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von Informationen zur Anlagensicherheit - 10 Jahre ZEMA**



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Towards better Accident Prevention and Response through Analysis and Sharing of Lessons learnt

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Topics

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- The MARS database
- The answers from accident databases
- Authorities and industry
- Lessons learnt of different types
- Closing the loop
- Whither now?



The MARS database

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- MARS contains 547 accidents
- Objective: *lessons learnt from **individual accidents*** => detailed information needed
 - Direct cause
 - Underlying cause
 - Response
 - Foreseen in Safety Report?
- 7 Near misses and 78 “incidents”

Completeness of MARS

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- Major accidents:
under-reporting suspected
- Near-misses of interest: 7 – *really?*
- Web search software installed
also
- Information on individual accidents
sometimes limited (e.g. Germany)

What questions can accident databases answer?

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- How did this accident happen?
 - Why did this accident happen?
 - Has it happened before?
 - Accident precursors
 - Where are the weak points?
(industries; substances; processes; process phases; ...)
- => information required; gathering process*

Authorities and industry

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- Inter-company communication mechanisms vary between industries (*e.g. nuclear; petrochemical; chemical; pharmaceutical ...*)
- Authorities' task:
 - to communicate among regulators
 - to ensure communication when industry fails to

Different types of lessons learnt

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- Accident cause:
 - technical
 - management failures
 - cognitive failures (understanding/prediction)
 - interaction of failures/anomalies
- Accident response:
 - emergency response
 - communication
 - “pre-post” failures

Closing the loop

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- Does the same accident happen again?
- Is accident information available to the relevant actors?
 - Is it ‘packaged’ suitably? Referenced?
- Weakest points:
 - Response?
 - For plant and instrumentation designers?

Whither now?

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- Improving information on near-misses
- Integrating with industry information
- Integrating MARS with national databases
- Getting the denominator as well as the numerator
- Using accident databases for safety performance indicators