Combining event investigations with process risk evaluation

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A weaknesses with some conventional "root-cause analysis"

- The primary focus on the particular event investigated may lead the investigator(s) to downplay observations about some weaknesses, that have nothing to do with the particular event, but that can be more serious that those weaknesses revealed in the specific investigation.
- These "other" weaknesses should result in actions but they can be camouflaged by the attention focused on the specific event investigated.

In the perfect world…..

- Weaknesses revealed while performing event investigations, but which has nothing to do with the particular event, are still reported and acted upon.
- But is this normally the case?

A combined strategy

General idea:

- Use the motivation and safety focus usually triggered by a specific event investigation to support a **broader** risk analytical activity.
- This activity should take a closer look at the quality of the process in which the event occurred in terms of support- and barrier functions.

Generic example (1)

- An event investigation revealed problems associated with a particular maintenance process.
- Causes were identified which could explain the particular event.
- Remedial actions were taken.
- The event investigators also observed several weaknesses which could **not be related to the specific event** but which revealed other problems with some important maintenance work/processes.

Generic example (cont.)

- A process analysis team is put in place.
- Members familiar with the work in which the event occurred construct a generic process for how work **usually** is performed in several maintenance activities.
- Support- and barrier functions are identified and discussed in terms of their quality. Risks are identified.
- Proposals are made to support the normal work process.
- Implementation and follow up.

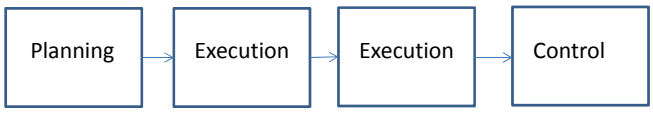
A real example

- An event occurred related to nondestructive testing at a nuclear power plant
- Attention from regulators
- An event analysis was performed which identified a set of specific factors that could explain the event
- The company that did the nondestructive testing decided to take a closer look at the ***whole process***
- I was invited to manage a process analysis group with participants from both power companies and those that perform the testing services.
- The group identified several weaknesses in processes
- Remedial actions were taken that resolved weaknesses (risks) identified.

How to do it (suggestion)

Step 1: Set up a focus group with members that have deep knowledge and experience of the process under investigation.

Step 2: Construct a generic scheme of the process as it normally performed.



How to do it (2)

Step 3: Identify support- and barrier functions related to each step in the generic process.

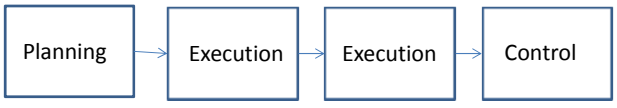
Step 4: Rate each support- and barrier function in terms of its quality (with use of some scale).

Step 5: Discuss how things might go wrong as a result of weaknesses in support- and barrier functions.

Step 6: Discuss and propose how the quality of the process can be enhanced.

Step 7: Document, spread information and implement.

For each process step: discuss possible deviations and their consequences, previous experiences, near misses, etc.



S&B				
Time	OK	OK	Not OK	Often OK
Manning	Not OK	OK	OK	
Tools				
Check				
Instruct	No	Yes	Yes	No
Training				
Etc				

Conclusions

- When events happen, take a broader look at the processes in which the event occurred.
- People in various work processes usually know what is OK and not in their normal work. This experience can be used systematically to evaluate work processes more broadly than is typically done in a specific event analysis.
- Even relatively simple classic strategies can be used as a tool for searching for improvements (task analysis, barrier analysis, process analysis etc.).
- By combining proactive risk analytical strategies with those used for experience feedback from root cause analysis much can be gained to create improvements.

Thank you!