



# Bypassing Critical Protections Standard

**MSW Process – Contractor Communication**

**Thailand Profit Center  
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# Purpose – Scope & Objectives

## Purpose

To ensure that bypassing of critical protections is performed in a safe and controlled manner.

## Objective

This standard establishes the requirements for the safe performance of the necessary bypassing of critical protections.

## Scope

This standard is applicable to plant/platform **critical protective devices or systems where it is possible to apply a hardware or software bypass, force, inhibit, override, or their electrical equivalent.**

# Purpose – Scope & Objectives

**This standard does not apply to the following:**

- When the purpose of the bypass is for Lockout/tagout. For lockout/tagout, please see GU – **Isolation of Hazardous Energy Standard**.
- **“Startup overrides”** designed with automatic removal after a specified time delay
- **Permanent bypasses**, the application of bypasses that change the basis of design as it relates to safety and/or critical protections that are already properly isolated, must be managed under the GU - Management of Change Process and/or the GU - Isolation of Hazardous Energy Standard.

**NOTE: This standard is not intended to replace the Isolation of Hazardous Energy Standard. However, on occasion it may be used in conjunction with the Isolation of Hazardous Energy Standard.**

# Requirements

1. Personnel involved in the authorization, approval, and implementation of bypassing critical protections shall be trained and competent in the roles for which they are responsible.
2. Hazards involved with bypassing critical protections for maintenance or testing, planned or unplanned, must be assessed, and alternative protections must be identified.
3. Bypassing, isolating, or removing critical protections during upset/abnormal operating conditions in order to maintain production is strictly forbidden.
4. **Only a minimum number of critical protective devices shall be bypassed at a time. There shall be at least one other layer of protection whenever a critical protection is on bypass.**
5. Facility management shall conduct periodic audits and verifications to ensure compliance to this standard.

## Definitions

**Bypass** - To temporarily block out, isolate, override, inhibit, force, jumper, or disable a device or system so that it will not perform its designed function for the purpose of testing, maintenance and startup.

***NOTE:***

For the purpose of this standard, the words **“bypass,” “isolate,” “override,” “inhibit,” “force,” “jumper,” “block,” “disable”** or any other term used to describe the temporary act of disabling a critical protective device or system have the same meaning.

# Definitions

**Critical Protections** - Devices or systems designed to protect personnel, the environment, process, equipment and properties from an undesirable event. Functional critical protections are a vital component of safety systems. They are designed and installed to ensure safe, reliable and environmentally sound operations. Critical protections consist of hardware and software which include, but are not limited to, the following:

- Shutdown devices or systems such as Pressure Safety Low Low (PSLL), Pressure Safety High High (PSHH), Emergency Shutdown (ESD) valves, etc.
- Fire and gas detection and fire suppression devices such as fire pumps, deluge systems, fusible loops, CO2 fire extinguishing systems, etc.
- Pressure Safety Valve (PSV), Blowdown Valve (BDV) and associated valves
- Safety critical manual valves that are (normally) locked open or closed
- Equipment safeguards, overspeed trip, fired equipment flame detectors and similar safety systems



## Roles and Responsibilities

Roles must be clearly defined, and personnel must meet the training and competency requirements of this standard prior to starting work.

The following roles and responsibilities are specific to Bypassing Critical Protections and are further defined in the GU –Training Requirements Tool:

- Person Authorize a Bypass
- Qualified Person

The intent of this SWP is ensure any bypass, inhibit, forces, jumped are properly authorized and controlled -

**Tenet #3**

# What Leaders Can Do to Support Bypassing Critical Protections SWP?



- Understand the intent of Bypassing Critical Protections and the Isolation of Hazardous Energy SWP
- Implement Bypass Log and ensure off/oncoming shift sign to acknowledge the operating condition
- Provide Bypass Display Board
- Minimize bypass of critical protections. At least one layer of protection in place when doing bypass
- Ensure appropriate approval before bypassing equipment
- Tag bypassed devices
- Audit bypass of critical devices, DCS, PLC and bypass log