



Integrated Safety Management

Five Steps of Integrated Safety Management

1. Define scope of work
2. Analyze hazards
3. Develop/ implement hazard controls
4. Perform work within controls
5. Feedback and improvement



Questions associated with each of the five steps:

1. What will the work/job/ experiment involve?
2. What are the hazards of this job?
3. What can be done to reduce the hazards?
4. Were all of the hazard reductions followed?
5. Was there anything that could have been changed to improve the quality and safety of the work?



Integrated Safety Management Risk Assessment



Consequences

		Consequences				
		A	B	C	D	E
Likelihood		Negligible	Minor	Moderate	Significant	Severe
E	Very Likely	Low Med	Medium	Med Hi	High	High
D	Likely	Low	Low Med	Medium	Med Hi	High
C	Possible	Low	Low Med	Medium	Med Hi	Med Hi
B	Unlikely	Low	Low Med	Low Med	Medium	Med Hi
A	Very Unlikely	Low	Low	Low Med	Medium	Medium

Definitions for Risk Assessment

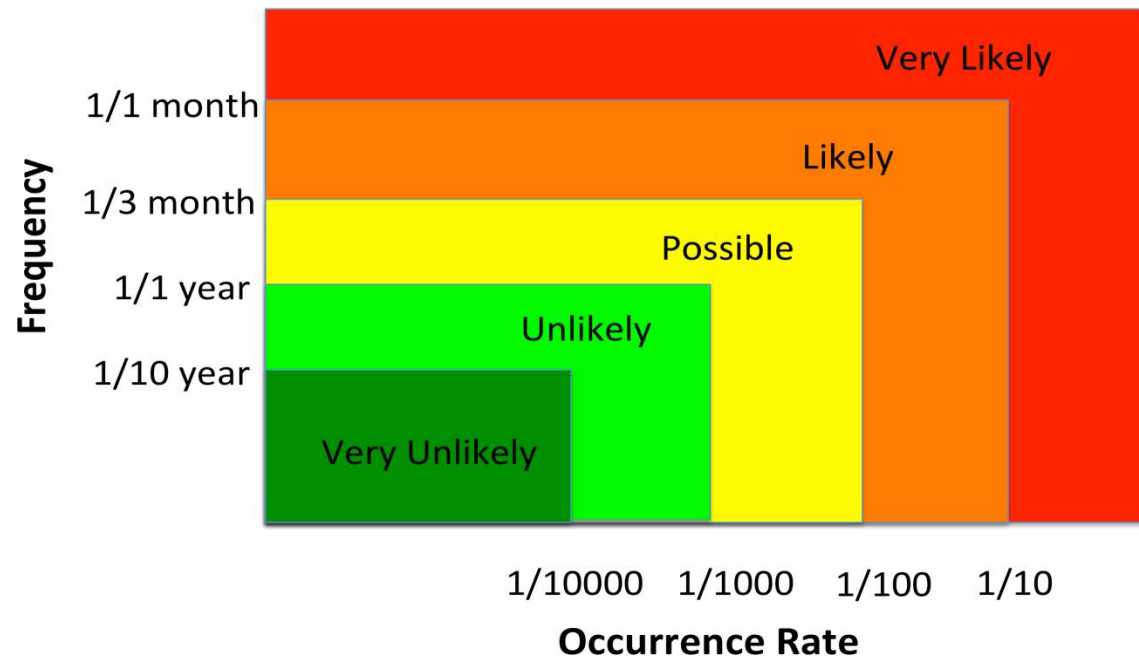


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Consequences, in a worst case scenario if something goes wrong:

- **Negligible:** minor injury resulting in basic first aid treatment that can be provided on site.
- **Minor:** minor injury resulting in advanced first aid treatment administered by a physician.
- **Moderate:** injuries that require treatment above first aid but do not require hospitalization.
- **Significant:** severe injuries and hospitalization.
- **Severe:** death or permanent disability.

Definitions for Risk Assessment



Likelihood, whichever is the greater risk (see graphic):

- **Very Unlikely:** less than once in a ten thousand times (<0.01%) and less frequently than once per 10 years.
- **Unlikely:** less than once in a thousand times (<0.1% of the time) and less frequently than once per year.
- **Possible:** less than once in a hundred times (<1% of the time) and less frequently than once per 3 months.
- **Likely:** less than once in ten times (<10% of the time) and less frequently than once per month.
- **Very likely:** more than once in ten times and more frequently than once per month.

Risk Assessment

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Use residual risk categories **after all controls are in place** to decide how the work will proceed:

- **Low:** proceed using ISM
- **Low Medium:** proceed with caution using ISM. A second worker is in the vicinity.
- **Medium:** Seek guidance from safety department before proceeding.
Two authorized workers must be in place before work can proceed.
Limited number of authorized workers as maintained by the safety department.
- **Medium High:** Seek guidance from safety department before proceeding.
Two authorized workers must be in place before work can proceed.
Limited number of authorized workers as maintained by the safety department.
Work can only proceed if authorized by the Director or his designee.
- **High:** Work will not be performed.

Human Behavior in ISM:

WHAT WILL THE JOB INVOLVE?

- Identify Critical Steps
- Ponder the worst that could happen
- Address unexpected equipment conditions, etc



WAS THERE ANYTHING THAT COULD HAVE BEEN CHANGED TO IMPROVE THE QUALITY & SAFETY OF WORK?

- Post Job Briefing
- Identify any errors (even minor ones)
- Understand reasons for errors and strengthen controls

WHAT ARE THE HAZARDS OF THE JOB?

- Pre-job briefing
- Discuss the controls and error prevention tools
- Identify and strengthen engineering and administrative controls



ARE THE CONTROLS BEING FOLLOWED?

- Continue self checking
- Continue peer checking
- Continue procedure use and adherence
- Effective communication
- Stop when unsure

WHAT CAN BE DONE TO REDUCE THE HAZARDS?

- Self checking
- Peer checking
- Procedure use and adherence
- Questioning attitude

Sample ISM Template

Scope of Work	Hazards	Likelihood	Consequences	Risk without Controls	Controls	Risk with Control in Place

Risk Assessment Matrix

		Consequences				
		A	B	C	D	E
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