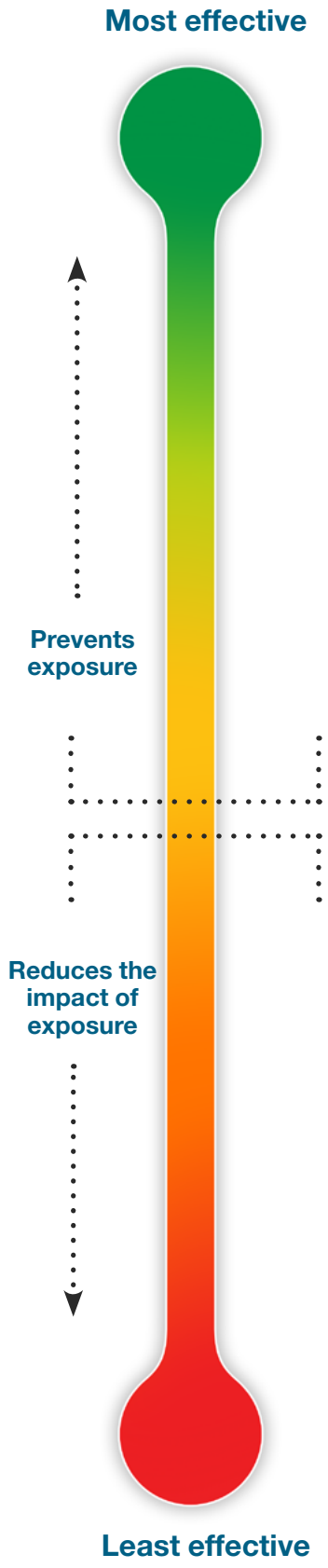
Using the hierarchy of controls to strengthen defences

When reviewing controls, it's important to consider not just whether a control exists, but how effective it is at preventing serious harm. The hierarchy of controls provides a structured way to assess the strength and reliability of safeguards used to manage serious incident and fatality risk.

Controls can serves one of two purposes: they either prevent exposure to a hazard or reduce the impact if exposure occurs. In general, controls that remove the hazard or isolate workers from it are more reliable than those that depend on consistent human behaviour.



Elimination

Elimination removes the hazard entirely from the task, process or operation. Since the hazard is removed, workers cannot bypass this control, giving the highest level of protection.

Substitution

Substitution replaces the hazard, or a hazardous component, with a less dangerous alternative. While generally effective, substitution can fail if workers do not use the new process or material as intended.

Engineering controls

Engineering controls use physical, mechanical or electrical means to isolate workers from the hazard. Examples include guarding, barriers, interlocks or ventilation systems. These controls are effective, but may still rely on proper use and maintenance.

Administrative controls

Administrative controls direct how workers perform tasks through policies, procedures, training, scheduling or warnings. These controls are more vulnerable to failure because they depend heavily on worker decision-making and conditions such as time pressure or fatigue.

Personal protective equipment

Personal protective equipment protects the worker rather than controlling the hazard. Because it depends on proper selection, fit and use, personal protective equipment is the least reliable form of control and should not be the primary defence against high-severity hazards.

When verifying controls during the CHECK phase, organizations should prioritize strengthening higher-order controls whenever possible. Administrative controls and personal protective equipment can help, but they work best when supporting stronger controls or hazards that organizations have engineered out or eliminated, rather than replace them.