EMERGENCY RESPONSE PLAN (ERP)

Natural Gas Leak – Interior Powerhouse

ERP #0202-A

Rev	Date	Description	Author	Approval
A	Mar. 24, 2026	Issued for Review (IFR)	PAC	

EMERGENCY RESPONSE PLAN

Plant Site – Power Plant & Data Center
Natural Gas Leak – Interior Powerhouse
Olds, Alberta

Issued: March 2026

Facility 24 Hr Emergency Number: To Be Determined

This ERP is supported by the Synapse EMP. ***NOTE:*** *This worksheet must be completed before starting operations.*

Site Name:	Synapse Data Center	**Surface Location:**	04-33-1-W5M
Stars Site #	To be determined	**GPS Coordinates:**	51°48'06.6"N 114°05'26.1"W

Driving Directions:

Located approximately 5 km west of the Town of Olds and is primarily accessed via Highway 27. Emergency responders should travel west from Olds on Highway 27 and enter the site via the southeast access located on the south side of the highway, which serves as the primary emergency access point. Secondary access is available from 44 Street along the west boundary of the site, with an additional tertiary access located at the northwest corner of the property via the local road network. Upon dispatch, responders should be advised to use the Highway 27 access unless otherwise directed, and a Synapse representative will be dispatched to meet and escort emergency services to the incident location.

Access Conditions:

Operational traffic, including heavy haul trucks and equipment, may be present at all access points, and road conditions may change due to ongoing daily operational activities. Emergency responders should exercise caution when entering the site, and where necessary, a Synapse representative will provide guidance or escort to ensure safe and efficient access to the incident location.

Worksite Information	Name	Office	Cell	Residence
To be completed prior to commissioning				

Corporate ERP	24 hr On Call #	TBD	**Alt:**	TBD
Site Safety Manager	24 hr On Call #	TBD	**Alt:**	TBD
VP Operations	24 Hr On Call #	TBD	**Alt:**	TBD

In a Medical emergency the Synapse Supervisor (or designate) will contact:

Emergency: 911 or Non-Emergency Contacts Below

Onsite Medical Contact #	To be determined	To be determined
Project Radio Frequencies	To be determined	To be determined
WCSS (Spill Coop)	To be determined	To be determined
Olds Fire Department	Non-Emergency Line	1-403-556-8880
Alberta Energy Regulator (AER)	Emergency Line	1-800-222-6514
Emergency Management Agency	Town of Olds (Municipality)	1-403-556-6981
RCMP – Olds Detachment	Non-Emergency Line	1-403-556-3324

If this transportation plan requires activation the following steps must be taken:

1. Sound the alarm. If a hazardous environment is suspected, evacuate the area to the muster point and verify personnel with a head count.
2. Notify the Site Supervisor and on-site medic (if assigned) immediately.
3. Assess the situation to identify hazards and implement appropriate controls to stabilize the area and prevent further risk to personnel.
4. Initiate rescue efforts as required and provide first aid within the capabilities of trained personnel.
5. Where medical transportation is required:
    a. Contact 911 and request emergency medical assistance, clearly communicating the nature of the incident, number of injured persons, and their condition, along with the site location (Synapse Data Center, LSD 04-33-1-W5M).
    b. Provide responders with clear access instructions to the site and confirm their understanding of the route.
    c. Assign a site representative to position at the primary site entrance to direct and guide emergency responders to the incident location.
    d. Ensure access routes within the site are unobstructed and safe for emergency vehicles by managing or halting traffic as required.
    e. Continue patient care and monitoring until emergency medical services assume responsibility.
    f. Upon arrival of responders, provide a concise summary of the situation, including patient status, care provided, and any hazards present.
    g. Support emergency responders as required and maintain control of the surrounding area to allow safe and efficient patient transport.

Special Considerations for Air Ambulance Support:

Where required based on patient condition or transport time, Emergency Medical Services may request air ambulance support.

Air medical evacuation services are provided by STARS Air Ambulance. STARS may be activated through 911 dispatch where patient condition or transport time warrants rapid evacuation to a tertiary care facility.

A designated landing zone shall be maintained on-site, with coordinates, access control, and obstruction clearance requirements defined in this ERP.

1. Scenario Definition

This scenario considers a loss of containment of natural gas within the powerhouse building, downstream of the exterior unit emergency shutdown valve and upstream of the gas turbine enclosure. It includes failure of fuel gas piping, valves, flanges, instruments, or associated appurtenances located within the building envelope, as well as any associated fire resulting from ignition of the released gas.

Unlike the turbine-enclosure scenario, this event involves a substantially larger bounded gas inventory and a larger congested indoor volume. The principal hazards are formation of a flammable gas-air mixture within the powerhouse, flash fire, localized or building-scale deflagration, structural damage, and injury to personnel within the affected building.

Detection is provided by combustible gas detectors located throughout the building. Where two or more LEL detectors, or applicable fire detection devices, are activated for more than three seconds, the control logic initiates an automatic turbine trip, closes the exterior unit emergency shutdown valve, and actuates both the building evacuation alarm and the site muster alarm. This voting and time-delay logic is intended to reduce nuisance activation from transient flashes or non-fire optical disturbances while maintaining rapid automatic response to a credible event.

This scenario has been evaluated using the Synapse Risk Matrix and shall be treated as a high-consequence operational emergency requiring immediate automatic isolation, full building evacuation, controlled site response, and escalation in accordance with the Synapse EMP. It represents a conservative operational planning basis and will be further refined during detailed design through Process Hazard Analysis (PHA) and Quantitative Risk Assessment (QRA).

2. Hazard and Inventory Basis

For emergency planning purposes, the fuel gas inventory within the powerhouse is conservatively represented by approximately 250 feet of 4-inch fuel gas piping operating at pressures up to 3000 kPa(g). On a preliminary basis, and assuming a nominal 4-inch line internal diameter of approximately 4.0 inches, this corresponds to an internal piping volume of approximately 0.60 to 0.63 m^3.

Upon depressurization to atmospheric conditions, that trapped inventory expands to approximately 18 to 19 m^3 of natural gas, with an associated methane mass on the order of 12 to 13 kg. This is the appropriate ERP planning basis unless and until detailed piping isometrics confirm a more precise bounded volume between the exterior ESD and the credible leak locations.

This is a critical distinction from Scenario 1. Once the exterior unit ESD closes, the release is bounded and no additional gas is supplied from upstream systems; however, the residual building-side inventory may still discharge through the leak point until the trapped section is fully depressurized. Accordingly, this scenario remains self-limiting after automatic isolation, but the available post-isolation inventory is materially larger and the potential consequences are correspondingly more severe.

Fuel Gas Conditions:

- Pressure up to 3,000 kPa
- Natural Gas (primarily methane)
- Confined to powerhouse
- Gas volumes approximately 0.62 m^3 at 3000 kPa
- Upon expansion to atmosphere, total volume 19 m^3
- Mass of gas ~ 13 kg

3. Energy and Consequence Characterization

The chemical energy associated with approximately 13 kg of methane is on the order of 650 MJ. Applying a conservative vapour cloud explosion efficiency for a congested internal building event, this corresponds to an equivalent energy release of approximately 60 to 65 MJ, or roughly 15 kg TNT equivalent for ERP screening purposes.

That does not mean the event should be described publicly as a 15 kg TNT explosion. It does mean, however, that this scenario must be treated as a serious internal building event capable of causing major localized damage if ignition occurs before the atmosphere is diluted below flammable limits.

Within the powerhouse, ignition of this inventory could produce a flash fire or deflagration sufficient to damage piping, cable trays, wall cladding, structural framing, and adjacent equipment, with the potential for secondary fires to also occur. Personnel remaining within the building during the initial release or ignition phase would be exposed to an unacceptable life-safety hazard.

Based on the bounded inventory, automatic isolation, and building separation distances, the event is expected to remain principally confined to the affected powerhouse and immediate plant area following automatic isolation. This scenario is treated operationally as a major internal building emergency until confirmed otherwise through detailed design, PHA, and QRA.

4. Engineered Safeguards and Design Controls

The powerhouse fuel gas system incorporates multiple independent and redundant layers of protection designed to detect, isolate, and control a loss of containment event and to limit escalation,

1. **Detection:**
    - Combustible gas detection (LEL) and fire detection systems provide continuous monitoring throughout the powerhouse.
    - Fixed LEL gas detectors are installed throughout the building
    - Detection logic requires:
        - 2+ LEL detectors in alarm, or
        - Applicable fire detection (fire-eyes)
    - 3-second voting / confirmation delay:
        - prevents nuisance trips (e.g. lightening, optical flashes, etc.)
        - maintains rapid response to credible events

2. **Automatic Shutdown:**
    - Detection of a confirmed hazardous condition initiates immediate automatic shutdown.
    - Turbine trip initiated automatically, without required operator action
    - Shutdown logic is hardwired / safety system driven

3. **Fuel Gas Isolation:**
    - The fuel gas system is designed with a fail-safe isolation philosophy:
        - Exterior unit ESD valve (located outside the building) is fail closed
        - Isolation of building from upstream supply is automatic
        - Downstream isolation valves are fail closed
        - vent valves between isolation points are fail open
    - This ensures that:
        - Gas supply is immediately terminated to the building
        - The event becomes bounded to trapped downstream inventory only

- The trapped section is automatically depressurized

4. **Inventory Limitation:**
   - System configuration inherently limits the available fuel inventory following isolation
   - Bounded inventory defined by ~ 250’ of 4” piping downstream of the ESD
   - Equivalent to approximately 0.62 m^3 pressurized volume, or 18.9 m^3 of free gas at atmospheric conditions

5. **Building Detection-Driven Alarm and Evacuation**
   - Detection logic is directly tied to personnel protection systems
     - Automatic activation of building evacuation alarm
     - Site-wide muster alarms
   - This results in immediate evacuation signaling for exposed personnel, and a rapid transition to controlled emergency response

6. **Fire Protection Systems (Sprinklers)**
   - Each powerhouse is equipped with automatic fire suppression systems, which automatically activate by heat detection or fire conditions (fire-eye activated deluge).
   - This system controls or suppresses secondary fires, limit fire spread, and protect structures and adjacent equipment.

7. **Ignition Control Measures**
   - Design and equipment / instrumentation selection reduces probability of ignition during a gas release.
   - Electrical equipment is selected and installed per the applicable hazardous area classification.
   - Controlled sources of ignition include motors, panels, and instrumentation.
   - Ventilation and gas detection further reduce ignition likelihood.

5. Event Progression

The expected sequence of events is as follows:

1. A leak develops within the powerhouse fuel gas piping or associated equipment. Natural gas is released into the building and begins to accumulate or disperse depending on leak rate, local ventilation, and building air flow conditions.
2. If two or more LEL detectors, or applicable fire detection devices, remain in alarm for more than 3 seconds, the automatic protection logic executes.
3. The affected turbines trip, the exterior unit ESD closes, the buildi9ng evacuation alarm sounds, and the site muster alarm is initiated.
4. Once the ESD closes, no further upstream gas is supplied. The trapped inventory within the building-side piping continues to discharge through the leak point until depressurized. An automated vent valve opens (which fails open), redirecting the trapped gas to a safe location.
5. If ignition occurs during this period, the result may be a flash fire or deflagration within the powerhouse.
6. If a sustained fire develops, the sprinkler system activates to control fire spread and protect surrounding equipment and structures.
7. Following isolation, the incident transitions from an active fuel-fed release to a bounded residual release and post-event building emergency.
8. Atmosphere recovery, fire control, structural assessment, and controlled re-entry then become the priorities.

All primary protective actions (trip, exterior isolation, depressurization, alarm initiation, and evacuation signal activation) are fully automatic and do not rely on operator intervention.

6. Emergency Response Philosophy

The emergency response philosophy for this scenario is materially more conservative than for the turbine-enclosure case. The primary risk to personnel exists during the initial release and any potential ignition phase before the trapped inventory has fully discharged and the building atmosphere has been rendered safe. Accordingly, no attempt shall be made to investigate the leak source from within the powerhouse once a confirmed gas alarm or fire condition has initiated automatic shutdown.

Upon alarm, all personnel within the affected powerhouse shall evacuate immediately using designated egress routes and proceed to muster in accordance with the established alarm protocol and wind direction assessment. Access to the affected building shall be prohibited except by authorized emergency responders and only after the Incident Commander determines that re-entry conditions have been satisfied.

Operators shall verify from the control system that the turbine trip has occurred, the exterior unit ESD has closed, and alarm actuation has been completed. They shall also determine whether fire indication persists, whether detector readings are decreasing, and whether additional units or common systems are affected.

External emergency response shall be initiated in accordance with the Synapse EMP wherever this event involves confirmed fire, explosion, injury, uncertainty regarding isolation status, sustained gas detection, visible structural damage, or any indication that the event may extend beyond the affected building.

On confirmed gas detection or fire within the powerhouse, the affected building and immediate surrounding plant area shall be treated as an exclusion zone until automatic isolation has been verified, detector readings are confirmed to be decreasing, fire status is known, and the Incident Commander authorizes controlled access.

Based on the current screening-level TNT-equivalent analysis of the bounded post-isolation gas inventory, the initial responder exclusion zone for a confirmed powerhouse gas release / ignition event should extend to at least 20 m from the affected building, pending confirmation of isolation, gas decay, fire status, and structural condition. This value is conservative for ERP purposes and remains subject to refinement through detailed PHA/QRA.

Re-entry shall not occur until the building atmosphere has been confirmed safe, the fuel gas system has been verified isolated and depressurized, fire risk has been eliminated or controlled, and the structural and mechanical integrity of the area has been assessed. Where sprinkler discharge or combustion products are present, re-entry shall also consider slip, electrical, visibility, and post-fire atmosphere hazards.

In the event that an automated isolation fails to activate, manual activation of upstream ESD valves will be executed by operations. Manual isolation may be required, and will be determined by the Incident Commander based on the conditions of the event. Should upstream isolation be required, please refer to ERP# 0203 – Natural Gas Leak – Gas Header System.

Key Considerations:

This scenario is bounded by automatic detection and exterior isolation, but it involves a significantly larger trapped fuel gas inventory than the turbine-enclosure case and therefore constitutes a major internal building emergency. T he event is expected to remain principally within the affected powerhouse and immediate plant area once automatic systems actuate, but it shall be managed operationally as a high-consequence event pending confirmation of safe conditions.

This scenario represents a conservative operational ERP basis developed from preliminary design information. The assumed trapped gas inventory of approximately 250 feet of 4-inch piping at 3000 kPa shall be verified and updated during detailed design. Final consequence characterization, escalation thresholds, and any public protective action planning shall be refined through formal PHA and QRA studies.

7. Incident Command (ICS) Structure

Emergency response at the Synapse site will be managed using the Incident Command System (ICS) appropriate for operational activities. The Site Supervisor (or designate) will assume the role of Initial Incident Commander (IC) and is responsible for initiating emergency response actions, assessing the situation, and directing site personnel.

The Incident Commander shall utilize the Synapse Risk Matrix as a decision-support tool during emergency response to evaluate incident severity, potential escalation, and required response actions. This includes determining the need for full site evacuation, expansion of the Incident Command structure, and engagement of external emergency responders. The matrix provides a consistent framework to ensure that response actions are proportional to the level of risk presented by the incident.

Depending on the nature, complexity, or duration of the incident, command may be formally transferred to one of the following:

- On-Duty Senior Manager
- Site Safety Manager
- Designated Emergency Lead

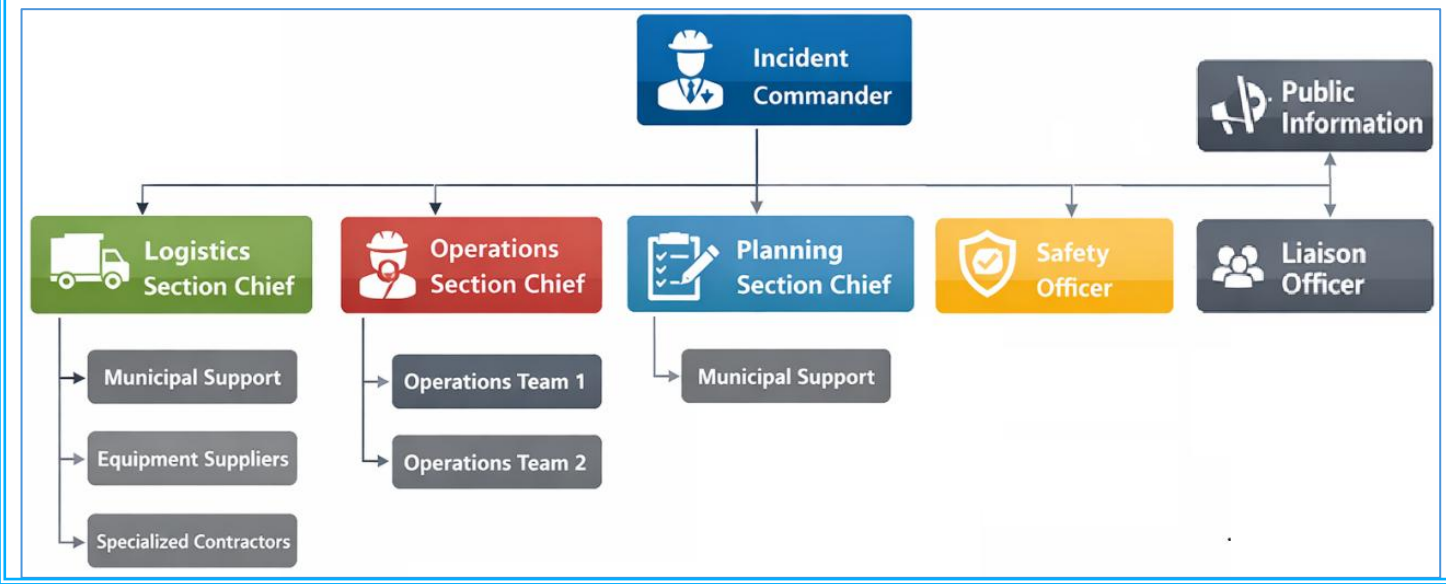
The transfer of command will be clearly communicated to all personnel involved in the response.

Upon arrival of external emergency services, command will transition to the appropriate responding authority as required, with Synapse personnel providing support, site-specific information, and access coordination. Synapse will provide technical support and site-specific hazard information continuously.

All personnel must follow the direction of the Incident Commander during an emergency.

Supporting roles may be assigned as required to manage the response effectively, including:

- **Safety Lead:** monitors hazards and ensures responder safety
- **Operations Lead:** coordinates on-site response activities
- **Communications Lead:** manages internal and external communications
- **Logistics Support:** facilitates site access, traffic control, and resource coordination



8. Muster Locations & Personnel Accountability

In the event of an emergency requiring evacuation, all personnel must immediately stop work, assess wind direction using site windsocks, and proceed to the designated muster location as determined by the site alarm. Two muster locations are established for the Synapse site:

- West Muster Point: Located at the west gate (Highway 2A)
- South Muster Point: Located at the main gate (Highway 27)

Alarm signals are used to direct evacuation as follows:

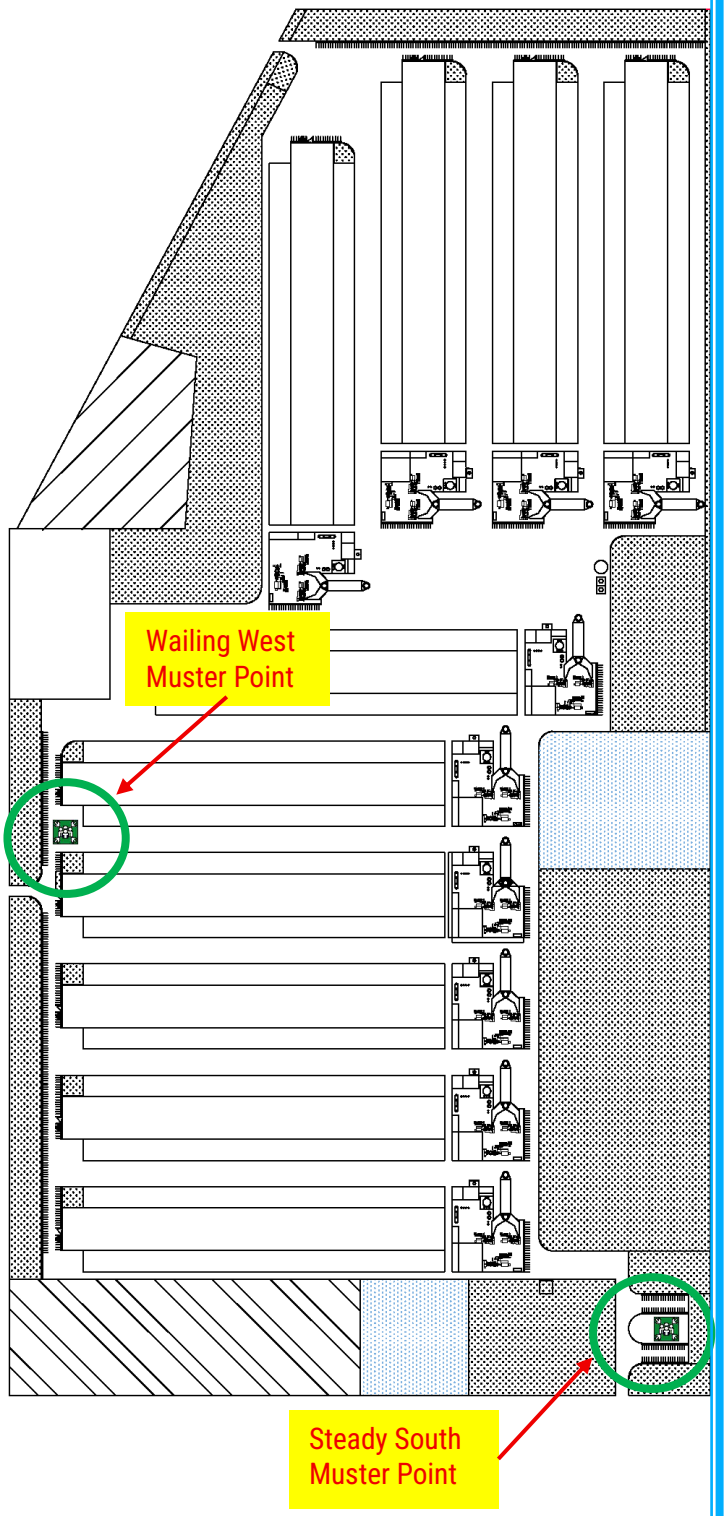
- Wailing alarm: Evacuate to the West Muster Point
- Steady alarm: Evacuate to the South Muster Point

Personnel must always consider wind direction and proceed to the designated muster point in a manner that avoids exposure to potential hazards. The principle of “wailing west, steady south” is to be used as a simple reference during emergency conditions.

Supervisors are responsible for directing personnel to the appropriate muster point and ensuring that all workers under their control are accounted for. Each contractor is responsible for maintaining an up-to-date record of personnel on site and must report their headcount to the Incident Commander or designate.

Upon arrival at the muster point, personnel must remain in place and await further instruction. Supervisors will conduct headcounts and identify any missing personnel. Any unaccounted-for individuals must be reported immediately to the Incident Commander to support rescue planning and response prioritization.

No personnel are permitted to leave the muster area or re-enter the worksite until authorization is provided by the Incident Commander. Muster locations and evacuation routes are shown in the site drawings included in this section.



9. Emergency Site Access and Traffic Control

During an emergency, immediate control of site access and internal traffic is required to ensure safe evacuation of personnel and unobstructed entry for emergency responders. Upon activation of an emergency response, all non-essential vehicle movement must cease, and equipment operators shall safely shut down and secure their equipment where conditions permit.

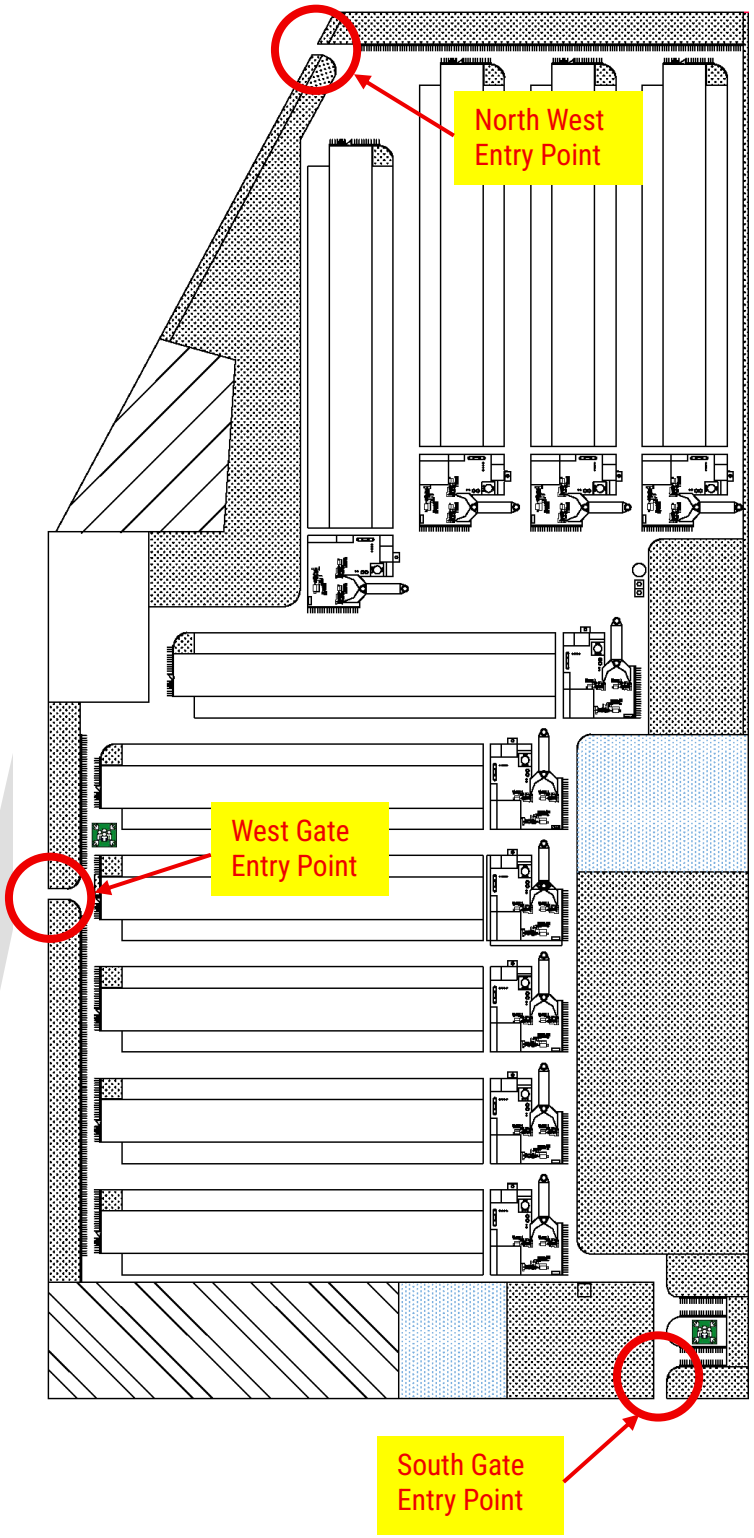
The Incident Commander, or designate, will direct site access control and traffic management activities. A designated site representative will be assigned to proceed to the primary site entrance to meet and escort emergency responders to the incident location. Where required, additional personnel may be assigned to key access points to support traffic control and maintain clear routes.

Primary access for emergency responders is via the southeast entrance from Highway 27. Secondary access is available via the west entrance along Highway 2A, with additional access at the northwest corner of the site if required. Access routes must be kept clear of obstructions at all times during an emergency.

Normal operational traffic, including heavy haul trucks and equipment, must be halted or redirected to ensure emergency vehicles can safely enter and maneuver within the site. Internal routes to the incident location and designated staging areas must be maintained and controlled.

Personnel assigned to traffic control shall ensure that emergency responders are provided priority access and that evacuation routes to muster points remain clear and safe for personnel movement.

All site personnel must follow direction provided by site supervision and traffic control personnel during emergency conditions.



10. Emergency Communication and Alarm Protocol

Effective communication during an emergency is critical to ensuring a coordinated and safe response. The Synapse site utilizes audible alarms, radio communication, and direct supervision to communicate emergency conditions and required actions to all personnel.

In the event of an emergency, any worker may raise the alarm by notifying supervision or activating available site alarm systems. All personnel must immediately stop work and respond in accordance with the alarm signal and direction provided.

Audible alarm signals are used to indicate evacuation requirements:

- **Wailing alarm:** Evacuate to the **West Muster Point (Highway 2A)**
- **Steady alarm:** Evacuate to the **South Muster Point (Highway 27)**

Personnel must follow the established evacuation protocol of "**wailing west, steady south**" and consider wind direction by referencing wind socks located throughout the site, when proceeding to the designated muster location. Non-essential radio traffic shall be minimized during emergency response to ensure clear communication channels.

Site communication during an emergency will be maintained using available communication systems, including:

- Two-way radios
- Mobile phones
- Direct verbal communication through supervisors

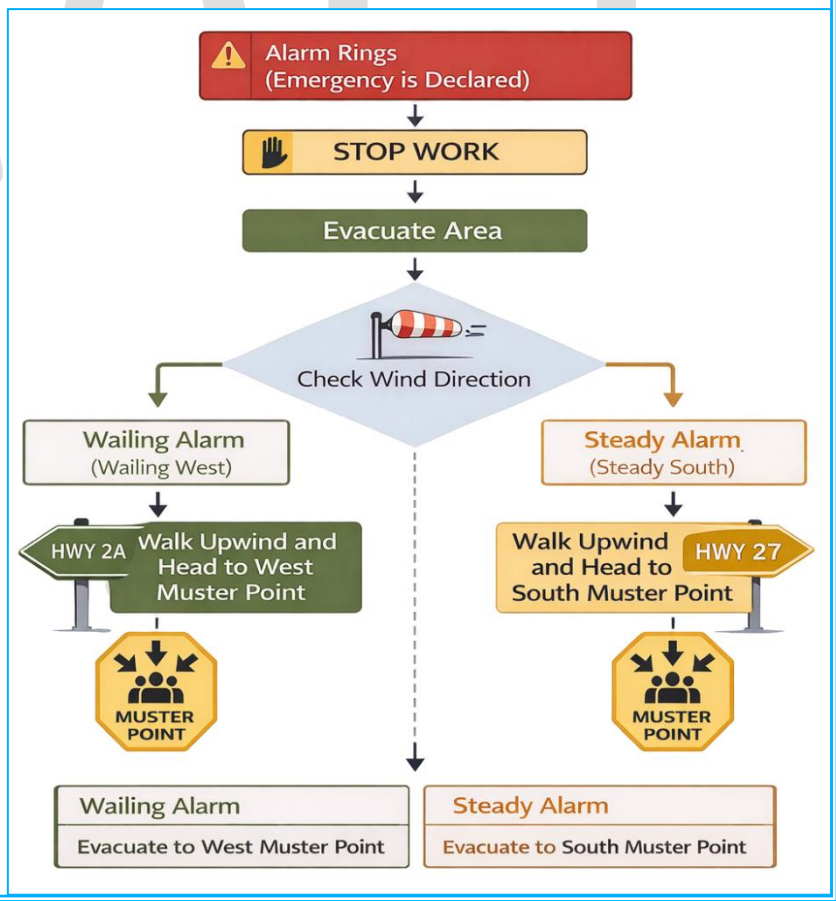
The Incident Commander is responsible for coordinating communications during an emergency, including:

- directing site response actions
- assigning personnel to key roles
- coordinating with emergency responders

Where required, external communication with emergency services will be conducted via 911.

Communication with regulatory agencies and external stakeholders will be managed by designated personnel in accordance with the Synapse Emergency Management Plan (EMP).

Roll-call will be completed at the designated Muster Station to ensure all personnel are accounted for.



11. Medical Response and On-Site Resources

The Synapse site will maintain appropriate medical response capability to address injuries and medical emergencies that may occur during daily operational activities. The level of medical response capability is aligned with the risk profile of operational activities as defined by the Synapse Risk Matrix, ensuring that resources are appropriate to the potential severity and likelihood of injury scenarios. The level of support assigned will be commensurate with workforce size, site conditions, and risk profile, and may include trained first aid personnel and/or an on-site medic where required.

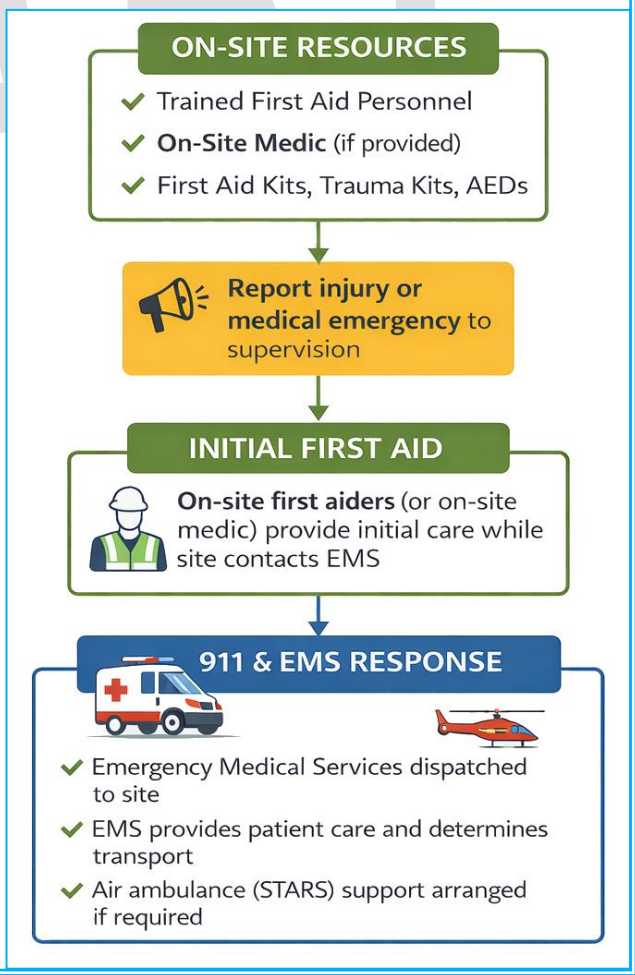
All personnel are responsible for immediately reporting injuries or medical emergencies to supervision. Trained first aiders will provide initial care within the scope of their training until advanced medical support arrives. Where an on-site medic is present, they will assume responsibility for patient care and coordination with Emergency Medical Services (EMS).

First aid equipment will be strategically located throughout the site and may include:

- First aid kits appropriate to workforce size and activity
- Automated External Defibrillators (AEDs), where provided
- Trauma kits and emergency medical supplies

Emergency medical transportation will be coordinated through 911, with site personnel providing clear access and escort to responding EMS. Where required based on patient condition or transport time, EMS may request air ambulance support. A suitable landing area will be identified and secured on-site to support air medical operations if needed.

All medical incidents will be managed in accordance with this ERP and reported in accordance with applicable regulatory and company requirements.



12. Regulatory Notification and Reporting Triggers

The determination of regulatory notification requirements is supported by the Synapse Risk Matrix, which defines thresholds for consequence severity and potential off-site impact. Incidents exceeding defined risk thresholds will trigger escalation protocols, including notification to applicable regulatory authorities and external stakeholders.

Certain incidents occurring during normal operation may require notification to regulatory authorities. The Incident Commander, or designate, is responsible for ensuring that appropriate notifications are initiated in accordance with applicable regulatory requirements and the Synapse Emergency Management Plan (EMP).

Regulatory notification may be required for, but is not limited to, the following types of incidents:

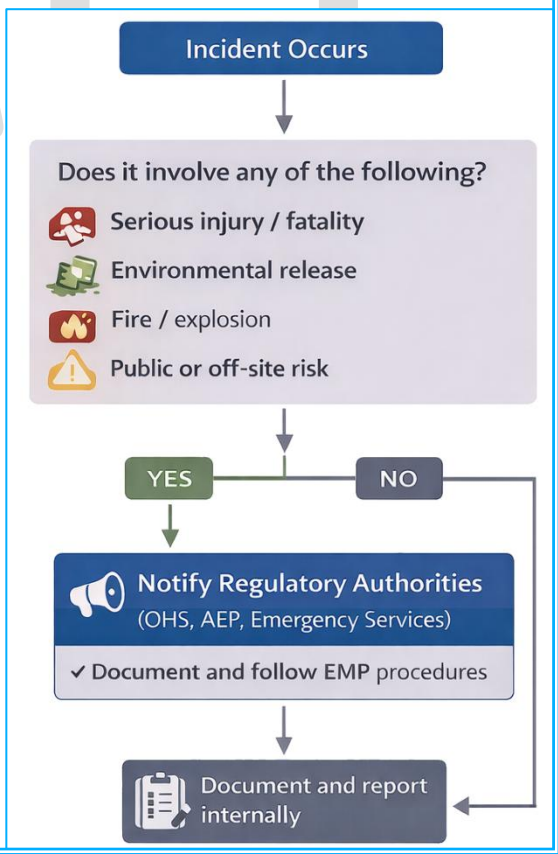
- Serious injury or fatality
- Uncontrolled fire or explosion
- Significant environmental release (e.g., fuel, oil, or hazardous materials)
- Release of a substance that may pose a risk to the public or environment
- Structural failure or major equipment incident with potential off-site impact

Where any of the above conditions are identified, the Incident Commander shall ensure that appropriate authorities are notified as required, which may include:

- Alberta Occupational Health and Safety (OHS)
- Alberta Environment and Protected Areas (AEP)
- Local emergency services or other regulatory agencies, as applicable

Initial notifications may be made via 911 or direct contact with regulatory agencies, as appropriate. Formal reporting and follow-up notifications will be completed in accordance with the Synapse EMP and applicable regulatory requirements.

All incidents must be documented and reported internally, regardless of whether regulatory notification is required.



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Risk Matrix

Impact Severity	Health & Safety	Environmental / Regulatory	Asset Damage / Business Interruption	Reputation	Financial
1	Redacted				
2					
3					
4					
5					

	E	D	C	B	A
1	Moderate	Urgent	Critical	Critical	Critical
2	Moderate	Moderate	Urgent	Critical	Critical
3	Minor	Moderate	Moderate	Urgent	Urgent
4	Minor	Minor	Moderate	Moderate	Moderate
5	Minor	Minor	Minor	Minor	Moderate

Residual Risk Management	Action	Time Frame	Responsible Authority
Critical	Redacted		
Urgent			
Moderate			
Minor			

Descriptor	Highly unlikely (design controlled)	Possible but not expected (may have occurred in industry)	Could occur (or has happened at Synapse)	Expected in similar projects (may occur with Synapse lifespan)	Frequent / recurring (common at Synapse)
Frequency / Period (year, cycle, etc.)	1/10,000	1/1,000	1/100	1/10	1/1
Probability	< 0.01%	0.01% to 0.1%	0.1% to 1%	1% to 25%	> 25%
	E	D	C	B	A
Likelihood					