

TWO VARIABLE RISK MATRIX

(1) Definitions of Likelihood Labels			
Level	Likelihood (Probability)		
	Descriptor	Description	Expected to occur
A	Almost certain	The event will occur on an annual basis	Once a year or more
B	Likely	The event has occurred several times or more in your career	Once every three years
C	Possible	The event might occur once in your career	Once every ten years
D	Unlikely	The event does occur somewhere from time to time	Once every thirty years
E	Rare	Heard of something like the event occurring elsewhere	Once every 100 years

(2) Definitions of Consequence Labels		
Severity Level	Consequences Types	
	Health and safety	Natural Environment
V Catastrophe	Multiple fatalities, or significant irreversible effects to >50 persons	Very serious, long-term environmental impairment of ecosystem functions.
IV Major	Single fatality and/or severe irreversible disability (>30%) to one or more persons	
III Moderate	Moderate irreversible disability or impairment (<30%) to one or more persons	Serious medium term environment effects
II Insignificant	Objective but reversible disability requiring hospitalization	Moderate, short-term effects but not affecting ecosystem functions
I Negligible	No medical treatment required	Minor effects on biological or physical environment

(3) Risk Rating Calculator					
Likelihood Label	Consequences Label				
	I	II	III	IV	V
A	Medium	High	High	Very high	Very high
B	Medium	Medium	High	High	Very high
C	Low	Medium	High	High	High
D	Low	Low	Medium	Medium	High
E	Low	Low	Medium	Medium	High

THREE VARIABLE RISK CALCULATOR

(1) Definition of Exposure Variable	
Exposure	E
Continuously or many times daily.	10
Frequently: Approximately once daily.	6
Occasionally: Once a week to once a month.	3
Infrequent: Once a month to once a year.	2
Rare: Has been known to occur.	1
Very rare: Not known to have occurred.	0.5

(2) Definition of Likelihood Variable	
Likelihood	L
Almost certain: The most likely outcome if the event occurs.	10
Likely: Not unusual, perhaps 50-50 chance.	6
Unusual but possible: (e.g. 1 in 10).	3
Remotely possible: A possible coincidence (e.g. 1 in 100).	1
Conceivable: Has never happened in years of exposure, but possible (eg 1 in 1,000).	0.5
Practically impossible: Not to knowledge ever happened anywhere (e.g. 1 in 10,000).	0.1

(3) Definition of Consequences Variable	
Consequences	C
Catastrophe: Multiple fatalities, permanent extensive environmental damage.	100
Disaster: Fatality, permanent local, damage to environment	50
Very serious: Permanent disability/ill health, non-permanent environmental damage.	25
Serious: Non-permanent injury or ill health. Adverse effect on environment	15
Important: Medical attention needed, off-site emission but no damage.	5
Noticeable: Minor cuts and bruises or sickness, small loss of containment, no off-site consequences.	1

(4) Risk Score Calculator	
Risk Score = E x L x C	
Risk Score	Risk Rating
> 600	Very High
300 - 599	High
90 - 299	Medium
< 90	Low