



**BlueDragon**  
IPS

# Introduction to the BlueDragon Integrated Problem-Solving System



# The BlueDragon IPS Value Proposition



The BlueDragon Integrated Problem-solving System (IPS) is a next-generation holistic problem-solving framework that helps organizations **improve safety & performance** and **reduce overhead** by solving problems faster and more accurately than any other methodology on the market, returning lost time and resources to mission critical tasks. BlueDragon has been vetted and implemented at some of the most technically challenging sites in the world.

PHASE 1 - DEVELOP QUESTIONS FOR LINES OF INQUIRY

PHASE 2 - IDENTIFY THE DEEPEST-SEATED CAUSES

PHASE 3 - ACTIONS TO PREVENT RECURRENCE



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# Differentiators

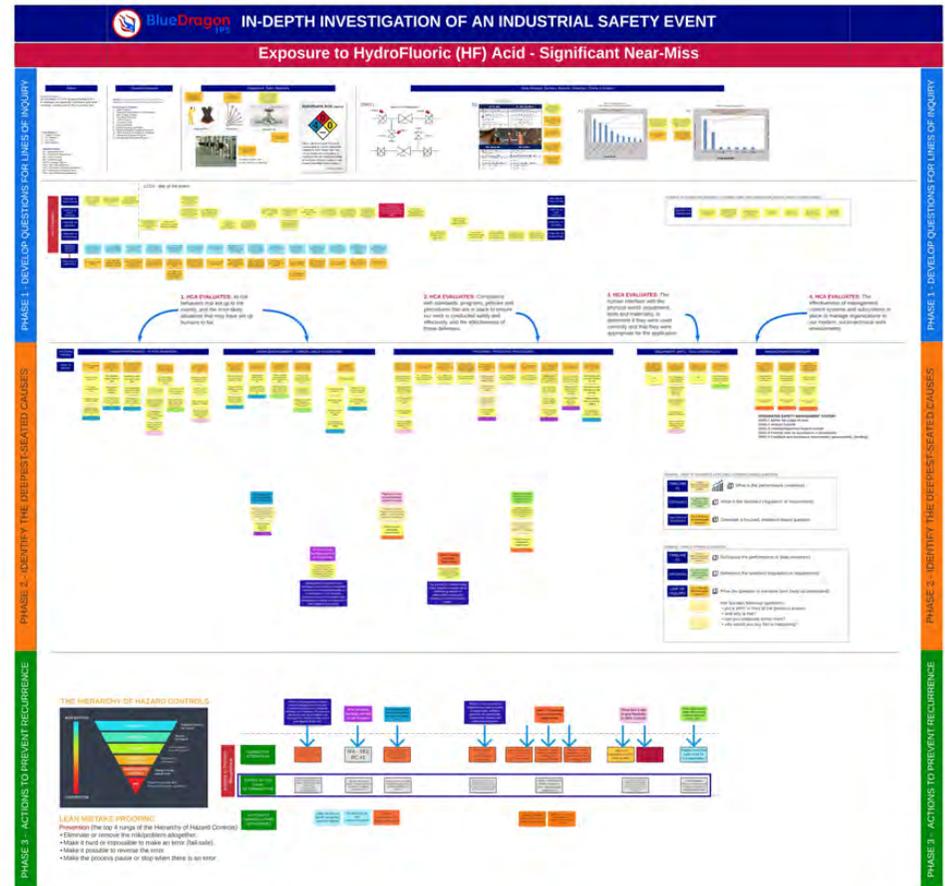
- Lean, agile, scalable framework to solve tame, complex and wicked human-centric problems.
- A holistic approach that incorporates Systems Theory and integrates the best features of many traditional, proven methods.
- Can be used for event investigations or proactive self-assessments & risk management.
- Founded on principles of Critical Thinking, Socratic Questioning and High Reliability Organizations.

# Three Dimensions of Value!

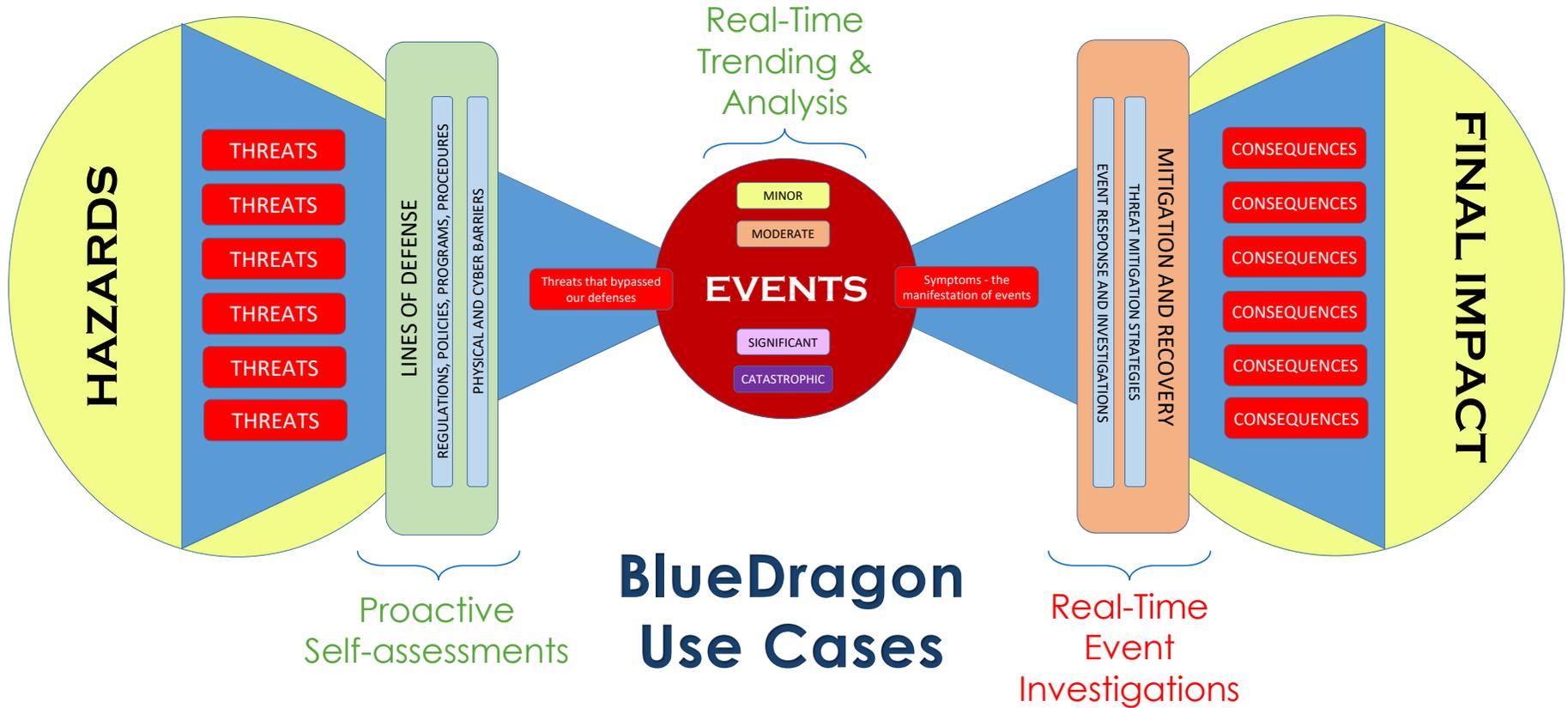
- Infinitely Scalable, with very little overhead
  - Small projects can be done quickly and efficiently
  - Large, highly complex problems use the same method, same tools
- The method is “application agnostic” and can be used for a vast number of socio-technical systemic applications
  - Highest application experience is in safety and security domains
  - Effective for any complex, multi-systemic problem
- Can be used for pre- or post-event circumstances
  - Pre: Analyses of defenses, vulnerability and risk assessment
  - Post: Root cause analyses

# Scalability and Application

- The figure illustrates a small example event analysis
- Additional timelines, organizational aspects, defenses, data sources can be added with virtually no method overhead
- The example illustrates a safety related problem, but security or any other complex problem can be the subject

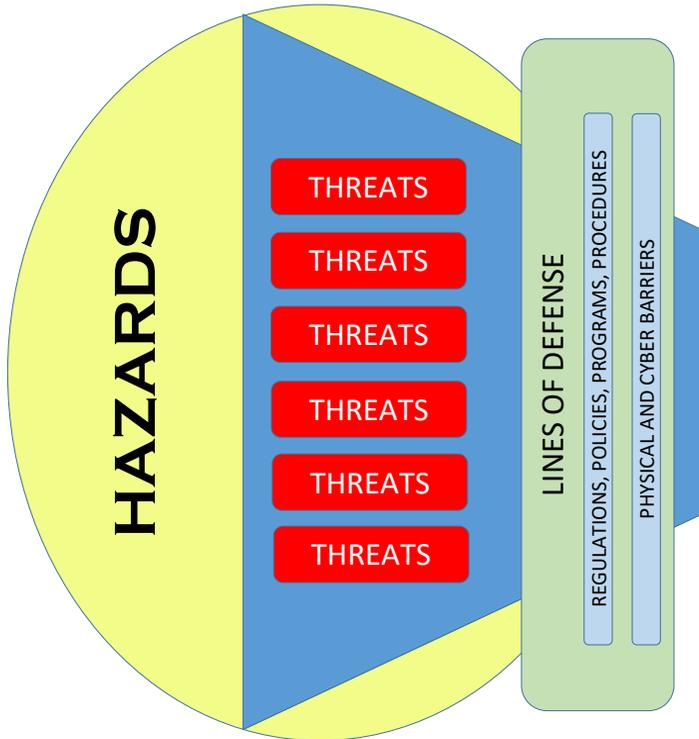


# Pre and Post Event Application: The Whole View



## BlueDragon Use Cases

# Blue Dragon was born as an RCA methodology, but is equally as effective for pre-event vulnerability/risk/threat assessment



## Examples:

- Proactive Safety Program Reviews
- Vulnerability Analyses
- Threat Assessments
- Safety Culture Assessments
- Risk Evaluations
- Minor Event Trending and Analysis
- Audits & Self-assessments

# and Others Using BlueDragon



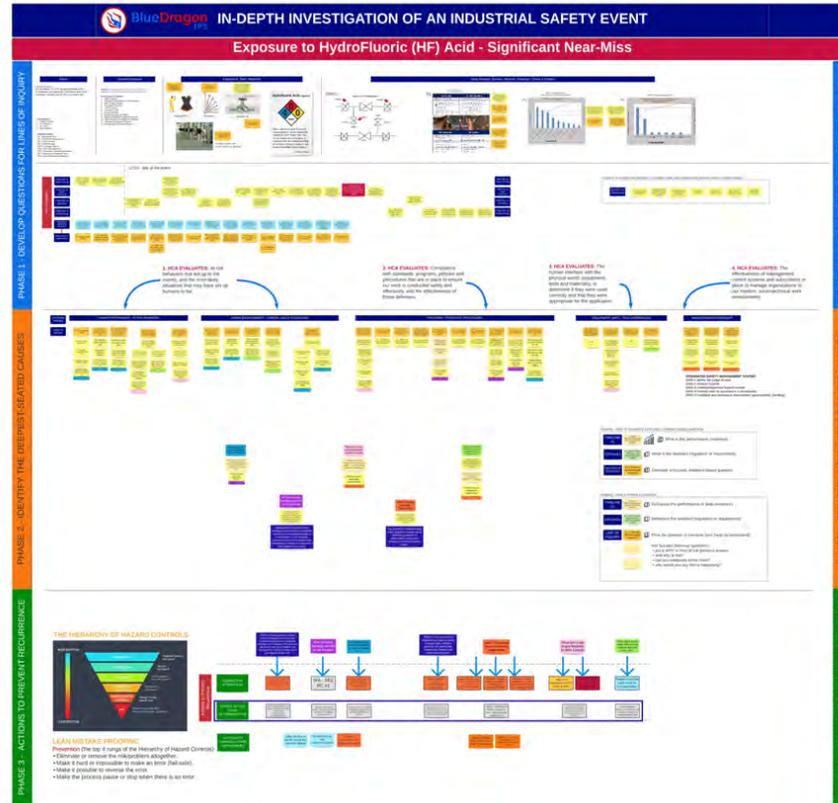
BlueDragon is in use at some of the most technically challenging sites in the world, including most of the Department of Energy's National Laboratories and the Nuclear Weapons Complex.

# Intro to BlueDragon IPS

Phase 1

Phase 2

Phase 3



Questions

Causes

Solutions



# Proactive Investigation of a Negative Trend of Dropped Objects

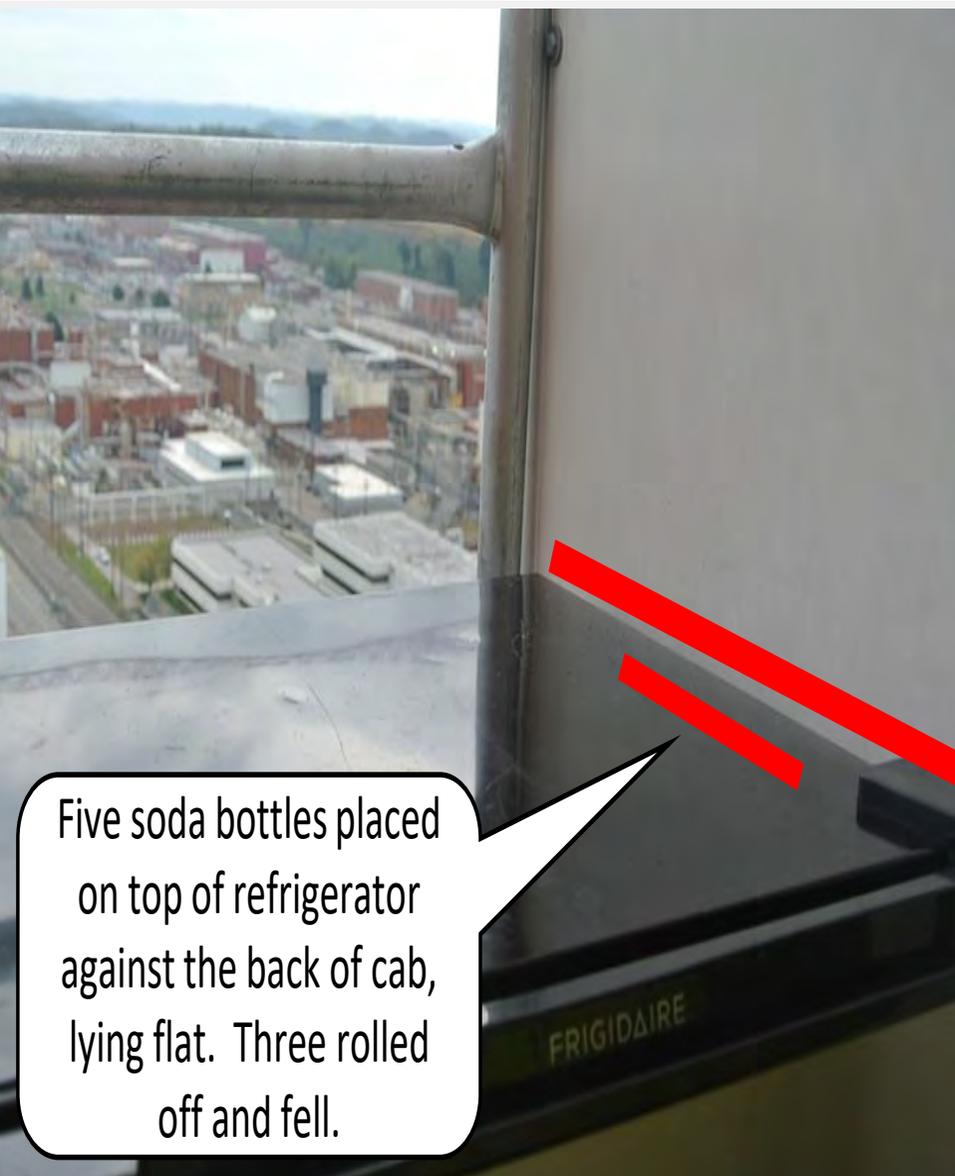
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Uranium Process Facility  
Construction, Oak Ridge

## Negative Trend

Five objects were dropped from 300 feet during construction of the Uranium Processing Facility

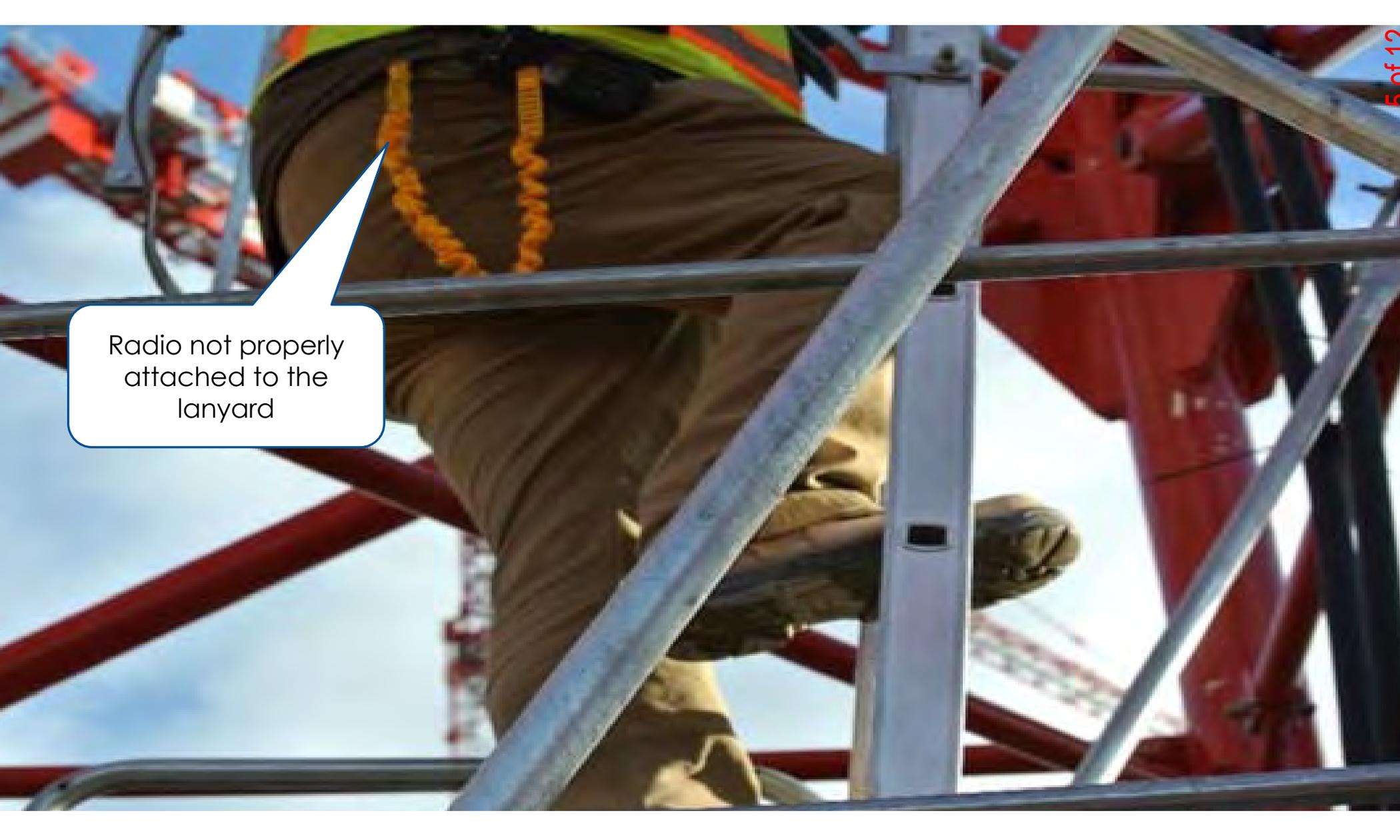




Five soda bottles placed on top of refrigerator against the back of cab, lying flat. Three rolled off and fell.



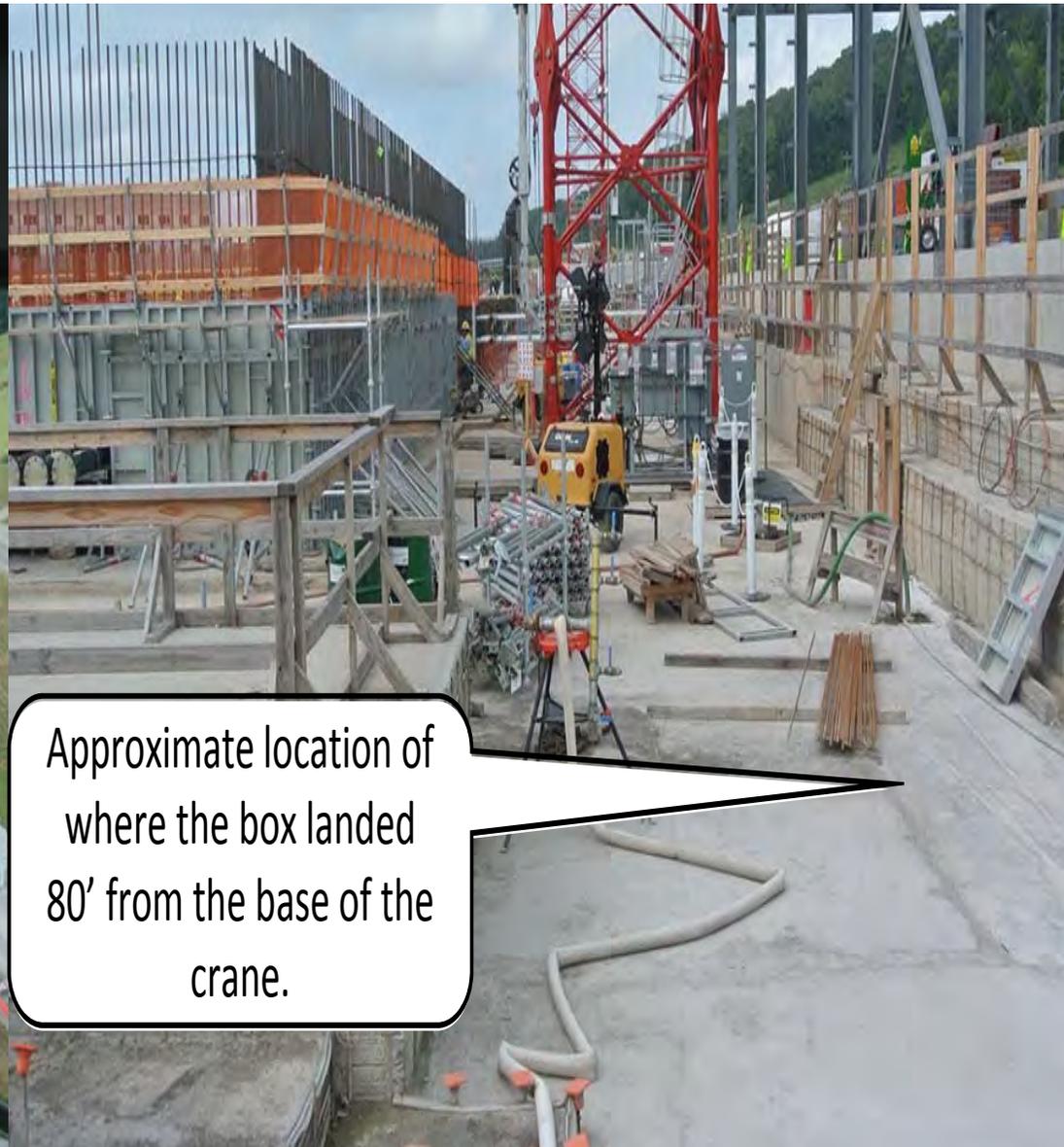
Two soda bottles hit top of cool down tent and broke through the fabric. Third bottle hit the tent structure and did not fall to ground.

A close-up photograph of a firefighter in brown turnout gear on a silver metal ladder. The firefighter's radio is visible, but it is not properly secured to the lanyard. A white callout box with a blue border points to the radio. The background shows red structural elements of the ladder and a clear sky.

Radio not properly  
attached to the  
lanyard



Sliding windows open approximately 18" to the center post.



Approximate location of where the box landed 80' from the base of the crane.



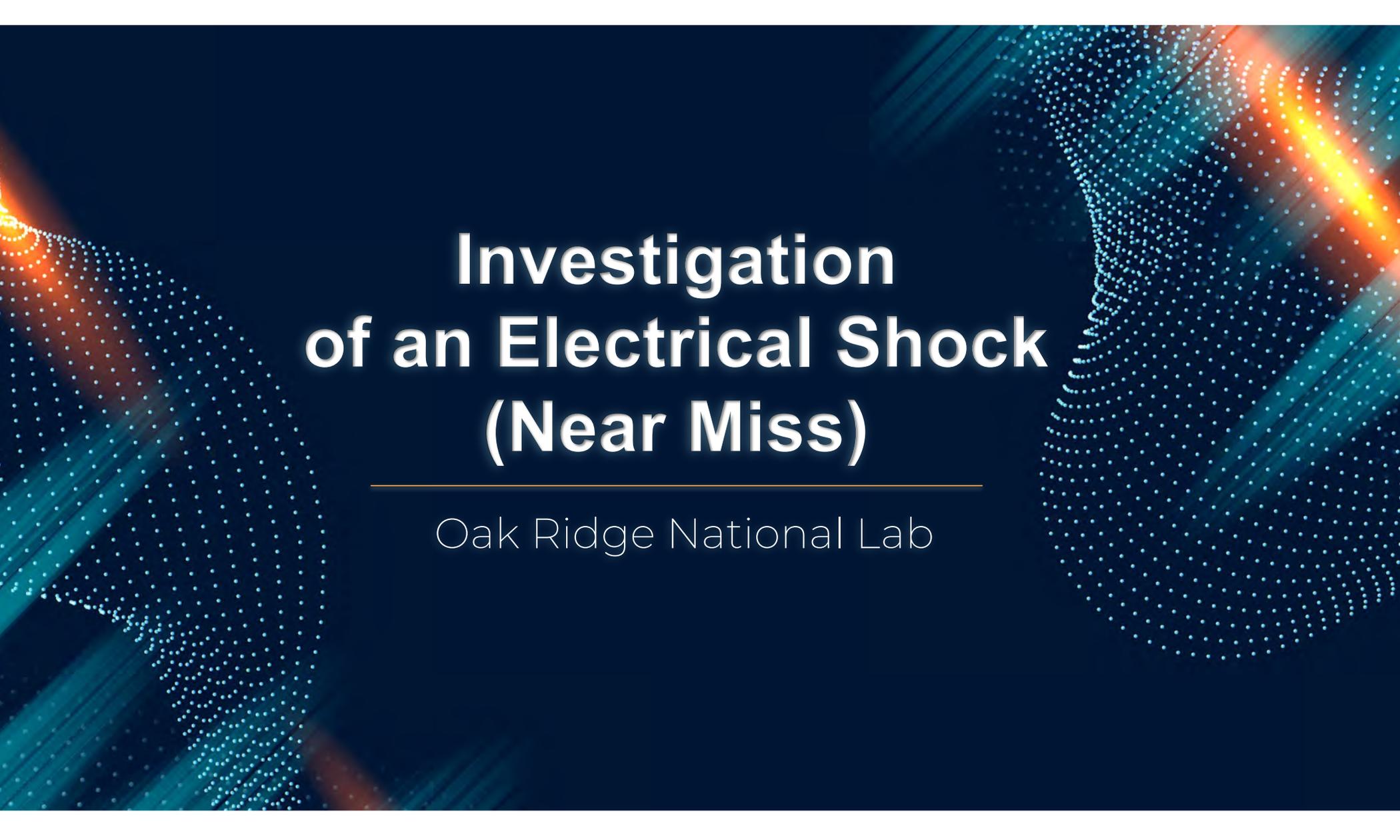


## Level of Effort:

- 4 team members
- 30+ defenses
- 60+ LOI questions
- 50+ SMEs
- 15 organizations
- 8 Causal Sessions

## Duration:

- 3.5 days



# Investigation of an Electrical Shock (Near Miss)

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Oak Ridge National Lab

## Near Miss:

Non-qualified  
Electrical Worker  
Cuts Into a Live  
20-amp Wire



Snippets used by the construction worker were not insulated. The arc blew one tip off and left a half moon on the other side.

The worker was sent to the hospital, treated and released.



## HCA Team:

- Team lead/facilitator
- 2 BlueDragon trained personnel (HPI Lead, QA Engineer)
- 1 non-HCA trained Issues Management Root Cause Analyst
- 0 SMEs from the affected organization



## HCA Team:

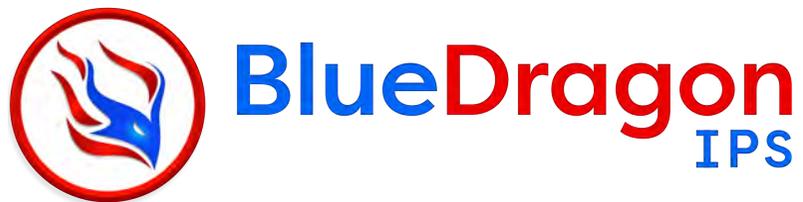
- Team lead/facilitator
- 2 BlueDragon trained personnel (HPI Lead, QA Engineer)
- 1 non-HCA trained Issues Management Root Cause Analyst
- 0 SMEs from the affected organization

## Details:

- 90 procedures/requirements
- 40 lines of inquiry
- 9 causal analysis sessions
- 50+ SMEs participated in the analysis

## Level of Effort:

- 4 days to complete the analysis
- 4 RCA team members
- 0 SMEs on the team



## Contact us:

**Rob De La Espriella, BD3**

CEO, DLE Technical Services, LLC

rob@bluedragon1.com

1+(772) 341-1093

www.bluedragon1-ips.com



We are an SBA certified  
Veteran Owned Small Business