ENERGY
SAFETY
CANADA

Line of Fire Program Management

How to Build and Use a Line of Fire Program

The National Safety Association
for Canada's Energy Industry

Edition: #1
Release Date: October, 2025
Revised: October, 2025

Disclaimer

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For over 75 years, Energy Safety Canada has been the national safety association for Canada's energy industry. Created by industry, for industry, we are dedicated to keeping energy workers safe and driving safety performance.

What We Do:

- Deliver industry-recognized training to meet industry needs.
- Collaborate with industry to drive continuous safety improvements.
- Provide safety and labour market data, insights and tools.
- Serve as the industry certifying partner for the Certificate of Recognition program.

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Preface

Purpose

This guideline aims to help companies design, implement, manage and evaluate an effective program to prevent “line of fire” incidents in workplaces with high- and low-energy activities. It is intended for energy industry supervisors, managers, health and safety personnel, senior managers and executives, emergency responders, stakeholder groups and safety committees, as well as frontline workers and those responsible for developing and implementing a Line of Fire Program.

It provides a framework for program development, outlining key tools and concepts, as well as the best approach to keep a Line of Fire Program fresh and relevant. The information in this document, along with other information sources referenced, is intended to help companies build an effective, risk-based program that is scalable to suit a variety of operational areas.

Project Scope and Limitations

The guideline is not intended to replace in-depth safety training, but to provide a framework for designing and implementing a Line of Fire Program. It offers a structured approach to help increase awareness of “line of fire” hazards and explain how work planning can support safety.

Planned work is not about the assigned tasks. It is about identifying, assessing and mitigating hazards before they become risks — before the job even begins.

Built on industry’s best practices, this guideline outlines the critical safety concept that is “line of fire” and its related approaches, as well as program components — with practical tools, customizable templates and enhanced hazard mitigation strategies. It provides a program outline, implementation plan and tools for evaluation, along with supplementary resources.

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1.0 Introduction

A Line of Fire Program is an essential part of an organization's health and safety management system.

"Line of fire" incidents occur when a person is in the direct path of a moving object, high- or low-energy force or hazardous release. In essence, the term "line of fire" is about being in harm's way.

A comprehensive and effective Line of Fire Program takes proactive steps to ensure workers are not put in this position. Assessing the state of a company's current health and safety system — including identifying missing elements — can help determine the steps necessary to achieve an effective Line of Fire Program.

1.1 Program Objectives

The goal of a Line of Fire Program is to:

- Increase awareness of "line of fire" hazards
- Differentiate between high-energy and low-energy activities
- Outline concepts and provide tools to assess the risks of "line of fire" scenarios/situations
- Implement tailored safety measures to minimize risks
- Encourage continuous improvement by learning from mistakes and near misses rather than focusing on blame and punishment.

2.0 Life Saving Rules

While many companies have health and safety rules designed to save lives, these are not consistent from one organization to the next. Standardization is an important part of Energy Safety Canada's strategy to improve safety outcomes and reduce inefficiencies.

The Safety Standards Council — a key component of Energy Safety Canada's governance — includes executive representatives from companies of varying sizes across industry sectors. Together, council members agreed on 10 standard life saving rules (LSR), which focus on critical workplace hazards and outline essential behaviours workers must follow to stay safe.

Companies have health and safety rules and actions designed to save lives.

The 10 Life Saving Rules (LSR) promoted by Energy Safety Canada focus on critical workplace hazards and outline essential behaviours workers must follow to stay safe.

Now a set of globally recognized safety principles designed to prevent serious injuries and fatalities in high-risk industries, these LSR have been integrated into the Line of Fire Program.

They emphasize the need for awareness and risk assessments, safe work practices, using barriers and controls, and properly handling tools and machinery.

The LSR promoted by Energy Safety Canada are:

Additional information is available on Energy Safety Canada's Life Saving Rules page.

Confined Space

Obtain authorization before entering a confined space

Working at Height

Protect yourself against a fall when working at height

Work Authorization

Work with a valid permit when required

Energy Isolation

Verify isolation and zero energy before work begins

Line of Fire

Keep yourself and others out of the line of fire

Bypassing Safety Controls

Obtain authorization before overriding or disabling safety controls

Driving

Follow safe driving rules

Hot Work

Control flammables and ignition sources

Safe Mechanical Lifting

Plan lifting operations and control the area

Fit for Duty

Be in a state to perform work safely

3.0 Line of Fire

The “line of fire” concept is a critical safety principle for preventing incidents, particularly in workplaces involving high-risk activities, such as construction, manufacturing, and energy industries.

“Line of fire” situations are those when workers are at risk of being exposed to hazardous energy, struck by objects or caught between objects.

Stored Energy	Striking Hazards	Crushing Hazards
• Energy release hazards include explosions, electrical shocks or pressurized material releases • Worker comes in contact with stored energy	• Struck-by hazards include flying, falling or dropped objects, vehicles and equipment • Worker is struck by or strikes against an object	• Caught-in or caught-between hazards include being pinned by machinery, trapped between objects or caught in collapsing structures • Worker is caught in, on or between an object, which includes hand injuries

3.1 Understanding "Line of Fire"

The "line of fire" concept is a proactive strategy that helps companies anticipate risks and implement control measures to ensure the safety of their employees and assets.

The goal in understanding and applying this concept is to eliminate hazards, reduce risk exposure and ensure workers are aware of their roles and responsibilities in maintaining safety.

3.2 The Need for a Line of Fire Program

The "line of fire" concept is part of the Life Saving Rules (LSR) — all of which relate to unsafe conditions and acts. These principles are integral to workplace safety in Canada.

While Canadian Occupational Health and Safety regulations do not explicitly mandate Line of Fire Program, they do require employers to:

- Identify hazards
- Control risks
- Train workers
- Conduct incident investigations.

"Line of fire" hazards exist at many worksites, but they — and the opportunity to correct them — are often overlooked.

Hazard identification is a critical skill for everyone involved in a work environment where potential risks to safety, health and property exist. It is foundational for preventing injuries, illnesses and incidents.

Employers play a crucial role in creating a work environment where people can recognize and manage hazards effectively, including those that put them in the "line of fire."

By equipping workers with the knowledge and skills to identify their own exposures to risk, assess situations in real time and apply the right safety measures, organizations can support better decision-making and reduce the likelihood of serious incidents — whether the work involves high or low-energy activities.

Tailoring a "line of fire" approach to a company's program, with its specific work and tasks, can have a transformative impact on safety performance across roles, organizations and industries.

3.3 High-Energy vs Low-Energy Activities

In the context of a Line of Fire Program, distinguishing between high-energy and low-energy activities is crucial to understanding risks and implementing appropriate safety measures. The primary difference lies in the magnitude of energy involved and the severity of potential consequences if and when something goes wrong.

Both high- and low-energy activities are risks for "line of fire" events.

High-energy activities involve significant energy sources that can release large amounts of force, motion or pressure, potentially causing catastrophic outcomes that may include life-ending, life-threatening or life-altering injuries. These are often regarded as "stuff that can kill you" (STCKY) or serious injuries and fatalities (SIFs), according to CSRA Life Model (see below).

Low-energy activities involve smaller or less-intense energy sources that have lower potential for severe harm, but are still capable of causing injury, such as strains, bruises, cuts or minor fractures.

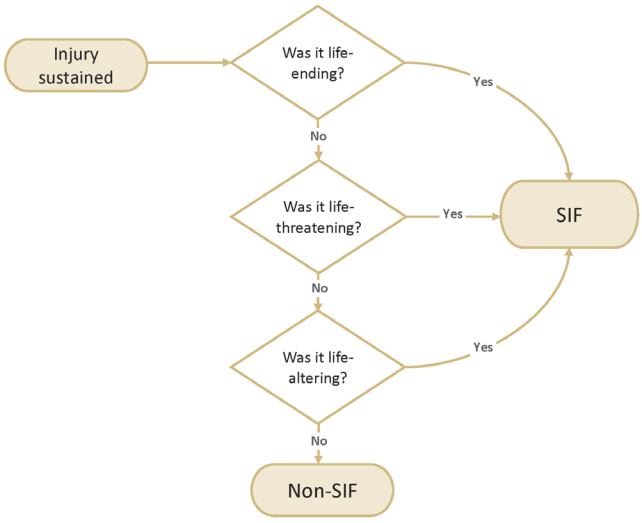

Figure 1: CSRA the life model

3.4 Why the Distinction Matters

Understanding the difference between high- and low-energy activities is important to ensure organizations can appropriately distribute resources, focus training efforts and address risks.

Resource allocation:

- High-energy tasks require more extensive resources, supervision and controls. They also need more focused task-specific planning, high competency of frontline workers and supervisors and, potentially, enhanced resources.
- Low-energy tasks still need oversight but can rely on simpler safety measures.

Training focus:

- Workers in high-energy activities need advanced, task-specific training.
- Workers in low-energy tasks benefit more from general awareness and ergonomics training.

Risk mitigation:

- High-energy activities demand proactive controls to eliminate risks.
- Low-energy activities often focus on reducing the likelihood of common injuries.

3.5 Examples of Energy Types

There are five key types of high energy: kinetic, potential, electrical, chemical and thermal (see Energy Wheel in Section 7.1). These can include:

- Kinetic energy: operating cranes or forklifts, standing in the path of a moving vehicle or swinging load, working near rotating machinery or high-speed conveyors
- Potential energy: working under suspended loads (e.g., hoists or cranes), maintenance of compressed springs or tensioned cables, inspection of scaffolding or elevated platforms
- Electrical energy: working on live electrical systems, handling high-voltage equipment or energized circuits
- Chemical energy: managing flammable or reactive chemicals, activities near pressurized chemical tanks or pipelines
- Thermal energy: welding, cutting or grinding (hot works), working near furnaces or molten materials

Low-energy activities include those with physical strain, manual forces or minor mechanical actions. These can include:

- Manual lifting: lifting or carrying tools or light materials, moving small objects in confined spaces
- Hand tools: using a hammer, screwdriver or wrench with a risk of minor cuts or strains from improper use
- Slips, trips and falls: walking on uneven or slippery surfaces, tripping over cables or

loose materials

- Low-energy mechanical systems: operating small, non-motorized equipment, such as hand-cranked or levered mechanisms
- Ergonomic risks: poor design of human/equipment interface points, repetitive motions (e.g., assembly work), poor posture leading to strains or sprains

The appendices provide inspection sheets and activity packages for typical high- and low-energy scenarios. Complementary resources can be found in Attachment A.

3.6 Control Measures

Limiting the risks of high-energy activities can be done through hard controls such as engineering (barriers, netting, containment equipment) and soft controls such as administrative controls (enhanced supervision, clearance zones, procedures, permits to work), as well as strict supervision, high-grade Personal Protective Equipment (PPE) and permits to work (PTW).

Low-energy activities can be mitigated through housekeeping, proper body mechanics, basic PPE and awareness training.

4.0 What the Data Tells Us

According to Alberta and Saskatchewan Workers' Compensation Board (WCB) reports from 2002-23 (data as of Q4 2023), contact with objects and equipment was the third-highest cause of fatality for workers.

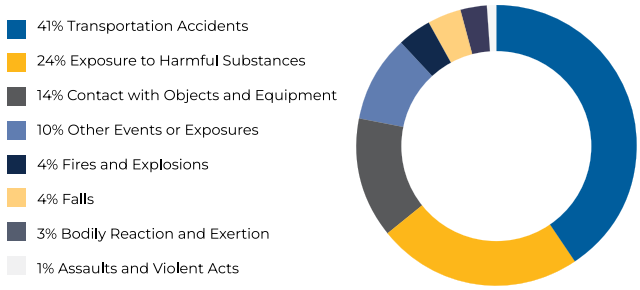

Figure 2: Event or exposure type (by fatality count)

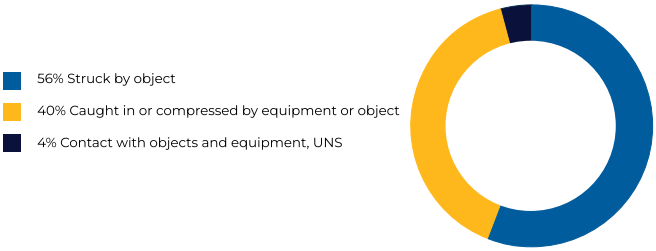

Figure 3: Contact with objects sub-categories

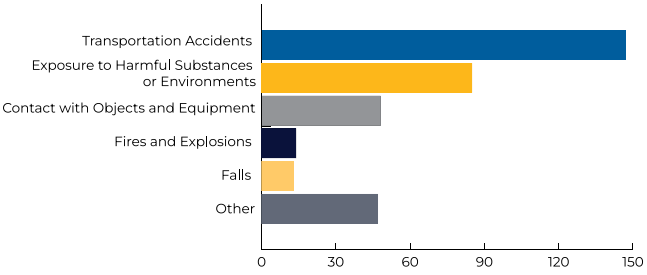

Figure 4: Top five events or exposure types, by number of fatalities

Additional information on this data is available on Energy Safety Canada's Injury Statistics and Reports page.

5.0 Program Initiation

Initiating a Line of Fire Program involves a structured approach to identifying, assessing and mitigating hazards where workers are at risk of being in the direct path of danger.

A company will need to conduct a gap assessment to evaluate the current state of LOF hazards — and their awareness and management of them. The results will offer insight into potential gaps that need attention and improvement. If a company does not have a Line of Fire Program, the assessment can first establish the why for a program and what it should achieve.

5.1 Program Initiation Steps

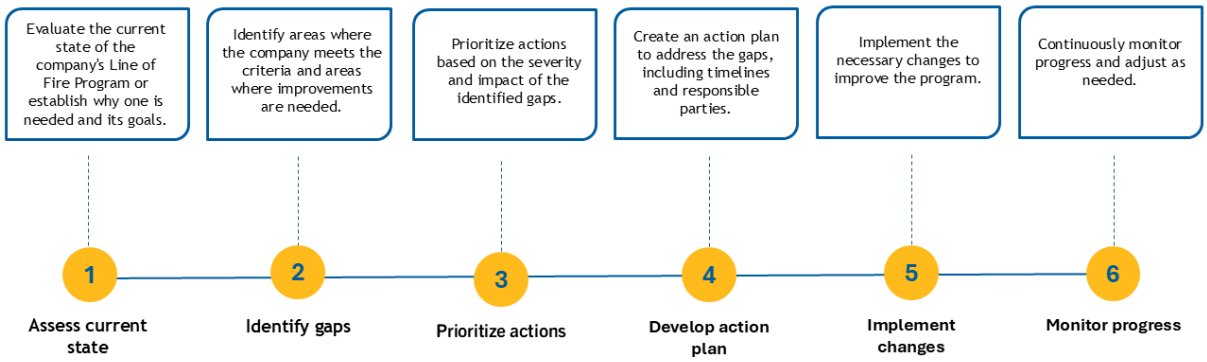

Figure 5: Program Initiation Steps

6.0 Program Development

A Line of Fire Program involves the strategic combination of education, administrative policies and a hierarchy of controls, along with worker engagement and a commitment to continuous improvement.

Incident prevention strategies that could be used in developing a Line of Fire Program include:

- Building capacity to fail safely — Creating systems and processes that can handle errors without leading to severe consequences.
- Training and awareness — Training workers to recognize situations where they might be in the "line of fire."
- Hazard identification and elimination — Identifying and eliminating hazards during task planning and execution.
- Safe work practices — Implementing actions such as maintaining safe distances from moving equipment, using proper lifting techniques, and staying out of the drop zone during overhead lifting operations.
- Engineering controls — Implementing controls and barriers that prevent minor errors from escalating into major incidents, including using barriers, shields and equipment designed to contain energy releases or contact with high-energy items (e.g., falling objects).
- Administrative controls — Developing procedures and protocols to manage "line of fire" risks and spotters to monitor high-risk areas.
- Personal Protective Equipment (PPE) — Equipping workers with necessary PPE, including helmets, gloves and other safety gears to minimize injury if exposure occurs.
- Emergency preparedness and response — Equipping workers with knowledge and tools for an effective response to emergencies, alongside the development and practice of emergency response plans.
- Continuous learning and improvement — Reviewing and updating protocols and processes regularly, based on feedback and incident reporting for ongoing enhancements and encouraging transparency in communication and reporting near-misses.

6.1 Program Outline

A program outline, such as the one below, can act as a framework for refining a current program or initiating a new one to enable priority setting, aligning focused efforts and/or building a case for change.

Aspect and Outcomes

Phase 1: Awareness & Education

Introduce to the "line of fire" (LOF) concept and foundational knowledge of associated risks in daily operations to promote work engagement.

Key Concepts and Activities

Introduction to core concepts

- Define "line of fire" and its relevance.
- Explain high- and low-energy activities.

Reporting

- Outline common LOF hazards and situations specific to the work.
- Differentiate between high- and low-energy activities.

Delivery methods

- Interactive workshops
- Visual aids (posters, videos) to emphasize common LOF scenarios

Implementation

Introduce practical tools into daily operations to identify LOF hazards in work tasks, leading to proactive reporting and personal accountability.

Aspect and Outcomes

Phase 2: Hazard Identification and Risk Assessment

Those involved in managing critical work can prioritize direct exposure to risks through understanding, identifying and mitigating hazards.

Key Concepts and Activities

Incorporate the Energy Wheel and analysis

- Identify energy sources in the workplace.
- Categorize tasks based on energy levels.

“Line of fire” mapping

- Use workplace layouts to map hazardous zones.
- Mark high-risk areas visually (e.g., barriers, signage)

Risk assessment matrix

Evaluate the likelihood and severity of incidents for both high- and low-energy activities.

Tools

- Hazard mapping software
- Checklists for “line of fire” risks (customized for energy levels)

Aspect and Outcomes

Phase 3: Training and Competency Development

Ensure workers are equipped to apply their knowledge and skills effectively in their roles, in specific tasks and in real-world situations.

Key Concepts and Activities

Training modules

- Recognizing "line of fire" situations
- High-energy: safe distances, use of PPE
- Low-energy: awareness of body positioning, maintaining clear pathways

Role-Specific/ Specialized training

- Operators of heavy machinery
- Manual labourers handling tools or materials

Behavioral reinforcement

- Safety drills: simulating both high-energy (e.g., crane failure) and low-energy (e.g., slip, trip) scenarios
- Mentoring: tailoring guidance and on-the-job training with feedback for refinement

Tools

- Activity packages for LOF categories
- Inspection templates

Aspect and Outcomes

Phase 4: Controls and Mitigation Strategies

Develop and/or use controls and strategies for proactive risk mitigation and management.

Key Concepts and Activities

Employing controls for high-energy activities

- Engineering controls: machine guards, automated systems
- Administrative controls: job rotation, task-specific standard operating procedures
- PPE: helmets, high-visibility vests, gloves

Employing controls for low-energy activities

- Housekeeping: clear walkways, organized tools
- Body mechanics: training in safe lifting and tool use

- Environmental adjustments: non-slip mats, ergonomic workstations

Timely interventions

- Proactive approach to mitigate before becoming a serious issue
- Real-time monitoring
- Robust communication systems to provide instant alerts and facilitate quick responses

Integration

Incorporate “line of fire” hazard management into safety systems through the design and implementation of effective controls to reduce LOF exposure.

Aspect and Outcomes

Phase 5: Monitoring and Continuous Improvement

Anticipate and adapt to changing conditions while promoting feedback channels, leveraging captured data.

Key Concepts and Activities

Incident reporting and investigation

Develop a reporting system for “line of fire” near misses or incidents.

Outline key performance indicators (KPIs)

Leading Indicators (proactive):

- Number of LOF hazards identified and corrected
- Frequency of safety training and toolbox talks
- Number of safety observations and near-miss reports
- Percentage of workers following safe work procedures

Lagging Indicators (reactive):

- Number of LOF-related incidents, injuries or fatalities
- Severity rate of LOF incidents (lost workdays, medical treatment cases)
- Workers’ Compensation claims related to LOF injuries

Feedback loop

- Collect input from workers and supervisors.
- Regularly update training and mitigation plans.

Data Analytics

Analyze and leverage data to reveal patterns and trends, enabling early detection.

6.2 Program Outcomes

Developing a strategic and thorough Line of Fire Program — or refining an existing one — can have a number of important outcomes.

- Enhanced awareness — Workers can recognize and respond to “line of fire” hazards.
- Risk reduction — A focus on fail-safe mechanisms and effective controls to protect workers can reduce the likelihood of incidents in high- and low-energy activities.
- System resilience and reliability — The organization can build robust systems to prevent “line of fire” hazards by design.
- Operational learning and adaptation — Organizations can learn from near-misses and promote adaptive capacity to update processes based on real-world insights.
- Work process optimization — Seamless execution of critical work management activities through improvements in task planning and worker alignment before high-risk work can begin, reducing the “line of fire” potential.
- Safer workplaces — Regular assessments and improvements foster a culture of safety.

6.3 Program Implementation

See Attachment A for full details on how to implement a Line of Fire Program.

6.4 Program Management

Continuous monitoring, training and improvement to ensure workplace safety are essential to managing a Line of Fire Program. This includes:

- Proactive hazard identification – Prevent risks before incidents occur.
- Strong leadership support – Safety starts at the top.
- Ongoing training and reinforcement – Keep employees aware and engaged.
- Data-driven decisions – Use incident reports and audits to improve safety.
- Employee involvement – Workers should participate in hazard identification and solutions.

A focus on these areas will result in a relevant program that ensures minimal LOF events — or eliminates them.

6.5 Program Evaluation

To ensure the effectiveness of an LOF program, a structured evaluation process should be conducted. Key aspects of the program evaluation include:

- Using data-driven insights to improve safety measures
- Encouraging employee participation in reporting and feedback
- Reviewing training effectiveness on a regular basis and adjusting as needed
- Ensuring management support for continuous improvement
- Updating policies and procedures based on audit findings.

6.6 Program Improvement

Enhancing an LOF program requires a continuous improvement approach that involves better training, hazard controls, employee engagement and data analysis. Improvement aspects include:

- More effective training, with hands-on learning and real-world scenarios
- Stronger safety controls with clear exclusion zones and better equipment safeguards
- Higher employee engagement through safety recognition and involvement
- Smarter use of data and technology to track trends and improve prevention
- Continuous review and adaptation based on audits and real-time feedback.

6.7 Summary

The Line of Fire Program is a proactive initiative aimed at eliminating workplace hazards that put workers at risk. Both employers and employees have a responsibility to manage risks related to “line of fire.” By integrating hazard awareness, strong safety controls and continuous monitoring, the program helps create a safer work environment and reduces the likelihood of injuries.

7.0 Related Concepts

Tools and concepts have evolved over the years to enhance awareness, knowledge and the use of “line of fire” prevention strategies.

Concepts such as the Energy Wheel and “stuff that can kill you” are interconnected frameworks for identifying, understanding and mitigating workplace hazards. Directly related to high-energy activities and their management, they collectively emphasize the importance of recognizing energy sources, potential hazards and actions that could lead to severe or fatal incidents.

See Attachment B: Concept document for more details.

7.1 Energy Wheel

The Energy Wheel is a visual tool used in safety management to help identify, categorize and manage hazards based on the types of energy present in the workplace. It simplifies the hazard recognition process by focusing on the various energy sources that could cause harm if not properly controlled.

The Energy Wheel is widely used during risk assessments, job hazard analysis (JHA) and toolbox talks to ensure workers identify and mitigate energy-related hazards.

See Attachment B: Concept document for more details.

Additional information is available on Energy Safety Canada’s Energy Wheel page.

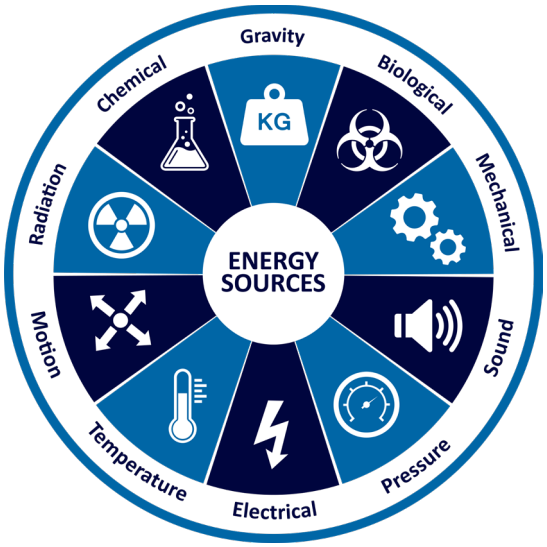

Figure 6: Energy wheel

7.2 Hierarchy of Controls

The hierarchy of controls is a systematic approach used to eliminate or minimize hazards associated with energy sources in the workplace. Part of safety management systems, it is commonly applied in industries where workers may be exposed to hazardous energy during the operation, maintenance or servicing of equipment.

The hierarchy is structured from most effective controls to least effective, emphasizing the importance of eliminating or reducing the risk at its source. Controls take various forms, including physical changes, procedures or equipment. The choice of controls depends on the type of hazard and its risk. Note that Elimination, Substitution and Engineering Control are collectively referred to as HARD controls because they reduce or eliminate the hazard while Administrative control and PPE are referred to as SOFT controls because the hazards are present and rely on workers to be careful.

See Attachment B: Concept document for more details.

Additional information on the Hierarchy of Controls is available on Energy Safety Canada's Hazard Assessment Resources page.

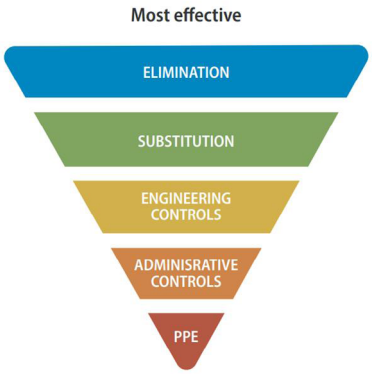

Figure 6: Hierarchy of controls

7.3 Stuff That Can Kill You (STCKY)

"Stuff that can kill you" (STCKY) is a safety concept used to identify and manage hazards or conditions in the workplace that pose a significant risk of serious injury or fatality. It emphasizes the importance of recognizing high-risk elements in work environments, which can cause life-threatening, life-altering or life-ending incidents if not properly controlled.

The concept focuses on prioritizing the identification, control, and management of hazards that have the potential to cause severe harm, unlike minor risks that might only result in superficial injuries.

See Attachment B: Concept document for more details.

7.4 Critical Work

Critical work refers to tasks or activities in a workplace that involve significant risk to people, property or the environment. These tasks often require precise planning, specialized skills and strict safety measures due to the potential for severe consequences if something goes wrong. In essence, critical work involves critical steps with inherent critical risks that could only be managed by critical controls.

Critical steps are human actions that, if performed improperly, will result in harm to an asset that is immediate, irreversible and intolerable. These steps are often tied to high-risk tasks or processes involving significant energy transfers.

Examples include high-risk construction activities, maintenance of hazardous systems or operations in confined spaces.

See Attachment B: Concept document for more details.

Additional information is available on Energy Safety Canada's Critical Work and Critical Work Management page.

7.5 Direct Controls

Direct Controls refers to the proactive and hands-on supervision, intervention and management of work activities to ensure safety standards and protocols are strictly followed. It involves real-time oversight by competent personnel to minimize risks and immediately address any unsafe conditions or behaviours. Direct Controls work even if workers make errors.

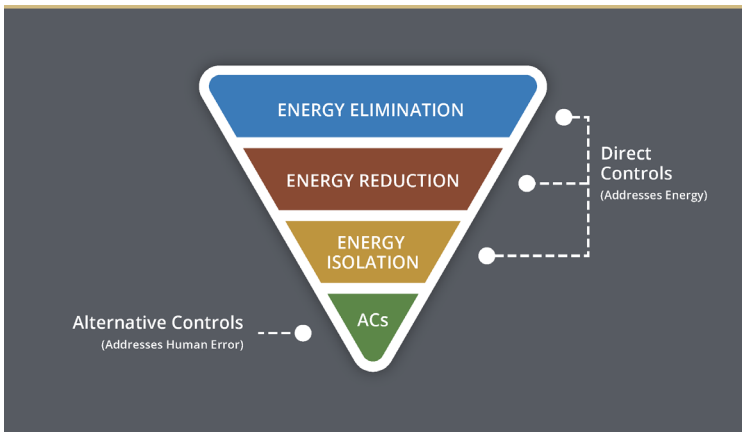

Figure 7: CSRA, hierarchy of energy controls

Figure 8: CSRA, direct controls requirements

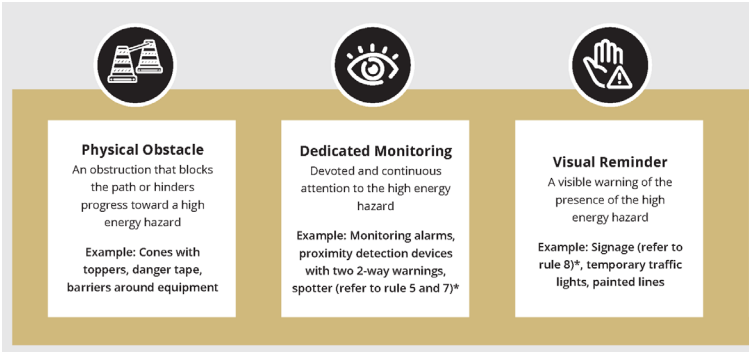

Figure 9: CSRA, alternative controls

Alternative Controls are specifically designed to mitigate human error. When a Direct Control is not feasible, there must be at least two Alternative Controls, from at least two or more of the categories shown in Fig. 8.

See Attachment B: Concept document for more details.

Additional information on Direct Controls is available on the CSRA website.

7.6 High Energy Control Assessment (HECA)

A High Energy Control Assessment (HECA), also known as energy-based observation, is a structured process used to identify, evaluate and control risks associated with high-energy activities in the workplace.

These activities involve significant energy sources — such as mechanical, electrical, chemical or thermal energies — that have the potential to cause catastrophic injuries or damage. HECA ensures that organizations assess and implement robust controls to manage these risks effectively.

See Attachment B: Concept document for more details.

Additional information on HECA is available on the CSRA website.

REFERENCES

CSRA	HECA
CSRA	High Energy: Controlling the Uncontrollable
Urbint	High-Energy Control Assessments (HECA) — What They Are and How They Save Lives
Orion Transcenders	STCKY(Sticky) Stuff That Kills You
Internation Oil & Gas Producers Association (IOGP)	Line of Fire Hazard Prevention (2025)

IMPLEMENTATION PLAN & REVIEW

See Attachment A for more details.

Program Preparation	• Obtain leadership alignment. • Get the sites ready.
Program Rollout Engage leaders and workers by:	• Delivering the program materials to the sites. • Capturing learnings or questions during activity package delivery. • Maintaining Line of Fire Program content with relevant new information.
Program Review and Improvement	• Plan a post-program review. • Request input from impacted stakeholders. • Focus on communications, program effectiveness and program management. • Assess collected information to improve future campaigns. • Communicate learnings to Energy Safety Canada.
Roles and Responsibilities	• Energy Safety Canada • Sponsor • Leaders • Program Managers

Implementation Resources	• Leadership alignment checklist • Readiness checklist • Getting the sites ready checklist • Supporting communications • Items for follow-Up • Post-program review roles and responsibilities • Post-program review worksheet

APPENDICES

Appendix A: Managing Critical Work

	Topic	Description
1	Redefining Safety	When safety feels bureaucratic or punitive, workers may stay silent about near-misses or concerns. Effective systems must recognize human error and ensure controls still protect workers when mistakes occur.
2	Proactive Hazard Energy	Risk management begins before work starts, with those closest to the job best positioned to spot high-energy hazards. They can verify whether critical controls are truly in place and functioning.
3	Navigating Critical Steps	Critical steps are task moments where mistakes can have immediate and serious consequences. Human performance tools help workers manage risk during these high-stakes points.
4	Managing Human Performance Risk	To manage or control risk, you must first understand the real conditions in which work happens. This requires learning about the actual context of everyday operations.
5	Positive Control of Hazardous Energy	Safety requires identifying energy sources, understanding how they interact with tasks, and applying proper controls. This awareness helps prevent Serious Injuries and Fatalities (SIFs) and other high-risk events.

6	Managing High Energy Hazards with HECA	HECA is a proactive, real-time tool for reducing serious injury and fatality risks. It focuses on what the data reveals for improvement, treating even partial success as an opportunity to close gaps.
7	Learning from Everyday Work	Learning comes not only from mistakes but also from everyday successes, adaptations, and problem-solving. By examining both what goes wrong and what goes right, organizations can strengthen safety and performance.

Appendix B: Activity Packages

Use 4Ds video to facilitate detailed conversation.

See Attachment A for details.

Appendix C: Inspection Forms/Sheets

	Topic	Description
1	Vehicle Inspection	The document is used to assess hazards, controls, and safe practices related to moving vehicles, site conditions, visibility, signage, and load security.
2	Logout-Tagout Inspection	The document is used to verify hazard assessments, isolation procedures, permits, lock application, tagging, and compliance with safe energy control practices.
3	Line of Fire Inspection	The document is used to assess hazard identification, safe practices, and controls to protect workers from risks such as moving equipment, stored energy, falling objects, and suspended loads.
4	Pressure Releases Inspection	The document is used to verify the identification, control, and safeguarding of stored energy hazards, proper equipment use, protective measures, and PPE requirements.
5	Moving Objects Inspection	The document is used to assess hazards, controls, and safe practices related to striking risks, equipment guarding, exclusion zones, lockout/tagout, and worker positioning.
6	Grinder and Drill Inspection	The document is used to evaluate equipment condition, guarding, PPE use, training, safe operation, and hazard controls.

7	Tools, Equipment & Machine Inspection	The document is used to verify safe work practices, proper equipment condition, guarding, certification, and correct tool usage.
8	Field Level Hazard Assessment (FLHA) Inspection	The document is used to verify that permits, hazard identification, safe work practices, and worker participation are properly completed and documented at a job site.
9	Dropped Object Inspection	The document is used to assess hazards, controls, and safe practices for preventing tools, equipment, and materials from falling and endangering workers.
10	Crushing Hazards Inspection	The document is used to evaluate hazard identification, controls, equipment guarding, lockout/tagout, safe work practices, and proper PPE use.
11	Safeguards Inspection	The document is used to verify protective measures such as guarding, signage, platforms, covers, guardrails, and safety nets to prevent worker exposure to hazards.
12	High Energy Control Assessment (HECA)	The document is designed to evaluate energy identification, lockout/tagout procedures, safety measures, training, incident response, and compliance at a worksite.
13	Stuff That Can Kill You (STCKY)	The document is used to identify and evaluate physical, electrical, chemical, biological, and other workplace hazards, as well as emergency preparedness measures.

Appendix D: Tools & Supporting Forms

	Topic	Description
1	A procedure for implementing the program	It outlines a process for implementing the Line of Fire Program as part of a robust health and safety management system
2	Hazard hunt card	Used to conduct hazard hunt related to “line of fire” situations.
3	Video review program template	Used to capture observations made by new workers from reviewing the Line of Fire Program video.
4	Business case planning tool	Macro-embedded spreadsheet so leadership can make a data-driven decision on an LOF Program.
5	Commitment calendar sheet	Used to establish worker behaviour for 21 days (may not be needed).

6	LOF translation execution plan	LOF project execution plan with schedule
7	Video review	PPT guide for video review

Appendix E: Line of Fire Products

	Topic
1	Poster
2	Tent Card
3	Hardhat Decal
4	Wall Decal/Magnet
5	Lanyard Card
6	Flip Guides/Handbook
7	Tape Measure
8	Pen
9	Mouse Pad
10	Pop Socket

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