; or
  - Theft or vandalism.
- Regulatory and Other:
  - Government agency visits or contact;
  - Permit / license contraventions;
  - Unauthorized activity on ROW;
  - Landowner / public complaints; or
  - Security Threats.
- Near Misses involving any of the above.

10.3.5 Incident Reporting

Astara must report all spills or releases that are or may cause an adverse effect as defined in the Responsible Energy Act and the Alberta Environmental Protection and Enhancement Act (EPEA) regarding the Energy Industry. The AER must be notified through the 24-Hour Response Line. This system is designed to streamline and standardize the reporting of spills and to ensure a coordinated, integrated response from different government agencies. The AER 24-Hour Response Line notifies both Alberta Environment and Parks (AEP) and Environment and Climate Change Canada.

For both refined and unrefined products, upon becoming aware of a reportable release, Astara must orally notify the AER at the first available opportunity.

Upon completing the oral notification, the AER sends the licensee the Field Inspection System Number (FIS) along with the Initial Incident Report which is to be completed within seven days of receiving the document from the AER.

Note: Astara must notify the landowner of any release that occurs off lease, or that occurs on an easement or right-of-way (Landowners can be private or any of the following: on Crown land (AEP), on reserves (First Nations), in provincial parks (tourism, parks and recreation). Landowner cooperation is essential in being able to quickly respond to a release.

For the purposes of reporting, Astara use the following guidelines and considerations to assess whether the release may cause, is causing or has caused an adverse effect.

- Any third-party impact (off lease) e.g. crop damage, vegetation damage and livestock impact.
- Spilled substance likely to contaminate surface or ground water.
- Groundwater and/or surface water is contaminated.
- Release or spill has potential for offsite odour complaints.
- Toxic or flammable release to air going offsite.
- Chemical and physical characteristics of the substance released.
- Receiving or potential to receive media attention.

The onus is on the party who causes the release and has control of the situation to assess the adverse effect.

10.3.6 Regulatory Notification

- The Incident Owner is accountable to complete regulatory reporting on time. They may delegate the actual call to an appropriate SME.
- Refer to the Regulatory Reporting Requirements document.
- Refer to the Environmental Program for environmental reporting requirements.
- Refer to the Security Program for security reporting requirements.

For Emergencies involving inter-provincial pipelines, the Canada Energy Regulator (CER) is the primary management agency.		
THIS MUST BE YOUR FIRST CALL		
Transportation Safety Board	**24-Hour Reporting Hotline***	**1-819-997-7887**
	Email	PipelineNotifications@tsb.gc.ca
*CER-regulated companies are advised to use the single-window approach for event reporting and contact the Transportation Safety Board (TSB) Reporting Hotline.		
For all Canada Energy Regulator regulated pipelines and facilities call the TSB Reporting Hotline when an event meets any of the definitions as per Section 3.0 Immediately Reportable Events under the Canada Energy Regulator Event Reporting Guidelines are to be reported to the CER **immediately**.		
Both the phone notification and the input of information into the CER's Online Event Reporting System (OERS): https://apps.cer-rec.gc.ca/ERS/Home/Index/ are required to occur as soon as possible and no later than three hours of the incident being discovered.		
For all other events that do not meet any of the definitions in Section 3, 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.		
Secondary Calls Contact as needed AFTER contacting the TSB and CER.		
Alberta Energy Regulator (AER)	24-Hour Response Line	1-800-222-6514
Oil and Gas Commission (OGC)	Emergency Support Line	1-800-663-3456

10.3.7 Public Protection

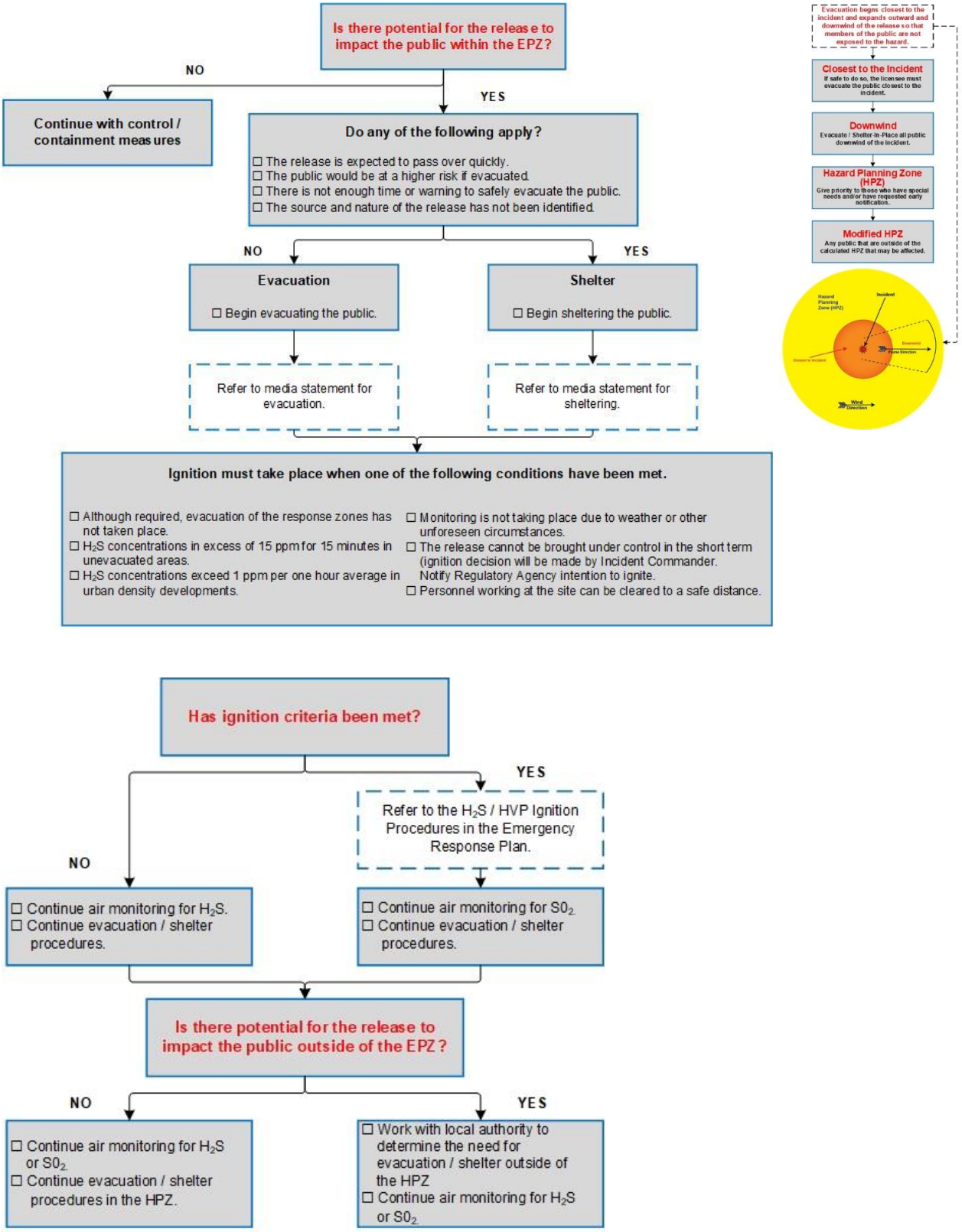
If the health and safety of the public cannot be assured, then the Company must determine the best approach for protecting the public. Depending on the severity of the emergency, the Company will implement one of three approaches to public protection: sheltering, evacuation, or ignition.

The purpose of public protection measures is to proactively address public health and safety concerns and to take appropriate response actions to protect the public from harm. This may include removing or reducing the hazards and asking public stakeholders to shelter and/or evacuate as required.

It is the Company's responsibility to initiate public protection measures in the EPZ for any incident involving a release of sour gas product if there is potential for the release to impact members of the public. This could also include SO_2 if the sour gas release was ignited.

The type of public protection measure employed depends on the severity of the incident and/or on the monitored results in the unevacuated areas. The licensee is responsible for ensuring that appropriate emergency response procedures are in place and can be implemented, including for areas of potential impact beyond the EPZ.

Public Protection Measures Flowchart



10.3.8 Incident Management Database Entry

- The Incident Owner is accountable to record incidents into the Incident Management Database within 24 hours.
- The Incident Management Database record must include:
  - Identification of the Incident Owner;
  - Objective and factual description of the incident without speculation as to cause;
  - Events leading up to the incident; and
  - Any actions taken in response to the incident.
- The Area Safety Advisor is an internal resource to all parties on incident investigation. In addition to their support role, they verify the information in the Incident Management Database and that the event is properly classified and categorized.

10.3.9 Incident Classification (Assessment Matrix)

Astara will classify incidents as per AER Directive 071 Assessment Matrix for Classifying Incidents, (See section 9.1 of the Emergency Response Plan)

Table 1. Consequence of Incident		
Rank	**Category**	**Example of consequence in category**
1	Minor	• No worker injuries. • Nil or low media interest. • Liquid release contained on lease. • Gas release impact on lease only.
2	Moderate	• First aid treatment required for on-lease worker(s). • Local and possible regional media interest. • Liquid release not contained on lease. • Gas release impact has potential to extend beyond lease.
3	Major	• Worker(s) require hospitalization. • Regional and national media interest. • Liquid release extends beyond lease – not contained. • Gas release impact extends beyond lease – public health/safety could be jeopardized.
4	Catastrophic	• Fatality. • National and international media interest. • Liquid release off lease not contained – potential for or is impacting water or sensitive terrain. • Gas release impact extends beyond lease – public health/safety jeopardized.

Table 2. Likelihood of incident escalating*		
Rank	**Descriptor**	**Description**
1	Unlikely	The incident is contained or controlled, and it is unlikely that the incident will escalate. There is no chance of additional hazards. Ongoing monitoring required.
2	Moderate	Control of the incident may have deteriorated but imminent control of the hazard by the licensee is probable. It is unlikely that the incident will further escalate.
3	Likely	Imminent and/or intermittent control of the incident is possible. The licensee has the capability of using internal and/or external resources to manage and bring the hazard under control in the near term.
4	Almost Certain or currently occurring	The incident is uncontrolled and there is little chance that the licensee will be able to bring the hazard under control in the near term. The Licensee will require assistance from outside parties to remedy the situation.
* What is the likelihood that the incident will escalate, resulting in an increased exposure to public health, safety or the environment?		

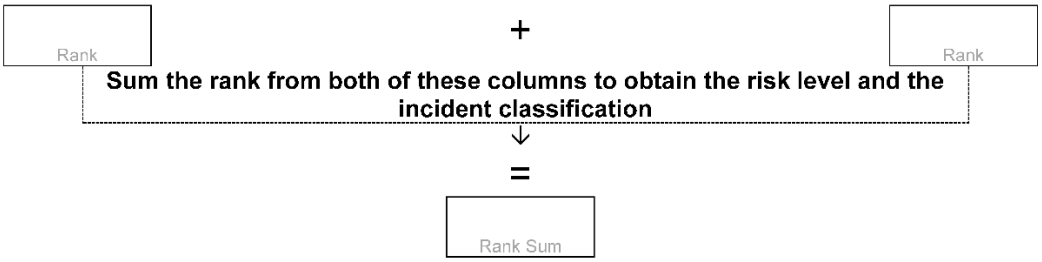


Table 3 Incident Classification	
Risk Level	**Assessment results**
Very Low 2-3	Alert
Low 4-5	Level – 1 Emergency
Medium 6	Level – 2 Emergency
High 7-8	Level – 3 Emergency

Incident Response Table

Incident Classification				
Responses	**Alert**	**Level 1 Emergency**	**Level 2 Emergency**	**Level 3 Emergency**
Communications				
Internal	Discretionary, depending on licensee policy.	Notification of off-site management.	Notification of off-site management.	Notification of off-site management.
External Public	Courtesy, at licensee discretion.	Mandatory for individuals who have requested notification within the EPZ.	Planned and instructive in accordance with the specific ERP.	Planned and instructive in accordance with the specific ERP.
Media	Reactive as required.	Reactive as required.	Proactive media management to local or regional interest.	Proactive media management to national interest.
Government	Reactive, as required. Notify the AER 24-Hour Response Line if public or media is contacted.	Notify the AER 24-Hour Response Line. Call local authority and AHS if public or media is contacted.	Notify the AER 24-Hour Response Line, local authority and AHS.	Notify the AER 24-Hour Response Line, local authority, and AHS.
Actions				
Internal	On site as required by licensee.	On site as required by licensee. Initial response undertaken in accordance with the specific or corporate level ERP.	Predetermined public safety actions are under way. Corporate management team alerted and may be appropriately engaged to support on-site responders.	Full implementation of incident management system.
External	On site as required by licensee.	On site as required by licensee.	Potential for multi-agency (operator, municipal, provincial or federal) response.	Immediate multi-agency (operator, municipal, provincial or federal) response.
Resources				
Internal	Immediate and local. No additional personnel required.	Establish what resources would be required.	Limited supplemental resources or personnel required.	Significant incremental resources required.
External	None.	Begin to establish resources that may be required.	Possible assistance from government agencies and external support services required.	Assistance from government agencies and external support services required.

ALERT

An incident that can be handled on site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public.

LEVEL 1 EMERGENCY

There is no danger outside the licensee's property, there is no threat to the public, and there is minimal environmental impact. The situation can be handled entirely by licensee personnel. There will be immediate control of the hazard. There is little or no media interest.

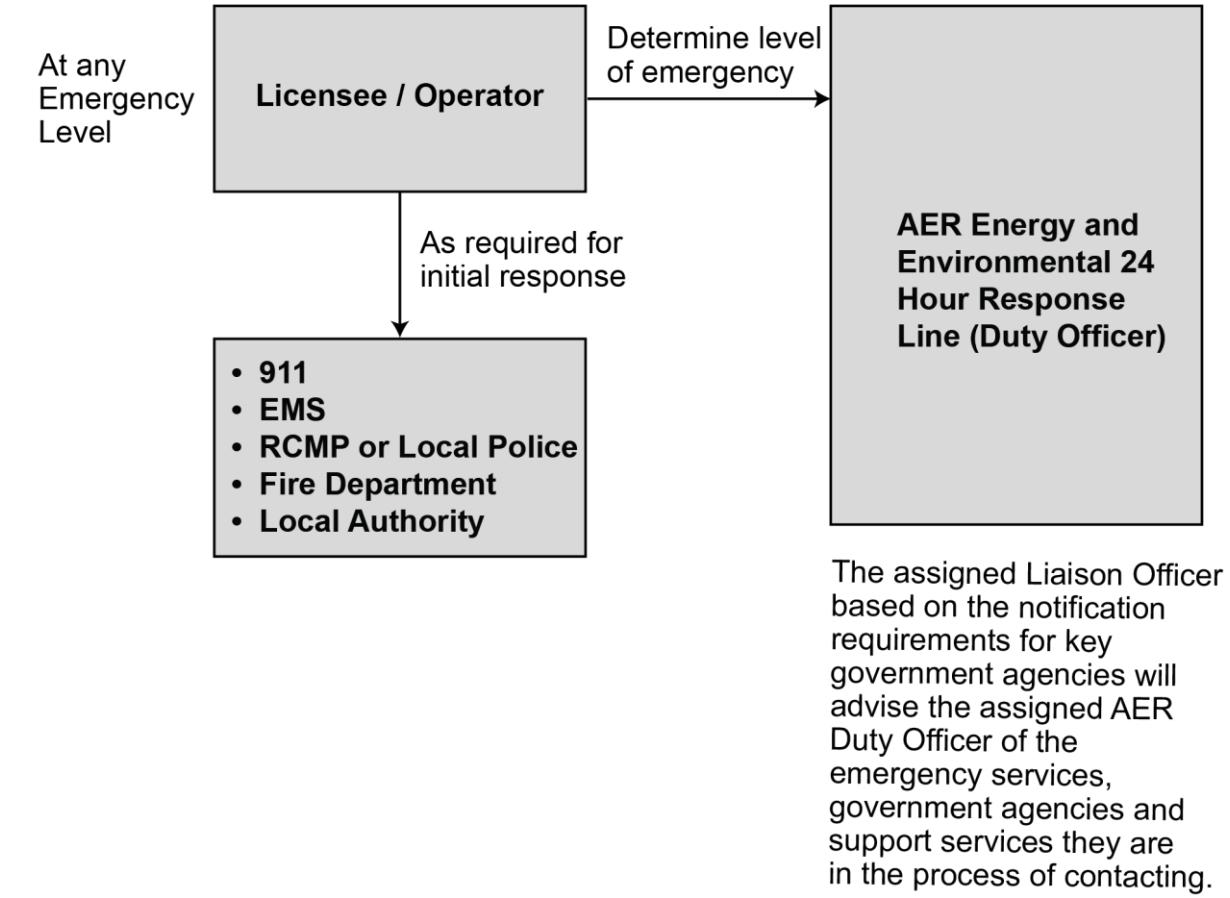
LEVEL 2 EMERGENCY

There is no immediate danger outside the licensee's property or the right-of-way, but there is potential for the emergency to extend beyond the licensee's property. Outside agencies must be notified. Imminent control of the hazard is probable but there is a moderate threat to the public and/or the environment. There may be local and regional media interest in the event.

LEVEL 3 EMERGENCY

The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multi-agency municipal and provincial government involvement is required.

Initial Notification Process



10.3.10 Share Learning

To create a learning organization, it is critical to share learnings across the organization. We can learn the lesson once, in one location, and share that learning with the entire organization.

Identify Lessons Learned

Not all lessons learned have organization wide application. The Incident Owner, with support from: Leadership; SME; and Technical staff, will review the investigation learnings and identify the lessons to share. Early engagement of the Legal Department is critical, as their approval is required for wider distribution.

Consider the following when selecting lessons:

- CAPA that affect organization-wide systems; and
- Risk tolerance factors and human factors, uncovered in an investigation that have broad applicability to the organization.

Communication Tools

- Initial Incident Alert.
- Use the Initial Incident Alert when timely action is required to prevent similar events. The intent of the Initial Incident Alert is to:
    - Notify the organization that an event has occurred;
    - Identify the issues; and
    - Outline interim actions.

Bulletin

- Use a Bulletin when the investigation is complete, and action is required to prevent similar events.
- Use the Bulletin template for general communications.

11.0 EVALUATIONS

11.1 Introduction

This section explains the process for evaluation and continual improvement. Evaluation serves several purposes:

- Improves field operations compliance.
- Helps meet regulatory and corporate requirements.
- Promotes consistency across field operations.
- Provides a method of integrating new operations into existing operations.
- Helps to familiarize operation employees with emergency management compliance requirements.

11.2 Purpose and Scope

This section applies to all emergency response evaluations. The Company will conduct assessments to evaluate the emergency response capacities and capabilities.

Astara has determined that the federal (CER) and provincial regulatory requirements are substantially the same. This determination will enable Astara to hold single exercise to which several regulators can attend and evaluate.

11.3 Responsibilities

People Leader:

- Assist the Emergency Management Program Coordinator during the assessment process.
- Resolve any assessment findings.
- Complete an Assessment Review Report to document the actions to be taken to resolve any deficiencies.

Emergency Management Program Coordinator:

- Complete Exercise Assessment Reports discussing all deficiency resolutions and items still outstanding.
- Ensure exercise assessment reports are submitted with 30 days of completion of event.
- Develop the schedule to complete the assessments.
- Perform the assessment with the Assessment Team members.
- Write the assessment report documenting the assessment findings.
- Assist operations personnel with the Assessment Review Report.

Area Safety Advisor:

- Assist People Leader with resolving any assessment findings.
- Assist People Leader with the Assessment Review and Final Assessment Reports.

11.4 Requirements

Exercise Evaluation Process.

- All emergency response exercise will be evaluated.
- When Regulatory Bodies are present, they will use their exercise evaluation processes and form.
- Evaluations will be used to confirm knowledge, skills and ability of field emergency response teams to respond effectively to incidents relevant to their operations.
- The evaluation will also consider:
    - Complexity of scenario.
    - Potential worse-case scenario.
    - Gaps in training.
    - Gaps in plans.
    - And emergency program capacity.
- Exercise evaluations will grade the components of the emergency response as:

  - Satisfactory – meaning Astara has demonstrated an effective emergency management process.
  - Satisfactory with conditions – meaning most elements of a competent emergency management process are in place and corrective actions are required.
  - Unsatisfactory – meaning Astara needs significant effort to meet regulatory requirements and corrective and preventive actions are required.
- The exercise evaluation report be submitted to the regulatory bodies within 30 days of completing the exercise.

12.0 CORRECTIVE AND PREVENTIVE ACTION

12.1 Introduction

Corrective and Preventive Action (CAPA) are taken to systematically resolve non-conformances and continuously improvement the Emergency Management Program (EMP).

12.2 Purpose and Scope

To describe the process, by which the Company follows to address non-conformances to the Emergency Management program, identified from incidents, evaluations, audits, assessments, management reviews and through stakeholder engagement.

12.3 Responsibilities

Management:

- Generate a CAPA from planned or unplanned assurance activity such as:
  - Management review meeting.
  - Recurring problems with procedures.
  - Previous corrective or preventive actions are no longer effective.
  - Audit findings.
  - Assessment findings.
  - Incidents.
- Use the CAPA tools provided by the Assurance team.

Emergency Management Program Coordinator:

- Report identified program non-conformances to the Director EHS.
- Initiate corrective and preventive actions to address non-conformances within the Emergency Management Program.

12.4 Requirements

There are seven steps to an effective CAPA procedure:

1. Initiate the CAPA.
2. The program owner (Director EHS) acknowledges the non-conformance.
3. An investigation into the systemic cause of the non-conformation is completed.
4. A plan to correct the non-conformation is developed, proposed, approved and implemented.
5. The CAPA plan at a minimum should list:
   - The action;
   - Who is accountable; and
   - The due date.
6. The program owner (Director EHS) verifies the effectiveness of the CAPA.
7. The CAPA is then closed.

13.0 PUBLIC AWARENESS AND INVOLVEMENT

13.1 Introduction

Astara is committed to an open dialogue and informed decision making through regular communication with person and entities in the Emergency Planning Zones (EPZs).

Frequent and consistent communication is an integral part in achieving a safe work environment and is an effective way of raising emergency management awareness.

13.2 Purpose and Scope

To ensure that persons or entities within our emergency planning zones (EPZs) have information about Astara's emergency response program and plans and how they will be impacted or effected in the event of an emergency.

Astara is required to share information with persons or entities in our Emergency or Hazard Planning Zones (EPZs).

13.3 Responsibilities

Supervisors:

- Ensure that each facility has signs posted that clearly display the 24 hour emergency contact number at the primary entrance.
- Ensure that all calls to the 24 hour emergency number initiate immediate action.
- Carry out public and local authority notification and consultation when required.

Emergency Management Program Coordinator:

- Ensure that Astara provides emergency management information to persons or entities located with the EPZs regarding the potential hazards of our activities.
- Develop, maintain and deliver public information pamphlets to all persons living within an EPZ or required to transit an EPZ to access their residence or tenure.
- Develop and maintain a list of residents and stakeholders in each EPZ.
- Exchange information with residents and stakeholders to ensure that there is a process to contact persons or other entities in an EPZ and if necessary, evacuate them in the event of an emergency.
- Develops and maintains a First Responder information presentation to provide upon request.
- The Emergency Management Program Coordinator will provide details of the emergency response procedures in place and to address questions and concerns that may arise; and address any request for additional information or for modifications to the ERP by the individual consulted.

Persons or Entities:

- Describe how they may be affected by an emergency.

13.4 Requirements

13.4.1 Notification and Consultation

Astara will carry out public and local authority notification and consultation as required by AER Directive 71.

<table>
<tr><th>Situation</th><th colspan="2">Notification and Consultation Requirements</th></tr>
<tr><td rowspan="4">Developing a site-specific ERP
• Sour Well
• Sour Operations
• HVP Pipeline
• Cavern Storage Facility</td><td colspan="2">Notification of and consultation with members of the public within the EPZ are required prior to submitting an application to the Provincial Regulator for approval when:
• Developing a sour well site-specific drilling and/or completions ERP.
• Developing a sour operations ERP.
• Developing an ERP for HVP pipeline and cavern storage facilities.</td></tr>
<tr><td colspan="2">Consultation is required with the local authority to confirm and coordinate each party’s roles and responsibilities.</td></tr>
<tr><td colspan="2">Notification and consultation are required if an existing EPZ either increases or decreases from its current size based on the following:</td></tr>
<tr><td rowspan="3">Change in EPZ Size</td><td>Change</td><td>Action</td></tr>
<tr><td>New EPZ is smaller than current EPZ</td><td>Residents who are no longer within the EPZ and the local authority are to be notified and informed of the change.</td></tr>
<tr><td>New EPZ is larger than current EPZ</td><td>Residents within the expanded portion of the EPZ and the local authority are to be notified and informed of the change in accordance with the requirements.</td></tr>
</table>

13.4.2 Public Awareness and Involvement

- Astara will request that person or entity within the EPZ provide:
  - Name and contact information that can be used for ongoing communications and for contact in the event of an emergency.
  - Provide the preferred method of contact for regular communications and emergencies. It should include:
    - 24 hour telephone number.
    - Legal address of any residence, business or facility.
    - In the event the legal address is not tied to the actual location being occupied the address or location that should be used by emergency responders.
    - Email address for non-emergency communications.
    - Any other method of communication as identified by the person or entity.
  - Additional relevant information regarding other occupants and their contact information.
- Persons or other entities will be given the opportunity to identify concerns, vulnerabilities or make requests to Astara regarding response procedures and individual emergency response requirements. Issues that should be considered and noted include:
  - Health sensitivities.
  - Mobility Issues.
  - Effects on and needs of pets and livestock.
  - Concerns about security of premises during an emergency.

- Astara will prepare an information pamphlet to provide to each person or entity that contains information to assist them in the event of an emergency. The pamphlet will contain:
    - Overview;
    - Why you are being contacted;
    - What to do during an emergency;
    - Warning signs;
    - Levels of emergency;
    - Emergency Procedures;
    - Shelter In-Place Procedure;
    - Procedure for Evacuation;
    - Ignition Procedure;
    - 24 hour emergency number;
    - Company overview;
    - Key Government Contacts;
    - Reception Center Location;
    - And any Potential Health Impacts; and
    - A map of the emergency planning zone that indicates how the person or other entity can get to safety in the event of an emergency.
- Astara will ensure that the emergency communication system (cell phone, telephone, and radio) is capable of enabling communications between:
    - Emergency response staff (employee and contractor).
    - The public (persons and other entities).
    - The regulator (AER, EMR or CER).
    - Other government departments (provincial health, environment or safety) or Supporting Agencies (Transport Canada).
- Astara will contact all municipalities when any part of the EPZ is located within the right of way of an arterial or municipal highway within that municipality.
- Astara will contact any Rights Holders within the EPZ. (Forestry License Holder, Grazing Permit Holder, Guide License Holder, Mineral Claim Holder, Water License Holder).
- Astara will contact any federally owned installation or federally regulated land within the EPZ including:
    - First Nations.
    - Military Installations.
    - Railways.
    - National Parks.
- Information collected from the person or other entity may be personal information as defined by the Personal Information Protection Act (PIPA). Private sector organizations that collect personal information are subject to the Act, which sets out the rules for how personal information may be collected, used or disclosed.
- Astara will comply with PIPA when collecting information from persons or entities within the EPZ.

13.4.3 Conducting Consultation

- Astara will conduct public consultation through face to face visits with persons and other entities in the EPZ.
- Offer to conduct the consultation by telephone if residents do not wish to meet with Company representatives face to face.
- Offer to send residents the public awareness pamphlet by regular or registered mail if they do not wish to participate in the consultation process.
- Review key emergency response information with members of the public identified in the EPZ who wish to participate in the consultation process, to familiarize them with potential emergencies and corresponding public protection measures pertaining to emergency response procedures.
- The Emergency Management Program Coordinator will provide details of the emergency response procedures in place and to address questions and concerns that may arise; and address any request for additional information or for modifications to the ERP by the individual consulted.