



CANADIAN ASSOCIATION  
OF PETROLEUM PRODUCERS

GUIDE

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# **Companion Planning Guide to ERCB Directive 071**

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## Overview

This guide is to be used as a companion document to the Energy Resources Conservation Board (ERCB) *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry*.

While *Directive 071* contains regulatory information, CAPP has provided this guide to add more detail, examples, and best practices that will assist in clarifying the regulations. The ERCB regulatory intent and review instructions for ERCB staff to review ERP applications is also included at the end of the sections in Part A of this Guide to assist your company in submitting the appropriate information in your emergency response plan (ERP).

**DISCLAIMER:** This guide is intended only to enhance the understanding of *Directive 071*. The ERCB regulations apply in all circumstances.

# Contents

<b>Project Scope</b> .....	1
Goal .....	1
Key Objective .....	1
General Approach .....	1
How to Use this Guide .....	1

## **CAPP Companion Planning Guide**

### **1 Introduction**

1.1 Licensee Responsibility .....	3
1.2 Requirements, Enforcement, and Expectations.....	4
1.3 Purpose of Emergency Preparedness and Response .....	5
1.4 What's New in <i>Directive 071</i> .....	5
1.5 <i>Directive 071</i> Requirements .....	6
1.6 ERP Application Process for ERCB Approval .....	6
ERCB Intent and Review Instructions for Section 1 .....	7

### **Part A: Planning Requirements for *Directive 071***

### **2 Corporate-level ERPs**

2.1 Corporate-level ERP Requirements .....	10
2.1.1 Assessment Matrix for Classifying Incidents .....	10
2.1.2 Communications Planning .....	15
2.1.3 Responsibilities of Personnel .....	16
2.1.4 Incident Management Systems.....	17
2.1.5 Reception Centre.....	17

### **3 Emergency Planning and Response Zones**

3.1 Emergency Planning Zone .....	18
3.2 Calculating EPZs for Hydrogen Sulphide .....	19
3.2.1 Sour Gas Wells.....	19
3.2.2 Sour Oil Wells, Sour Water Disposal Wells and Sour Observation Wells .....	21
3.2.3 Sour Gas Pipelines .....	21
3.2.4 Sour Liquid Pipelines .....	22
3.2.5 Facilities .....	22
3.3 Calculating EPZs for HVP Product.....	23
3.3.1 HVP Product Release Rates - Pipelines .....	23
3.3.2 HVP Product Release Rates - Cavern Storage Facility .....	24
3.3.3 Gas Composition.....	24
3.3.4 Depressurization to Atmospheric Pressure.....	24
3.3.5 Release Orientation.....	24
3.3.6 Release Duration .....	25

3.3.7	Dispersion Modelling .....	25
3.3.8	Meteorological Conditions .....	25
3.3.9	Averaging Times .....	25
3.3.10	Emergency Planning Zone Endpoints .....	25
3.4	Emergency Awareness Zone .....	26
3.4.1	EAZ for an H <sub>2</sub> S Release .....	26
3.4.2	EAZ for an HVP Product Release .....	26
3.5	Initial Isolation Zone .....	26
	ERCB Intent and Review Instructions for Section 3.....	27
<b>4</b>	<b>Public and Local Authority Involvement in Emergency Preparedness and Response</b>	
4.1	When Are Notification and Consultation Required? .....	29
4.2	Preparing for the Public Involvement Program .....	29
4.3	Conducting the Public Involvement Program .....	31
4.3.1	Public Information Package .....	32
4.4	Information Required from the Public Involvement Program.....	34
	ERCB Intent and Review Instructions for Section 4.....	34
<b>5</b>	<b>Common Requirements for Site-specific ERPs</b>	
5.1	Assessment Matrix for Classifying Incidents .....	38
5.2	Public Protection Measures .....	38
5.2.1	Notification Within the EPZ .....	38
5.2.2	Evacuation and/or Sheltering Within the EPZ.....	38
5.2.3	Notification and Evacuation Outside the EPZ .....	39
5.2.4	Ignition Criteria.....	40
5.2.4.1	Sour Well Releases.....	40
5.2.4.2	HVP Product Releases from a Pipeline or Cavern Storage Facility .....	40
5.2.5	Isolation Procedures.....	41
5.2.6	Air Quality Monitoring.....	41
5.3	Maps.....	41
5.4	Equipment List .....	42
5.5	Mutual Aid Understandings.....	42
5.6	Telephone Lists.....	44
5.7	Plan Distribution.....	45
5.8	Communications Planning .....	46
5.9	Responsibilities of Personnel.....	46
5.10	Incident Management Systems.....	46
5.11	Record Keeping.....	48
5.12	Reception Centre.....	48
5.13	Downgrading and Stand-down of Emergency Levels.....	48
	ERCB Intent and Review Instructions for Section 5.....	48
<b>6</b>	<b>Sour Well Site-Specific Drilling and/or Completion ERPs</b>	
6.1	ERP Submission Requirements.....	51
6.2	ERP Content Requirements .....	52

6.3	Critical Sour Well Approval.....	53
6.4	Noncritical Sour Well Approval.....	53
6.5	Additional Conditions to ERP Approval .....	53
6.6	ERPs for Temporary Surface Pipelines .....	54
6.7	ERPs for Multiwell Programs.....	54
6.8	Sour Underbalanced Drilling Operations.....	54
	ERCB Intent and Review Instructions for Section 6.....	54
<b>7</b>	<b>Sour Operations ERPs</b>	
7.1	ERP Submission Requirements.....	56
7.2	ERP Content Requirements .....	58
7.3	Supplements and Updates/Amendments .....	58
7.3.1	Use of Supplements for Drilling and/or Completion Operations .....	58
7.3.2	Use of Supplements for Sour Well Workovers, Well Servicing, and Testing .....	59
7.3.3	Supplement Distribution.....	59
	ERCB Intent and <i>Review Instructions</i> for Section 7.....	60
<b>8</b>	<b>ERPs for HVP Pipelines</b>	
8.1	ERP Submission Requirements.....	61
8.2	ERP Content Requirements .....	61
8.3	ERP Supplement.....	61
8.3.1	Newly Added Pipeline Tie-ins, Facilities, and Operating Areas .....	61
8.3.2	Currently Operating System.....	61
8.3.3	Supplement Distribution.....	62
	ERCB Intent and Review Instructions for Sections 8 and 9.....	62
<b>9</b>	<b>ERPs for Cavern Storage Facilities Storing HVP Product</b>	
9.1	ERP Submission Requirements.....	64
9.2	ERP Content Requirements .....	64
9.3	ERP Supplement.....	64
9.3.1	Newly Added Well, Pipelines, and Facilities.....	64
9.3.2	Supplement Distribution .....	65
<b>10</b>	<b>Spill Cooperative Response Plans</b>	
10.1	Requirements.....	66
10.2	Member of an Oil Spill Cooperative .....	66
10.2.1	Spill Cooperative Response Plan Contents.....	66
10.3	Nonmember of an Oil Spill Cooperative .....	66
10.3.1	Spill Response Plan Contents .....	67
10.3.2	Spill Response Equipment Requirements .....	67
	ERCB Intent and Review Instructions for Section 10.....	67

## **Part B - Response Requirements for Directive 071**

### **11 Corporate-level ERPs**

11.1	Requirements .....	69
11.1.1	Assessment Matrix for Classifying Incidents .....	69
11.1.2	Communications Planning .....	69
11.1.2.1	Downgrading and Stand-down of Emergency Levels .....	70
11.1.3	Incident Management Systems .....	70

### **12 Emergency Planning and Response Zones**

12.1	Emergency Planning Zone .....	71
12.2	Emergency Awareness Zone .....	71
12.3	Response Zones .....	71
12.3.1	Initial Isolation Zone .....	72
12.3.2	Protective Action Zone.....	72

### **13 Public and Local Government Involvement in Emergency Preparedness and Response**

13.1	When are Notification and Consultation Required? .....	74
13.2	Public Awareness Program .....	74

### **14 Common Requirements for Site-specific ERPs**

14.1	ERP Location.....	76
14.2	Assessment Matrix for Classifying Incidents .....	76
14.3	Public Protection Measures .....	76
14.3.1	Notification During an Accidental Release.....	76
14.3.2	Evacuation and/or Sheltering Indoors .....	78
14.3.3	Public Protection Measures for an H <sub>2</sub> S Release .....	78
14.3.4	Public Protection Measures for an HVP Product Release.....	78
14.3.5	Notification and Evacuation Outside the EPZ.....	79
14.3.6	Ignition Criteria.....	79
14.3.6.1	Sour Well Releases .....	79
14.3.6.2	HVP Product Releases from a Pipeline or Cavern Storage Facility ...	80
14.3.7	Isolation Procedures.....	81
14.3.8	Air Quality Monitoring.....	81
14.3.8.1	Sour Gas Release from a Manned Operation .....	82
14.3.8.2	Sour Gas Release from an Unmanned Operation .....	82
14.3.8.3	HVP Product Release.....	82
14.4	Equipment Location and Calibration .....	82
14.5	Communications Planning .....	83
14.5.1	Downgrading and Stand-down of Emergency Levels.....	83
14.6	Plan Maintenance.....	83
14.7	Incident Management Systems.....	84
14.8	Reception Centre.....	84
14.9	Training Sessions.....	84
14.10	Exercise Requirements.....	85

14.11 Record Keeping.....	85
14.12 Sale of Property.....	86
14.13 Overlapping EPZs.....	86
14.13 Presour and Critical Sour Requirements.....	86
<b>15 Sour Well Site-specific Drilling and/or Completion ERPs</b>	
15.1 Presour and Critical Sour Meeting Requirements.....	87
15.2 Equipment Requirements for Critical Sour Well Operations.....	88
15.2.1 Conducting Operations.....	88
15.2.2 Release of Equipment.....	88
<b>16 Spill Cooperative Response Plan</b>	
16.1 Member of an Oil Spill Cooperative.....	89
16.1.1 Spill Training Exercises and Notification Requirements.....	89
16.1.2 Training Exercise Report Summaries.....	89
16.2 Nonmember of an Oil Spill Cooperative.....	89
16.2.1 Spill Training Exercise and Notification Requirements.....	89
16.2.2 Training Exercise Report Summaries.....	89
<b>17 Frequently Asked Questions on the ERCB Implementation Strategy</b> .....	90
<b>Appendices</b>	
1 Definitions for the Purposes of <i>Directive 071</i> .....	93
2 ERP Approval Application .....	93
3 Information that Industry Provides to the Public in the EPZ Regarding Exposure to Hydrogen Sulphide .....	93
4 Assessment Matrix for Classifying Incidents .....	93
5 Distribution of an Approved ERP.....	93
6 Evacuation Requirements.....	93
7 Assessment and Ignition Criteria Flowchart.....	93
8 Information Disseminated to the Public at the Onset of and During an Incident.....	93
9 First Call Communication Form.....	93
10 HVP Pipeline Emergency Planning Zone Tables .....	94

## Project Scope

ERPs are a legal requirement for many aspects of oil and gas exploration, production, processing, and transportation operations; however, the value of emergency response preparedness goes beyond regulatory compliance. ERPs help upstream petroleum industry operators

- identify and quantify the risks associated with their operations,
- identify strategies to minimize and/or eliminate risks before they contribute to incidents, and
- manage the residual risks so that any incidents that occur have minimal impact.

The outcomes of effective preparedness and response can strengthen industry infrastructure and lessen any potential negative impacts (human, environmental and financial) on its operations.

The CAPP Companion Planning Guide to Directive 071 (the Guide) was created to help companies in the Alberta petroleum industry protect employees, the public and the environment, as well as meet regulatory requirements in developing, implementing, and reporting emergency preparedness and response activities. The guide should also help meet the requirements of other provinces. This document also offers additional guidance specific to sour gas releases, high vapour pressure (HVP) product releases and spills of hydrocarbons and produced water.

### Goal

The goal of this Guide is to answer industry questions from producer members regarding implementation of the new and pre-existing aspects of ERCB *Directive 071* and to provide a location where non-regulatory aspects of *Directive 071* (i.e., expectations) could eventually be housed.

### Key Objective

The key objective of the Guide is to assist the petroleum industry in understanding the ERCB regulatory requirements and expectations for developing an ERP and in responding to an incident.

### General Approach

Each section of the Guide mirrors the corresponding section in *Directive 071* for ease of reading and provides implementation guidance and advice on the interpretation of *Directive 071* as well as answers to frequently asked questions. An additional section on frequently asked questions (FAQ's) regarding the ERCB implementation strategy is included as Section 17.

### How to Use this Guide

Use this document in conjunction with *Directive 071* as a tool to provide in depth clarification and interpretation of the ERCB regulatory requirements. The Guide can

provide you with more detail, examples, and best practices to clarify the regulations and expectations set out in the Directive.

The sections, headings, and subheadings of this document are identical to those found in *Directive 071*. The Guide also contains additional subheadings in some areas to cover specific topics not addressed in the Directive.

If CAPP has no additional information to enhance a particular section in *Directive 071*, the corresponding section in the Guide will state that no additional information is offered or applicable. If there are any FAQ's relevant to a topic, they are included at the end of each section, in italics.

CAPP encourages companies to continue to submit FAQ's as the Guide will be periodically updated. FAQ's may be submitted to April Dias ([ADias@comptonpetroleum.com](mailto:ADias@comptonpetroleum.com)) or Darrell Hunt ([Darrell\\_Hunt@nexeninc.com](mailto:Darrell_Hunt@nexeninc.com)).

# CAPP Companion Planning Guide

## 1 Introduction

The ERCB uses this subsection to introduce its three core principles pertaining to its emergency management system. Directive 071 supports the core principles through the review of ERPs, testing your company's ability to effectively respond to an incident, and observing industry exercises.

*Directive 071* was divided into two parts by the ERCB to differentiate between the requirements for obtaining an approved ERP and the requirements for companies to implement their plan and respond to an emergency. Your company should be familiar with both parts of *Directive 071* to understand the ERCB regulatory requirements and to maintain an effective emergency management process.

***1. The deletion of the word “upstream” from the title of Directive 071 is a significant change, implying that the directive may be applied to the entire petroleum industry including refining operations. Please clarify as to where and when the directive should be applied? Directive 071 applies to any petroleum industry operation that would normally fall under the jurisdiction of Directive 056: Energy Development Applications and Schedules. The Directive does not apply to refining operations, which is considered to be a downstream operation.***

### 1.1 Licensee Responsibility

In order to protect the public and the environment your company should

- be proactive in identifying hazards,
- have an appropriate ERP for your operations,
- ensure that your staff are trained and equipped to effectively react to an emergency, and
- practice emergency response through combinations of drills and exercises.

***1. Does the ERCB consider an operator and a licensee to be the same? Does the ERCB consider a contract operator to have the same responsibilities as a licensee? No. Under the ERCB Acts and Regulations, the licensee is responsible to ensure that regulatory requirements are met. If the operator was noncompliant in handling a licensee's operations, the licensee would be held accountable for the noncompliance.***

***2. I have several sour gas wells in a field that are contract operated by a company that owns most of the gas wells in the field. My gas wells are also tied into their gathering system. Do I need to develop my own ERP or can these wells be placed under the other company's ERP?***

*The sour gas wells that you own but are contract operated by another company can be placed in their ERP. The ERP should list the wells that are contract operated along with the company that owns the well. Your company should ensure that processes are in place to notify you during an emergency.*

## 1.2 Requirements, Enforcement, and Expectations

The numbered “must” statements in Directive 071 represent low and high risk ERCB regulatory requirements that might lead to enforcement actions against your company for noncompliance in those areas. The list of enforceable regulatory requirements and their risk ranking are found on the ERCB website.

Risking of the “must” statements was based on a typical non worst case scenario and was scored by the ERCB on impact to health and safety, environment, conservation, and stakeholder confidence. In general most high risk “must” statements are those that could pose a risk to the safety of residents within the emergency planning zone (EPZ).

**Statements in Directive 071 that contain the words “should”, “is expected to”, and “is encouraged” are ERCB expectations that companies will follow a guideline or recommended practice and are not subject to noncompliance enforcement actions by the ERCB.**

ERCB Bulletin 2008-15 contains the implementation schedule for Directive 071. Key dates for calculating EPZs using ERCBH2S and revising ERPs are as follows.

<b>Commencing April 8, 2008</b>	Companies will need to use Directive 071 and ERCBH2S for all <b>new</b> well, pipeline, and facility ERPs and follow the new routine/nonroutine application process. Some ERPs will be eligible for temporary exemption.
<b>ERPs eligible for temporary exemption</b>	<ul style="list-style-type: none"> <li>• site-specific drilling and completion ERPs submitted to the ERCB and/or approved prior to April 8, 2008.</li> <li>• Existing sour production facility ERPs that were submitted to the ERCB and received approval prior to April 8, 2008.</li> </ul>
<b>July 2 to December 31, 2008</b>	Companies will need to recalculate all well and pipeline EPZs within existing facility ERPs and submit the results to the ERCB’s Emergency Planning and Assessment Section
<b>December 31, 2008 to July 2, 2009</b>	The Emergency Planning and Assessment Section will assess the EPZ information submitted and provide a full implementation plan by July 2, 2009, for updating existing facility ERPs.

### 1.3 Purpose of Emergency Preparedness and Response

A serious incident is generally followed by a period of confusion and uncertainty when major decisions must be made. If personnel are unprepared, they may be overwhelmed and unable to deal with the emergency adequately. Proper planning and preparation will help your company activate action plans and mobilize response teams and resources in a safe, effective, and efficient manner, reducing the overall impact of the emergency.

The planning process can also help companies minimize their risks by identifying hazards and controlling or eliminating them before an incident occurs. A thorough ERP identifies what types of emergencies might occur, probable scenarios, levels of risk, and provides information on systems for responding adequately to these emergencies.

An effective ERP is concise and well organized with sufficient detail to ensure quick access to critical information. The amount of information is determined by the potential risks identified.

Implementing an effective ERP

- ensures immediate and effective actions by operating personnel,
- emphasizes/encourages coordinating activities between responders and government agencies,
- protects the public and reduces danger to workers and responders,
- minimizes impact on property and the environment, and
- maintains effective communication with all parties involved or impacted by the emergency.

The ERCB had originally defined the purpose of an ERP as “ensuring a quick, effective response to emergencies in order to protect the public from fatalities and irreversible health effects.” They have expanded the purpose to encompass the broader spectrum of public safety.

### 1.4 What’s New in Directive 071

Table 1: Summary of New Requirements in *Directive 071* outlines the key changes to the June 2003 version of this Directive. The major changes to *Directive 071* are summarized below

- your company can no longer apply for a reduced emergency planning zone (EPZ),
- emergency levels are no longer used to determine the need for evacuation or sheltering,
- a new ERP application process has been introduced,
- companies are required to use the new Assessment Matrix to classify an incident,

- the reduced hydrogen sulphide (H<sub>2</sub>S) release from using a surface controlled subsurface safety valve (SCSSV) can be used to calculate the well EPZ,
- all companies will be required to use the ERCBH<sub>2</sub>S model in calculating EPZs for sour wells, pipelines, and facilities,
- the 20 ppm (3-minute average) criterion for evacuation has been changed to 10 ppm (3- minute average), and
- the requirement for an annual update has been removed from the directive.

There are additional changes in the directive that are listed in Table 1 and minor changes that have not been captured by this table. Your company is advised to read the entire directive to ensure that you are aware of all the changes.

## 1.5 Directive 071 Requirements

The ERCB administers the regulatory requirements of *Directive 071* through the Oil and Gas Conservation Regulations and the Pipeline Regulation. *Directive 071* is referenced throughout those documents. For your information, each section in this Guide will reference the appropriate ERCB regulation that applies to a specific type of ERP.

The ERCB also states in *Directive 071* that it has adopted the most recent edition of the Canadian Standards Association (CSA) standard CAN/CSA Z-731-03 *Emergency Preparedness and Response* and expects it to be used by the petroleum industry in conjunction with *Directive 071* when your company develops its emergency preparedness and response programs. For the most part material found in the standard has been expanded on in the directive; however, the Annexes in CSA Z-731 contain valuable reference material.

Companies should be familiar with the content of CSA Z-731; however, *Directive 071* contains the requirements that need to be followed to satisfy the ERCB's requirements. CSA Z-731-03 may be purchased from the Canadian Standards Association. Instructions on how to obtain the document are found on the CSA Website at [www.csa.ca/standards/](http://www.csa.ca/standards/).

## 1.6 ERP Application Process for ERCB Approval

ERP applications and supplements to ERPs will now have to be registered through the ERCB Digital Data Submission (DDS) system, which is compatible with the current industry standard desktop environment. The new ERCB application process was designed to streamline the review process and reduce the waiting time for companies to get approval for ERP applications. The applications process is similar to the facility applications process used by the ERCB for *Directive 056* submissions.

To submit an ERP application to the ERCB your company will need to provide

- a covering letter that sets out what is being asked for,
- the application form (found in Appendix 2 of *Directive 071*),
- a copy of the ERP, and
- a copy of the comma separated value (CSV) batch export file from ERCBH2S submitted electronically to the Emergency Planning and Assessment Section at EPAssessment@ercb.ca.

**1. How do I register my application on the ERCB DDS system?** *The DDS system may be accessed through the ERCB Website at [www.ercb.gov.ab.ca](http://www.ercb.gov.ab.ca). Applications may be submitted using the ERCB's current DDS protocol, which requires your company to have an identification code and password to access the system. The ERCB will notify your company via email of the registration and disposition of an application.*

**2. Do you send the CSV file in first then courier over your ERP and register it on DDS or the other way around?** *The process for submitting an ERP application is the following*

- register the ERP through the ERCB DDS system,
- send in the CSV batch export file electronically, and
- submit the ERP to the Emergency Planning and Assessment Section.

**3. Do I need to attach the CSV batch export file to my Directive 056 application?** *No. Your company will use the ERCBH2S calculation in the Directive 056 application, but you only need to submit the CSV batch export file electronically to the ERCB Emergency Planning and Assessment Section to support the ERP application..*

**4. Is the new application form to be printed and forwarded in written format?** *The application form should be in written or printed format and submitted with the ERP to the ERCB Emergency Planning and Assessment Section.*

## ERCB Intent and Review Instructions for Section 1

The ERCB will review the following when assessing an ERP

<b>ERP plan reference number</b>	
<b>Registration date</b>	
<b>Application file number</b>	
<b>ERP name</b>	
<b>Company name</b>	
<b>B.A. code (issued to applicant)</b>	
<b>Company contact information</b>	Name, Telephone, FAX, Email address
<b>Consultant company</b>	
<b>B.A. code (issued to consultant)</b>	
<b>Consultant contact information)</b>	Name, Telephone, FAX, Email address

<p><b>Type of ERP</b></p>	<p><b>Sour well site-specific noncritical</b> - drilling, completions, servicing/workover, multi well</p> <p><b>Sour well site-specific critical</b> - drilling, completions, servicing/workover, multi well</p> <p>Sour Operations</p> <p>Supplement</p> <p>HVP Pipeline</p> <p>HVP Cavern Storage Facility</p>
<p><b>Are there any significant deficiencies that make the ERP technically incomplete?</b></p>	<p>Check to see if the applicant failed to appropriately address and/or explain the selected bold boxes marked on the ERP application form.</p> <p>Check to see if the ERP contains information that is inconsistent with the information contained within a related Directive 056 application/licence.</p>

## **Part A: Planning Requirements for Directive 071**

### **Sections 2 - 10**

## 2 Corporate-level ERPs

### 2.1 Corporate-level ERP Requirements

In a court of law the accountability and liability for company operations, including loss of life or damage to the environment, rest with a firm's senior management and directors. Laws require them to have systems in place to protect the public and minimize impacts to property and the environment.

Corporate-level ERPs are used to handle an emergency when your company's operations do not require a *Directive 071* site-specific ERP. They are legal requirement under the following ERCB Acts and Regulations

- Sections 8.002(1) and 8.002(2) – ERCB Oil and Gas Conservation Regulations
- Sections 50.1(1) and 50.1(2) – ERCB Pipeline Regulation

The ERCB regulations may be found on the ERCB Website at [www.ercb.ca/portal/server.pt](http://www.ercb.ca/portal/server.pt).

A corporate-level ERP addresses how your company will handle an emergency and includes

- the range and types of hazards and associated emergencies that are applicable to your operations, and
- the level of detail required to address each item depending on the nature of the operations that the plan covers.

A copy of the corporate-level ERP should be readily available at a response location in your company's area of operations so that staff can use it to effectively respond to an incident.

Corporate-level plans do not have to be submitted to the ERCB for approval; however, the ERCB may occasionally ask a company to submit the ERP for review. The minimum amount of information that should be included in a corporate-level ERP is outlined in the subsections below.

#### 2.1.1 Assessment Matrix for Classifying Incidents

Many companies have developed their own systems for classifying an incident. This could lead to confusion if a response is required from another company, government agency, regional health authority (RHA), or local authority and that party is using a different incident classification system. The magnitude of the required response might not be appropriate for the level of emergency.

The assessment matrix for classifying incidents (Appendix 4 - *Directive 071*) was developed so that incidents throughout the province could be classified and communicated to others on a consistent basis. Your company is required to include the assessment matrix in the corporate-level ERP and all site-specific ERPs and to use it to classify an incident.

The assessment matrix consists of a series of tables designed to classify an incident based on the consequence of the incident and the likelihood of escalation. **Table 1** is used to rank the consequence of the incident from **minor (1)** to **catastrophic (4)** based on the following consequences in each category if they are applicable.

- What was the impact on workers at the site?
- What kind of media interest could the incident attract?
- What is the potential impact of any liquid release?
- What is the potential impact of any gas release?

Table 1. Consequence of incident		
Rank	Category	Consequence in category
1	Minor	<ul style="list-style-type: none"> <li>• No worker injuries.</li> <li>• Nil or low media interest.</li> <li>• Liquid release contained on lease.</li> <li>• Gas release impact on lease only. No odour from gas detected off site.</li> </ul>
2	Moderate	<ul style="list-style-type: none"> <li>• Medical aid treatment required for on lease worker(s)</li> <li>• Local and possible regional media interest.</li> <li>• Liquid release not contained on lease. Liquid release can be contained off lease.</li> <li>• Gas release impact has potential to extend beyond lease. Odour complaints likely.</li> </ul>
3	Major	<ul style="list-style-type: none"> <li>• Worker(s) requires hospitalization.</li> <li>• Regional and national media interest.</li> <li>• Liquid release extends beyond lease and is not contained.</li> <li>• Gas release impact extends beyond lease with potential to jeopardize public health/safety.</li> </ul>
4	Catastrophic	<ul style="list-style-type: none"> <li>• Fatality.</li> <li>• National and international media interest.</li> <li>• Liquid release extends off-lease and is not contained. There is potential for, or the release is, impacting water or sensitive terrain.</li> <li>• Gas release impact extends beyond lease and public health/safety is jeopardized.</li> </ul>

The **worst case scenario** in Table 1 determines the rank of the consequence of the incident.

**Table 2** ranks the likelihood of the incident escalating from **unlikely (1)** to **almost certain or currently occurring (4)** based on your company's assessment of how well the incident is being controlled and whether outside resources will be required.

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?		

The sum of the ranking from Table 1 and Table 2 will give your company the risk level, which is then used to assign the incident classification (**Table 3**).

Table 3. Incident classification

Risk level	Assessment results	Examples
Very low 2-3	Alert	Circulating a kick during drilling; a small spill of a volatile chemical product on site; a small release of sour gas from a leaking valve; a small oil spill from a tank on a single well battery.
Low 4-5	Level-1 emergency	A stuffing box on a pumping oil well has cracked and oil is spraying off lease into an adjacent field; several workers have been knocked down by sour gas after entering a metering shack and require hospitalization; a seal on a sour gas wellhead has failed and sour gas could jeopardize public safety; a rig hand has been severely injured by a joint of drill pipe falling off the pipe rack.
Medium 6	Level-2 emergency	A fire is burning in a compressor station near a major city and there is significant regional interest; an oil spill from a well extends beyond the lease and is heading towards a small creek; an explosion at a battery has hospitalized several workers, but the hazard will shortly be under control.
High 7-8	Level-3 emergency	An explosion in a slightly sour gas well ruptures the casing creating a blowout outside the casing; several workers are killed while attempting to bring a sour gas well under control; an oil pipeline ruptures at a river crossing and spills oil several kilometres upstream of the water intake of a large town; an uncontrolled release of HVP product from a cavern storage facility near a major city catches fire and creates national media interest.

11

The following examples illustrate how the assessment matrix should be used.

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### **Example 1 - Alert**

A choke on above ground piping leading off the wellhead of a flowing oil well cracks and begins to spray oil. The quantity of oil spilled amounts to several litres and is confined to the area immediately adjacent to the well. The operator arrives on site, surveys the damage, and immediately shuts in the well. The choke is replaced and the well is placed back on production.

The consequence/impact of the spill is established as minor (1) because the release is contained on site. The likelihood of the incident escalating is unlikely (1) because the release can immediately be controlled and the choke replaced.

The risk level would be ranked as **Very Low (2)** [minor (1) + unlikely (1)] and the incident would be classified as an **Alert**.

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### **Example 2 - Level 1**

While changing out a bottomhole pump on an oil well, one of the rods slips from the rack on the monkey boards striking a rig hand on the arm. The rig hand subsequently requires hospitalization. A reporter for a local newspaper arrives on scene and indicates that he will run a story in the paper.

The consequence of the incident could be moderate (2) based on local media interest or major (3) based on the rig hand requiring hospitalization. Always use the highest category/rank which in this case is major (3). The likelihood of the incident escalating is unlikely (1). The risk level would be ranked as **Low (4)** [major (3) + unlikely (1)] and the incident would be classified as a **Level 1 emergency**.

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### **Example 3 - Level 2**

A farmer is working in his field and accidentally shears off the master valve above the bonnet on the wellhead with his combine. The farmer is not hurt but the well is venting sweet gas and spraying salt water. The produced water from the spray is pooling on the farmer's land and gas is escaping at about 40 000 m<sup>3</sup>/d. It is evident that it will take several days to remove the farmer's combine, obtain the necessary equipment, and kill the well to bring it under control. The well is near a major town and the regional press has picked up the story.

The consequence of the incident could be major (3) based on regional media interest or the liquid release extending beyond the lease site. The likelihood of the incident escalating is likely (3) which means that imminent control using internal and external resources is possible. The risk level would be ranked as **Medium (6)** [major (3) + likely (3)] and the incident would be classified as a **Level 2 emergency**.

### Example 4 – Level 3

During the drilling of a sour gas well, the crew hits a pocket of high pressure gas at a shallow depth. The drill pipe shoots out of the hole and strikes the travelling block igniting the escaping gas and setting the rig on fire. The rig crew is forced to pull back to safety; however, the driller has been hit by a joint of drill pipe and is seriously injured. The rig is located next to a major highway and the fire is visible to motorists passing by. It is clear that because of the location, media interest will be high.

The consequence of the incident could be major (3) based on regional media interest or the rig hand requiring hospitalization. The likelihood of the incident escalating is almost certain or currently occurring (4) with little chance that the licensee will be able to bring the hazard under control in the near term. The risk level would be ranked as High (7) [major (3) + almost certain (4)] and the incident would be classified as a Level 3 emergency.

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Companies also have to include Appendix 4 Table 4 - Incident Response in a corporate-level ERP or site-specific ERP as part of a comprehensive response program for dealing with an incident. The ERCB requirements are minimum responses that your company should initiate as part of the communications, actions, and resource strategies once you have determined the level of emergency. The table can be submitted as is or your company can expand on it.

Companies that use a different type of assessment matrix can include it in the ERP but it should be linked to the ERCB assessment matrix that has to be included in the ERP so that the incident response is similar to that of Appendix 4.

**1. Do the ERCB's definitions of level of alert and emergencies apply specifically to sour operations?** *They apply to any hazard that has the potential to impact the public or the environment including sour gas, HVP product, and oil and saltwater spills.*

**2. When you say that the matrix and the response actions at various levels must be included in the ERP, do you mean verbatim or by intent?** *The Assessment Matrix was established to provide consistency in classifying incidents in the oil patch and to ensure that the level was understood by others. The ERCB has indicated that every company is required to put the Assessment Matrix in the ERP verbatim. The wording for the incident response doesn't have to be verbatim; however, the communications, actions and response strategies should be similar to what the ERCB has in Appendix 4. According to the ERCB, these are the minimum actions that every company is expected to carry out for each level of emergency.*

**3. Is an alert an emergency level?** *An alert is an on-site incident that can be handled through normal operating procedures. It is not considered to be an emergency.*

**4. It is unclear which incidents Appendix 4 Table 4 Incident Response applies to. Is it only for H<sub>2</sub>S and HVP product incidents, incidents with off-site impact, or all incidents including on-site medical emergencies, sweet spills etc. with no off-site impact?** *The Incident Response table contains the minimum actions that a company is*

*expected to take for an alert or a level of emergency with respect to communications, actions and resources and applies to all incidents both on site and off site.*

**5. Please provide some examples of what types of incidents could be classified as an alert? Some examples would be**

- *a small leak from a needle valve on a wellhead,*
- *circulating out a kick during a drilling operation, or*
- *H<sub>2</sub>S detectors pick up a sour gas release on the plant lease site causing the company to investigate. It turns out to be a substantiated release and not a false alarm.*

## **2.1.2 Communications Planning**

The goal for communications planning is to establish policies and processes for the coordination of communications within your company and between any applicable outside stakeholders such as support services, the public, the media, regulatory agencies, and suppliers in the event of an emergency. Communications planning supports the ERP and addresses communication response in the EPZ, media relations, and communication issues including procedures for the assessment of potentially harmful situations and the methods for responding to these situations quickly and effectively.

Communications plans establish guidelines for dealing with a variety of situations, and ensures that your company's staff and communicators are familiar with those procedures and their roles in the event of an emergency.

The objectives of a communications plan are to

- assess the situation, define response strategies, and determine whether a communications response is warranted;
- assign communications resources and responsibilities (a communications team that will make recommendations on appropriate responses); and
- implement immediate action to
  - identify those parties that should be informed about the situation,
  - communicate facts about the emergency, and
  - restore order and/or confidence.

***1. My company feels that we just have to be aware of the communications processes that are there. Why do we need a section in the ERP dealing with a communications plan? Most companies find it advantageous to actually develop a communications plan rather than just be aware of the processes that need to be there.***

During an emergency it is easy to overlook a procedure or process if the plan is not available for reference. Your plan needs to meet the requirements of the Directive 071

Section 5.8, but it is not necessary to have it in one section as long as the elements are present in the plan.

### 2.1.3 Responsibilities of Personnel

To successfully implement and manage an emergency response operation, specific roles and responsibilities are needed. Consider these positions/roles when developing a response organization. Your company may have a different name for them.

#### Command

Corporate EOC/crisis manager: person in charge of managing the corporate crisis management team	Liaison officer Information officer Safety officer
Regional emergency operations centre (REOC)/ emergency manager in charge of the regional EOC	Communications officer
On Scene/Incident Commander/Operations Section Chief: person in charge of the on- scene command post (OSCP)	

#### Planning

Planning section chief	Logistics section chief
Finance section chief	Operations section chief

#### Operations

Environmental assessment and damage mitigation	Medical assistance and transportation
Resource procurement/ logistics	Reception centre coordination
Public notification coordination	Public safety: to provide overall strategy to protect the public
Government Interface/Liaison	Security
Legal advice	Finance/cost control
Air support	

#### Response

Reconnaissance	Search and rescue/evacuation
Resource staging area	Road blocks
Spill control	Fire response

## **2.1.4 Incident Management Systems**

Adopting an incident management system that is compatible with your company's capabilities minimizes the impacts of hazards on public health/safety and property, facilities/operations, the environment, and your company's reputation. The ERCB would like to see details of your incident management system (i.e., Incident Command System (ICS), Emergency Site Management System, etc.) along with a discussion on the roles and responsibilities of personnel at the on-site command post, regional emergency operations centre (EOC), and the corporate EOC.

A single EOC with appropriate representation from the local authority, provincial departments/agencies (ERCB, RHAs, Alberta Environment, RCMP, etc.) and the responsible company can be very effective in handling an emergency. The ERCB is not mandating that operations be handled this way but is encouraging companies to consider setting up a single EOC with this type of representation during an incident.

## **2.1.5 Reception Centre**

Your company is required to have procedures in the corporate-level ERP for

- designating responsibility to locate a suitable reception centre,
- activating the reception centre,
- contacting the local authority to advise them of the location, and
- meeting and registering evacuees.

### 3 Emergency Planning and Response Zones

#### 3.1 Emergency Planning Zone

The ERCBH2S model will provide a circular emergency planning zone around a release of H<sub>2</sub>S. A computer model simulating an HVP product release will also provide a circular zone. Your company is required to modify the shape and extent of the EPZ based on the physical features of the area such as topography, access and egress routes, residences adjacent to the EPZ (within 25 metres), information gathered from the public involvement process (i.e., sensitivities to H<sub>2</sub>S, special needs, etc.) or any other factor that may require including residents within the EPZ.

Figure 1 in Directive 071 illustrates the different types of planning and response zones that are discussed throughout the directive. The ERCB has introduced the use of the terms IIZ and PAZ to clarify where industry should focus its response during an incident. Your company's response to an incident is basically the same as under the old directive. Response is required immediately adjacent to and downwind of the release.

- 1. Can my company still submit an application for a reduced EPZ? Your company can no longer submit an application to the ERCB for a reduced EPZ. Arguments that were used for requesting a reduced EPZ have been included in the model. The ERCBH2S model will have to be used to calculate the size of the EPZ.***
- 2. What will happen to facilities that already have a reduced EPZ? All EPZs will have to be recalculated using the ERCBH2S model? The ERCB has developed an implementation schedule for your company to use in resubmitting the sour operating and site-specific ERPs. The implementation schedule is found in ERCB Bulletin 2008-15 and was issued in April 2008.***
- 3. Some of the ERCBH2S calculated EPZs are larger than I expected. Is there anything I can do to affect the size? The biggest contributor to the size of an ERCBH2S calculated EPZ is time. The faster an H<sub>2</sub>S release to atmosphere is stopped, the smaller the EPZ. There are several ways to impact this time. The most common methods for wells are ignition or installation of SCSSV's, and for pipelines it is the ESD valve closure settings. These options, along with others are available in a subsection on the ERCBH2S inputs page called 'Source Mitigation'.***
- 4. Our company plans to develop a work camp for its oilsands project and the only development within the project EPZ will be the work camp. Do we need to develop an ERP? Essentially workers in a camp are considered members of the public when they are off duty and the place that they stay in is considered to be surface development. Your company would have to develop an ERP to respond to the area.***
- 5. Our drilling and completions group is not comfortable using a 15-30 minute ignition time in the model even though the rig crew is on site and they have multiple methods of ignition because there is the possibility that ignition criteria would not be met in that short time period. Are we interpreting the ignition time that we use in the ERCBH2S model properly?***

*When a company is using the ERCBH2S model it should base the ignition time for a release on*

*1. How quickly could the release be ignited? If there are staff on site at all times (i.e., drilling a well, a servicing operation, etc.), the release could theoretically be ignited right away. That decision has nothing to do with the Ignition Assessment and Criteria Flowchart.*

*2. Keeping the above in mind, you want to make sure that everyone is accounted for and the ignition team is prepared to ignite before your company proceeds.*

*For a manned operation the model will let you select a time ranging from 15 minutes to 720 minutes. The EPZ calculated by the model is based on the time that it takes to ignite after the initial release of sour gas. Fifteen minutes was selected as the minimum time to muster on-site personnel and send in the ignition team to ignite and is the smallest number that can be inputted into the model. You should pick a realistic time to ignite based on company experience from ignition drills. That is the time that you would use in the model to determine the size of the EPZ.*

*The decision to ignite a release is based on the criteria in Appendix 7. Once any of those conditions have been met, ignition has to occur within 15 minutes after the decision to ignite. This is not the same as the time selected for input into the model and may allow your company some time to bring the release under control without igniting, if the Appendix 7 conditions have not been met.*

## **3.2 Calculating EPZs for Hydrogen Sulphide**

### **3.2.1 Sour Gas Wells**

If you are drilling a sour gas well, your company will be required to determine the H<sub>2</sub>S release rate based on the methodology found in *Directive 056*. If the well is on production and absolute open flow (AOF) rates are not available, the ERCB will allow your company to use offset data, if available, or a rule-of-thumb calculation based on 3 times a wells current production capability.

When you calculate a release rate for an acid gas injection well the worst case release scenario occurs when the reservoir has been fully repressured. The AOF is determined or calculated by using the release up the tubing string.

**Your company can take credit for the installation of SCSSV's and downhole chokes in determining the H<sub>2</sub>S release rates for producing sour gas wells and acid gas injection wells.** This assumes that the SCSSV closes immediately after a pressure drop at surface and limits the H<sub>2</sub>S release to the volume in the tubing above the valve. The ERCB will expect that companies provide proper maintenance and testing of the SCSSV's during the wells operational life.

***1. My company has purchased several hundred slightly sour producing wells in a field and we have very little absolute open flow (AOF) data for the wells. Now that we have to recalculate the EPZs using ERCBH2S, do we have to test all of the wells to***

**obtain a flow rate? When you add up the lost production and the cost to test the wells, it's going to cost us a fortune. Can't we use a rule of thumb method to estimate the wellhead AOF?** Yes. For producing wells the ERCB will let your company use a rule-of-thumb calculation for the wellhead AOF based on 3 times a wells current production capability. Another method also approved by the ERCB would be to use a representative AOF from another well in the area.

**2. Can different EPZs be used throughout the drilling operation?** No. Worst case scenarios will have to be used to develop EPZs for an ERP. The ERCB will not accept ERPs with a multi-level EPZ for each sour zone. Should there be an incident while drilling into one of the sweet zones or a sour zone with a lesser release rate, your company's response is expected to match the predicted impact; however, as a minimum, notification will have to include all residents within the worst case EPZ.

**3. Can a different EPZ be used for drilling versus completions?** Yes. Drilling and completion rates are usually different and therefore a different size EPZ can be used for the completion phase. Depending on the zone being completed, the type of completion, or the determination of a new release rate, the EPZ could be either smaller, larger, or the same size.

**4. If a company determines, after they have consulted the public, that the release rate is actually higher or lower than what they told the public, what should they do?** If the release rate is higher, the public has to be notified and the ERP revised for the larger EPZ. That would include notification and consultation for members of the public outside of the existing EPZ. If the release rate is lower, the company will be required to use that rate with the corresponding EPZ and notify those residents who are now out of the EPZ.

**5. I have some wells with subsurface safety valves that are not surface controlled. Can I still select this option under 'Source Mitigation' in the ERCBH2S mode?** No. These valves cannot be maintained reliability unless they are surface controlled.

**6. In the ERCBH2S model I have selected SCSSV for my well, but the minimum time under 'Time from release until stop flow or ignition' still shows 15 minutes. Why?** The phase of well operation selected must be producing/injection in order to receive a time credit for the valve.

**7. For existing wells should you use the highest H<sub>2</sub>S concentration from any formation capable of flowing to surface based on a search of data from the area or is this based on your own well data?** When using ERCBH2S for a production scenario you would use the highest value from the particular well's production data. When using the model for drilling and completion scenarios, you will not know the data, so you would use the highest value from your search of the area.

### 3.2.2 Sour Oil Wells, Sour Water Disposal Wells, and Sour Observation Wells

Non flowing sour oil wells and sour water disposal wells on vacuum are normally incapable of flow back to surface. An ERP will not be required if the well is incapable of flowing back to surface without mechanical assistance.

A release from flowing sour oil wells, sour water from injection wells under pressure, or sour observation wells, capable of flowing, will pool on surface and sour solution gas dissolved in the fluid will be released as a result of the pressure drop. Sour gas release is based on the liquid flow rate to surface and the gas-to-liquid ratio.

***1. If a sour oil well is depleted over years and won't flow, is shut-in and physically disconnected from the pipeline still considered part of the gathering system? No it is not considered to still be part of the gathering system and because it can no longer flow to surface without mechanical assistance does not require an ERP. The ERCB requires that the well be suspended properly so that H<sub>2</sub>S can no longer reach the surface.***

***2. My well is only slightly sour (50ppm). Do I have to use the ERCBH<sub>2</sub>S model to calculate the EPZ? Wells with an H<sub>2</sub>S content less than 100 ppm do not have to be modelled.***

### 3.2.3 Sour Gas Pipelines

Sour gas pipelines and sour multiphase pipelines are handled the same way using ERCBH<sub>2</sub>S. When dealing with a sour multiphase pipeline it is important to remember to use the combined composition of the gas and liquids including water when inputting the information into ERCBH<sub>2</sub>S.

***1. How does the ERCB expect operators to manage public safety within very large sour pipeline EPZs? Managing public safety within the EPZ of large sour pipelines is very much dependent on the type of release and the concentration of H<sub>2</sub>S. If the pipeline rupture is a guillotine break then the release is non continuous, assuming the ESDs close properly. Residents within the area should have been advised during the public involvement program to shelter indoors upon detecting sour gas. Sheltering-in-place is the best public protection measure for a non continuous release if evacuation might place residents at risk.***

*A more common type of pipeline failure is the development of small holes from corrosion or pipe defects. It may not be large enough to trigger the deployment of the ESDs and likely is detected through odour complaints. A company will have more time to deal with public protection measures and will probably have sufficient time to evacuate residents downwind of the release in the PAZ before they come into contact with H<sub>2</sub>S.*

**2. Why is my pipeline EPZ different using ERCBH2S than it was using the nomograph?** Primarily the changes are driven by the volume and duration of the release. This, in turn, is impacted by the presence, type, setting, and subsequent behaviour of pipeline ESD valves. Many of these parameters can be controlled by the user to reflect actual operating conditions or allow users to investigate changes that would result in a more appropriate sized EPZ.

**3. How can I find out what the default settings and data entry ranges are for ERCBH2S inputs – are they listed in Directive 071 or in the ERCBH2S User Guide?** The default settings and data entry ranges are only shown on the ERCBH2S inputs page.

**4. In the old method of calculating pipeline EPZs, it was just the licensed amount of H<sub>2</sub>S that was used to calculate the release volume but now it has to be the actual. Is this true?** The old method of calculating the pipeline EPZ did require that you use the licensed amount of H<sub>2</sub>S and in addition the pipeline's licensed pressure. When you use ERCBH2S to calculate the pipeline EPZ, your company can use the licensed H<sub>2</sub>S concentration or the actual H<sub>2</sub>S concentration and the licensed pipeline pressure or the maximum operating pipeline pressure.

### 3.2.4 Sour Liquid Pipelines

The volume of H<sub>2</sub>S from a sour liquid pipeline release is treated in the same manner as a gas release from fluid at stock tank conditions. Sour solution gas dissolved in the pooled fluid will be released as a result of the pressure drop. The volume of H<sub>2</sub>S released is based on the amount liquid released from the pipeline, the gas-to-liquid ratio and the concentration of H<sub>2</sub>S.

**1. I am modelling something in the Liquid Pipeline or Liquid Well portion of the ERCBH2S Inputs page. The flow rate is over the allowable limit of 10 000 m<sup>3</sup>/d. How can I proceed?** ERCBH2S will model liquid flow rates in excess of 10 000m<sup>3</sup>/d but as you have noticed there is an 'orange warning' for this 'input row' in column E on the ERCBH2S inputs page. Go ahead and submit your calculations to the ERCB with your other submission materials, but attach a note to the submission indicating that the error message shown for the ERCBH2S calculation result is related only to the flow rate. The maximum allowable entry for a liquid flow will be changed in a future version of ERCBH2S.

**2. I used ERCBH2S and found that my EAZ actually falls within the EPZ. Did I do something wrong?** No. There was a glitch in the ERCBH2S model that created this problem. It has since been corrected.

### 3.2.5 Facilities

When calculating the EPZ for a sour facility your company should only use the largest EPZ for any single pipeline entering or leaving the facility. Although there may be

several pipelines within the pipeline right-of-way, the probability of more than one line rupturing at the same time and same location is remote.

*1. At what point in the lease should I measure the EPZ from? EPZ measurements for a facility lease are taken at the facility lease boundary.*

### **3.3 Calculating EPZs for HVP Product**

There is no specific method currently defined by the ERCB for calculating an EPZ for High Vapour Pressure (HVP) production facilities. The ERCB encourages companies to use the table found in Appendix 10<sup>1</sup> in this document or to use an appropriate dispersion model. The requirements set out below provide the minimum standards that are applied when undertaking a hazard assessment for HVP product to determine the EPZ.

Hazard analysis is a complex task requiring an understanding of source conditions, fluid behaviour, dispersion modelling, and the systems and procedures in place to mitigate the consequences should an accidental release occur. To properly assess the hazard from HVP product and construct an effective ERP requires appropriate expertise from a range of disciplines. Companies should ensure that persons undertaking a hazard assessment for HVP product are competent and suitably qualified by virtue of their training and experience.

The primary hazard associated with HVP products is direct exposure to flame. Upon release, immediate ignition could occur resulting in a jet fire, or a dense gas cloud could travel to a delayed ignition source, resulting in a flash fire or an explosion. The largest hazard area for emergency response planning is the flash fire. Companies should conduct a dense gas plume dispersion assessment for each facility to determine the size of the EPZ.

For HVP product pipelines the drained volume is the sum of release volumes that exist between emergency shutdown valves (ESD) valves and check valves. The EPZ for a HVP production facility is calculated from the largest HVP product release volume from any pipeline entering or leaving the facility.

Mitigation actions should be accounted for in the EPZ calculation, but they have to be practical and explained in the documentation supporting the ERP so that the ERCB can be satisfied that they are appropriate.

#### **3.3.1 HVP Product Release Rates – Pipelines**

For a pipeline, the mass release rate profile from a guillotine break is calculated using the maximum licensed pressure:

- The calculation assumes that the ESDs close instantaneously.

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<sup>1</sup> The table in Appendix 10 is from a report to the HVP Working Group on “The Effects of HVP System Parameters on Dispersion and Thermal Radiation Hazard Extents” by Jacques Whitford AXYS Ltd.  
July 2008

- Initially a liquid stream will be released until the exit pressure drops to the vapour pressure. This occurs very rapidly and can be ignored in the modelling.
- Following the liquid stream there will be a steady two-phase flow that will continue until the pressure drops below the vapour pressure. This portion of the release requires modelling as it is where the majority of the material is released.
- The final portion of the release is a vapour and can be ignored in the modelling since it will not contribute significantly to the hazard distance.

### **3.3.2 HVP Product Release Rates - Cavern Storage Facility**

For a storage cavern the release is modelled as a continuous release until the cavern is depleted, or the release is modified by a mitigation action such as ignition.

### **3.3.3 Gas Composition**

HVP product facilities may handle batches of product with distinct compositions. The representative composition of each HVP product batch mixture should be modelled. The EPZ is determined by the batch with the largest hazard area.

### **3.3.4 Depressurization to Atmospheric Pressure**

During a release, HVP product exiting as a two-phase flow expands rapidly to atmospheric pressure. The temperature of the fluid will drop further and additional liquids will form:

- Real fluid behaviour and the presence of liquid aerosol should be accounted for in the dense gas dispersion modelling because it can have a significant effect on initial conditions and the downwind concentrations of HVP product.
- All of the released material is assumed to enter the cloud as a vapour or an aerosol (i.e., no liquid pool is formed on the ground).

### **3.3.5 Release Orientation**

The most conservative release orientation (i.e., horizontal or vertical) is assumed. Typically the most significant release is a horizontal release.

### **3.3.6 Release Duration**

#### **Pipelines**

The release duration from an HVP product pipeline is determined from the mass between ESD valves and the steady two-phase flow release rate at the vapour pressure.

#### **Storage Cavern**

For a storage cavern the duration is determined by the mitigation action or the time to deplete the cavern of its product. For modelling purposes the minimum ignition delay time is 15 minutes. This is to ensure a margin of safety within the EPZ calculation. Note that prompt ignition (i.e., sooner than 15 minutes) should be planned for within the ERP.

### **3.3.7 Dispersion Modelling**

A dense gas dispersion model designed for source conditions that include condensed liquids as an aerosol should be used to calculate downwind concentrations.

A parallel airflow model is acceptable because releases occur at or near ground level and the release is dense (i.e., is heavier than air). Local terrain effects that may channel the release need to be identified and considered in the ERP.

### **3.3.8 Meteorological Conditions**

Dispersion of the HVP product plume is dependent on the meteorological conditions during the release. The EPZ is based on the worst case meteorological conditions that result in the largest predicted distance. Low wind speed and very stable conditions will usually determine the EPZ.

### **3.3.9 Averaging Times**

The shortest averaging time that the model allows (i.e., typically 10 seconds) is used for the calculation. This is to account for peak concentrations above the longer term release duration average that may be within flammable limits.

### **3.3.10 Emergency Planning Zone Endpoints**

The EPZ represents the distance to the hazard following an accidental release of HVP product at which “direct exposure to flame” could occur. Ignition of a gas/air mixture can occur only when the ratio of gas-to-air in the mixture falls between the upper flammability limit (UFL) and the lower flammability limit (LFL) of the mixture. Dispersion models calculate LFL as an average value. As the gas to air mixture in the

atmosphere may fluctuate above and below average values, LFL/2 should be used as the accepted endpoint.

### **3.4 Emergency Awareness Zone**

The Emergency Awareness Zone (EAZ) is a planning zone surrounding the EPZ where a response to an emergency may be required if the hazard expands beyond the original EPZ. Companies should be cognizant of the physical features and characteristics of the area (roadway systems, key geographic features); however, unlike the EPZ, companies are only required to identify the urban density developments, public facilities or publicly used developments are located and to place them on their ERP map.

#### **3.4.1 EAZ for an H<sub>2</sub>S Release**

The EAZ for an H<sub>2</sub>S release was previously based on the area from the edge of the EPZ to twice the radius of the EPZ. It did not appear to have any scientific basis and was more or less a rule of thumb to define an area that might need response actions if the release extended beyond the EPZ. The edge of the EPZ as defined by ERCBH<sub>2</sub>S is the distance to the indoor H<sub>2</sub>S concentration of 10 ppm and has real value for an emergency response coordinator in planning public protection measures.

*1. Will we expect to get distances to the EAZ boundary that are greater than what we had before? It used to be 2 times the EPZ radius. Most of the calculated EAZ distances to the outside boundary are about 1.5 times or less than the EPZ radius which results in a smaller distance than was previously used.*

#### **3.4.2 EAZ for an HVP Product Release**

The ERCB has not developed a dispersion model for determining the EAZ of a HVP product release. For an H<sub>2</sub>S release, the EAZ as determined by ERCBH<sub>2</sub>S indicates that the distance to the EAZ boundary is approximately 1.5 times the EPZ radius. Until there is further development by the ERCB on an HVP dispersion model, the distance to the EAZ for an HVP product release has been set at this number.

### **3.5 Initial Isolation Zone**

ERCBH<sub>2</sub>S provides valuable information to emergency responders in identifying resident locations in proximity to a continuous sour gas release from wells or pipelines (i.e., the IIZ) where sheltering in place will only provide temporary protection for residents. If the residents could not be safely evacuated and are sheltering, your company will have to consider other public protection measures such as supervised evacuation or ignition to protect their safety.

If the release from a sour gas or HVP pipeline is from a guillotine rupture, the hazard is a plume of gas, controlled by meteorological conditions and of limited duration.

Sheltering in place should provide adequate protection for residents as outdoor concentrations will spike when the plume passes over the residence and decline afterwards.

*1. Does the IIZ have to be drawn on the ERP map? The IIZ does not have to be drawn on the ERP map; however your company should consider ways to retain the information for use in responding to members of the public that may be in that zone during the release of a hazard. That could include listing the information somewhere in your ERP.*

### ERCB Intent and Review Instructions for Section 3

The ERCB will review the following when assessing an ERP

<b>Are there surface developments within the EPZ?</b>	Cross reference a random number of residence locations on the map with the confidential resident information.
<b>Are there egress issues, dead end roads?</b>	All residents on the dead end roads must be included in the EPZ and have been included in the public consultation.
<b>Is the map EPZ clear and large enough to assess secondary roads and access to the residences?</b>	Some maps are not to the appropriate scale to be able to evaluate if there are any egress issues or houses closely adjacent to the EPZ.
<b>Has the H<sub>2</sub>S release rate assessment been conducted in accordance with Directive 056?</b>	The ERCB strongly encourages the filing of a “presubmission” H <sub>2</sub> S release rate assessment to its Geology and Reserves Group for review prior to the submission of an application.
<b>Has all required information been properly entered into the ERCBH<sub>2</sub>S model spreadsheet?</b>	Conduct a random check and cross reference pipeline information with IAR. Review batch page to determine if any information is missing.
<b>Does ERCBH<sub>2</sub>S indicate that SO<sub>2</sub> could be a concern after ignition?</b>	If yes, the ERP must address preplanned procedures to monitor and respond to the hazard.
<b>Is the facility EPZ determined correctly? Has the EAZ been determined by ERCBH<sub>2</sub>S?</b>	Check for accuracy.
<b>Does the ERP state how the approximate size of the PAZ will be determined after an incident?</b>	Check to see if the ERP discusses how the approximate size of the PAZ will be determined after a release and how monitoring will define the actual size.

**Are there any special considerations such as rivers, campgrounds, trap lines, public facilities, etc.?**

Features	Look in the ERP/ the ERP must address
Rivers/lakes	Public notification/ area search by rover/isolation. Also look for a phone number for Oceans and Fishery in the ERP
Campground/recreation area	Public notification/ area search by rover
Trap line	Contact information for owners of the trap line areas
Public Facility (s)	Notification and evacuation assistance (if required) for large public facilities.
First Nations Reserves	Telephone directory must include contact information. Not required on the distribution list.
Other industrial operators	Must include contact information in the ERP
Parks, wild life areas	Must include phone number for Alberta Sustainable Resources
School children in the EPZ	Must include school phone numbers and contact information

## **4 Public and Local Authority Involvement in Emergency Preparedness and Response**

### **4.1 When Are Notification and Consultation Required?**

Table 3 in *Directive 071* sets out the notification and consultation requirements when preparing a site-specific ERP for submission to the ERCB. A new addition to the table is the need to notify and consult with residents and the local authority when there is a change in the size of the EPZ as a result of using the ERCBH2S model.

***1. If we run ERCBH2S and find that the size of the EPZ has decreased can we continue to use the old EPZ rather than make the change? This may be an option and will be handled on a case-by-case basis by the ERCB. Your company should contact the Emergency Planning and Assessment Section to discuss the details of your situation.***

***2. Please clarify whether the intent is to identify and consult with each person at a household or location or a representative of the location or household? If possible it is important that all members of a family be aware of the types of hazards presented by industry operations and public protection measures available to protect members of the public during an incident; however, in practical terms it would generally be through consultation with one member of the household.***

### **4.2 Preparing for the Public Involvement Program**

***1. We often find that the local authority and other government agencies do not want to be contacted for face-to-face consultation on every ERP, especially when a sour well site-specific drilling ERP is noncritical. My company is drilling numerous wells in their area. Is it necessary to contact them for every ERP? No. The ERCB has changed this requirement so that your company can consult with the local authority and other government agencies such as the local RHA according to predetermined arrangements that your company has made with that party. For example some local authorities may only require a face-to-face visit for a critical sour well and notification for noncritical sour wells. The protocols that you have arranged with these parties will have to be included in the ERP. If a local authority is non responsive and will not meet with your company, the ERCB requires that you note that in the ERP.***

***2. If my company is drilling several wells in a municipal district do we have to discuss the roles and responsibilities with the local authority every time we create an ERP? Talk to your local authority and other government agencies to see if they will agree to a single consultation on the roles and responsibilities. If they agree that the single consultation is sufficient, then include a summary of those discussions and the agreed to roles and responsibilities in your ERPs.***

**3. The wording “The licensee must attempt to reach a mutual understanding with local authorities on the specific role and responsibilities of both parties during an emergency” places a heavy obligation on industry to pursue the local authority for an agreement while not outlining a path to follow if the parties do not agree. How do we know what the specific roles and responsibilities are for a local authority and what are the options for us if we can’t reach an agreement?**

*The Emergency Management Act sets out the responsibility of each local authority for direction and control of the local authority’s emergency response but does not specifically outline its roles and responsibilities. The revised government plan “The Petroleum Industry Incident Support Plan” no longer contains a task matrix outlining the local authority or RHA roles and responsibilities before, during, and after an incident. Your company should ask the local authority and RHA if they would be willing to provide information on their roles and responsibilities for use in future plans. The Alberta Emergency Management Agency (AEMA) will also allow companies to review the structure of a MEP which may provide some assistance in identifying non-specific roles and responsibilities for discussion.*

*If there are disagreements with the local authority or RHAs on roles and responsibilities, your company is encouraged to use an independent facilitator or local synergy group to reach a mutual understanding. The ERCB’s Appropriate Dispute Resolution group can also be contacted to assist in facilitation provided that their services are available. If both parties cannot agree on a mutual understanding of the roles and responsibilities or if the local authority and/or RHA do not have the resources to support your company, the ERCB requires that you document attempts to engage and include a discussion of the attempted consultation process.*

*If the local authority or RHA does not respond to your request for a meeting to discuss the roles and responsibilities, it should also be documented. Your company will need to retain a record of the efforts to engage the local authority or RHA.*

**4. What is the role of the local RHA in my ERP and can they stop me from getting ERP approval?** *The role of the RHA is to ensure that it is aware of, and able to plan to respond to, public health hazards that oil and gas development might pose within their region. At times some RHAs feel that they need to impose more stringent requirements based on health outcomes rather than safety. In those cases the ERCB does not expect your company to fully address all of the RHAs demands. Make note of that in your ERP. The RHA can not stop a development by placing unreasonable demands based on perceived public health concerns on an operator; however, try to work with the local RHA to address their concerns if possible.*

### 4.3 Conducting the Public Involvement Program

Involving members of the public in the ERP development process is an important step in ensuring that your company obtains relevant information, necessary for emergency response.

Notification involves

- contacting pre-identified members of the public within and adjacent to the EPZ,
- letting them know that they are within the company's EPZ, and
- offering to meet in person to review the public information package, answer questions, and resolve any concerns.

You may find that the resident may refuse to meet with your company representative in person. Should that happen, your company is required to offer to conduct the consultation program by telephone. Some residents may even resist that option in which case your company can only provide a public information package by registered mail (or regular mail if the resident agrees) with an offer to meet to address any questions and concerns.

Table 4 differentiates between the members of the public requiring notification and consultation and those that only require notification. If an ERP is triggered, nonresident landowners within the setback distance from the well, pipeline, or facility are required to be notified by registered mail that they are within the EPZ and be provided a copy of the public information package. Nonresident landowners outside of the setback distance will not require notification. Since the notification requirements for nonresident landowners are the same as the *Directive 056* requirements, there should be minimal additional administrative burden on your company.

***1. What does necessary knowledge mean? Does it mean a stakeholder relations person who has read the plan, an Emergency Response planner, or an operations person who has implemented plans? It refers to a planner or HSE person or an individual who thoroughly understands the contents of the ERP and has a reasonable knowledge about emergency response.***

***2. If you have a project that is slightly sour and doesn't trigger an ERP (i.e., no surface development and no access roads going through), do you still have to send a notification to all the people that own land within the EPZ or just landowners within the setback (usually the same thing in this case)? The notification requirements in Section 4 of Directive 071 only apply if your company needs to develop a site-specific ERP. In this case, a site-specific ERP is not required and your company would handle emergency response through your corporate-level ERP. There would however still be notification requirements under Directive 056.***

**3. Companies typically send out a handout on the project to operators in the area with an offer to meet. Does this meet the intent re: notification and consultation of Table 4? The ERCB has indicated that it will meet the notification and consultation requirements.**

**4. What is the definition of a public and a private recreational property? Could you give us some examples? A private recreational facility would be a recreational facility that the general public can't use without a membership. Some examples would be**

- private golf course,
- private shooting club (skeet, pistols etc.),
- private member owned club providing athletic and social activities,
- private hunting facilities (restricted to paid hunters), or
- private fishing facilities (small lakes on private land that are stocked with trout and restricted to those who pay for fishing).

*A public recreational facility would be a recreational facility that the general public can use without a membership. Some examples would be*

- public and semi private golf courses,
- dude and guest ranches,
- petting zoo, or
- indoor and outdoor paintball facilities.

**5. When we are carrying out the stakeholder consultation during the development of an ERP do we consult with a resident on all aspects of the plan prior to completion? Consultation would be limited to a review of key emergency response information so that they are familiar with the hazards, potential emergencies, public protection measures, information requests and addressing concerns. There would be no need to consult with a resident of all the aspects of a plan.**

#### **4.3.1 Public Information Package**

The purpose of information packages is to provide residents within emergency planning zones with the following

- information about the nature of your company's operation(s),
- an understanding of how an emergency could affect them,
- information on how your company responds to an emergency, and
- an understanding of the types of public protection measures that your company

will undertake to protect them as well as things that they can do (such as sheltering) during an incident; public information packages are a valuable reference for residents in determining what to do during an emergency.

Companies are no longer required to include a copy of their public information package in the ERP submitted to the ERCB's Emergency Planning and Assessment Section; however, the ERCB might request that it be submitted for hearings, audits or during an assessment. The local ERCB Field Centre will still require a copy of the information package.

**1. When is a licensee required to distribute new information packages?** *New information packages should be distributed during the public involvement program and during the Public Awareness Program or any other time that there is a significant change in company operations or EPZ size.*

**2. If an ERP encompasses a large area with many variances, must the public information include all release rates, volumes, and EPZ determinations?** *The public information package needs to contain the range of release rates, release volumes, H<sub>2</sub>S concentrations and EPZ sizes for all wells, pipelines, and facilities. Your company can prepare multiple information packages to cover off specific areas if the EPZ covers a large area. Residents might request specific information for wells, pipelines or facilities in the information package and your company is required to provide that information. If there is a security concern then discretion should be used in providing the specific information.*

**3. What does the ERCB consider to be a reasonable period of time for residents to review the public information package and have questions and concerns addressed?** *The ERCB would not define a 'reasonable period of time' for us on this question. Your company should ask the resident if a week would be sufficient for them to get back to you with any questions and concerns or if they could tell you how much time they will need to review the package.*

**4. Some members of the public who don't want to meet with my company and just want a copy of the public information package have asked that we send the package by regular mail and not by registered mail. They don't want the inconvenience of going to the local post office to pick up the package. Does it meet the Directive 071 requirements if we just sent it by regular mail?** *It will meet the requirements if your company documents the residences that no longer wish to receive registered mail and prefer notification by regular mail. Email will also be acceptable if the resident wishes to be notified this way. This will show the ERCB that you have done due diligence in attempting to notify residents. Ideally you should get something in writing from those who prefer regular mail; however, documented telephone conversations will also be adequate.*

#### 4.4 Information Required From the Public Involvement Program

The type and amount of information that company representatives are attempting to collect during the public involvement program has become a very sensitive issue with members of the public. Residents are increasingly reluctant to divulge personal and confidential information especially when that information concerns small children.

That being said, resident information is an important element in company planning in order to effectively respond to an emergency. The information requirements under Section 4.4 of *Directive 071* were reviewed by the ERCB Freedom of Information and Privacy Commissioner and should be appropriate for the purpose of developing plans and responses for public protection.

**1. Are public facilities and/or transients included under the category of special needs?** *No, this is not the intent of the special needs category. The special needs category is for persons requiring early response for reasons such as evacuation assistance, requesting early notification, not having telephones, requiring transportation assistance, having a language or comprehension barrier, or having specific medical needs. Special needs also include those who decline to give information during the public consultation process and any residences or businesses where contact cannot be made.*

**2. For those residents with special needs, is the company required to conduct early notification day or night or during daylight hours only?** *Specifics for timing of the notification should be worked out with the residents during the public involvement program. Those identified as special needs for declining to give information during the public consultation program should be contacted as required by your company to initiate public protection measures.*

**3. If I know that a resident has a medical problem can I make note of it in the ERP without asking permission?** *Always ask the resident if they wish to be listed in the ERP as having a special need. Let them know that their medical condition does not have to be listed in the ERP unless they request that it be included in the plan.*

#### ERCB Intent and Review Instructions for Section 4

The ERCB will review the following when assessing an ERP

<b>Has notification and consultation with members of the public within the EPZ taken place?</b>	Ensure resident information is included.
<b>Has consultation with the local authority, the director of emergency management for all municipalities within and adjacent to the EPZ, and the local RHA or applicable federal health branch taken place?</b>	Ensure contact was made with the above and any agreements are incorporated into the ERP.

<b>Has the EPZ increased?</b>	If yes, residents within the expanded portion of the EPZ and the local authority are to be notified and informed of the change.
<b>Has the EPZ decreased?</b>	If yes, residents that are no longer within the EPZ and the local authority are to be notified and informed of the change.
<b>Has the licensee identified all residents and local authorities within and adjacent to the EPZ?</b>	Review the map portion of the ERP as well as the resident information list to determine if appropriate resident identification has taken place. The local authority information should be contained within the contacts section of the ERP. Also all corporate boundaries (hamlets, villages, towns, etc.) for the full map area must be shown.
<b>If the EPZ intersects an urban density development, has the licensee included the entire development within the EPZ for the purpose of conducting the public involvement program? Check to see if this has happened.</b>	If an EPZ includes a portion of an urban centre, the licensee is not required to identify each individual residence within the urban centre; however, has contact been made with the appropriate urban director(s) of emergency management to review key emergency response information and confirm and coordinate each party's roles and responsibilities? Check to see if this has happened.
<b>Has the licensee attempted to reach a mutual understanding with local authorities on the specific needs and roles and responsibilities of both parties during an emergency and include a summary of the roles and responsibilities in its ERP?</b>	This information should be outlined in a specific section of the ERP. Cross reference the roles and responsibilities with that of the response section of the ERP and/or the response flow chart to ensure accuracy.
<b>Has the licensee notified the following within the EPZ?</b>	Nonresident landowners and farmers renting land that don't live on the property but are within the facility setback distance? Check to see if this has happened.  Registered trappers, guides, outfitters, and registered grazing lease and allotment users? Check to see if this has happened.  Oil and gas operators with unmanned facilities (wells)? Check to see if this has happened.
<b>The owner of a rented house in an EPZ is required to be advised that their property lies within the EPZ by providing an information package by registered mail.</b>	Check to see if this has happened.

<p><b>Has the licensee notified and consulted the following within the EPZ?</b></p>	<p>Permanent and part time residents, including those residing on dead-end roads beyond the EPZ where occupants must egress through the EPZ? Cross reference map with resident lists and contacts sections(s) of the ERP.</p> <p>Business owners and/or operators and industrial operators, including oil and gas operators with manned facilities? Cross reference map with resident lists and contacts sections(s) of the ERP.</p> <p>Private and public recreational property owners, operators, and occupants? Cross reference map with resident lists and contacts sections(s) of the ERP.</p> <p>Rural public facilities and publicly used development, such as schools, community centres, registered campgrounds and picnic areas? Cross reference map with resident lists and contacts sections(s) of the ERP.</p>
<p><b>While conducting the public involvement program has the licensee:</b></p>	<p>Conducted the public involvement program through personal consultation visits with all identified individuals?</p> <p>Offered to conduct the public involvement program by telephone if residents do not wish to meet the licensee representative face-to-face?</p> <p>Reviewed key emergency response information with members of the public identified in the EPZ to familiarize them with potential emergencies and corresponding public protection measures pertaining to emergency response procedures?</p> <p>Addressed any request for additional information or for modifications to the ERP by the individual consulted? Spot check the ERP by randomly selecting up to 10 residents. Once selected, contact and confirm with them via telephone that the above took place.</p>
<p><b>Has the licensee notified residents of urban centres that they are within the EPZ?</b></p>	<p>Check to see if the ERP contains details of the notification process.</p>
<p><b>Has the licensee provided a copy of the public information package to the local ERCB Field Centre?</b></p>	<p>Check with appropriate Field Centre.</p>

<p><b>Has the licensee attempted to obtain the following information for incorporation into its ERP?</b> Yes/No</p>	<p>Exact location of the residence, place of business, or public facility including egress route issues;</p> <p>Name of key contact and a 24-hour contact telephone number and an alternate contact, if possible;</p> <p>Names of all family members in residence;</p> <p>Number of occupants, specifying adults and preschool and school-age children;</p> <p>Names of those with special needs or specific requirements;</p> <p>Any additional concerns or comments; and</p> <p>Any other information deemed necessary to allow for effective emergency response procedures to be developed.</p>
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## 5 Common Requirements for Site-specific ERPs

### 5.1 Assessment Matrix for Classifying Incidents

Information specific to the use of the Assessment Matrix or Incident Response is found in Section 2.1.1 of this Guide. The ERCB requires that the Assessment Matrix be included in every site-specific ERP and be used to classify an incident.

Companies also have to include Appendix 4 Table 4 - Incident Response in the site-specific ERP as part of a comprehensive response program for dealing with an incident. The ERCB requirements are minimum responses that your company should initiate as part of the communications, actions, and resource strategies. The table can be submitted as is or your company can expand on it.

Companies that use a different type of assessment matrix can include it in the ERP but it should be linked to the ERCB assessment matrix so that the incident response is similar to that of Appendix 4.

### 5.2 Public Protection Measures

#### 5.2.1 Notification Within the EPZ

Procedures for **how** notification will take place should include the use of

- rovers,
- recorded messages, automated call out
- personal phone calls,
- television or radio, and
- public safety bulletins or news releases.

Procedures for **when** notification will take place should address

- the public in the response zones,
- the director of emergency management if an urban centre is within the EPZ,
- individuals who have requested notification at any level of emergency and wish to evacuate, and
- the rest of the public within the EPZ.

#### 5.2.2 Evacuation and/or Sheltering Within the EPZ

The location and evacuation of transients poses special problems particularly in areas of high recreational activity. Your company's procedures for locating and evacuating transients, such as the use of aerial surveillance, rovers, etc., will need to be

documented in the ERP. Companies should also consider what type of equipment will be required to carry out the search and evacuation and the necessary training for rovers and/or company personnel to effectively carry out their roles and responsibilities.

Sheltering-in-place instructions are an important part of a public information package and need to be adequately explained during consultation with residents so that they are aware of how to prevent the circulation of outside air into the house.

Sheltering indoors for HVP releases is the preferred way of protecting residents. Sheltering instructions for HVP releases should contain additional information on managing potential ignition sources.

**1. *My company uses its own shelter-in-place instructions in our public information package and in our ERPs. Does my company have to use the CAPP shelter-in-place instructions or can we continue to use our own?*** *The ERCB indicates in Directive 071 that a shelter-in-place document should be equivalent to the CAPP best practice shelter in place document but there is no specific requirement in the directive that requires your company to use it. CAPP has put together a best practice document for shelter in place entitled Emergency Response Planning: Shelter-in-Place Instructions. The Guide, published in May 2006, was prepared by the CAPP Emergency Response Committee with input and support from Dr. David J. Wilson Professor Emeritis, Department of Mechanical Engineering, University of Alberta, Alberta's Council of Medical Officers of Health (CoMOsH), and the ERCB. The Guide is available on the Canadian Association of Petroleum Producers (CAPP) Web site [www.capp.ca](http://www.capp.ca).*

### **5.2.3 Notification and Evacuation Outside the EPZ**

Notification and evacuation outside of the EPZ is an issue that needs to be discussed with the local authority in the area where your ERP is being developed. Depending on their capability and available resources, the local authority may ask for assistance from your company to carry out the notification and evacuation of residents in the part of the EAZ that is affected by the hazard.

Notification mechanisms in the MEP response framework may be used to notify residents outside the EPZ if a lot of people are involved and residents need to shelter or be evacuated. The Emergency Public Warning System (EPWS) is a part of the disaster response system that gives local authorities immediate access to warn the public in the event of a major emergency. EPWS provides warning to Albertans through radio and television with instructions to take action and protect themselves from disaster. It is available to all of Alberta's municipalities and First Nations Communities.

**1. *Can a company ask the local authority to use the EPWS system to warn the public about a major sour gas release?*** *We checked with Alberta Emergency Management Agency on this and they confirmed that your company can ask the local authority to activate the EPWS in the event of a sour gas emergency or any other hazard.*

## 5.2.4 Ignition Criteria

### 5.2.4.1 Sour Well Releases

Your company's ignition policy for a sour well release should include the following

- protocols supporting a decision to ignite a release,
- positions(s) authorized to carry out ignition,
- actions to be taken prior to ignition,
- description of availability and location of ignition equipment, and
- description of actions to be taken following ignition.

The ERCB also requires that your company include an ignition criteria flowchart in the ERP.

### 5.2.4.2 HVP Product Releases from a Pipeline or Cavern Storage Facility

Your company's ignition policy for HVP product release should include the following

- protocols supporting a decision to ignite a release,
- positions(s) authorized to carry out ignition,
- actions to be taken prior to ignition such as establishing the perimeter of the dispersing vapour cloud,
- description of availability and location of ignition equipment, and
- description of actions to be taken following ignition

**Immediate Ignition:** Your company emergency response procedures should establish actions to be taken if a product release occurs while personnel are on site and should indicate the qualified company representatives at the site who have the authority to ignite the release. These emergency response procedures should be reviewed as part of the pre-job safety meeting before work begins near an HVP facility or pipeline.

**Delayed Ignition:** Your ERP should outline considerations and actions required prior to attempting ignition of a dispersing HVP plume such as the approach and identification of the location of a plume and consideration of possible changing weather conditions. The plan should indicate that the company/operator's first qualified representative on the site has the authority to ignite the plume.

### 5.2.5 Isolation Procedures

Your company may have to deal with the problem of isolating a major highway or railway if the hazard has the potential to impact the travelling public or railway operations. The ERP should identify the highways and railways that could be affected and set out the procedures for communicating with the RCMP, Infrastructure and Transportation (INFTRA) and the appropriate rail company to isolate the area.

### 5.2.6 Air Quality Monitoring

Your company is required to have procedures in its ERP for contacting air quality monitoring companies, the locations and contact numbers for those companies and details outlining the number and types (stationary, handheld, mobile) of monitors required during an emergency and details on their intended use. This includes but is not limited to the specification of the type and number of monitoring units required by initial response personnel, rovers, personnel manning roadblocks, and personnel responsible for identifying the position of the plume within the EPZ.

The ERP should also outline procedures for acquiring and deploying additional monitoring and air quality equipment, if required.

***1. If our ERCBH2S model run indicates that SO<sub>2</sub> could be a problem, Directive 071 tells us that we have to pre-planned procedures in our ERP to handle the problem. We are finding that the model rarely shows it and when it does it only touches down for a short period of time and could be anywhere depending on the meteorological conditions. What kind of pre-planned procedures are we supposed to include in our ERP? If the model shows that the SO<sub>2</sub> could be a concern outside of the EPZ, this should be discussed with the local authority and RHA. Residents beyond the EPZ would have to be advised by the local authority to shelter in place if they detected any SO<sub>2</sub> odour following the ignition of a release. If the model shows that SO<sub>2</sub> could be a concern inside the EPZ after ignition, your company should discuss this with members of the public during the public consultation process and inform them that they should shelter in place if they detect any SO<sub>2</sub> odour. Document that process in your ERP. Information on what to do if an SO<sub>2</sub> odour is detected should also be placed in your public information package.***

## 5.3 Maps

Your company is required to include regional and planning zone maps in the ERP. Regional maps provide clear directions on how to get to the general area whereas planning maps are more detailed and are intended for use in the immediate vicinity of the operation. Regional and planning maps can be combined if access routes from recognizable reference points are included. A minimum requirement for planning maps is that they include the area up to the EAZ boundary.

- 1. Does the licensee of a sour production facility need to include all facilities tied to their facility in the ERP?** *There is no requirement for this in Directive 071. It might be prudent to include the point of tie-in on the ERP map if your company needs it for reference purposes.*
- 2. What ground truthing information in the EAZ does the ERCB need from our company?** *To meet the ERCB's requirements for ERP development, the only information that your company is required to collect in the EAZ is the location of urban density development, public facilities and publicly used developments. These locations have to be placed on the ERP map.*
- 3. Does our company have to put the IIZ on an ERP map for all of our sour wells, pipelines, and facilities?** *There is no requirement to place the IIZ on the ERP map. The IIZ can be generated from the ERCBH2S model and is a valuable tool for responders in identifying residents who can only shelter for a temporary period of time during a continuous release. The ERCB recommends that your company keep this information available to aid your responders in protecting members of the public within this zone.*
- 4. Does my company have to place potential roadblock locations on all of our site-specific ERPs?** *No. Your company only has to place the potential roadblock locations on the sour well site-specific drilling and/or completion ERP.*
- 5. Why is the ERCB asking us for trapping area, grazing lease, and allotment boundaries when all we would be doing during an emergency would be to search for transients in those areas, similar to what we do for hikers etc.** *Putting this information into the ERP clearly identifies these areas for transient searches as well as identifying the type of use in the area. Grazing lease holders and trappers do not like to be considered as transient as they use the land regularly. The information is also important to collect in case of an ERCB hearing. The ERCB uses it for checks on Directive 056 consultation (to ensure that stakeholders have been properly identified) and for the Emergency Response Assessment Program during ground truthing of the map.*

## **5.4 Equipment List**

The ERCB requires that companies include a list of equipment used to respond to an emergency in their ERP. The equipment list consists of the following

- Communications equipment - includes telephones, pagers, two-way radios, computer networks and satellite phones.
- Roadblock equipment - includes signs, barriers, reflector jackets, flashlights, objects or other equipment obtained and used in support of achieving the objective.
- Ignition equipment - includes flare guns and remote controlled ignition devices.
- Gas monitoring equipment - includes handheld monitoring devices, stationary, and mobile air quality monitoring equipment.

## **5.5 Mutual Aid Understandings/Agreements**

In May 1994, the ERP Task Force of the CAPP Safety Committee published guidelines to assist upstream petroleum companies in establishing mutual aid agreements. This

section summarizes information contained in *Mutual Aid Agreements for Emergency Response Guideline*, a comprehensive reference document available from CAPP.

A mutual aid agreement is an understanding between two or more organizations with operations or facilities in an area outlining how they will assist each other (sharing resources, skill sets, or equipment) in responding to incidents. It can be a formal or an informal agreement that defines each party's responsibilities for providing aid and support during an incident. Mutual aid agreements can include other operators, suppliers, local authorities, local community leaders, local health organizations and public safety agencies in the area (i.e., fire, police, municipal emergency planning organizations and natural resource agencies).

- Assess your current operations and risks to identify where joint or adjacent operations present shared risks and opportunities to share response activities. Contact all parties you want to include in a mutual aid understanding and address these questions.
- Does each party have an ERP?
- What are the group's goals and will participant's work cooperatively to achieve them?
- What is the term of the agreement and what are the conditions for terminating it?
- What are the minimum standards for response materials, equipment and personnel?
- What third party contracts for emergency response services exist?
- What financial arrangements, liability, and insurance should be included?
- How can community concerns be addressed in the proposed agreement?
- Are there common approaches for public safety as well as common maps, resources and database information?

To create an agreement develop procedures for

- activating the agreement and mobilizing all respondents,
- assigning roles and responsibilities,
- sharing resources and equipment,
- communicating with respondents during an emergency,
- communicating with the public during and after an emergency,
- training and exercises to ensure the agreement works, and
- maintaining the agreement.

***1. Is written proof of mutual aid required? No. Directive 071 does not have any requirements for companies to submit written proof of mutual aid understandings. The ERCB does however encourage companies to provide details of the mutual aid***

*understandings in their ERPs including the name of the other company's representative and the contact number.*

**2. Is it a requirement for all licensees to submit formal, signed mutual aid understandings along with its ERP?** *No, the ERCB recognized industry concern regarding the legal liabilities associated with formally signed mutual aid understandings. Companies are required to attempt to reach a mutual understanding with local authorities on the specific needs and roles and responsibilities of both parties during an emergency and include a summary of roles and responsibilities in the ERP.*

**3. The ERCB mentions that my company will need a bridging paragraph in our production facility ERP if other gathering systems with separate ERPs are tied into our facility. Is this the same as a mutual understanding agreement? What do I have to put in the bridging paragraph?** *No. The bridging paragraph is not the same as a mutual understanding agreement. A mutual understanding is a non legal agreement between parties to provide aid in the form of resources and equipment to the other party in the event of an emergency. A bridging paragraph in your ERP will reference all of the other ERPs from other gathering systems tied into your facility. Typically the reference would be a key contact and a 24-hour number that will allow them to initiate their ERP. If an emergency on their gathering system is detected by your facility staff, it will provide information on the communication protocol (who to call and when) between your company and the other company.*

## 5.6 Telephone Lists

Internal telephone lists include key personnel designated to assist in emergency response. The list should include key contact names, an alternate name in the event that the key contact is unavailable, and contact numbers (home, work, and mobile phones, pager and fax numbers) The telephone list should also include personnel from the following key internal departments who could be called for additional assistance such as

- Corporate Communications/Public Affairs
- Construction
- Emergency Response
- Engineering
- Environment
- Financial
- Human Resources
- Legal
- Management
- Industrial Hygiene
- Marketing
- Medical
- Operations
- Production
- Regulatory Affairs
- Risk Management
- Safety
- Security
- Technical
- Transportation

The external telephone list should contain

### Support Services

- Ambulance services
- Heavy equipment providers
- Mobile air quality monitoring companies
- Chemical information services
- Chemical spill cleanup services
- Emergency medical clinics
- Fire departments
- Poison control centres
- Local hospitals
- Oilfield supply companies
- Oil spill cooperatives
- Mutual understanding groups
- Physicians
- Manufacturers/suppliers
- Police departments
- Transportation

### Government Regulatory Agencies

- Energy Resources Conservation Board - ERCB
- Alberta Environment - AENV
- Alberta Health and Wellness (AHW)
- Appropriate Health Unit or local Board of Health
- Alberta Emergency Management Agency - AEMA
- Infrastructure and Transportation (INFTRA)
- Sustainable Resource Development (SRD)
- Alberta Workplace Health and Safety

### Media

Companies should compile and maintain a list of newspapers, television, and radio stations with contact names and fax numbers for all cities and towns where the company has offices and/or operations. This information does not have to go into the ERP.

***1. Telephone lists are not usually updated for sour well drilling and/or completions ERPs once the ERP is printed. An exception is the review of key numbers at the on-site ERP review meeting. Will this be sufficient to meet ERCB expectations? If the key numbers on a telephone list are current, that would meet ERCB expectations.***

## 5.7 Plan Distribution

The information contained in an ERP is treated as a confidential document by the ERCB until the ERP is approved. At that time the ERP becomes a public document and could be viewed by any member of the public upon request. Typically that request is through the Freedom of Information and Privacy Act (FOIP) and the FOIP coordinator at the ERCB would determine if the ERP should be released. The FOIP coordinator would sever (remove) all personal and confidential resident and company information and security related information in the ERP before it was released. The ERCB however cannot refuse to allow the ERP to be reviewed by others unless there are concerns

(security, etc.) about the individual(s) making the request.

Your company is required to provide a copy of the ERP, excluding confidential resident and personal information, to any resident within the EPZ who makes a request to your company, in writing, to receive a copy. They could make the same request to the ERCB to obtain a copy; however, it would have to be made through the FOIP process. The ERCB is asking companies to provide this information directly to residents within the EPZ upon request so that the ERP process is viewed as open and transparent. Your company should offer to meet with the resident(s) to review the ERP and be available to answer any questions.

*1. Can another company contact the ERCB and ask to see my company's ERP? The ERCB will not let another company see your ERP if it is currently being reviewed by ERCB staff and has not been approved. Once the ERP has been approved, it becomes a public document and the company could ask to see a copy. Release of the ERP would be subject to a decision from the ERCB FOIP coordinator as to whether it should be released.*

*2. After the ERP has been approved by the ERCB do I send the Emergency Planning and Assessment Section two copies so that they can pass along a copy to the appropriate ERCB Field Centre? No. Your company is required to send one copy to the Emergency Planning and Assessment Section and the other copy directly to the appropriate ERCB Field Centre.*

## **5.8 Communications Planning**

See Section 2.1.2 for additional information

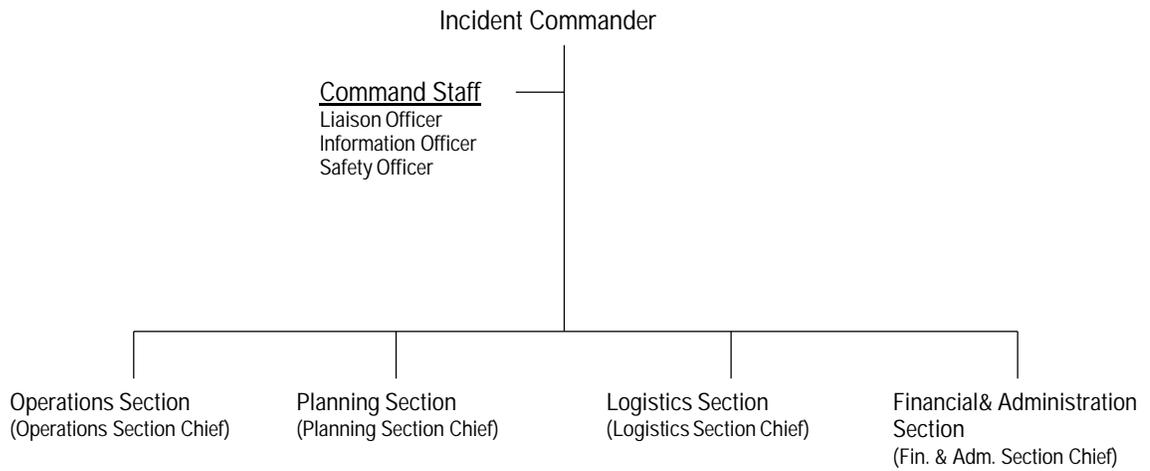
## **5.9 Responsibilities of Personnel**

See Section 2.1.3 for additional information.

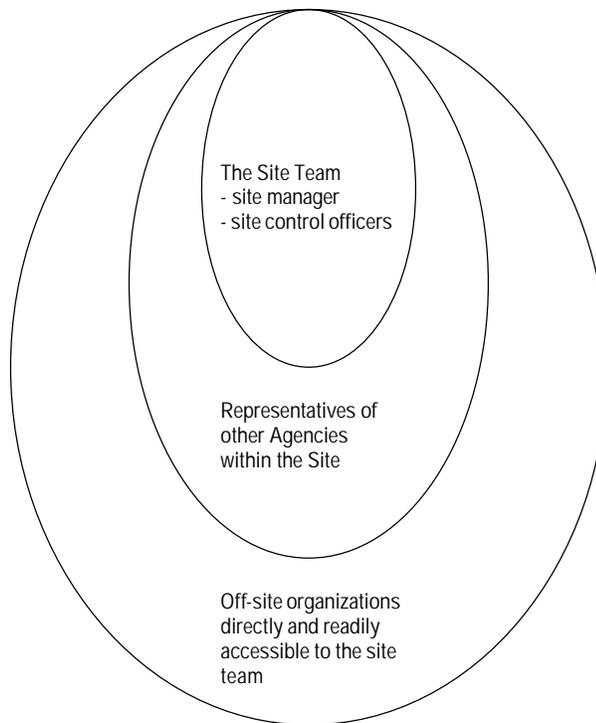
## **5.10 Incident Management Systems**

See Section 2.1.4 for additional information. Schematics for two of the most commonly used incident management systems are outlined below.

## **Incident Command System (ICS)**



## **Emergency Site Management System (ESM system)**



**What is the GEOC? Under what circumstances is the GEOC established?** GEOC is the Government Emergency Operations Centre and is comprised of the Consequence Management Operations Centre (COMOC) and the Crisis Management Operations Centre (CRMOC). The COMOC is established when it is determined that one is required by the Petroleum Industry Incident Support Plan (PIISP) and it accommodates government representatives from government departments that have a role in handling the incident. Once the GEOC is established, incident control is coordinated by AEMA under the leadership of the ERCB who develops a strategy and operational objectives to guide the Provincial Government response for the incident.

### **5.11 Record Keeping**

Your company will need to develop a process to record your efforts in contacting and obtaining information for the notification and consultation programs and in keeping your ERP information current as per your company's plan management system.

### **5.12 Reception Centre**

In its corporate-level ERP, the licensee must set out the procedures for

- activating a reception centre located at a safe distance from the release source if required, and
- meeting and registering evacuees at the reception centre.

### **5.13 Downgrading and Stand-down of Emergency Levels**

Your ERP should contain information on

- who is responsible for downgrading or standing-down an emergency, and
- the procedures for contacting the ERCB to consult on downgrading or standing-down an emergency.

### **ERCB Intent and Review Instructions for Section 5**

The ERCB will review the following when assessing an ERP

<b>Does the ERP contain the required content as per Section 5?</b>	The licensee must include the Assessment Matrix for Classifying Incidents and the actions outlined in Incident Response (as a minimum). Confirm that the public actions stated in Table 4 including any protection measures that the licensee is taking at each level of emergency are clearly detailed.
<b>Have all the public protection measures been addressed and included in the ERP?</b>	Notification within the EPZ must include specific procedures for how and when notification will take place in the EPZ. Notification procedures during an accidental release must be addressed.
<b>Have evacuation and/or sheltering requirements within the EPZ been addressed in the ERP?</b>	The ERP must address how the evacuation of the response zones that are within the EPZ will be accomplished during an incident and procedures for locating and evacuating transients.
<b>Does the ERP identify under what conditions sheltering will be considered as a viable public protection measure?</b>	Check to see if the ERP contains the Directive 071 information and if shelter-in-place instructions are in the ERP.
<b>Does the ERP identify the notification and evacuation criteria outside the EPZ?</b>	Check for a discussion on this in the ERP.
<b>Does the ERP address ignition criteria?</b>	Check to see if the ERP contains ignition procedures (e.g., an ignition flowchart), description of the equipment, and acknowledgement that ignition authority will be assigned to a licensee representative on site.
<b>Are there procedures outlined in the ERP to isolate the response zones, as per Section 5.2.5?</b>	Procedures for establishing and manning roadblocks should be in the ERP.
<b>Are there procedures for monitoring, recording, and reporting H<sub>2</sub>S and SO<sub>2</sub> in the ERP?</b>	The ERP should contain details on the intended use and procedures for activating air quality monitoring units.
<b>Does the ERP map contain all items listed in Section 5.3?</b>	Check list to ensure that map has all the requirements.
<b>Does the ERP contain a list of all required equipment as per Section 5.4?</b>	Check ERP with list.

<b>Is a complete telephone list included in the ERP as per Section 5.6?</b>	Check ERP with the requirements of Section 5.6.
<b>Does the ERP address distribution requirements?</b>	Check to see if the licensee has distributed any copies to residents who have requested in writing to have a copy.
<b>Is there an effective communication plan outlined in the ERP as per Section 5.8?</b>	Check ERP with the requirements of that section.
<b>Are the roles and responsibilities of key personnel and alternates clearly defined as per Section 5.9?</b>	Check ERP with the requirements of Section 5.9.
<b>Are the procedures for establishing emergency management centres and maintaining communication between centres provided?</b>	Ensure that the ERP details how the company will manage and coordinate a response to an emergency with government agencies as needed. Check to ensure that the management centres are in compliance with PIISP. Check to ensure communications protocols and procedures used between command centres has been provided. If a flowchart of this communication has been provided in ERP, ensure information is consistent.
<b>Does the ERP include procedures to be used for reporting and recording information during and following an emergency as per Section 5.11?</b>	ERP should reflect the requirements of Section 5.11.
<b>Does the ERP clearly detail procedures to establish reception centres?</b>	Confirm that mention is made within the ERP that any reception centre to be activated will be located a safe distance from release source? Ensure that a position has been dedicated towards receiving residents at the reception centre. Confirm presence of reception centre registration forms.
<b>Does the ERP clearly define procedures to downgrade and call down an emergency?</b>	Confirm that the ERP states who is responsible for downgrading and/or standing down levels of emergency and that the ERCB is consulted for downgrading and/or standing down all emergencies. Cross reference this section with the roles/responsibilities and mutual agreements of government agencies. Confirm that the ERP contains procedures to inform and update media, public government agencies (i.e., all persons affected by the emergency) on emergency status. Cross reference flow of communication with any organizational or communication flowchart contained within the ERP. Note that these flowcharts are not required to be within the ERP.

## 6 Sour Well Site-specific Drilling and/or Completion ERPs

### 6.1 ERP Submission Requirements

Sour well site-specific drilling and/or completion ERPs are a legal requirement for companies working in Alberta's upstream petroleum industry under the following ERCB Regulations

- Sections 8.003(1) and 8.003(2) – ERCB Oil and Gas Conservation Regulations

Companies need to prepare an ERP for

- all critical sour well drilling and/or completion operations, and all noncritical sour well drilling and/or completion operations when there is surface development within the EPZ or where residents live outside the EPZ but have to egress through it.

When your company determines the size of the EPZ remember to check for surface development (i.e., residents, schools, businesses, hospitals, recreational facilities) outside the EPZ that

- may be located on dead-end roads and need to egress through the EPZ, or
- are adjacent to (within 25 metres of) the EPZ.

The ERCB considers these types of surface development to be part of the EPZ. Your company is required to include the information in the ERP.

***1. Does my company require an ERP if the only surface development in the EPZ is a campground, trapper cabin, or a production facility? Yes. By definition surface development is any dwelling that is occupied full-time or part-time, including formal campgrounds and places of business.***

***2. Does my company require an ERP if the campground, trapper cabin, or production facility is unoccupied while company operations are being conducted? An ERP may not be required if your company can guarantee that the EPZ will be unoccupied during the operation. You will need to submit a request to the ERCB Emergency Planning and Assessment Section that includes documentation from your company and verification by the other party (i.e., trapper, campground owner, etc.) that they will not be in the EPZ during the operation.***

***3. Does my company need to submit a sour well site-specific drilling and completion ERP if we are planning to drill this year and complete the well two years down the road? No. You will only need to submit a sour well site-specific drilling ERP to the ERCB for review and approval. When the time comes to complete the well your company will need to prepare an ERP for that operation and submit it to the ERCB for approval.***

**4. If my company has an approved sour well site-specific drilling and completion ERP, how long is it good for? If we finish the drilling operations and wait for 8 months to complete the well is the ERP still valid?** Your ERP expires one year after it has been issued and is invalid if your company drills after that date. You will need to submit a new ERP to the ERCB for review and approval before drilling the well. If your company completes the well within a year of the approval being issued, the ERP is still valid; however, additional public notification and consultation will be required if the completion operation takes place more than 6 months after removing the drilling rig. If the completions operations have not commenced after one year from the ERP approval, the ERP is invalid and a new ERP will be required to complete the well.

**5. My company plans to carry out a workover and test the well immediately after we complete it. Do we have to submit another ERP to the ERCB before we can do this?** There are several options that your company can use in this circumstance

- send a request to the ERCB Emergency Planning and Assessment Section to extend the sour well drilling and completions ERP and include the workover and testing operations under that plan,
- create a supplement to an existing sour operations (so long as it meets the supplement requirements in Section 7 of Directive 071), or
- create a stand-alone site-specific workover ERP.

The ERCB will allow companies to use their sour well site-specific ERP for other operations such as workovers and testing for up to one year after the ERP has been approved provided that those operations are described in the ERP and the resident information in the EPZ is kept current. After one year, the well will have to be included in a sour operations ERP if your company plans to do any additional work on the well.

## **6.2 ERP Content Requirements**

ERPs for a sour well site-specific drilling and/or completion operation have to include the requirements listed in Sections 3, 4, 5, and Section 6.2. These are the ERCB minimum information requirements that will satisfy their requirements for ERP approval. Companies may choose to add additional information to its ERPs as required.

**1. Can my company use an answering service as a 24-hour contact phone number?** Your company can use an answering service as your contact number provided that you have a company representative on call that can be reached at all times.

**2. Where do I send an electronic copy of the CSV batch export file when I submit my site-specific ERP?** Your company should submit the CSV batch export file to the Emergency Planning and Assessment Section at [EPAssessment@ercb.ca](mailto:EPAssessment@ercb.ca).

**3. In the ERP content requirements it says that we have to include a copy of the comma separated value (CSV) batch export file from ERCBH2S that was submitted – assume this is not necessary? That is correct. The CSV batch export file is part of the ERP requirements however it is submitted electronically to the Emergency Planning and Assessment Section at EAssessment@ ercb.ca. The CSV batch file supports the ERP application.**

### **6.3 Critical Sour Well Approval**

**1. Why are sour well drilling and/or completion ERPs required to be on site prior to drilling out surface casing? This is an event that takes place in all drilling operations and was selected many years ago as a reasonable point for having an ERP on site. Your corporate-level ERP should be sufficient to handle any incident that might occur prior to drilling out the surface casing.**

### **6.4 Noncritical Sour Well Approval**

**1. What should my company do if it finds out that the drilling contractor has spudded the well and the ERCB has not yet approved my ERP? Your company should immediately shut down drilling operations at the well site and contact the ERCB's Emergency Planning and Assessment Section with a voluntary disclosure of what has happened.**

### **6.5 Additional Conditions to ERP Approval**

**1. For site-specific critical well ERPs, Directive 071 states that air monitoring equipment must roam the EPZ just prior to and throughout sour operations. Will the wording “A sour well site-specific drilling and/or completions ERP is in effect immediately after drilling out surface casing and for the duration of the completion operations” be interpreted to mean that sour operations now begin when the surface casing is drilled out? If so there can be a significant time frame between drilling out the surface casing and entry into the sour zone. The costs of air monitoring equipment and standby responders could be significant. Equipment required for use prior to entering the critical sour zone or combination of zones that make the well a critical sour well only have to on location prior to entering the zone.**

**2. My company has a sour well site-specific drilling ERP that was approved 6 months ago and would like to use it to run in a tubing plug through our master valve using a lubricator and wireline. Can we use our ERP for this operation? Your company's sour well site-specific ERP is sufficient for this operation as long as the type of operation is described in the ERP and the plan is still active on the ERCB DDS system.**

## 6.6 ERPs for Temporary Surface Pipelines

Many companies have decided to test their sour gas wells through a process called “inline testing” which requires tying into an existing gathering system by way of a temporary surface pipeline. This minimizes the amount of sour gas that needs to be flared in order to acquire sufficient pressure transient analysis data to determine reservoir size, deliverability and formation damage. The ability to tie in the well and use inline testing will be determined by the geography of the area and the distance to the nearest gathering system. Companies should consider inline testing whenever possible to reduce the impact of flaring in your area. CAPP has published a spreadsheet to help companies evaluate the economics of in-line testing using temporary pipelines for sweet or sour well flaring operations. This spreadsheet is intended to streamline the requirements of Section 2.8: *Economic Evaluation of Gas Conservation – ERCB Directive 060: Upstream Petroleum Industry Flaring, Incinerating and Venting*.

***1. If part of the EPZ for my temporary surface pipeline falls outside of the well EPZ, but there is no surface development inside the pipeline EPZ, can my company still include the temporary surface pipeline in the sour well site-specific drilling ERP?***  
*Yes. Your company should indicate in the sour well site-specific ERP that you could find no surface development inside the portion of the temporary pipeline EPZ falling outside the well EPZ.*

## 6.7 ERPs for Multiwell Programs

Companies that are conducting multiwell programs in an area are encouraged to submit an ERP for a multiwell program to reduce the number of times that members of the public are notified and consulted during the public involvement program.

## 6.8 Sour Underbalanced Drilling Operations

The decision to not allow sour underbalanced drilling operations when members of the public are located inside the EPZ is currently under review at the ERCB and any changes to the policy will be incorporated into a future revision to Directive 071.

### ERCB Intent and Review Instructions for Section 6

The ERCB will review the following when assessing an ERP

<b>Does the ERP contain the required content as per Section 6?</b>	Check the ERP to see if it contains everything in Section 6.2.
<b>Will a temporary surface pipeline be used for in-line testing?</b>	Check to see if the pipeline EPZ falls entirely within the well EPZ. If it doesn't then the pipeline may need a separate approval.

<b>Pre-sour meeting.</b>	The need for a pre-sour meeting should be referenced in the ERP.
<b>Critical sour meeting.</b>	The need for a critical sour meeting should be referenced in the ERP.

## 7 Sour Operations ERPs

### 7.1 ERP Submission Requirements

Sour Operations ERPs are a legal requirement for companies working in Alberta's upstream petroleum industry under the following ERCB Regulations

- Sections 8.004(1) and 8.004(2) – ERCB Oil and Gas Conservation Regulations
- Sections 50.2(1) and 50.(2) – ERCB Pipeline Regulation

Your company is required to prepare an ERP for

- all producing or injecting critical sour wells or a shut in critical sour well that has not been properly suspended as per the requirements found in ERCB Directive 013: Suspension Requirements for Wells;
- all producing or injecting noncritical sour wells or a shut-in noncritical sour well that has not been properly suspended, if there is surface development within the EPZ; and
- all sour pipeline operations or sour facility operations if there is surface development within the EPZ.

When your company determines the size of the EPZ remember to check for surface development (i.e., residents, schools, businesses, hospitals, recreational facilities, etc.) outside the EPZ that

- may be located on dead-end roads and need to egress through the EPZ, or
- are adjacent to (within 25 metres of) the EPZ.

The ERCB considers these types of surface development to be part of the EPZ. Your company is required to include this information in the ERP.

Figure 1 in *Directive 071* is a schematic which links the types of sour operations ERPs with the types of supplements that can be submitted by a company. The ERCB currently has in-house sour operations ERPs for all five of the categories listed in Figure 1. Your company could submit a supplement to any one of those ERPs from the list of supplements at the bottom of Figure 1. For example a company could submit a sour well supplement to a sour production facility ERP or a sour well supplement to an ERP for a pipeline conveying sour gas.

***1. If there is more than one operator tied into a facility, who is responsible for ensuring that an ERP is in place? Each company is responsible for constructing and submitting its own ERP to the ERCB for approval however; companies could get together and submit one fully encompassing sour production ERP for all the operations. If several sour production ERPs are submitted there should be a bridging paragraph in each ERP outlining how emergency communications will take place***

between each of the companies.

**2. Can multiple ERPs be submitted to cover all of the operations attached to a sour production facility?** *Yes. Different companies can prepare ERPs for the wells and pipelines that are licensed to them. The ERPs for these companies will need to reference the sour production facility they are tied into.*

**3. Are ERP approvals interdependent?** *If one ERP is dependent upon another ERP then approval is contingent upon approval of both plans. If the ERP is not dependent upon another ERP, it will be approved on its own merit.*

**4. If you have a sour well and a number of sweet wells tied into the main gathering pipeline and the sour well is shut in and physically disconnected from the pipeline does the pipeline still require an ERP if there is surface development in the EPZ?** *No. In determining the EPZ for a pipeline, the licensee uses the ERCB model to calculate the H<sub>2</sub>S release rate and the size of the EPZ. The inputs to the model for calculating the H<sub>2</sub>S release rate and the EPZ size are the maximum operating pressure and the maximum H<sub>2</sub>S concentration. Since the maximum H<sub>2</sub>S concentration is zero, the model will not predict an EPZ. For setback calculations your company would have to use the maximum licensed operating pressure and the maximum licensed H<sub>2</sub>S concentration for the pipeline. The level for the pipeline would be determined from those parameters.*

**5. If there is surface development in a small area of my company's sour gathering system, do we need to have an ERP for the entire gathering system?** *Yes, under the current requirements in Directive 071, surface development determines whether a sour operations ERP is required. Your company will have to include the entire gathering system in the plan; however, notification and consultation for the ERP will only need to focus on the area containing surface development.*

**6. If a sour well is drilled, cased and not perforated, is an ERP required?** *No. There is no potential for the well to flow to surface assuming the well was cemented properly. A sour operating ERP will not be required.*

**7. Does my company need an ERP to abandon a well?** *Your company will not require an ERP to abandon a well if it meets the following criteria*

- *the well is a non flowing sour oil well. See Section 3.2.2 Directive 071.*
- *The well is a sour gas well and meets the suspension requirements of Directive 013. If you removed the wellhead there would be no flow to surface (i.e., the well will have a bridge plug or a packer with an on-off tool in the casing or a tubing plug in place in the tubing). Your company would place a BOP on the well prior to commencement of abandonment operations.*

*If the well is a sour gas well and does not meet the suspension requirements of Directive 013, it will need an ERP. See Section 7.1 Directive 071.*

## 7.2 ERP Content Requirements

Your company has to include the requirements listed in Sections 3, 4, 5 and Section 7.2 in the sour operations ERP, if relevant to the ERP. Your company may choose to add additional information to the ERPs as required.

## 7.3 Supplements and Updates/Amendments

The ERCB requirement to use a supplement for **adding wells, pipelines, or facilities** (new operations) to an existing sour operating ERP can often be confusing to many companies. There are situations where a supplement is appropriate and situations where an update/amendment is all that has to be submitted. Section 7 in Directive 071 has recently been revised to clarify when supplements and amendments are required.

*1. What information needs to be submitted for a tie-in? The locations associated with the tie-in (i.e., the well, pipeline) as well as the release rate for the well and the release volume for the pipeline, the corresponding EPZs, resident information, and a map of the area.*

A currently operating system is typically a system acquired from another company. Your company is required to submit a supplement to the ERCB for review and approval when a currently operating system with surface development within its EPZ is added to an existing sour operations ERP. As part of the public involvement program you will also have to notify and consult with residents within the EPZ of the currently operating system and any other new residents that may be added to the sour operations ERP.

*2. Why wouldn't you just submit an update to your existing ERP? This section is a bit of a repeat from "Sale of Property" – What is the difference? If your company purchases a property from another company and you intend to incorporate it into an existing ERP, you can submit an update/amendment to the existing ERP if after adding the currently operating area, you find that the expanded portion of the current EPZ has no surface development. An amendment does not need ERCB approval. If that isn't the case, your company will need to submit a supplement and conduct a public involvement program for all residents in the expanded portion of the current EPZ.*

*If you purchase a property from another company and it is not being added to an existing ERP, your company is required to submit a new ERP to the ERCB and at the same time ensure that members of the public are protected until that ERP has been approved.*

### 7.3.1 Use of supplements for Drilling and/or Completion Operations

Your company can drill and/or complete a non-critical or critical sour well using your current sour operations ERP provided that

- the proposed sour well EPZ is entirely within the sour operations ERP emergency planning zone, or

- a portion of the proposed sour well EPZ falls outside the existing EPZ and does not contain any surface development, and
- the sour operation ERP addresses emergency response procedures and personnel responsibilities specific to drilling and/or completions, and
- a supplement is submitted containing
  - complete resident information for the EPZ,
  - the well location,
  - the size of the EPZ and its supporting information,
  - a telephone and distribution list specific to the operation, and
  - any additional emergency response procedures specific to the operation,
- the company conducts a public involvement program for members of the public within the proposed well EPZ, and
- a copy of the CSV batch export file from ERCBH2S is submitted electronically to the ERCB.

### **7.3.2 Use of supplements for Sour Well Workovers, Well Servicing, and Testing**

Your company can conduct a workover, well servicing, or testing operation on any sour well currently included in a sour operations ERP provided that

- the sour operations ERP addresses emergency response procedures and personnel responsibilities specific to the operation, and
- the sour operations ERP has up-to-date information on residents within the EPZ of the well, and
- the well EPZ falls entirely within the sour operations ERP emergency planning zone, and
- a supplement is submitted according to the requirements of Table 7.

***1. My company would like replace the packer in a noncritical sour gas well and it will require killing the well and pulling the tubing string. We have emergency response procedures for this type of operation in our sour production facility ERP and the well EPZ falls within the sour production facility EPZ. Do we have to submit a supplement for ERCB? If your company removes the wellhead and there is surface development within the EPZ it will have to submit a supplement to the ERCB before the operation can begin.***

### **7.3.3 Supplement Distribution**

No additional information is offered or applicable.

## ERCB Intent and Review Instructions for Section 7

The ERCB will review the following when assessing an ERP

<b>Is the ERP required?</b>	Check to see if the applicant actually needs an ERP as per the requirements in Section 7.1.
<b>Is the sour operation on production?</b>	Answer should be NO. If yes, a detailed explanation as to why it is on production must be submitted. Confirm with the company that the well, pipeline, or facility is NOT on production. If in doubt have the Field Centre follow up.
<b>Does the ERP address the requirements outlined in Sections 4 and 5 of Directive 071?</b>	Use the review instructions for Sections 4 and 5.
<b>Does the ERP contain all of the information listed in Section 7.2 of Directive 071 that is relevant to the operation?</b>	Compare the ERP to the requirements to the Section 7.2.
<b>If the company submits an update should it have been a supplement?</b>	Check Section 7.3 to see if it meets the supplement requirements.
<b>If the company submits a supplement, is it required?</b>	Check the supplement requirements in Section 7.3 and ensure the supplement meets all the requirements.
<b>Has the licensee conducted a public involvement program for all new members of the public as defined in Section 4.3 of Directive 071?</b>	Use the review instructions for Section 4.
<b>Does the licensee have plans to distribute the ERP to the appropriate government agencies?</b>	Ensure that the appropriate government agencies are included on the ERP distribution list.
<b>Has the company submitted a supplement requesting that a drilling and completions operations be carried out using the sour operations ERP?</b>	Ensure that a site-specific ERP is not required. Ensure that the request meets the requirements of Section 7.3.4.

## **8 ERPs for High Vapour Pressure Pipelines**

### **8.1 ERP Submission Requirements**

ERPs for high vapour pressure pipelines are a legal requirement for companies working in Alberta's petroleum industry under the following ERCB Regulations

- Section 50.2 (1) – ERCB Pipeline Regulation

Your company will need to prepare an ERP for

- all HVP pipeline operations if there is surface development within the EPZ, and
- pipeline maintenance and repair operations if there is surface development within the EPZ and the pipeline has not been depressured and purged.

When your company determines the size of the EPZ remember to check for surface development (i.e., residents, schools, businesses, hospitals, recreational facilities, etc.) outside the EPZ that

- may be located on dead-end roads and need to egress through the EPZ, or
- are adjacent to (within 25 metres of) the EPZ.

The ERCB considers these types of surface development to be part of the EPZ. Your company is required to include this information in the ERP.

### **8.2 ERP Content Requirements**

Your company has to include the requirements listed in Sections 3, 4, 5, and Section 8.2 in the HVP pipeline ERP if relevant to the ERP. Your company may choose to add additional information to the ERPs as required.

### **8.3 ERP Supplement**

#### **8.3.1 Newly Added Pipeline Tie-ins, Facilities, and Operating Areas**

No additional information is offered or applicable.

#### **8.3.2 Currently Operating System**

Your company is required to submit a supplement to the ERCB for review and approval when a currently operating system with surface development within its EPZ is added to an existing HVP pipeline ERP. You will also have to notify and consult with members of the public within the EPZ of the currently operating system and any other new residents that may be added to the HVP pipeline ERP as part of the public involvement program.

### 8.3.3 Supplement Distribution

No additional information is offered or applicable.

### ERCB Intent and Review Instructions for Sections 8 and Section 9

The ERCB will review the following when assessing an ERP

<p>Is this ERP a new plan or is the HVP line a supplement to an existing facility plan?</p>	<p>Check as to whether the plan is a new plan needing complete review and approval before operations can begin. If plan is not a new plan, confirm that it is indeed a supplement to an existing area/facility plan and that no new residents are within the EPZ for the HVP pipeline that are not already within the EPZ of the facility plan. Cross referenced existing facility to ensure that both are operating under the same BA code and same response structure. Cross reference existing facility ERP map with map of supplemental HVP operations to ensure no new residents have been included.</p>
<p>Has the EPZ been calculated correctly?</p>	<p>Confirm that the EPZ has been calculated using the release volumes for each pipeline segment.</p>
<p>Has the licensee provided an overview of HVP operations to be covered by the ERP?</p>	<p>Confirm that pipeline specifications have been included in the ERP. This includes pipeline routing, location of ESDs, licence number of the pipeline, and operational status of the HVP pipeline. Confirm that the size and configuration of the EPZ is provided. Ensure that the general proximity to the nearest urban centre and residence has been provided. Ensure that the general land use including the following has been provided</p> <p>- population density in area, number of residents, transient use, public facilities and road usage and proximity to road system</p>
<p>Has the licensee provided procedures for incident detection, notification, and confirmation?</p>	<p>Check to ensure any forms needed for incident detection and reporting are detailed within the ERP.</p>
<p>Has the licensee included the appropriate public protection measures to be undertaken in the event of an incident?</p>	<p>Ensure that sheltering in place measures are documented within the ERP. Ensure that sheltering in place procedures are detailed as being the primary public protection measure to be utilized and under what circumstances they are to be employed. Ensure that the ERP clearly states that evacuation is not the primary public protection measure for HVP releases. Ensure that the decision to evacuate is designated to a responder within the ERP.</p>
<p>Confirm that the ERP details when evacuation of the EPZ is to occur.</p>	<p>Ensure that procedures detailing how the evacuation notice is to be given are detailed in the ERP.</p>

Does the ERP contain ignition procedure for HVP product?	Ensure that the ERP contains the special considerations for HVP product for making the decision to ignite. Ensure that a responder has been designated for making the decision to ignite a release and is designated the authority to ignite. Ensure that the ERP details the steps that the licensee will employ to minimize any chance of unplanned ignition (i.e., ensure any protection measures guarding against accidental releases are detailed).
Does the ERP state when air monitoring is to be established in the event of an emergency?	Confirm when air monitoring is to be established. Confirm that air monitoring is to occur initially downwind at the nearest unevacuated residence or areas where people may be present.
Has the licensee provided a detailed distribution list for the HVP ERP?	Confirm that the government contacts listed in Appendix 5 of Directive 071 have received a copy. Call and confirm.
Has the licensee indicated in the ERP where the approved ERP will be stored?	Ensure that the storage location where the ERP is to be kept is included in the HVP pipeline or Cavern Storage Facility ERP.

## **9 ERPs for Cavern Storage Facilities Storing HVP Product**

### **9.1 ERP Submission Requirements**

ERPs for hydrocarbon storage in caverns are a legal requirement for companies working in Alberta's petroleum industry under the following ERCB Regulations

- Sections 8.005(1) and 8.005(2) – ERCB Oil and Gas Conservation Regulations

Your company is required to prepare an ERP for any facility storing HVP product in caverns. When you determine the size of the EPZ remember to check for surface development (i.e., residents, schools, businesses, hospitals, recreational facilities, etc.) outside the EPZ that

- may be located on dead-end roads and need to egress through the EPZ, or
- are adjacent to (within 25 metres) of the EPZ.

The ERCB requires that surface development within these areas be included as part of the EPZ and that the information be placed in your company's ERP.

### **9.2 ERP Content Requirements**

Your company has to include the requirements listed in Sections 3, 4, 5 and Section 9.2 in the cavern storage facility ERP, if relevant to the ERP. Your company may choose to add additional information to the ERPs as required.

### **9.3 ERP Supplement**

No additional information is offered or applicable.

#### **9.3.1 Newly Added Wells, Pipelines, and Facilities**

Your company is required to submit a supplement to the ERCB for review and approval if

- the EPZ(s) for a newly added well(s), pipelines, and facilities do not fall entirely within the current cavern storage facility ERP emergency planning zone; and
- there is surface development within the EPZs of the newly added well(s), pipeline tie-ins, and facilities.

You will also have to notify and consult with all new members of the public within the expanded cavern storage facility ERP emergency planning zone as part of the public involvement program.

### **9.3.2 Supplement Distribution**

No additional information is offered or applicable.

## **10 Spill Cooperative Response Plans**

### **10.1 Requirements**

The Spill Cooperative Response Plan section was put together by a committee comprised of petroleum industry field operators, the WCSS and the ERCB and outlines the requirements for companies that are members of an oil spill cooperative and for those that are not members. Spill response contingency plans encompassing production and pipeline facilities and trucking routes are a legal requirement for licensees of oil wells, saltwater disposal wells or liquid pipelines working in Alberta's upstream petroleum industry under the following ERCB Regulations

- Section 8.052 (1) – ERCB Oil and Gas Conservation Regulations
- Section 50.3(1) – ERCB Pipeline Regulation

One of the requirements of being a member of good standing in an oil spill cooperative is the need for companies to assess the risk that their operation might pose to the environment. An example of a risk assessment guide for liquid hydrocarbon spills can be found on the WCSS Website [www.wcss.ab.ca](http://www.wcss.ab.ca).

### **10.2 Member of an Oil Spill Cooperative**

If your company is an active member in an oil spill cooperative in the area where operations are located, you are exempt from the requirement to develop a response plan, purchase cleanup equipment and to conduct an annual exercise. All of these requirements will be handled by the cooperative that your company belongs to.

#### **10.2.1 Spill Cooperative Response Plan Contents**

No additional information is offered or applicable.

### **10.3 Nonmember of an Oil Spill Cooperative**

If your company is not a member of an oil spill cooperative in the area where operations are located, you will have to develop a spill response plan and submit it to the ERCB for approval.

Your company will also have to purchase cleanup equipment and conduct an annual exercise.

### **10.3.1 Spill Response Plan Contents**

No additional information is offered or applicable.

### **10.3.2 Spill Response Equipment Requirements**

No additional information is offered or applicable.

## **ERCB Intent and Review Instructions for Section 10**

The ERCB will review the following when assessing an ERP

<b>Is the licensee a member of a spill cooperative?</b>	If yes, is the area spill cooperative name and contact information included in the ERP. If no, the licensee must provide evidence and confirmation that it has its own ERCB approved spill response plan and spill clean-up equipment.
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## **Part B: Response Requirements for Directive 071**

### **Sections 11 -16**

## 11 Corporate-level ERPs

### 11.1 Requirements

The corporate-level plan is used to respond to emergencies when a company's operations do not require the use of a site-specific plan. Company personnel that have been assigned roles and responsibilities for emergency response should be aware of the contents of the corporate-level ERP to insure that it can be effectively implemented. Your company is required to review the plan with personnel that have been assigned roles and responsibilities. Additional information on corporate-level ERPs is included in Section 2.1 of this Guide.

*1. Would the ERCB allow a company to use a quick reference guide that addresses the core elements of a corporate plan rather than a full corporate-level ERP? You can use a quick reference guide as long as the corporate-level plan is available at a response location in your area of operations.*

#### 11.1.1 Assessment Matrix for Classifying Incidents

Your company will initially determine the level of the emergency, contact emergency responders and activate internal response resources following an incident. After that has taken place, you are required to contact the ERCB as soon as possible to let them know what has happened and confirm the level of the emergency.

Additional information specific to the use of the Assessment Matrix or Incident Response is found in Sections 2.1.1 and 5.1 of this Guide.

*1. What happens if my company disagrees with the ERCB on the level of the emergency? Your company should try to reach consensus with the ERCB on categorizing the level of emergency. If you cannot reach an agreement the ERCB will ultimately decide on the level of emergency and require that the external response be the same as the level determined by the ERCB. Your company's internal response may be different from the response that the ERCB would expect at that level.*

*2. During an emergency should I contact Alberta Environment before I contact the ERCB? The ERCB requests that you contact the local ERCB Field Centre first to convey the particulars of the incident. The ERCB will then advise your company if Alberta Environment should be contacted.*

#### 11.1.2 Communications Planning

Information specific to the Communications Plan can be found in Sections 2.1.2 and 5.8 of this Guide. The ERCB recommends using the First Call Communication form in Appendix 8 if the media is contacted.

*1. Directive 071 says that I have to coordinate media releases with the ERCB prior to release to provide consistency and accuracy of information. Does this mean that my company is not allowed to talk to the media without permission from the ERCB? No. The ERCB just wants to be sure that correct and factual information is presented to the media and ultimately to the public.*

*2. In section 11.1.2 it says there is no longer “one call” that you make – you must call all the applicable regulators yourself (is a bit of a disagreement from before). Note that #6 should just apply “when required”. Not every incident (e.g., Alert) would require all that information to be provided. For a level-1, -2, or -3 emergency your company will have to contact the local authority, the RCMP/police and the local RHA. The ERCB will advise your company if any other government agency needs to be notified. The ERCB local field centre will also go through the same contact process. We agree. Since an alert is not an emergency the information in Appendix 8 does not have to be made available to the public.*

#### **11.1.2.1 Downgrading and Stand-down of Emergency Levels**

*1. Why do I need to consult with the ERCB to downgrade or stand-down an emergency? Consultation with the ERCB provides consistency in the decision making process to downgrade and stand-down an emergency. After discussing the situation with your company, the ERCB will discuss the decision to downgrade or stand-down the emergency with the appropriate government agencies such as the local authority, the local RHA, Alberta Environment and the Alberta Emergency Management Agency and confirm with your company that the call is appropriate.*

#### **11.1.3 Incident Management Systems**

Information specific to Incident Management Systems can be found in Sections 2.1.4 and 5.10 of this Guide.

*1. If the local authority insists that the EOC be set up at their offices, do we have to comply? Under the Emergency Management Act, the Local Authority has the mandate to take control of an emergency. If they want to set up an EOC at their offices, your company will need to comply and work under their command system.*

## 12 Emergency Planning and Response Zones

### 12.1 Emergency Planning Zone

If your company is involved in any type of operation, on-site supervisory staff will need to be aware of the size of the EPZ. As part of the inspection process, ERCB field inspectors routinely check for knowledge of this information. If the on-site supervisor is not aware of the EPZ size or provides an incorrect EPZ size, the field inspector may assess a noncompliance against your company.

*1. If we have the ERP on site with information on the EPZ size will that satisfy the ERCB's concerns about being aware of the size of the EPZ? No. If there was an emergency, the ERP may not be immediately accessible to the on-site supervisor and the size of the EPZ would be unknown.*

### 12.2 Emergency Awareness Zone

Response in the EAZ is a coordinated effort between your company and the local authority and should be discussed with the local authority prior to conducting the public involvement program. Some local authorities will have limited resources or capability to handle a response in the EAZ. Your company should be prepared to assist the local authority in any way or if need be take over their roles and responsibilities. Additional information on the EAZ can be found in Section 3.4 of this Guide.

*1. Does this mean that my company is expected to handle everything in the EAZ? Depending on your discussions with the local authority, your company may have to handle some or all of the emergency response in the EAZ. If the hazard is impacting the EAZ, it would be classified as a level-3 emergency. At that point the Petroleum Industry Incident Support Plan is activated and government agencies will provide support to the licensee and the local authority to aid in the emergency.*

### 12.3 Response Zones

Response zones are referenced in CSA Z-731 and are areas where a company focuses its resources to implement public protection measures. These zones include the initial isolation zone (IIZ) and the protective action zone (PAZ). Response in the PAZ initially occurs near the release and will generally expand outwards during the incident as the hazard moves away from the release point. Your company should ensure that it has sufficient staff or third party responders to handle an expanding PAZ.

*1. How will I know where the IIZ is? The ERCBH2S model will calculate the size of the IIZ for sour wells and pipeline. If an emergency occurs and the IIZ size is not readily available from the model run, the ERCB recommends using a minimum size of 20 per cent of the EPZ or 300 metres, whichever is smaller.*

### 12.3.1 Initial Isolation Zone

Residents residing in the IIZ are within an area where sheltering during a continuous release of H<sub>2</sub>S will only provide temporary protection. Your company's response initially focuses on this area to ensure that residents are given early notification to evacuate or if the release has occurred unexpectedly, to initially shelter until safe evacuation can be achieved.

*1. Why does sheltering in the IIZ only provide temporary protection? A house can provide protection from outside air during a release if every device which draws outside air into the house (i.e., furnaces, air conditioning, etc.) is turned off. During a limited release, such as a pipeline rupture, the plume will pass over the house, reach a peak concentration and then quickly drop off. The indoor concentration of H<sub>2</sub>S should not reach a level where resident safety is at risk. During a continuous release of sour gas, such as an uncontrolled sour well release, the indoor concentration of H<sub>2</sub>S will continue to rise and over a period of time may reach a level where resident safety may be at risk.*

### 12.3.2 Protective Action Zone

As soon as the release occurs your company will be able to determine the direction and approximate size of the Protective Action Zone by noting the wind direction and using the ERP map. The process outlined in Figure 3 of *Directive 071* can quickly be used to outline the PAZ in the EPZ; however, your company's resources should initially be focused in the IIZ and immediately downwind in the PAZ. As appropriate equipment arrives, the actual size of the PAZ can be determined from monitored readings.

*1. Will it be necessary to consult to the PAZ to effectively conduct public protection measures? The PAZ is a response zone and not a planning zone. During an emergency the PAZ could extend beyond the EPZ and in some cases even beyond the EAZ. Consultation requirements for the public involvement program are only required for the EPZ which is a planning zone.*

*2. The criteria used to determine the perimeter of the initial isolation zone and the protective action zone are absent from, and should be included in Directive 071. The boundary to the PAZ during the initial stage of the emergency is the edge of the EPZ which is determined from the ERCBH<sub>2</sub>S model. Methodology found in Directive 071 allows the licensee to determine the approximate size of the PAZ immediately after the release using plume direction and the ERP map. The IIZ is calculated when your company runs the ERCBH<sub>2</sub>S model.*

*3. There is some anxiety about the term "Protective Action Distance" as it is again new and wasn't discussed. Need to explain that it is just the same prioritization distance as before – downwind towards the EPZ boundary.*

***The diagram in Directive 071 is more complicated than it needs to be. The width of the PAZ arch is just the length of the EPZ radius. New terminology is being added where it isn't required. The protective action distance and the method for quickly calculating the size of the protective action zone are not new concepts. The methodology is right out of Annex I in the CSA/CSA-Z731-03 standard, which is the national standard of Canada. The ERCB is just referencing the standard.***

## 13 Public and Local Authority Involvement in Emergency Preparedness and Response

### 13.1 When Are Notification and Consultation Required?

Part B notification and consultation requirements are intended for operations that take place after an ERP has been approved and include

- notification and consultation due to facility modifications that change the EPZ size,
- notification prior to entering the first sour zone,
- notification prior to nonconsecutive completion operations on a sour well (see FAQ 2 below),
- notification and consultation due to delayed completions operations,
- notification of transfer of ownership,
- consultation for the Public Awareness Program, and
- notification at the end of sour drilling and/or completion operations.

*1. Clarification is requested as to whether members of the public need to be notified and consulted for all facility modifications or just those of significance? Unless there is surface development in the expanded portion of the EPZ, members of the public do not have to be notified or consulted for facility modifications that result in small changes to the EPZ with no material impact on emergency response, or result in only minor changes to facility procedures. Your company should document those modifications and if in doubt contact the ERCB Emergency Planning and Assessment Section to confirm that notification and consultation is not required.*

*2. Table 9 appears to be an inconsistent description of a non-consecutive completion (i.e., 4 weeks or 6 months)? Notification of members of the public within the EPZ is required for a completion that occurs 4 weeks to 6 months after the drilling rig has been released. After 6 months your company will have to carry out notification and consultation with members of the public within the EPZ.*

### 13.2 Public Awareness Program

An important and proactive aspect of emergency preparedness and response is to ensure that members of the public within the EPZ are familiar with the types of hazards and emergencies that could occur and the public protection measures that will be implemented to protect them during an emergency.

The ERCB requires that companies send a public information package to residents

every two years and include an invitation to attend a public meeting to review important emergency response information. The public meeting will also provide your company with an opportunity to network with members of the public and answer any questions that the residents may have.

If the number of residents within the EPZ is limited, your company may contact each residence individually to see if they would rather have a face-to-face meeting rather than conduct a public meeting.

## 14 Common Requirements for Site-specific ERPs

### 14.1 ERP Location

*1. Our company wells are tied into a gas plant that is operated by another company: however, we have an ERP for our portion of the field and will use response personnel from operations in a nearby field. If an incident occurred at one of our wells, we would use the gas plant as our EOC. Can we leave our ERP at the gas plant? Yes, as long as you intend to initiate first response actions from the gas plant.*

### 14.2 Assessment Matrix for Classifying Incidents

Information specific to the use of the Assessment Matrix or Incident Response is found in Sections 2.1.1, 5.1, and 11.1.1 of this Guide.

### 14.3 Public Protection Measures

Public protection measures include the following

- notification,
- evacuation and/or sheltering indoors (commonly referred to as sheltering-in-place),
- ignition,
- isolation (roadblocks, fire hazard orders, Notice to Airman), and
- air quality monitoring.

*1. Who is ultimately responsible for protecting members of the public? Under the Emergency Management Act the Local Authority is mandated to protect members of the public.*

#### 14.3.1 Notification During an Accidental Release

It is imperative that the public be notified as soon as your company realizes that the hazard has the potential to impact beyond the operations site. Notification priorities are as follows

- the public in the IIZ; these people are at the highest risk,
- the public in the PAZ that are within the EPZ,
- the director of emergency management, if an urban centre is within the EPZ,

- individuals within the EPZ that have requested early notification and wish to voluntarily evacuate,
- the remainder of the public in the EPZ, and
- members of the public outside the EPZ; if necessary, notification mechanisms in the MEP response framework will be used by the local authorities to notify residents, if activated.

**1. If I have a small release of sour gas that only creates a slight odour problem downwind of the plant, do I have to notify every person in the EPZ that requested early notification?** *No. Your company should just notify those individuals residing in the IIZ and in the PAZ. Use available equipment to monitor the release. If the wind shifts you will have to carry out additional notification.*

**2. When should I notify the ERCB and Alberta Environment?** *Contact the local ERCB Field Centre as soon as possible after initiating your response actions. The ERCB will advise if they feel that Alberta Environment should be contacted.*

**3. What should we do if we try to contact a residence in the PAZ by phone and there is no answer?** *Send a rover to check on the residence. Make sure that the rover has personal protective equipment in case there is sour gas in the vicinity of the residence.*

**4. How do we handle security issues for our rovers? They will be required to handle dogs, angry residents etc. For example you may have a resident that was hostile during the public involvement process and doesn't want to talk to you. How would you protect our rovers assuming that they have no phone contact? This happens to all of us. We recommend either going to a buddy system or go with a member of the RCMP when checking the residence if you know that you're going to have problems. Information about hostile residents or problems with dogs should be placed in your ERP.**

**5. When Directive 071 talks about the PAZ what specifically are they referring to; the PAZ calculated by ERCBH2S or the approximate method for calculating the PAZ size referred to in Figure 3?** *In order to quickly respond to an emergency your company should use the process described in Figure 3 of Directive 071. It will provide you with an approximate PAZ size to implement your public protection measures. As soon as the mobile air monitoring units arrive your company will be able to define the PAZ based on monitored results. If you have the most recent meteorological information your company could run the ERCBH2S model to supplement your information on the extent of the PAZ.*

### 14.3.2 Evacuation and/or Sheltering Indoors

If it is safe to evacuate, members of the public should be moved away from a release of sour gas or HVP product prior to exposure to the hazard; however, short term sheltering for minor releases is also an effective public protection measure. Sheltering indoors can provide protection, but your company will need to continuously monitor the hazard to ensure that members of the public are not at risk from increasing indoor concentration levels. Residents that are sheltering should be frequently contacted so that your company can assess their situation.

### 14.3.3 Public Protection Measures for an H<sub>2</sub>S Release

If there is time to safely evacuate members of the public before exposure to sour gas, your company is required to make every effort to ensure that it happens.

**1. Does this mean that after the IIZ and the PAZ are evacuated we only evacuate the remainder of the EPZ based on measured results?** *The remaining members of the public within the EPZ must be notified and advised to shelter indoors if they smell a sour gas odour. They may ask if it is safe to evacuate and you can provide them with a safe route to leave the EPZ and also provide the location of the reception centre where they can register. If the wind shifts, the PAZ shifts, and the public within the newly redefined PAZ will also have to be evacuated. By the time this happens, the ignition criteria should have been reached and the well ignited.*

**2. Do we now not have to isolate and/or evacuate the entire EPZ, or only evacuate the PAZ and manage the rest of the EPZ based on measuring the plume?** *It is not necessary to evacuate the entire EPZ following an incident. For a sour gas release, your company's initial focus will be to evacuate the IIZ and the PAZ. Roadblocks will have to be set up to isolate the IIZ and the PAZ. Members of the public in the rest of the EPZ will have to be notified and advised to shelter if they smell H<sub>2</sub>S. Those who wish to voluntarily evacuate will need instructions to safely leave the EPZ.*

**3. Is the evacuation of an area solely dependent on monitored results?** *Not entirely. Your company should take a proactive approach in dealing with evacuation within the PAZ. The focus should be on ensuring that residents within the response zones are protected from exposure to H<sub>2</sub>S. Proactive evacuation in the PAZ will mitigate exposure to H<sub>2</sub>S.*

### 14.3.4 Public Protection Measures for an HVP Product Release

If there is time to safely evacuate members of the public before exposure to the HVP plume your company should make every effort to ensure that it happens. If the release is unexpected and there is no time to safely evacuate members of the public, your company will need to notify the residents with instructions to shelter immediately and to turn off any devices that might provide a source of ignition (furnace pilot lights,

electrical power, etc).

For HVP releases, the IIZ defines a region around a release where plume concentrations fall within the UFL (UEL) and LFL (LEL) and, if ignited the region where the public may be directly exposed to flame. For large failure events this area reaches its maximum extent shortly after initiation of a failure and then declines. Inadvertent actions within this region may lead to ignition, thus sheltering is recommended until such time that the position of the plume can be assessed and evacuation can take place safely.

Evacuation is recommended for cases where the plume is visible, egress can occur in an upwind direction and when the process of evacuation is unlikely to ignite the plume. Residents should be advised to evacuate using vehicles only if they are located upwind of the release and no significant gas concentrations are detected. A decision to evacuate should be made by qualified individuals with access to LEL monitors.

### **14.3.5 Notification and Evacuation Outside the EPZ**

See Section 5.2.3.

***1. For situations where the public beyond the EPZ requires notification and/or evacuation, must direct notification occur, or is it indirect notification such as a public broadcast system adequate? Indirect notification such as a broadcast media (e.g., television, radio, EPWS) can be used and is coordinated through the local authority MEP, if activated, and the Petroleum Industry Incident Support Plan. Direct notification may be difficult unless the local authority has that information available.***

***2. Please clarify what you mean in the statement “Evacuation of the area outside the EPZ is a coordinated response through a licensee’s ERP and the response framework in the local authority’s MEP.” The coordinated response inside the EPZ is outlined in your company’s ERP, but the details of the response in the areas beyond the EPZ should be provided in the MEP. Your company and the local authority will need to discuss how a coordinated response will take place as part of your consultation program.***

***3. When does the local authority activate its MEP? The MEP is not automatically activated with every emergency. It is generally activated when there are significant numbers of residents being affected by the incident.***

### **14.3.6 Ignition Criteria**

#### **14.3.6.1 Sour Well Releases**

Following an incident, the hazard associated with a release from a sour gas well may be controlled or minimized by deliberately igniting the release. Ignition of a sour gas release should only occur after careful deliberation, and when safe to do so. Until an

ignition decision has been, steps should be taken to minimize any chance of unplanned ignition in the area.

If the sour gas well release occurs in a remote area of the province and there is no danger to members of the public, the ERCB may allow the release of sour gas to continue in order to allow your company time to bring the well under control. The plume should be carefully monitored to ensure that members of the public are not impacted by the release.

***1. Does my ignition team have to be certified in sour well ignition to ignite the well?***  
*No. Certification is not an ERCB requirement but they recommend that your team have training in this area.*

***2. If my company is performing a critical sour well operation, when do we need to have the remote controlled ignition device on site?*** *The primary ignition remote controlled device has to be on site before entering the critical sour zone. In the case of a producing well, it would be just before the wellhead is removed.*

#### **14.3.6.2 HVP Product Releases from a Pipeline or Cavern Storage Facility**

Following an incident, the hazard associated with an HVP product release may be controlled or minimized by deliberately igniting the release. Ignition of an HVP product release should only occur after the position of the plume has been established, after careful deliberation, and only when safe to do so. Until such time that a decision has been made to ignite a release, steps should be taken to minimize any chance of unplanned ignition in the area. For example: people should not smoke, appliances that produce heat or which have pilot lights should be turned off, automobiles and power supply to homes and buildings should be turned off. Your company should consider the following when making a decision to ignite the release:

- evacuation of all people from the region of the plume; consider the safety benefits for members of the public located in the immediate area,
- monitor the wind direction and consider that changes in wind direction cannot be anticipated during the period when plume ignition will be attempted,
- assess the possibility of an explosion: i.e., obstructions or regions of congestion within the perimeter of the dispersing vapour cloud, and
- if the duration of the release is expected to continue for a long period of time, an un-ignited release could contribute to additional hazards to the public and response personnel.

***1. My company is very concerned with the statement that ERCB senior staff may decide to make the decision to ignite the release if we don't agree to ignite the release or if we're not prepared to take the necessary steps to ignite the release. Is the ERCB prepared to be responsible for their actions if they decide to ignite and serious***

*consequences result from their actions? The ERCB will only use this course of action as a last resort if it is aware of public safety concerns and if the company refuses to mitigate those concerns by igniting the hazard. ERCB senior staff will be in contact with executive management and Board members in Calgary and do not act completely on their own in ordering ignition.*

#### **14.3.7 Isolation Procedures**

If required, in the event of an H<sub>2</sub>S or HVP product release, your company will have to identify the location of the release, isolate the IIZ and the PAZ, and control all egress and access to and from this area by

- establishing manned roadblocks to prohibit unauthorized entry into the response zones where public safety threat may exist,
- obtaining a fire hazard order (issued by the ERCB) or have the local authority declare a state of local emergency, and
- having NAV CANADA issue a Notice to Airmen to restrict airspace above the release.

*1. The directive refers to roadblocks being established to restrict unauthorized entry into the response zones during a sour gas or HVP product release. Is the part of the EPZ that is outside the IIZ and PAZ part of this area, or is it part of a planning zone but not part of the response zone? Road blocks are established to restrict unauthorized entry into the IIZ and the PAZ; however, some portions of the EPZ may be blocked by roadblocks depending on the roadblock placement.*

*2. Who makes the request for a Notice to Airmen? The ERCB may make that request at a level-2 or level-3 emergency.*

#### **14.3.8 Air Quality Monitoring**

The implementation of public protection measures begins with an understanding of current and expected weather conditions and with knowledge of the position of the plume. Mobile air quality monitoring devices are designed to obtain this information to determine

- the limits of the flammable or explosive region of a dispersing vapour cloud,
- the gas concentrations at manned roadblocks and in areas being evacuated; this information is required to ensure that people at these locations remain safe and that evacuation can take place safely, and
- when a decision to downgrade or stand-down an emergency can be made.

*1. Under what circumstances can we use a plume tracker rather than a mobile air monitor? A plume tracker cannot, under any circumstances, be used to replace a mobile air-monitoring unit.*

*2. For those situations where the ERCB requires a mobile air monitor to be on site, can a company elect to use a stationary monitor instead? No, a stationary monitor cannot be used to replace a mobile monitor due to its inability to locate a mobile plume and its inability to read in parts per billion. Stationary monitors can be used at individual residence locations where the company has agreed to place one at the resident's request.*

#### **14.3.8.1 Sour Gas Release from a Manned Operation**

No additional information is offered or applicable.

#### **14.3.8.2 Sour Gas Release from an Unmanned Operation**

No additional information is offered or applicable.

#### **14.3.8.3 HVP Product Release**

No additional information is offered or applicable.

### **14.4 Equipment Location and Calibration**

Equipment used for communications, roadblocks, ignition, and gas monitoring should be properly maintained and available for use at all times. For monitoring equipment proper maintenance means testing and calibrating to ensure that it is operational.

Additional information specific to an Equipment List is located in Section 5.4 of this Guide.

*1. How often must monitoring equipment be calibrated and tested? Monitoring equipment should be calibrated and tested according to the equipment manufacturer's maintenance manual. The Alberta Employment and Immigration Website [www.employment.alberta.ca](http://www.employment.alberta.ca) should also be checked for publications that pertain to calibration requirements.*

*2. We need to have records for our equipment but also need some more guidance around ensuring that contracted equipment is maintained properly. If we don't have an approved vendor program how do we address this issue? Would we just discuss it in your first meeting with the company to book the services or would we ask for some kind of confirmation from them? If your company doesn't have an approved vendor program then a discussion with the vendor on their maintenance and calibration programs will satisfy the ERCB. Ensuring that contracted equipment meets industry standards is not a regulatory requirement in Directive 071.*

## 14.5 Communications Planning

### 14.5.1 Downgrading and Stand-down of Emergency Levels

Information specific to downgrading and stand-down of emergency levels can be found in Section 11.1.2.1 of this Guide.

*1. Downgrading Levels of Emergency – had brought in the requirement to consult with other regulatory agencies in order to downgrade but have gone back to just the ERCB (the ERCB will confer with the other agencies). The ERCB changed this to help out companies during an emergency. The ERCB will consult with your company on the downgrade or stand-down and then call all the other government agencies to confirm that there are no problems with the decision. The ERCB will then contact you to confirm that the downgrade or stand-down is appropriate.*

## 14.6 Plan Maintenance

The need for companies to submit an annual update to the ERCB for their sour operation, HVP pipeline or cavern storage facility ERPs has been eliminated. The onus has been placed on companies to keep their ERPs current with respect to the following categories

- company information,
- mapping information,
- resident contact information,
- response staff or capacity changes, and
- new facility additions, such as well or pipeline tie-ins.

Your company will need to prioritize operating areas and develop procedures for more regular reviews to ensure that your ERPs remain current. Operating areas that may require additional scrutiny include

- transient areas
- areas of high development
- industrial areas

*1. What will the ERCB consider as up-to-date resident information? On reserve land for example, residential information may change weekly. Your company should look at the area in question at least every six months to see if there is ongoing growth (e.g., new communities, industrial development, public facilities, etc.) or something that an operator has told you about and follow up. This could be part of the discussion awareness program with your rovers and public safety officer. Those developments will*

*need to be noted on your internal ERP and if they are instrumental to implementing the ERP distributed to all plan holders. On the reserve your company should check with the band office for potential changes in resident location.*

## **14.7 Incident Management Systems**

Information specific to Incident Management Systems can be found in Sections 2.1.4 and 5.10 of this Guide.

## **14.8 Reception Centre**

Depending on the number of residents expected at the reception centre, your company may require several personnel at the centre to meet and register the evacuees. The local authority should also be contacted, advised of the location of the reception centre and invited to send a representative to assist and support activities. As part of your consultation with the local authority during the planning phase, the local authority may also want to participate or perhaps even be responsible for running the reception centre. In large urban areas the Red Cross could take over the role of running the centre.

## **14.9 Training Sessions**

Training is an essential emergency response component and should be provided to everyone who would potentially participate in a response. The amount and frequency of training depends on the type and size of your company's operations. As the training needs for on-scene responders will differ from those of office-based response managers, programs should be developed to accommodate those differences.

Ensure that employees are thoroughly familiar with company policy and procedures for responding to emergencies. Training can be provided for all emergency response roles through recognized training programs such as

- programs that meet National Fire Protection Association (NFPA) Standards 471, 472, or 600,
- programs that meet the Occupational Safety and Health Act (OSHA) 1910.120,
- Red Cross or St. John Ambulance programs,
- H<sub>2</sub>S Alive and other programs from ENFORM,
- Incident Command System (ICS) training,
- internal training programs,
- on-the-job training, exercises,

- WCSS, and
- safety meetings.

## 14.10 Exercise Requirements

An exercise is often viewed as a test of a company's capability to implement their ERP during an emergency. At the same time it can be utilized as a valuable training tool for company personnel to practice their roles and responsibilities for a real emergency. Practice makes perfect and we all make mistakes. With that in mind all exercises should be treated as a learning experience and lessons learned from the exercise should be applied to the next exercise.

CSA Z-731 Appendix K provides guidance in designing and documenting your exercise. Carrying out exercises to test ERPs is a regulatory requirement and companies are responsible for setting standards to test their own ERPs.

***1. Does the ERCB have to be notified if more than one exercise is held per year? It's a requirement in Directive 071 that the ERCB be notified of all exercises so it can decide if it wishes to attend.***

***2. Section 14.11 states "In situations where licensees have multiple area ERPs with the same response personnel and infrastructure, the ERPS may be tested simultaneously through one exercise. What is meant by the same response personnel? The reference to the same response personnel means the same field supervisory personnel. That would mean that those at the "Section Chief" level in the ICS (or similar position in other response organization structures) would be common.***

*Separate exercises are not required when the only support personnel that change are in the support positions (i.e., rovers, roadblock personnel, reception centre representatives, etc).*

***3. We have to notify the ERCB for a tabletop exercise, but it is not really an invitation. Do we really expect that the ERCB will not show up for these? Actually ERCB field staff will probably attend as many of these as possible and in many cases would like to participate as opposed to just observing. Tabletops are a great way to practice for the real event.***

## 14.11 Record Keeping

Your company will need a process for reporting and recording information. This documentation will be used for legal, regulatory, historical, and analytical purposes. The ERCB has listed the various types of programs, the time frames for retention and the documentation that will need to be retained for audit purposes and for the ERCB's ER Assessment program.

*1. How long is my company expected to keep information on file? The ERCB expects your company to keep all records on file for a period of three years.*

#### **14.12 Sale of Property**

There has been a significant change in the methodology for a company to submit a new ERP after purchasing an operating area from another company. The purchasing company should contact the Emergency Planning and Assessment Section at the ERCB within 30 days of the transfer of licence to discuss a timeframe for submitting a new ERP.

*1. Does the ERCB have any concerns if we use the old ERP for telephone and address information to identify residents in the EPZ so that we can notify them of the change of ownership and advise them that we will be conducting a public involvement program as part of the development of a new ERP? No. In the interest of public safety, the purchasing company should use the old ERP until the new ERP has been approved.*

#### **14.13 Overlapping EPZs**

*1. Does an application need to be made if there are operations being conducted where EPZs will overlap? No, however the onus is on the licensee to meet the requirements in Section 14.13.*

*2. Is an approval granted for overlapping EPZs? No approval is required.*

*3. Overlapping EPZs – they had taken this out at one time. How do you determine this in advance? Do we have to rely on the local ERCB Field Centre to tell us if someone else is planning something in our area? Is this referring to overlapping between two different companies or just your own? This section applies to any situation where EPZs overlap including areas where your own EPZs overlap. It can be difficult to determine if another company's EPZ overlaps your EPZ. Your company should contact the local ERCB field centre to assist in determining if this is the case since they have copies of all the ERPs in their area.*

#### **14.14 Presour and Critical Sour Meeting Requirements**

See Section 15.1

## 15 Sour Well Site-specific Drilling and/or Completion ERPs

### 15.1 Presour and Critical Sour Meeting Requirements

If the well is a noncritical sour well, the presour meeting is expected to be held within 96 hours (4 days) before entering the first sour zone in the well with the personnel listed in Section 5.6 of *Directive 071* to discuss hazards associated with the operation, review roles and responsibilities, and assess on-site capabilities required to implement the ERP.

If the well is a critical sour well and there are sour zones above the critical sour zone or combination of zones that make the well a critical sour well, two meetings will need to be conducted.

The first meeting is a presour meeting which is expected to be held within 96 hours (4 days) before entering the first sour zone. This could be part of your safety meeting.

The second meeting which could be held on site or at the on-site command post is the critical sour meeting which is expected to be held within 96 hours (4 days) before entering the critical sour zone or combination of zones which make the well a critical sour well. Your company is required to notify the ERCB, the local authority, RHA and other applicable government departments or agencies so they may elect to attend.

***1. Are the field response personnel that are assigned the roles of rovers and roadblock duties expected at the field review of a pre-sour or critical sour meeting or is it just the supervisory personnel? Key personnel involved in the supervision and management of the emergency response activities including the key representative of any contracted party are required at the meeting. They would convey the necessary information to field response personnel that have been assigned roles and responsibilities in the ERP including rovers and roadblock personnel.***

***2. If there are drilling programs with multiple wells being drilled in the area, will a single meeting at the outset of the program be sufficient to meet the objective of coordinating the field and drilling response or does the ERCB expect that these meetings will reoccur as a matter of fact? These types of meetings should take place for every well that is drilled. They are a means of verifying that the roles and responsibilities have not changed since the last well was drilled, confirmation that contact numbers are correct, and that revisions to the ERP have been discussed with well site personnel.***

***3. Notice of meetings – 8 days before going critical sour (4 days notice for meeting and meeting up to 4 days before) – very hard to predict/hit these windows, especially if directional drilling/horizontal drilling. When your company is about 5 days away from the critical sour zone, give the local ERCB Field Centre a call and tell them when you anticipate entering the critical sour zone. This will allow them to block off some time for the meeting. Call them 24 hours in advance of the meeting.***

## **15.2 Equipment Requirements for Critical Sour Well Operations**

### **15.2.1 Conducting Operations**

If your company is drilling a critical sour well, the equipment that is identified in the ERP (remote controlled ignition devices, etc.) does not have to be on location until you are ready to drill into the critical sour zone or combination of zones that make the well critical sour.

If your company is completing, well servicing, or working over a critical sour well, the equipment identified in the ERP is required to be on location prior to conducting the operation.

### **15.2.2 Release of Equipment**

No additional information is offered or applicable.

## **16 Spill Cooperative Response Plans**

### **16.1 Member of an Oil Spill Cooperative**

#### **16.1.1 Spill Training Exercises and Notification Requirements**

Section 16.1.1 contains the spill training exercise requirements for spill cooperative members so that they remain a member of good standing in the cooperative. It also includes the notification requirements to the ERCB and specific information that is required to be submitted to the ERCB prior to the exercise.

#### **16.1.2 Training Exercise Report Summaries**

The spill cooperative has thirty days to complete the training exercise report summary following completion of the exercise. The ERCB requires that the summary be available for a period of up to two years following the exercise.

### **16.2 Nonmember of an Oil Spill Cooperative**

#### **16.2.1 Spill Training Exercises and Notification Requirements**

A nonmember of an oil spill cooperative has to conduct their own exercise in the area where its operations are located and meet the same competencies and notification requirements as an oil spill cooperative member.

#### **16.2.2 Training Exercise Report Summaries**

The nonmember of an oil spill cooperative has thirty days to complete the training exercise report summary following completion of the exercise. The ERCB requires that the summary be available for a period of up to two years following the exercise.

## 17 Frequently Asked Questions on the ERCB Implementation Strategy

**Q. I began public consultation before the new Directive was issued. Can I get an exemption?**

*A. Generally exemptions are not permitted. Bulletin 2008-15 describes those ERPs that meet temporary exemption criteria. These are production facility ERPs that were received by the ERCB prior to April 8, 2008. Also exempt are site-specific ERPs that have received approval prior to April 8, 2008 and that expire after the activity is complete or within one year of approval, whichever is the sooner.*

*ERPs that are subject to ERCB hearings are under the direct control of the ERCB Board and will be considered on a case-by-case basis.*

*Much of the work undertaken for public involvement prior to the Directive 71, April 2008 edition will be applicable. Directive 071 outlines the consultation and/or notification requirements for changes to the EPZ.*

*For existing sour operations ERPs, recalculation of the EPZ is required and the results are to be submitted to the Emergency Planning and Assessment Section by December 31, 2008. Licensees are encouraged to do this as soon as possible to assist the ERCB and ensure operational impacts from the new requirements are minimized. Licensees can choose to update their plans for these facilities, but it is not mandatory.*

**Q: I received the ERCB Directive 056 well licence prior to April 8, 2008; does this exempt my ERP from the new Directive 071 requirements?**

*No, the well licence application can be amended based on the new information received from the ERCBH2S model. The ERP is to be created using the new Directive.*

**Q. Are we required to run the ERCBH2S model for applications pertaining to the re-licensing of existing pipelines? For example if we increase the licensed H<sub>2</sub>S content do we have to run the new model to determine the EPZ, even if that pipeline is covered under an existing approved ERP.**

*A. Re-licensing is considered a 'new application' – and therefore requires the EPZ to be calculated with ERCBH2S. It is permissible to use the existing production facility ERP for public protection measures (as stated in Bulletin 2008-15). Any changes in EPZ size must be communicated as per Directive 071 April 2008.*

*If the re-licensing is subject to objection and the application goes to hearing, then the Board will consider the need to amend the existing sour production facility ERP to the new Directive 071 requirements.*

**Q. We have a re-licensing project about to kick off and I believe from our conversation today that this would need to be run through the ERCB model to confirm planning zone sizes and release volumes? Would this meet the rules for supplement to an existing ERP or count as a new ERP (I think the Team can adjust some of the parameters - pressure and maybe even H<sub>2</sub>S to keep the planning zone a similar size)?**

*A. I can confirm that under the scenario listed below, the ERP would not be considered new but rather a major update. Should the EPZ distances remain within the overall boundary of the existing EPZ for the gathering system, the submission would be deemed an update. Should the EPZ distances extend beyond the current EPZ boundary for the gathering system, then the submission would be deemed a supplement requiring review and approval unless there is no surface development inside the portion of the EPZ that falls outside the existing EPZ for the gathering system. An update is sufficient if that is what you find.*

**Q. For bitumen wells - we have a well with no H<sub>2</sub>S potential during drilling or completions, but it is predicted to contain H<sub>2</sub>S once on production. There is no offset gas analysis as the offsets would be under a different SAGD process. Are we required to use the ERCBH<sub>2</sub>S model for this well and if so, what is acceptable for use as a gas analysis given these circumstances.**

*A. The EPZ is based on the largest release potential which is either the drilling, completions or production cases. For this well the need for a site-specific production ERP would be based on the producing release rate and ERCBH<sub>2</sub>S calculation. Given that the EPZ is not strongly dependent on the gas analysis (driven largely by H<sub>2</sub>S content) your company can use a best guess gas analysis until confirmation of composition.*

**Q. In Bulletin 2008-15, Section 2.2, is ‘sour production facilities’ referring specifically to gas plants, or is it all sour production facilities?**

*A. Bulletin 2008-15 Section 2.2 addresses sour production facilities approved prior to April 8, 2008. This includes all sour operations that are required to be covered under an emergency response plan - wells, pipelines, batteries, satellites, plants, compressor stations etc. We commonly refer to these as sour production facilities and they do include, but are not limited to, gas plants.*

*For existing sour production facilities, companies should run the ERCBH<sub>2</sub>S models in preparation for submission prior to Dec. 31, 2008. The ERCB will analyze the data to determine the level of impact that may occur in regards to the timing of submissions for ERPs amended to conform to the new Directive 071. The ERCB will consider these results and issue a complete implementation plan for sour production facility ERPs on or before July 2, 2009. Companies should be proactively assessing the changes to their existing ERPs and begin making the amendments (in house) to their plans in anticipation of the implementation plan.*

**Q. How will enforcement be handled for the new requirements?**

*A. Infractions prior to July 2, 2008 will result in a warning of noncompliance and requirement to correct the noncompliance immediately. After July 2, 2008 Directive 019 provisions will be applied. The purpose of this grace period is to allow licensees to adjust to the new requirements.*

**Q. Conducting effective public and local government involvement programs and gathering proper ERP information and preparing effective ERPs takes time and organization. For ERP public and local government involvement programs (new wells and not previously approved production facilities) that were started before April 8, 2008, is there no possibility of an exemption?**

*A. No. Much of the work that has already been done should be applicable under the new Directive 071 requirements. Your company can send out notification letters to all previously consulted parties advising them of the new EPZ distance determined by the ERCBH2S model.*

*The public protection measures (notification, evacuation, sheltering, and ignition) remain the same. Any changes to the EPZ would require consultation with additionally impacted parties only. Existing parties should receive notification of the change via mail outs. Directive 071 explains what is required for any EPZ size change.*

**Q. What is the update schedule for corporate-level plans? Some companies use corporate-level plans as core plans for area plans. Updating corporate-level plans right away could create some inconsistencies since area plans do not have to be updated until July 2009.**

*A. Although ERCB Bulletin 2008-15 did not mention updating corporate-level plans, the Board's expectation is that they do not have to be updated until July 2009.*

## **Appendix 1 Definitions for the Purposes of Directive 071**

This appendix is the glossary for Directive 071 and contains definitions for various terms throughout the Directive.

## **Appendix 2 ERP Approval Application**

This appendix provides the ERP Application Form and instructions on how to fill out the form. The application form has to be submitted to the Emergency Planning and Assessment Section along with a copy of the ERP.

## **Appendix 3 Information that Industry Provides to the Public in the EPZ Regarding Exposure to Hydrogen Sulphide**

Appendix 3 contains instructions to residents on what to do during an H<sub>2</sub>S release. The ERCB requires that those instructions be included in your company's public information package.

## **Appendix 4 Assessment Matrix for Classifying Incidents**

No additional information is offered or applicable.

## **Appendix 5 Distribution of an Approved ERP**

No additional information is offered or applicable.

## **Appendix 6 Evacuation Requirements**

Please note the change in the evacuation requirement from 20 ppm to 10 ppm.

## **Appendix 7 Assessment and Ignition Criteria Flowchart**

No additional information is offered or applicable

## **Appendix 8 Information Disseminated to the Public at the Onset of and During an Incident**

No additional information is offered or applicable

## **Appendix 9 First Call Communication Form**

Your company can use this form or any other form in recording information pertaining to an incident.

## Appendix 10 HVP Pipeline Emergency Planning Zone Tables

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For the configurations considered in the report the pipeline diameter is predicted to have the largest influence on the downwind centerline extent of the LFL/2 concentration. Based on this assessment the Working Group proposes that, in the absence of site-specific considerations, the relationship between the pipeline diameter and EPZ can be approximated in Table 1. The relationship presented in Table 1 can be used as a starting point for EPZ determination but, this should not preclude more refined assessments that address site-specific considerations.

The ERCB has indicated that it is prepared to accept the proposed EPZ distances for selected diameters for use in your companies ERP. Areas where site-specific considerations could influence the size of the EPZ should be modelled accordingly.

**Table 1: Proposed EPZ Distances for Selected Diameters**

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