

Risk Assessment;

*Part 4; How we can use a risk matrix?
Case Study PDO Risk Assessment matrix*

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*Iran, South Pars Gas Field Development
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Severity	Disaster	High	Medium	Minimal
Probability	Disaster	High	Medium	Minimal
Regularly	Critical	Critical	High	Medium
Probable	Critical	High	Medium	Low
Occasional	Critical	High	Medium	Low
Rarely	High	Medium	Medium	Low
Probable	Medium	Medium	Low	Low



Basic Information;

Department / Area/Facility	
Job Type / Equipment / System	
Process	
Task	
Carried Out By -	
Risk Assessment Tracking No.	



Risk Matrix;

Severity	Likelihood				
	A	B	C	D	E
0					
1					
2					
3					
4					
5					

		Approver
	Low	DTL or Delegate
	Medium	Operations Manager
	High	Oil, Gas or Engineering Director
	Serious	



Risk Identification and Analysis;

No.	Activity / Task	Hazard/ Threat	Effect of the Hazard	Groups Affected/ Consequence	Initial Risk (Highest Rating)	Control measures required to reduce Initial Risk	Residual / Tolerable Risk (Severity / Likelihood)
1							
2							
3							
4							
5							

residual Risk Reviewed and **Accepted** (Production Coordinator)

Name:	Ref ID	Sign:	Date:
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Residual Risk **Approved** by;

Name:	Ref ID:	Sign:	Date:
Position:			



Risk Matrix 2;

Severity	Consequences				Increasing Likelihood				
	People	Assets	Environment	Reputation	A	B	C	D	E
					Never heard of before in the Industry	Heard of in the Industry	Has happened in the Company or more than once per year in the Industry	Has happened at the Location or more than once per year in the Company	Has happened more than once per year at the Location
0	No Injury or health effect	No damage	No effect	No impact					
1	Slight injury or health effect	Slight damage	Slight effect	Slight impact					
2	Minor injury or health effect	Minor damage	Minor effect	Minor impact					
3	Major injury or health impact	Moderate damage	Moderate effect	Moderate impact					
4	PTD or up to 3 fatalities	Major damage	Major effect	Major impact					
5	More than 3 fatalities	Massive damage	Massive effect	Massive impact					

Risk Matrix Severity Description; PEOPLE

Severity Level	Definition
0	No injury or health effect
1	Slight injury or health effect – Not affecting work performance and not affecting daily life activities. Examples: <ul style="list-style-type: none"> • First aid cases and medical treatment cases • Exposure to health hazards that give rise to noticeable discomfort, minor irritation or transient effects reversible after exposure stops
2	Minor injury or health effect – Affecting work performance, such as restriction to activities or need to take up to 5 days to fully recover. Or affecting daily life activities for up to 5 days. Or reversible health effects. Examples: <ul style="list-style-type: none"> • Restricted work day cases or lost work day cases resulting in up to 5 calendar days away from work • Illnesses such as skin irritation or food poisoning.
3	Major injury or health effect – Affecting work performance in the longer term, such as absence from work for more than 5 days. Or affecting daily life activities for more than 5 days. Or irreversible damage to health. Examples: <ul style="list-style-type: none"> • Lost Work Day cases resulting in 6 or more calendar days away from work • Long term disabilities (previously called Permanent Partial Disabilities) • Illnesses such as sensitisation, noise induced hearing loss, chronic back injury, repetitive strain injury or stress
4	Permanent total disability or up to three fatalities – resulting from injury or occupational illness. Examples: <ul style="list-style-type: none"> • Illnesses such as corrosive burns, asbestosis, silicosis, cancer and serious work related depression. • Car accident resulting in 1, 2 or 3 fatalities
5	More than three fatalities – resulting from injury or occupational illness. Examples: <ul style="list-style-type: none"> • Multiple asbestosis cases traced to a single exposure situation • Cancer to a large exposed population

Risk Matrix Severity Description; ASSETS

Severity Level	Definition
0	No damage
1	Slight damage – Costs less than 10,000 US\$. Example: <ul style="list-style-type: none">• No disruption to operation
2	Minor damage –Costs between 10,000 and 100,000 US\$. Example: <ul style="list-style-type: none">• Brief disruption to operation
3	Moderate damage –Costs between 100,000 and 1 million US\$. Example: <ul style="list-style-type: none">• Partial shutdown
4	Major damage –Costs between 1 and 10 million US\$. Example: <ul style="list-style-type: none">• Up to two weeks shutdown
5	Massive damage –Costs in excess of 10 million US\$. Example: <ul style="list-style-type: none">• Substantial or total loss of operation



Risk Matrix Severity Description; Environmental

Severity Level	Definition
0	No effect
1	Slight effect Local Slight environmental damage – contained .within the premises. Example: <ul style="list-style-type: none">• Small spill in process area or tank farm area that readily evaporates
2	Minor effect Contamination. Damage Minor environmental damage, but no lasting effect. Examples: <ul style="list-style-type: none">• Small spill off-site that seeps into the ground• On-site groundwater contamination• Complaints from neighbours, Contamination. Damage s• Single exceedance of statutory or other prescribed limit• No permanent effect on the environment.
3	Moderate effect Limited environmental damage that will persist or require cleaning up. Examples: <ul style="list-style-type: none">• Spill from a pipeline into soil/sand that requires removal and disposal of a large quantity of soil/sand• Observed off-site effects or damage, e.g. fish kill or damaged vegetation• Off-site groundwater contamination• Complaints from community organisations (or more than 10 complaints from individuals)• Contamination. Damage Frequent exceedance of statutory or other prescribed limit, with potential long term effect



Risk Matrix Severity Description; Environmental

Severity Level	Definition
4	<p>Major effect</p> <p>Severe environmental damage that will require extensive measures to restore beneficial uses of the contaminated environment. Examples:</p> <ul style="list-style-type: none">• Oil spill at a jetty during tanker (off) loading that ends up on local beaches, requiring clean-up operations• Off-site groundwater contamination over an extensive area• Many complaints from community organisations or local authorities.• Extended exceedance of statutory or other prescribed limits, with potential long term effects
5	<p>Massive effect</p> <p>Persistent severe environmental damage that will lead to In terms of loss of commercial, or recreational use or loss of natural resources over a wide area. Example:</p> <ul style="list-style-type: none">• Crude oil spillage resulting in pollution of a large part of a river estuary and extensive clean-up and remediation measures



Risk Matrix Severity Description; REPUTATION

Severity Level	Definition
0	No impact
1	Slight impact <ul style="list-style-type: none">• Local public awareness but no discernible concern• No media coverage
2	Minor impact <ul style="list-style-type: none">• Local public concern• Local media coverage
3	Moderate impact – Significant impact in region or country <ul style="list-style-type: none">• Regional public concern• Local stakeholders, e.g. community, NGO, industry and government, are aware• Extensive attention in local media. Some regional or national media coverage.



Risk Matrix Severity Description; REPUTATION

Severity Level	Definition
4	<p>Major impact – Likely to escalate and affect Group reputation</p> <ul style="list-style-type: none">• National public concern• Impact on local and national stakeholder relations. National government and NGO involvement with potential for international NGO action.• Extensive attention in national media. Some international coverage.• Potential for regulatory action leading to restricted operations or impact on operating licences.
5	<p>Massive impact – Severe impact on Group reputation</p> <ul style="list-style-type: none">• International public concern.• High level of concern amongst governments and action by international NGOs.• International media attention.• Significant potential for effect on national/international policies with impact on access to new areas, grants of licences and/or tax legislation.



Thanks for your Attention

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