

Diana Engström
Swedish Nuclear Fuel and Waste Management Company



Introduction

The study focused on:

- The effectiveness of computerized reporting systems, trending and categorization
- Why computerized reporting systems and trending have had such a big impact in the nuclear industry
- The scientific perspective on knowledge
- The illusion of control
- Safety Culture

Reporting and categorization

- It is hard to get everyone to report and that means the reports in the system mainly might come from the same department all the time.
- Sometimes hard to get the contractors to report in the same system
- 5000-6000 reports/observations every year is common
- All observations are considered equally important (at least in the reporting phase)
- The categorization is only based on the direct/triggering cause and not based on any analyses
- The categories are too many, but can't cover all anyway...
- What is a Human Performance event?

**This leads to the question:
What is actually categorized?**

An example of why categorization is so hard

One day a manager came to me and said – someone broke the rules and did not follow work procedures. The manager reported it as a violation against rules and procedures.

I put together an investigation team and we found – there was a mismatch between theory and reality. The people who planned the job did not know enough about the job in practice and that the drilling method they chose to get the job done always require some adjustments since you never know how the material reacts when you start drilling. If the planners would have known, they would probably have chosen another method to get the job done. So no one broke the rules. The problem was built in a year earlier when the job was planned and the “doers” assumed that the planners knew that the chosen method would require some adjustments.

So what category should we put this observation in?

What about trending?

- Based on the direct/triggering cause - the real causes might be something completely different
- Hard to know what you are trending
- Might lead to an excessive focus on the wrong things
- Will probably tell you very little about the Nuclear Safety within your organization
- Technical problems, components, systems - things that easily get captured by a computerized system should be trended
- A comparison between trends and the in depth causal analysis showed that the causal analysis performed had nothing to do with the trends that the computerized system showed

Why are we stuck in the idea of categorization and trending?

- Regulators and other authorities promote categorization and trending
- Managing safety by numbers, like error counts, uphold an illusion of rationality and control
- The scientific perspective of knowledge is the dominating perspective
- Within the new positivism it was argued that it was only the observable, and most preferably measurable, which was accepted as “real” knowledge
- The computerized reporting and trending system seems to be a modern way of trying to standardize something very complex in an easy way

Why is this important from a safety culture perspective?

- All safety culture specialists must understand and take into consideration how computerized systems, different work processes and decisions etc. affect safety culture
- The organization and technology have a great impact on individuals daily work performance
- Safety culture is much more than to train people how to behave
- Too much trust in numbers, indicators and trending might lead to a failed process of learning
- And most important of all: **The image of what is "wrong" in an organization might therefore become false.**

The way forward/Conclusions

- Discuss and evaluate whether these systems fulfill the purpose and contribute to increased nuclear safety or not. It seems that the idea of categorization and trending after all rests on too weak foundations.
- Understand the limitations of the system
- Decide what is important to report, not everything is
- Focus more on interaction between people to share experiences and stop seeing exchange of experiences as a technological issue
- Make more investigations/causal analysis

Thank you – any questions?

