Human & Organizational Performance (HOP)
&
Serious Injuries & Fatalities (SIF)

About Me

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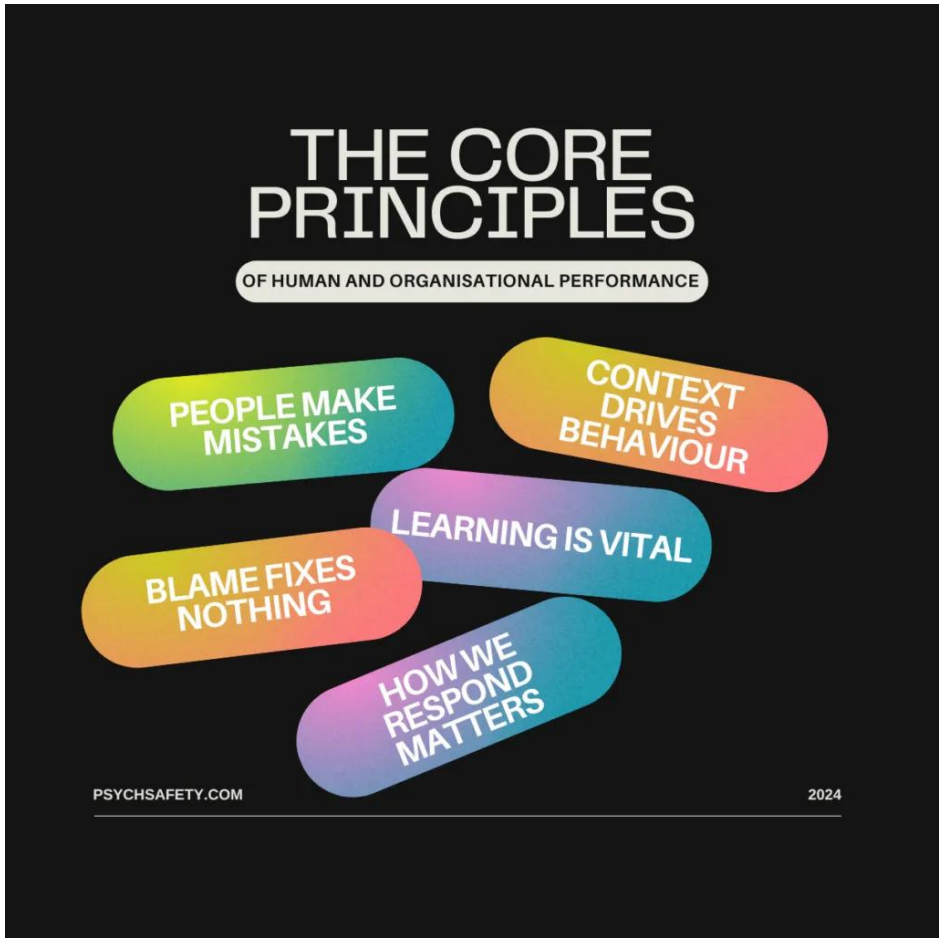
Guitar

Twin

What is HOP?

- Human & Organizational Performance (HOP)
- Humans are fallible and can make mistakes
- HOP shifts the focus from blaming individuals for problems and shifts the focus to understanding and improving organizational systems

  - Traditional = *Fix the person*
  - HOP = *Fix the system*



What is HOP?

- Human & Organizational Performance (HOP)
  1. Error is normal
  2. Blame fixes nothing
  3. Context drives behavior
  4. Learning is Vital
  5. Leadership Response Matters

- Shifting blame away from the individual and focusing on the systemic and contextual cause

Mindsets -Traditional vs. HOP

- Traditional Approach
  - Compliance/Rule Enforcement
  - Zero Errors
  - Investigation = “Who’s fault is it?”
  - Safety = absence of incidents
  - Discipline driven

- HOP Approach
  - Learning & System Improvement
  - Human error will happen
  - Investigation = “Why did the system allow the error?”
  - Safety = Presence of safeguards
  - Resilience driven

Example

- Scenario: A maintenance tech suffers a hand injury while replacing a conveyor belt. The conveyor was not locked out, which allowed the belt to move while the tech was performing work.

Traditional

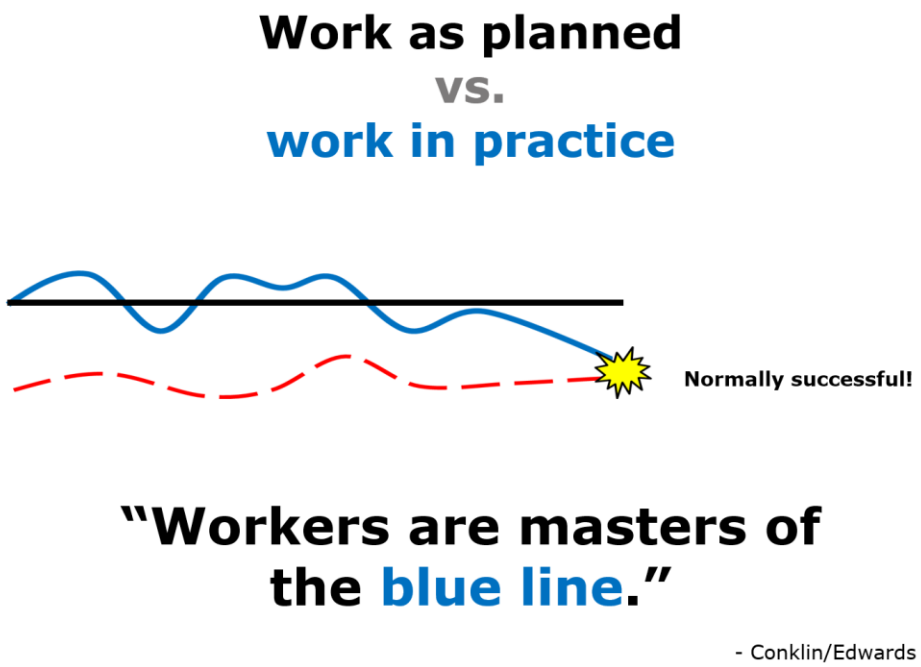
- Investigation focus:
  - Technician failed to follow LOTO procedures
- Root cause:
  - Technician was complacent
- Corrective actions:
  - Discipline tech for LOTO failure
  - Retrain tech on LOTO
  - Post more signage on performing LOTO on conveyors

HOP

- Investigation focus:
  - Technician failed to follow LOTO procedures
- Root cause:
  - Pressure to restart line quickly to meet production goals
  - LOTO devices far away
  - SOP difficult to find
- Corrective actions:
  - Train supervisors on balancing safety & productivity
  - Store LOTO tools near equipment/on cart
  - Place LOTO SOP at the equipment

HOP Risk Assessment

- Work As Planned vs. Work As Practiced
  - Planned – How we think the job is done
  - Practiced – How the job is actually done
- Risk lives in the gap



HOP Risk Assessment

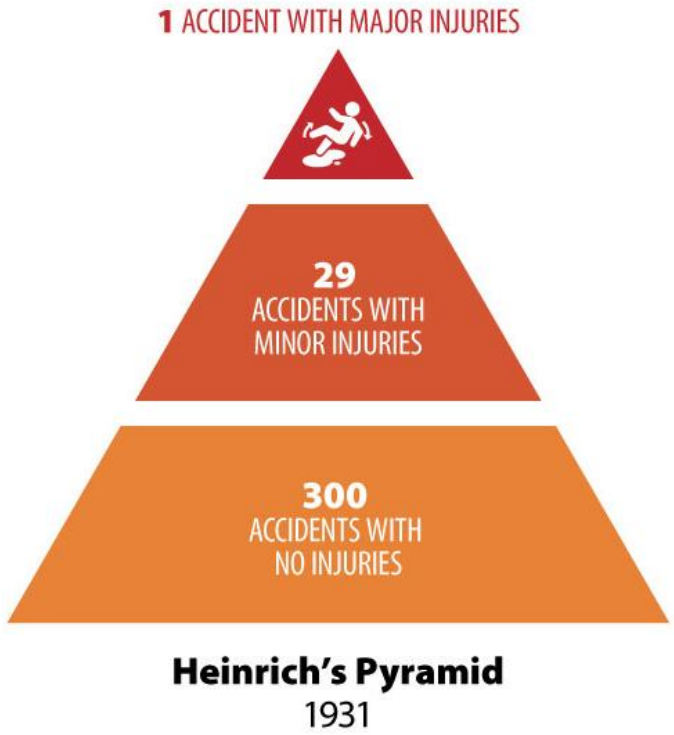
- How do I close the gap?
  - Learning Teams
    - “Walk me through a typical job”
    - “What if X happens?”
    - “What if X isn’t available?”
    - “What would make this safer & easier for you without slowing you down?”
    - “What’s the biggest risk of this job?”
    - “What conditions today made the job harder or slower?”
  - Gather & document responses & implement corrective actions based on Work As Practiced and incorporate into Work as Planned (SOPs, training, 5S, etc.)

What does this have to do with SIFs?

A Little History

Heinrich's Pyramid (1931)

- William Heinrich
- 1931 publish theory in *Industrial Accident Prevention: A Scientific Approach*.
- Focuses on human actions as cause of injuries
- 88% of accidents are caused by the unsafe acts of persons.

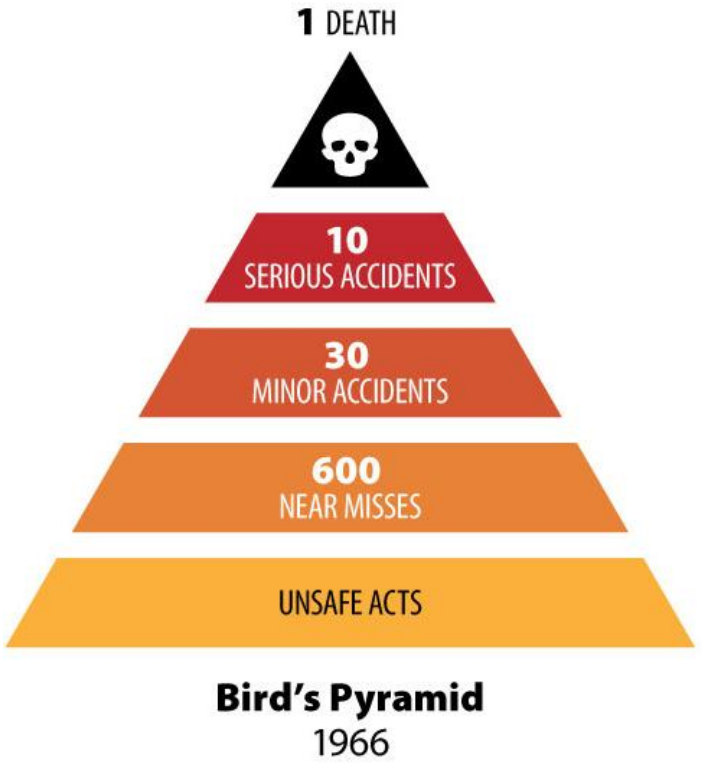


Heinrich's Pyramid
1931

A Little History

Bird’s Pyramid (1966)

- Frank Bird
- One fatality for every 600 near misses
- Focusing on near misses or first aids leads to a reduction of severe injuries or fatalities (SIF).



What does the data show?

- Since 1970s/1980s injury prevention in the U.S. has been focused on reducing **near misses** and **first aids** with the goal of **reducing injuries** and **fatalities.**

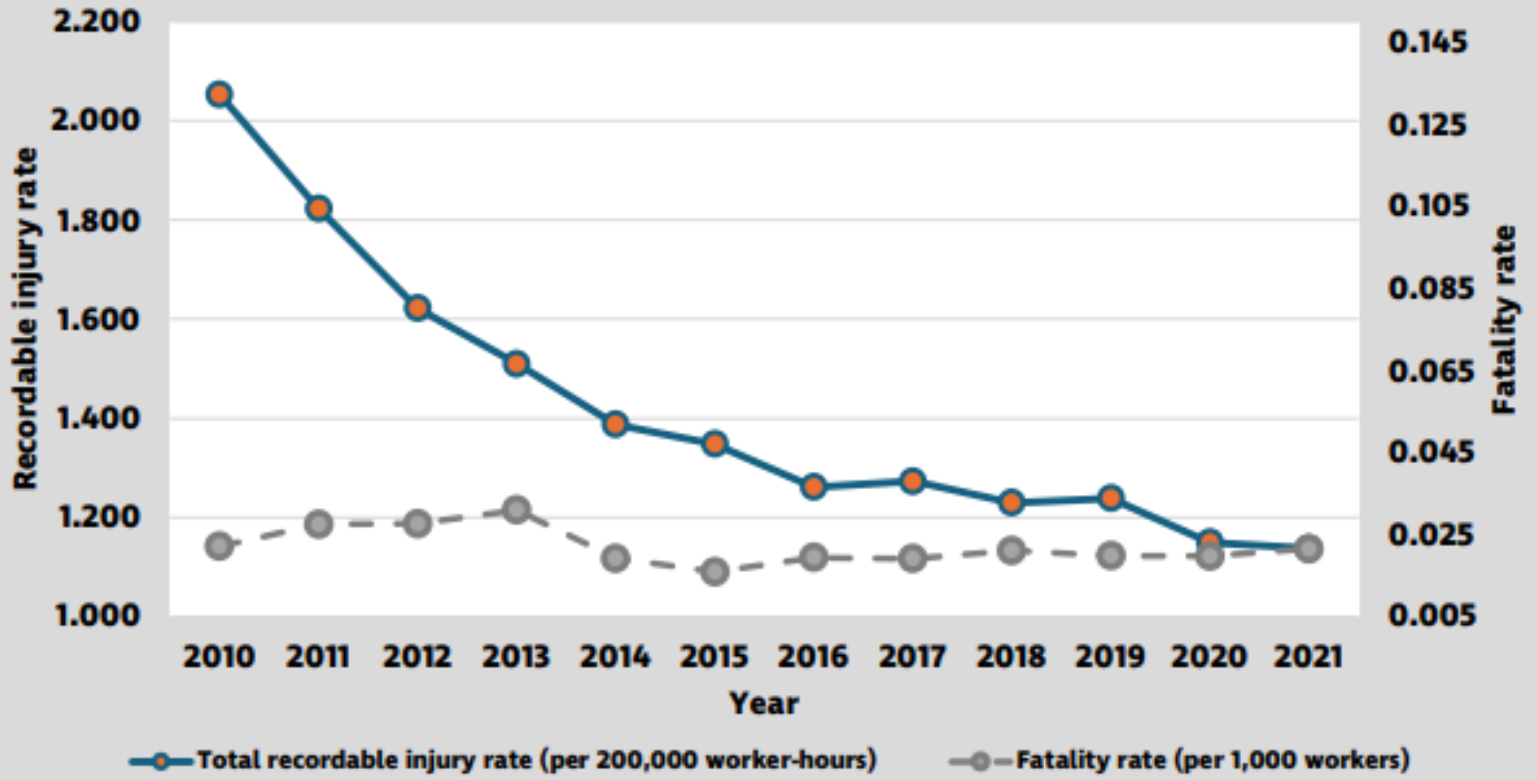
- We have been successful in reducing minor injuries and the TRIR, BUT….the data shows something else.

SIF vs TRIR

FIGURE 1

POWER GENERATION & DELIVERY INJURY & FATALITY TRENDS

Injury and fatality trends for electric power generation and delivery (rolling 3-year average).



Note. Reprinted from "The Power to Prevent Serious Injuries and Fatalities," by Edison Electric Institute (EEI), 2020 (www.eei.org/-/media/Project/EEI/Documents/Issues-and-Policy/Power-to-Prevent-SIF/SCLwebinar.pdf). Copyright 2020 EEI. Reprinted with permission.

What Does This Mean?

- Traditional approach has reduced injuries and recordables and driven down workers' compensation claims and lost productivity.
  - SIF prevention and causes are different from low severity prevention and causes
  - Keep doing what you are doing…BUT

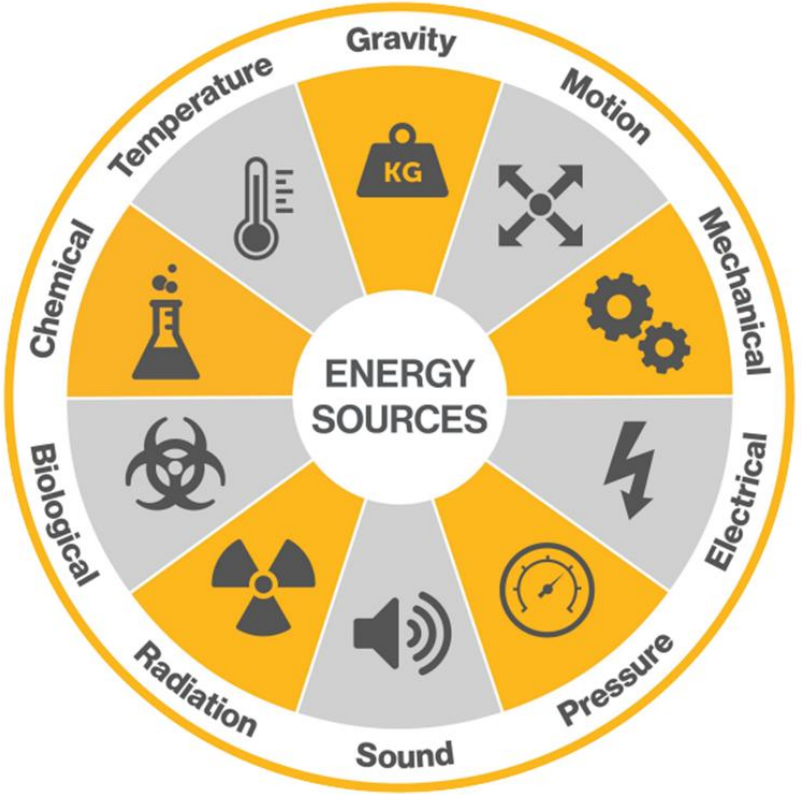
- We need a new (different) approach to reduce the risk of SIFs.

How do you define “SIF”?

- SIF: Incidents that are considered life threatening, life altering, or lead to death
- What’s the difference between a *severe* injury vs. a “regular” injury?
    - The magnitude of the energy involved

Energy Approach

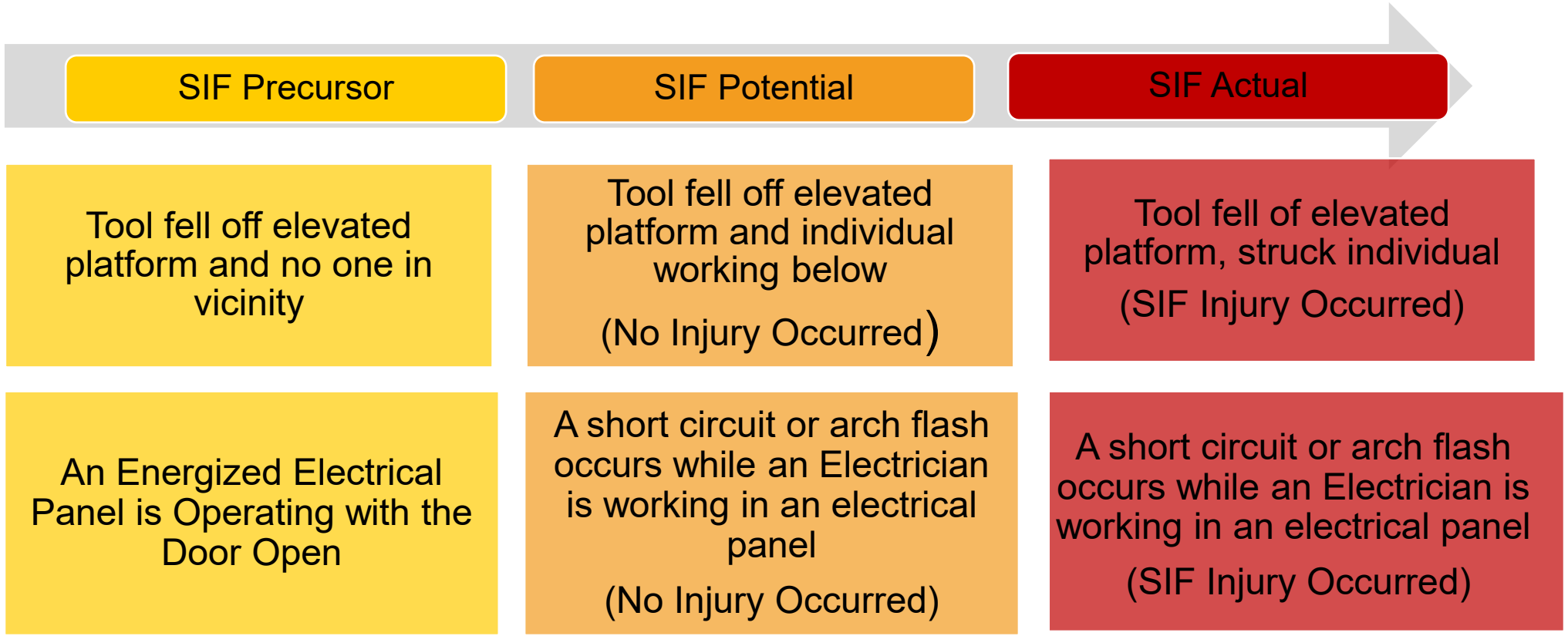
- Greater Energy = Greater Severity
  - Examples:
    - Falling at floor level vs. falling 20 feet
    - Contact with hydraulic fluid vs. contact with 50% caustic
  - What energy is present?
  - Is it enough to cause serious injury?



SIF Precursor/Potential

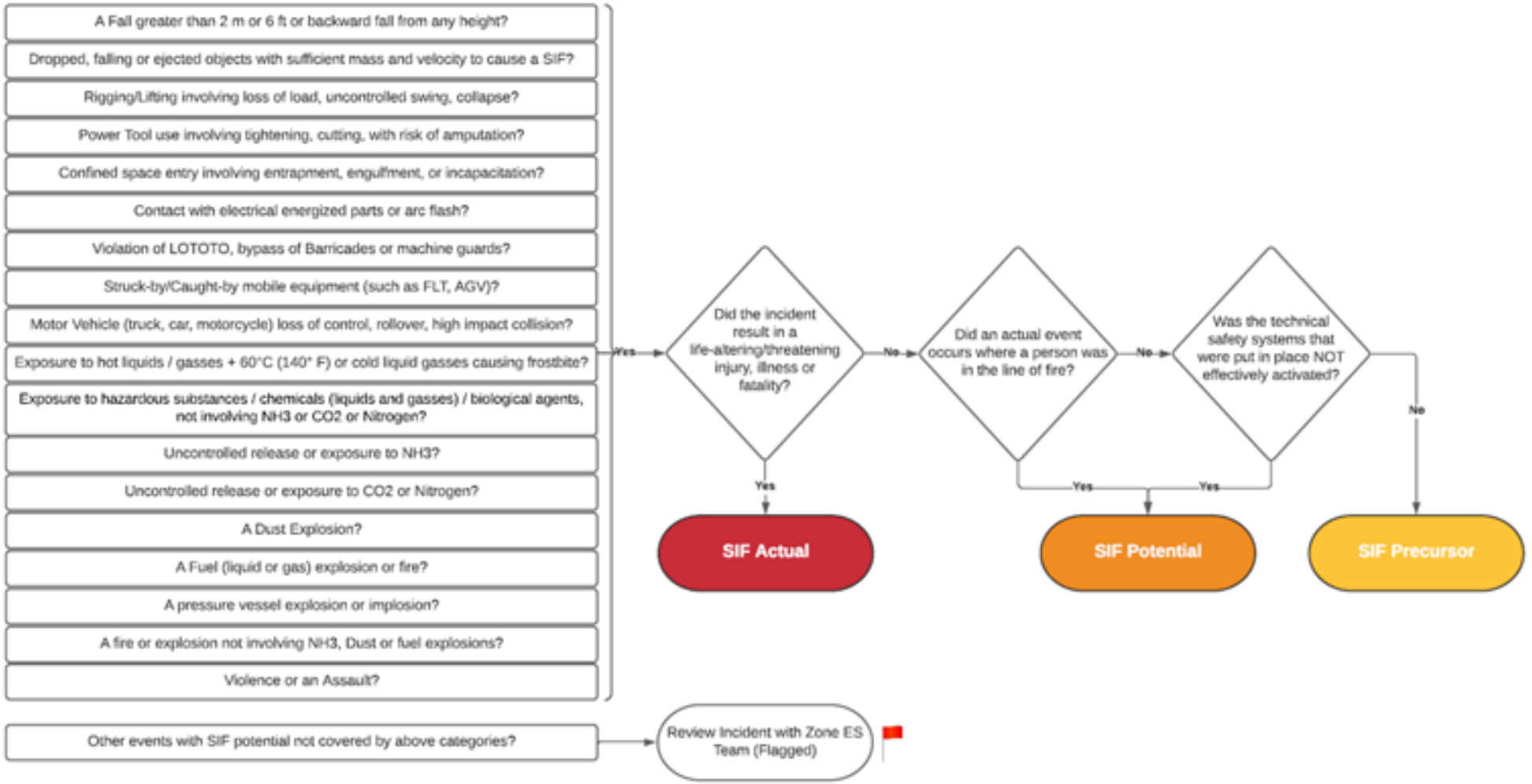
- Near miss, incident, or hazardous condition that, given slightly different circumstances, could have resulted in severe injury or fatality

SIF Precursor/Potential



SIF Decision Tree

- The **SIF Decision Tree** can help define if an event results in a SIF Actual, SIF Potential or SIF Precursor



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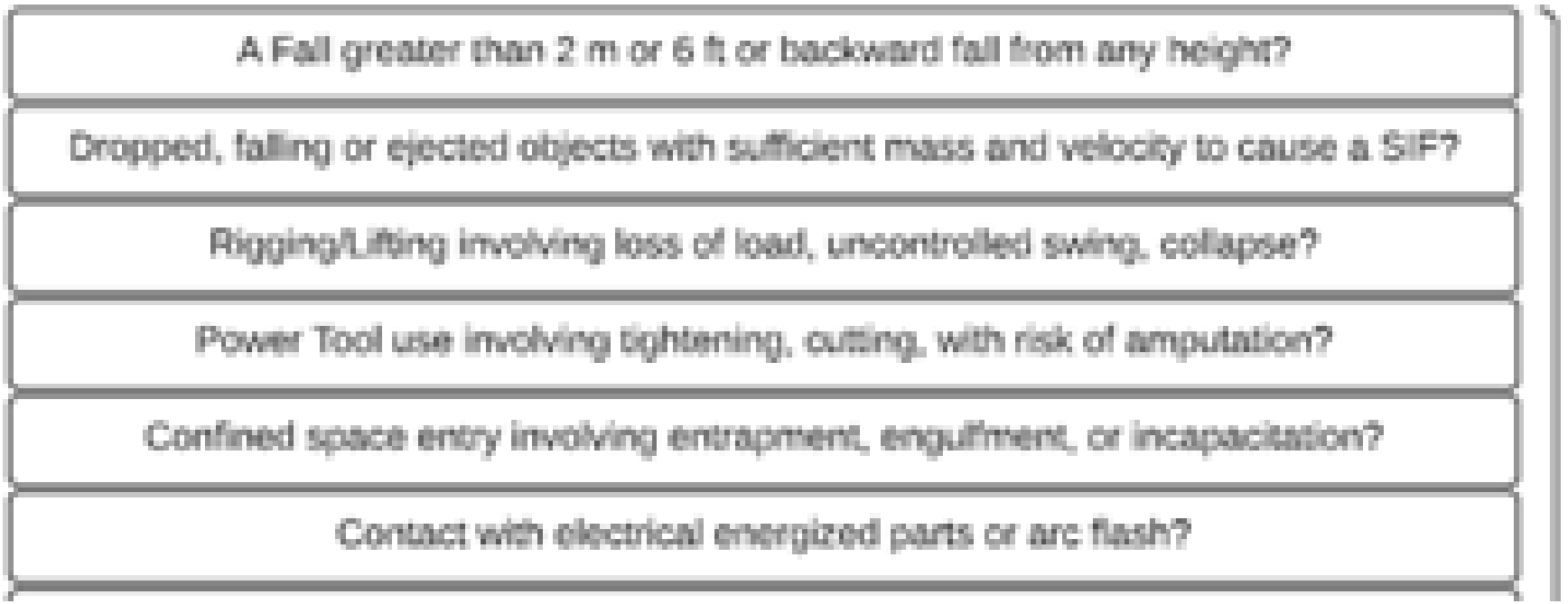

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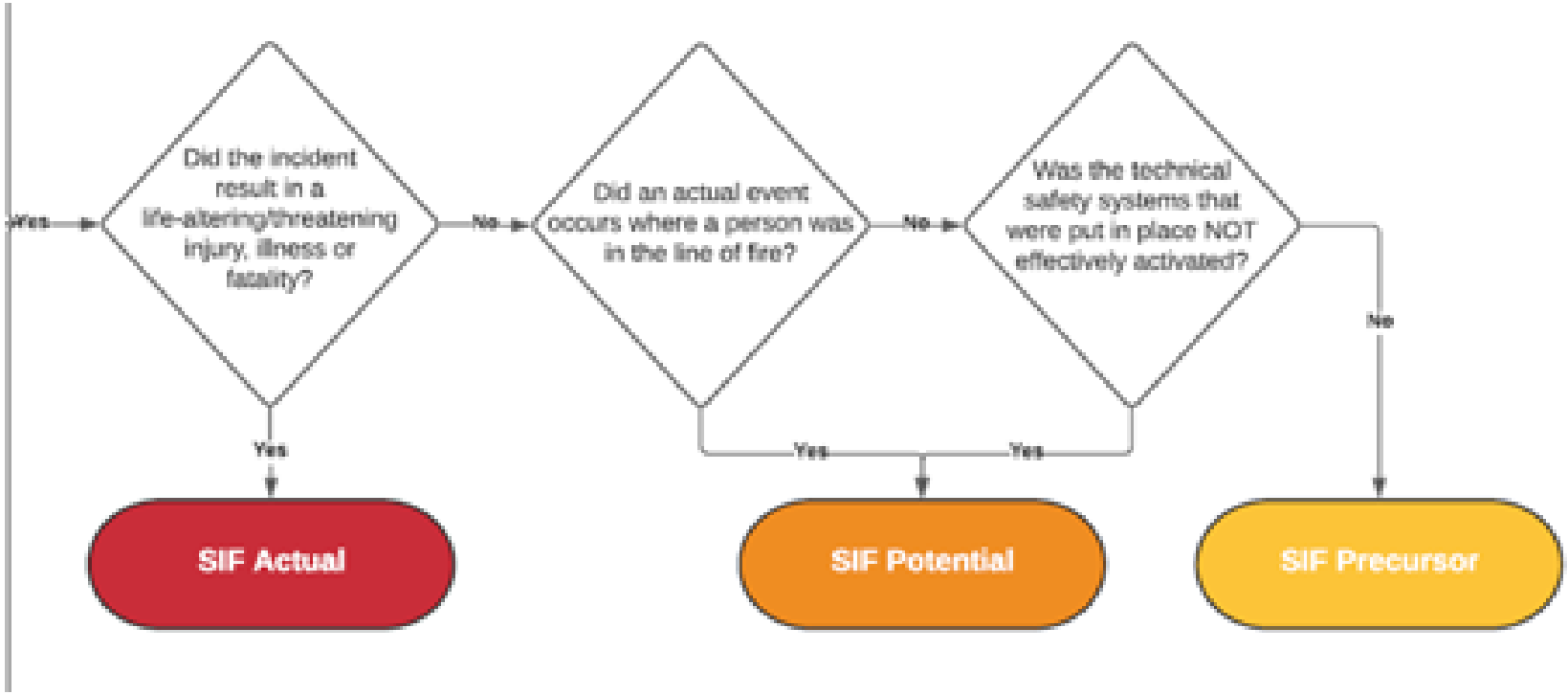


Life Saving “Golden Rules”

The 6 Life Saving Golden Rules are based on statistical SIF analysis from the past incidents:

1) **SAM & LOTOTO:** I will always verify proper isolation of hazardous energy by performing LOTOTO or SAM before accessing equipment and/or working on live equipment

2) **Hazardous Substances:** I will always handle hazardous substances only if I understand the hazards and implement the control measures defined to mitigate the risks

3) **Working at Heights:** I will always use the proper fall protection equipment while working at heights

Life Saving “Golden Rules”

The 6 Life Saving Golden Rules are based on statistical SIF analysis from the past incidents:

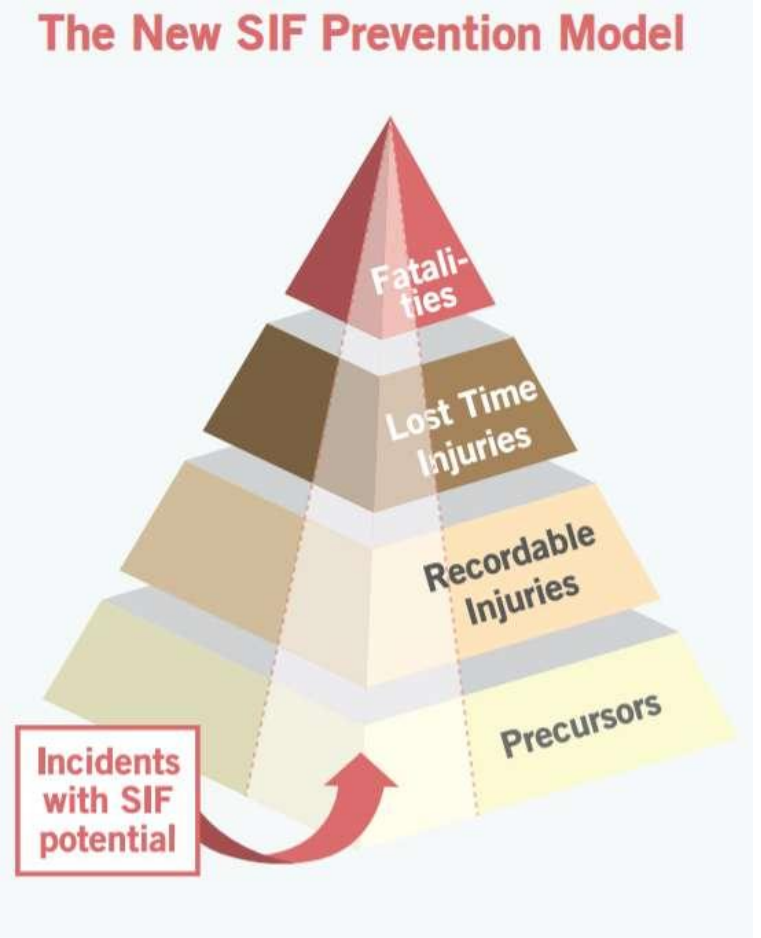
4) **Electricity:** I will always work on electricity only if I am qualified, understand the hazards and implement the control measures defined to mitigate the risks

5) **Work Permit:** I will always work with a validated Work Permit for high risk tasks and ensure all Front Line Team Members mitigate the risks by applying the requirements of the Work Permit

6) **Vehicles:** I will always keep to the minimal safety distance between vehicles and/or pedestrian

HOP & SIF

- Identify SIF or SIF Potential interactions (tasks, jobs, etc.)
- Utilize HOP risk assessment approach to identify circumstances where these interactions occur
- Implement controls based upon results of the risk assessment



Resources

- TapRoot – HOP Practical Guide
- National Safety Council – SIF
- Energy Based Safety – Matthew Howe, SafetyFunction

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