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# Title Project : Industrial relocation

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Type : Prevention

Departement : Industrial

## Undesirables Events

Code	Description
E1	Work-related illness
E2	Drop in productivity
E3	Drop in quality
E4	Inadequate design
E6	Explosion and fire
E5	Pollution
E7	.....

## Factors

Code	Description
F1	Mechanical
F2	Electrical
F3	Human
F4	Physical

## Impacts

Code	Description
IP	On performance
IC	On cost
ID	On delays
IE	on the environment

## Probability Scale

Relative concentration of risk		Probability of occurrence
0.0	0.15	0.1
0.15	0.25	0.3
0.25	0.5	0.5

0.5	0.75	0.7
0.75	0.9	0.9

## Estimation of Impact

	Impact : IP	Impact : IC	Impact : ID	Impact : IE
E1	7	7	3	1
E2	9	7	6	1
E3	7	6	6	1
E4	6	6	4	5
E5	7	5	2	9
E6	7	7	7	8

## Les Matrices AHP

### E1

	F1	F2	F3	F4	Weight
F1	1.0	5.0	3.0	0.5	0.28
F2	0.2	1.0	0.5	0.13	0.06
F3	0.33	2.0	1.0	0.14	0.1
F4	2.0	7.69	7.14	1.0	0.56

### E2

	F1	F2	F3	F4	Weight
F1	1.0	3.0	0.25	0.5	0.14
F2	0.33	1.0	0.11	0.14	0.05
F3	4.0	9.09	1.0	2.0	0.52
F4	2.0	7.14	0.5	1.0	0.29

### E3

	F1	F2	F3	F4	Weight
F1	1.0	4.0	0.33	2.0	0.22
F2	0.25	1.0	0.13	0.5	0.06
F3	3.03	7.69	1.0	7.0	0.62
F4	0.5	2.0	0.14	1.0	0.11

### E4

	F1	F2	F3	F4	Weight
F1	1.0	2.0	4.0	7.0	0.51
F2	0.5	1.0	3.0	5.0	0.31
F3	0.25	0.33	1.0	2.0	0.12
F4	0.14	0.2	0.5	1.0	0.06

## E5

	F1	F2	F3	F4	Weight
F1	1.0	6.0	8.0	2.0	0.54
F2	0.17	1.0	3.0	0.33	0.11
F3	0.13	0.33	1.0	0.17	0.05
F4	0.5	3.03	5.88	1.0	0.3

## E6

	F1	F2	F3	F4	Weight
F1	1.0	0.33	3.0	4.0	0.25
F2	3.03	1.0	5.0	7.0	0.57
F3	0.33	0.2	1.0	2.0	0.11
F4	0.25	0.14	0.5	1.0	0.07

## Calculation of the risk factor concentration for each undesirable event

Undesirable event	Linked risk factor category	Factors of category Xi	Weighting: Yi	$X_i \cdot Y_i$	Fraction of total Eq	Probability of Occurrence	Max Impact	Level of Risk
E1	F1	7	4.0	28.0	--	--	--	--
	F4	7	3.0	21.0	--	--	--	--
			Sub-Total E1	49.0	0.23	0.3	7.0	2.1
E2	F1	7	4.0	28.0	--	--	--	--
	F3	3	2.0	6.0	--	--	--	--
	F4	7	3.0	21.0	--	--	--	--
			Sub-Total E2	55.0	0.26	0.5	9.0	4.5
E3	F3	3	2.0	6.0	--	--	--	--
			Sub-Total E3	6.0	0.03	0.1	7.0	0.7
E4	F4	7	3.0	21.0	--	--	--	--
			Sub-Total E4	21.0	0.1	0.1	6.0	0.6

Undesirable event	Linked risk factor category	Factors of category Xi	Weighting: Yi	Xi*Yi	Fraction of total Eq	Probability of Occurrence	Max Impact	Level of Risk
E5	F4	7	3.0	21.0	--	--	--	--
	F1	7	4.0	28.0	--	--	--	--
			Sub-Total E5	49.0	0.23	0.3	9.0	2.7
E6	F1	7	4.0	28.0	--	--	--	--
	F2	2	1.0	2.0	--	--	--	--
			Sub-Total E6	30.0	0.14	0.1	8.0	0.8
			Total	210.0	100 %			

**Result :** Limit ACCEPT = 2.5

Accepted Risks	
Code	Description
E1	Work-related illness
E3	Drop in quality
E4	Inadequate design
E6	Explosion and fire

Risks à reduire	
Code	Description
E2	Drop in productivity
E5	Pollution