Storing vital products, with care



Tailor-made Hazop typicals a systematic route to acceptable risk Jaco van der Leeden





Process Safety Event Rate

Own employees and contractors per 200,000 hours worked



Total Injury Rate

Own employees and contractors per 200,000 hours worked





Our independent position



Vopak & Hazop Hazop Typicals Typicals in Hazop workflow Roadmap Typicals Pilot results



Vopak & Hazop

Hazopping:

- Demonstrates acceptable risk
- Both valuable & time consuming

Yet, we are:

- Hazopping similar scenario's over and over again
- Repeating the same discussions
- Coming to different conclusions

#	Guide word	#.#	Cause	#.#.#	Consequence	Conditional Modifiers	CO	K	(* R	***	Safeguards	Risk	CG	K K ^a R	Safety critical	Safety critical task	Acti	Action	Action owner	Prie	ALARP description	CG	KK	R
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			in 10 years)		single fatality	time, therefore RRF10)	P				pressure relief valve	100	p				L							
							r						r											L



Hazop typicals:

- contain the knowledge of our experts, with approval by commitee
- automatically generate a risk ranking based on pre-defined input
- tailor-made for our most important Hazop scenario's
- demonstrate whether the installation is sufficiently safeguarded

This is expected to provide:

- **Systematic** route to an acceptable risk
- Vopak expertise on topic is available to all
- Ease of use: Efficient use of our time
- Consistent risk assessment: High level of Hazop quality



Our expertise captured in a structured process



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Tab for creating an evaluation and overview of all units to identify insufficiently protected units.

Automatically generated Hazop-line to copy-paste





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Typicals in Hazop workflow

Obligatory use in Hazops

- prior to a Hazop: identification of typicals to be used
- take a copy from the templates
- Hazop team to ensure correct application of the typical to the situation
- use the copy-paste Hazop-line in the Hazop
- add the completed form as a tab to the Hazop worksheet

Optionally used in specific cases for an inventorisation



Finalized Typicals



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Roadmap Typicals



Example Camlocks/caps









Tailor made to situation:

- Product/ non-product
- High/Low position
- Volume connection
- Cap type + size
- Venting
- Frequency of use





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Pilot results





- Able to find the most hazardous locations
- Often simple solutions possible
- Effective method for selectively tackling the most dangerous locations







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Thank you

