



Our Safety Companion

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Tip #37

Hazard Identification and Risk Analysis (HIRA)



*You can't control what you don't
IDENTIFY and understand!*



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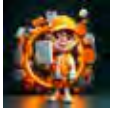
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Step [1] Find the Hazards

Step [2] Analyze the Risks

HIRA is the systematic process of identifying hazards and evaluating their potential consequences and likelihood.





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Risk Analysis = Proactive Protection

- Anticipate and **prevent** incidents.
- **Prioritize** controls based on risk.
- Support informed **decision-making**.





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Structured Tools Reveal Hidden Risks

- **HAZOP** (Hazard Operability Study)
- **FMEA** (Failure Modes and Effects Analysis)
- **What-If / Checklist** Analysis
- **Bow-Tie** Diagrams



HAZOP



FMEA



What-If /
Checklist



Bow-Tie
Diagrams





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Missed Hazards = Missed Chances to Prevent Disaster

Many catastrophic accidents could have been prevented if hazards were identified earlier and risks correctly assessed.



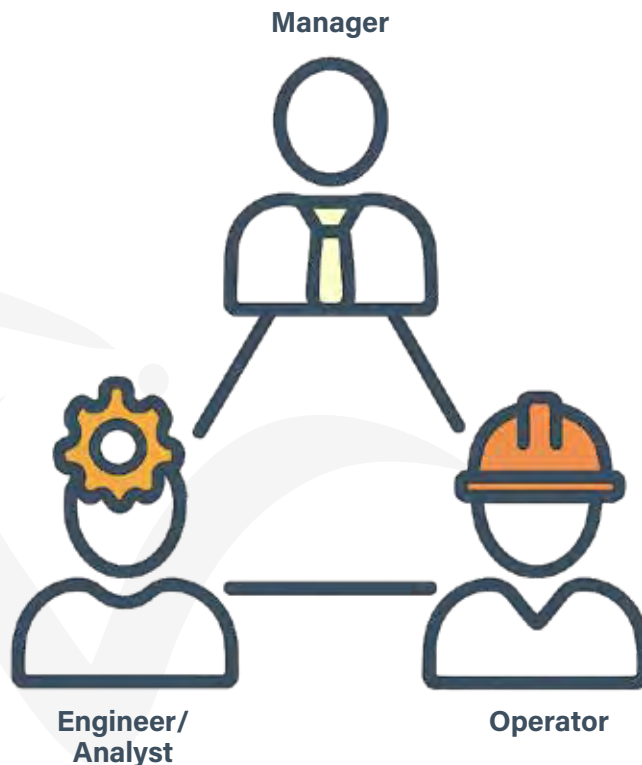


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Everyone Contributes to Hazard Awareness

- **Management:**
Allocate resources for HIRA studies.
- **Engineers/Analysts:**
Apply Structured techniques.
- **Operators:**
Share frontline knowledge of risks.





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Skipping Risk Analysis = Inviting Accidents

A facility skipped a full HAZOP during expansion. A hidden overpressure scenario caused a release and fire.





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IDENTIFY Hazards. ANALYZE Risks. SAVE Lives.

Hazard identification and risk analysis are essential for prevention, they turn the unknown into the manageable.

