

BYPASSING SAFETY SHUTDOWN DEVICES

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CANADA PROCESS SAFETY GUIDELINE

Purpose: To provide the recommended minimum requirements to manage work involving bypassing safety shutdown devices. Each Operating Area is to utilize specific processes and procedures to meet the spirit of this high-level document.

Examples of Critical Systems

The following table lists examples of critical systems that may require bypassing safety shutdown processes:

Critical System	Examples	Critical Device
Locked open / locked closed valves	Car seal or maintenance Lock Lists	PSVs, Presco, high pressure shutdown bypasses, inlet ESD bypasses
Fire and Gas Detection	H2S and LEL detection, water and deluge system	Shutdowns, alarms, logic control (PLC), hydrants, fire-water pumps, detection heads
Emergency Shutdown (ESD) and Pressure Shutdown Device (PSD)	Inlet headers, sales points and compressor blowdowns	Valves, switches, control systems (DCS) solenoids, relays
Call-out/Call-Down systems	1-800#, radio systems	Alarms, on-call systems, emergency procedures
Pressure/Vacuum Relief	Tanks, piping, vessels	Pressure safety valves and rupture disks, thief hatches, pressure regulators
Protection Instrument	Local shutdown panels	PLC, temperature S/D, pressure S/D, safety sensitive end devices (HLSD)
HVAC	Ventilation fans	Links to ESD system, fresh air supply fans
Flashback Protection	Flame arrestors	
Containment	Systems to protect facilities or collects unexpected releases or fluids	Berms, spill-containment dikes, firewalls, drains, and siphons that allow flow out of a system.

Normal Operating Conditions

- Under normal operating conditions, safety devices and valves must not be in bypass mode or position.
- All valves that are in place to allow the bypass or isolation of safety systems, must be secured in their normal operating position.

Before completing a bypass


Before completing a bypass identify:

- Alternative approaches.
- Other bypassed, inhibited or defeated safety protection devices.
- Additional defenses.

Determine System Bypass Type

Determine whether the bypass will be an Attended System Bypass or Unattended System Bypass as per definitions below:

System Type	Definition
Attended System Bypass	An attended system bypass is where a CPC representative is consistently monitoring the bypassed equipment to ensure the equipment operates within design parameters.
Unattended System Bypass	An unattended system bypass is when a critical system is bypassed and does NOT have a CPC representative monitoring the equipment.



NOTE: Unattended critical system bypasses are acceptable as a temporary short-term measure (<7 days ideally and up to 14 days maximum). Longer term bypasses must be identified to the Process Safety Team for consideration and potentially addressed via Management of Change Processes.

Conducting an Attended System Bypass

When conducting an attended system bypass the following applies:

- Complete the Bypass Control Form for all critical systems or device bypasses.
- Forward completed forms to respective supervisor for review, approval and retention.
- Understand all shutdown and isolation procedures
- Monitor equipment and maintain operating limits.

Conducting an Unattended System Bypass

Before conducting an unattended system bypass, the following requirements must be met:

- Complete a hazard assessment and determine risk of bypass
 - Complete the Bypass Control Form.
 - Forward completed forms to the respective supervisor for review, approval, and retention.
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Approval Requirements for Unattended System Bypass

Approval requirements for unattended bypasses are as follows:

- Obtain approvals as indicated in the Approval Guidelines for Risk Acceptance table.

If a CPC representative cannot be physically present, verbal approval is acceptable. Notation on the bypass control sheet must include:

- Name.
 - Date/time approval was obtained.
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Bypass Extensions

When bypasses are implemented, extensions must consider:

- Any bypasses that will extend past 14 days will require a risk assessment be conducted.
 - Appropriate approvals must be obtained for all bypass extensions.
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