Fire Safety Concept Tree scenario worksheet (NFPA 550)

Company	:	ICL-IP	Behandelt door	:	2E
Area	:	Maintankenpark	Date	:	23-4-2019
Scenario nr.	:	1		:	
Scenario title	:	Koeling H2O2 opslagtanks 81, 82 en 83			

Scenario consequences			**Direct causes**		
Constructie	:	Betonnen opvangbak - PE-tanks		:	
Apparatuur	:	Leidingen en tanks		:	
Kabels	:	N.v.t.		:	
Bluswaterleiding	:	N.v.t.		:	
Besmetting product	:	N.v.t.		:	
Sumps	:			:	
Luchtleidingen	:			:	
Koelwater systeem	:	Bluswaternet		:	
stikstofsysteem	:			:	
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Preventive LOD's — LOD's on left side of the BOW-TIE — **Securing LOD's**

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Concept checklist	Manage method	To be used	Control item	To be used	How	How (2nd level)	To be used	Wettelijke eis	Acceptable/ Possible	Remarks
Manage fire	Control combustion process	☐	Control fuel	☐	Control fuel properties, **or**		☐			
			OR		Limit fuel quantity, **or**		☐			
					Control fuel distribution		☐			
			Control the environment	☐	Control physical properties of enviroment, **or**		☐			
	OR				Control chemical composition of enviroment		☐			
	Surpress fire	☐	Automaticaly surpress fire	☐	Detect fire, **and**		☐			
			OR		Apply sufficient surpressant		☐			
			Manually surpress fire	☐	Detect fire, **and**		☐			
					Communicate signal, **and**		☐			
					Decide action, **and**		☐			
					Respond to site, **and**		☐			
					Apply sufficient surpressant, **and**		☐			
	OR				Accessable, **and**		☐			
					Workable		☐			
	Control fire by construction	☐	Control movement of fire **AND**	☐	Vent or remove fire, **or**		☐			
					Confine/contain fire		☐			
			Provide structural stability				☐			
Manage exposed	Limit amount exposed						☐			
	Safeguard exposed	☑	Defend exposed in place,	☑	Restrict movement of exposed, and		☑			Vaste opstelling tanks en containment
					Defend the place, and ☑	Defend against fire products, and	☑			Koelen door middel van een deluge-installatie Automatisch of handmatig geactiveerd
						Provide structural stability	☑			Opvang dient tegen brand bestand te zijn
			OR		Maintain essential enviroment		☑			Koelsysteem dient functioneel te blijven
			Move exposed	☐	Cause movement of exposed, and ☐	Detect need, and	☐			
						Signal need, and	☐			
						Provide instructions	☐			
					Provide movement means ☐	Provide capacity, and	☐			
						Provide route completeness, and	☐			
						Provide protected path, and	☐			
						Provide route access	☐			
					Provide safe destination (Defend exposed in place is required)		☐			
Prevent fire ignition	Control electrical energy sources	☐	Eliminate electrical energy sources, or				☐			
			Provide barrier				☐			
	Control heat-energy sources	☐	Eliminate heat-energy sources, or				☐			
			Control rate of heat-energy release				☐			
	Control source-fuel interactions	☐	Control heat-energy source transport, **and** ☐		Provide separation, or		☐			
					Provide barrier		☐			
			Control heat-energy transfer processes, **and** ☐		Control conduction, **and**		☐			
					Control convection, **and**		☐			
					Control radiation		☐			
			Control fuel transport ☐		Provide barrier, **or**		☐			
					Provide separation		☐			
	Control fuel	☐	Eliminate fuel(s), or				☐			
			Control fuel ignitibility ☐		Control fuel properties, **or**		☐			
					Control the environment		☐			

Mitigation LOD's — LOD's on right side of the BOW-TIE — **Securing LOD's**

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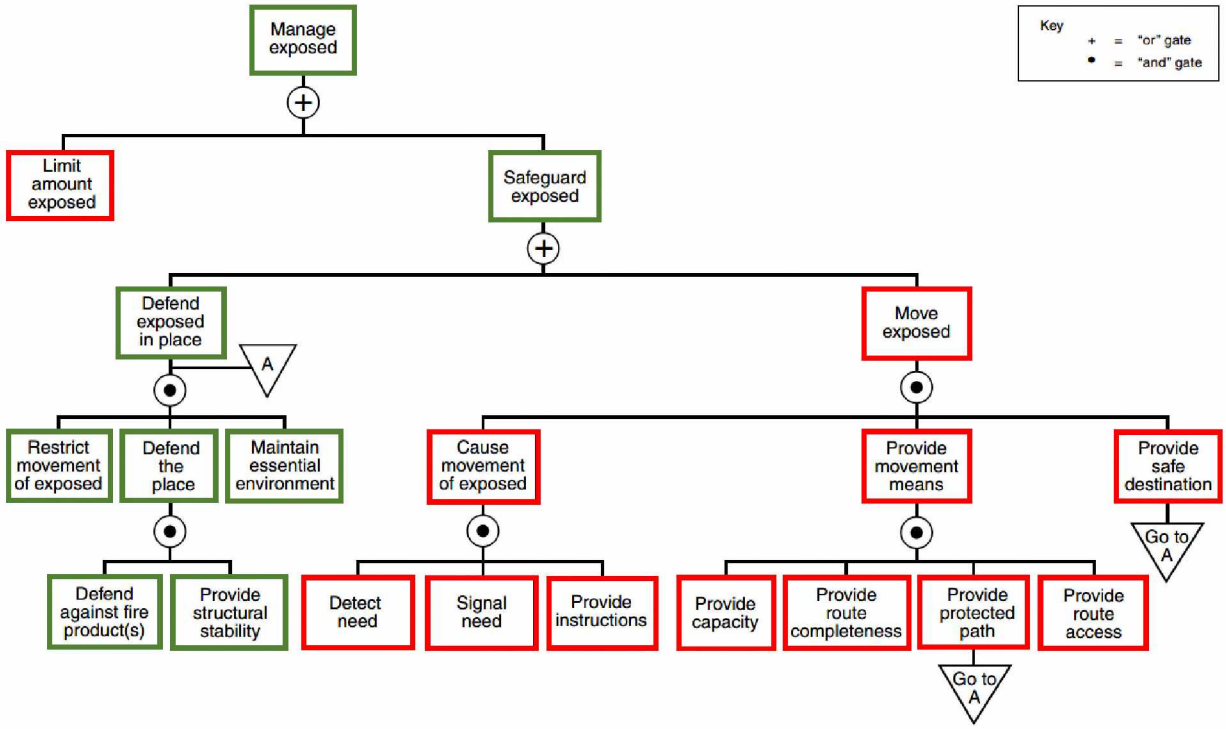
Key
+ = "or" gate
• = "and" gate
Manage exposed
Limit amount exposed
Safeguard exposed
Defend exposed in place
A
Move exposed
Restrict movement of exposed
Defend the place
Maintain essential environment
Cause movement of exposed
Provide movement means
Provide safe destination
Go to A
Defend against fire product(s)
Provide structural stability
Detect need
Signal need
Provide instructions
Provide capacity
Provide route completeness
Provide protected path
Provide route access
Go to A