cenovus ENERGY

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Well Site and Facility (Process Building) Entry Practice

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Appendices

UNCONTROLLED DOCUMENT IF PRINTED

1.0 Purpose

The purpose of the Well Site and Facility (Process Building) Entry Practice is to describe the minimum requirements to safely enter well sites and facilities (process buildings) to perform operational, maintenance, and inspection activities.

2.0 Scope/Application

This Well Site and Facility Entry Practice applies to all Cenovus worksites or facilities (buildings). A qualified Cenovus employee or an authorized contractor must accompany visitors.

The Alberta and Saskatchewan regulatory requirements are found in Appendix A.

3.0 Well Site and Facility (Process Building) Entry Requirements

Hazard assessment and use of precautionary measures must be considered as a "routine work practice" when entering well sites and facilities.

3.1 Hazards

Typical hazards are:

a) Toxic gas and oxygen deficiency

b) Flammability, explosive, pressure

c) Confined spaces, oxygen displacement, and toxic atmospheres

d) Static electricity

e) Chemicals such as methanol, biocide, demulsifiers, scavengers, etc.

f) Hantavirus (infected deer mice and their droppings)

3.2 Typical Precautionary Measures

Typical precautionary measures are:

a) Hazard assessment and daily worksite inspections

b) Bonding and grounding practices before entry

c) Personal protective equipment (PPE) appropriate for the nature of the hazard

d) Working alone precautions are completed upon arrival

e) Emergency preparedness

f) Well site, lease or facility orientation as necessary

3.3 General Entry Guidelines

1. All workers who may be required to enter a well site, lease, or facility (building) is required to wear a personal gas detection monitor.

   Note: Refer to Cenovus CEN-EHS090, **Gas Detection Practice** for details.

2. Workers must **not** be exposed to a substance that exceeds the occupational exposure limits (OELs) at any time.

   In Alberta, worker exposure to any substance listed in the OHS Code (Schedule 1, Table 2) must be kept as low as reasonably achievable (ALARA) and must not exceed its OEL or ceiling limit listed in Table 2 at any time.

In Saskatchewan, worker exposure to any substance listed in the OHS Regulations (Table 21) must be kept as low as reasonably achievable and must not exceed the contamination limit listed in Table 21.

3. Only normal operating duties such as low-risk routine maintenance (no hot work), meter reading, and inspection of equipment which will not increase the exposure limits, should be performed as per approved BU's site-specific operating procedures (SSOPs).
4. Smoking is **not** permitted.
5. Leave all non intrinsically-safe equipment (i.e., cellphones, flashlights, cameras, lighters, etc.) in your vehicle. Park in designated areas.
6. Check the ground for dead birds or rodents when walking towards the building; check for sounds, odours, signs of leaks, abnormal conditions, or other hazards.
7. Dissipate any static electrical charge from your body by touching the metal building. In the case of a fibreglass building, touch a pre-installed grounding rod.
8. Verify that adequate ventilation of the building exists prior to entry.

   Warning: Extra care and caution has to be taken for buildings that may only have one point of ventilation such as a building with one door, or a building with a door and a window and the window is closed. If a building has two doors, open the downwind door first, then the upwind door. Ventilation fans, if present, should be switched on prior to entry.
9. Take a safe position to the side (not in front) of the door prior to opening it.

   Warning: More time is required for natural ventilation to take place when interior and exterior temperatures are similar.
10. Prior to entry through the doorway, check for any abnormalities or odours within the building. Use a multi-head gas detection monitor to check atmosphere at the doorway.

    Warning: Reaction time for the multi-head gas detection monitor could be as long as **ten** seconds.

3.4 Oxygen-Enriched Atmospheres

At oxygen concentrations above 23.0% in air, the situation becomes dangerous due to the increased fire hazard. Sources of oxygen, when combined with a fuel, have the potential to create an explosive mixture. Oils, grease, and materials contaminated with these substances are particularly hazardous in the presence of an oxygen-enriched atmosphere, as they can ignite extremely easily and explosively as well.

If you have been exposed to an oxygen-enriched atmosphere, ventilate your clothing outside in the open air for at least 15 minutes well away from any ignition sources.

3.5 Building Entry During Cold Weather

a) Cold, dry weather increases the possibility of static electricity accumulation on workers. To ensure that static electricity is dissipated, touch the outside of the metal building or grounding rod prior to entry.

b) Buildings that are closed tight to retain heat also increase the risk of accumulation of hydrocarbon gases inside the building. This increases the risk of: Fire

   - Explosion
   - Oxygen deficiency resulting in knock down

- Hazardous atmosphere exposure (e.g., H_2S, CO, LEL, etc.)

c) Ventilation time may have to be increased before accumulation of hydrocarbon gases are ventilated and safe entry can be accomplished.

3.6 Warning Signs and Wind Indicators

a) All leases, building, facilities, and worksites where H_2S is present in concentrations that exceed 10 ppm must have permanent warning signs posted at:

- Gates and entrances into sour leases, well sites, gathering facilities, compressors, pumping units and stations.
- Doorways and entrance ways into process buildings.
- The base of storage tanks.

b) Signage shall read "Danger H_2S Poisonous Gas" or some such similar warning with the location (legal description) and Cenovus's 24-hour emergency telephone number.

c) Directional wind indicators such as flags and windsocks must be flown in conspicuous locations and visible from the entrance gate.

3.7 Well Site/Lease/Facility Entry Procedures

The well site, lease, and facility entry procedures on the following page are typical for initial entry to secure a safe work area. Assessment requirements for subsequent entries are dependent on initial results and the duration and nature of the work undertaken. All SSOPs take precedent and **must** be followed by all employees and contractors.

ACTION	NOTES
Well Site/Lease Entry	
Assess well site/lease hazards and conditions using **Stop, Look and Listen** protocol.	**Stop, Look and Listen, check for:** a) Anything unusual on the road or around the lease/ equipment. b) Indicators of process instability or upset. c) Air contamination (odour). d) Alarms status (beacons). e) Wind direction. f) Park upwind at least 7.5 metres (25 feet) from potential gas sources.
Facility (Process Building) Entry with Gas Detection	
Assess gas concentration	**Stop, Look and Listen:** Read gas detection monitor located in facility office or mounted on outside of the building, or call the Control Room for instantaneous reading. **Entry Conditions:** **1. Readings below 20% LEL,** bond to ground, open doors to ventilate and enter. Determine source of gas reading and isolate or repair. All efforts should be made to ventilate building to the lowest LEL levels possible; however, entry will be permitted at 10% LEL for **ten** minutes and below 10% for **eight** hours with O_2 levels above 19.5% and continuous monitoring.

ACTION	NOTES
	2. Readings above 20% LEL, are considered an operational emergency. A plan must be built prior to entry that includes risk assessment, backup resources, PPE, continuous monitoring and isolation. Under no circumstances is entry allowed at 40% LEL or greater.
Facility (Process Building) Entry without Gas Detection	
Assess gas concentration	**Stop Look and Listen:** Test the atmosphere inside the building from outside. **Entry Conditions:** **1. Readings below 20% LEL**, bond to ground, open doors to ventilate and enter. Determine source of gas reading and isolate or repair. All efforts should be made to ventilate building to the lowest LEL levels possible; however, entry will be permitted at 10% LEL for 10 minutes and below 10% for **eight** hours with O_2 levels above 19.5% and continuous monitoring. **2. Readings above 20% LEL**, are considered an operational emergency. A plan must be built prior to entry that includes risk assessment, backup resources, PPE, continuous monitoring and isolation. Under no circumstances is entry allowed at 40% LEL or greater.

4.0 Pre-requisite Training and Competencies

Employees should have demonstrated competency in the following:

a) Hazard identification and managing risk.

b) Gas sampling, detection and monitoring: recognized training is an internal Cenovus course, training from the equipment manufacturer, or from external training agencies.

c) Working alone.

d) Emergency preparedness and response.

e) Confined space awareness.

Contract personnel should have demonstrated competency in the following:

a) Cenovus's well site and facility entry guidelines.

b) Gas sampling, detection and monitoring: recognized training is from the equipment manufacturer or an external training agency.

c) Emergency preparedness and response.

5.0 Roles and Responsibilities

Roles and responsibilities for safety documents are described in the link below:

Cenovus CEN-EHS234, Roles and Responsibilities Standard

Roles and responsibilities specific to this Well Site and Facility (Process Building) Entry Practice are described below:

5.1 Business Units/Asset Teams

The Business Units/Asset Teams are responsible for approving or identifying those workers or contractors who are permitted to enter Cenovus buildings or leases when working alone.

5.2 Business Unit/Asset Team Workers/Contractors

Cenovus workers and contractors are responsible for reporting to the Worksite Supervisor any spills, incidents, and/or unusual conditions prior to entering a lease or building and which may occur during the work, and stopping the work if necessary.

6.0 Principles

Hazard assessment and control practices and procedures are fundamental to the effective management of EH&S. The Well Site and Facility (Process Building) Entry Practice supports Cenovus EH&S Management System Element 2, *Managing Risk and Change*, and Element 5, *Regulatory*.

7.0 References

7.1 Internal References

1. Cenovus CEN-EHS022, *Risk, Risk Assessment and Risk Management Description*
2. Cenovus CEN-EHS090, *Gas Detection Practice*

8.0 Management of Change

Proposed changes to this practice can be directed to EH&S Development and MOC

Definitions and Acronyms

Definitions and acronyms for safety documents are described in the link below:

Cenovus CEN-EHS243, Definitions and Acronyms

Appendix A – Applicable Legislation

The Well Site and Facility (Process Building) Entry Practice encompasses requirements of the following legislation.

1. **Alberta OHS Code (2009)**
   a) Part 2 – Hazard Assessment, Elimination and Control
      - All Applicable Sections
   b) Part 4 – Chemical Hazards, Biological Hazards and Harmful Substances
      - All Applicable Sections
   c) Part 10 – Fire and Explosion Hazards
      - All Applicable Sections
   d) Schedule 1, Table 2 Occupational Exposure Limits for Chemical Substances
2. **Saskatchewan OH&S Regulations (to 2009)**
   a) Part III – General Duties
      - All Applicable Sections
   b) Part XXI – Chemical and Biological Substances
      - Section 307 – *Substances Listed in Table 21*
   c) Appendix, Table 21 Contamination Limits