

Management systems and safety culture; reflections and suggestions for research

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An initiative within Vattenfall

- The Nordic Generation Safety Management Institute was established in 2006
- The aim is to support training and research within
 - leadership
 - decision processes
 - communication
 - experience feedback
 - questions related to competency

A training course in safety management

- A total of 30 hours divided into two parts
- 10 lecturers, 14 participants (site managers to operations managers)
- Content
 - What can be learned from accidents
 - Leadership and group behaviour
 - The precautionary principle and safety ethics
 - Human reliability
 - Safety culture and safety climate
 - Complexity theory
 - Safety management systems
 - Decision making
 - Organisational culture
 - International organisations

Three courses in safety management

- Main course – key managers at the sites
 - Provide a broad understanding of important fields that are related to safety
- Overview – control room and maintenance personnel
 - Provide a presentation of the strategic perspectives of safety management
- Strategic considerations – managers at the corporate level
 - Provide an understanding how decisions on the corporate level may influence safety

The course planned for 2007

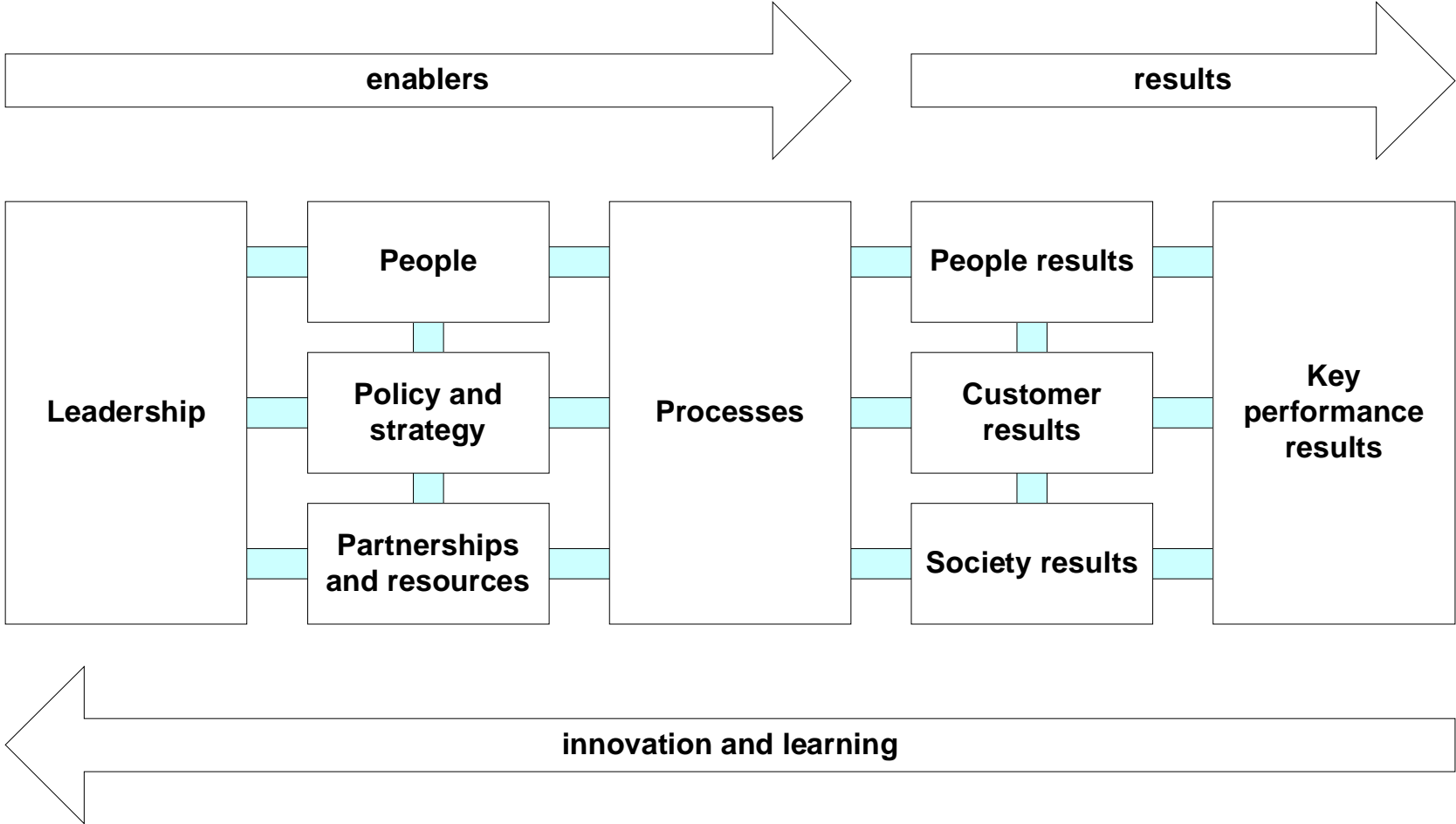
- Perspectives on safety
- Risk philosophy
- Operative and strategic decisions – an exercise
- Decision making
- Management systems
- Corporate and safety culture
- Safety indicators
- Analysing incidents – an exercise
- Regulatory oversight

Identified research tasks

- A development perspective in review processes
 - the review processes are seen as cumbersome
 - make document reviews more efficient
- Analysis of safety management systems
 - IAEA has issued new guidance for management systems
 - what kind of requirements can be placed on management systems
- Safety focused management

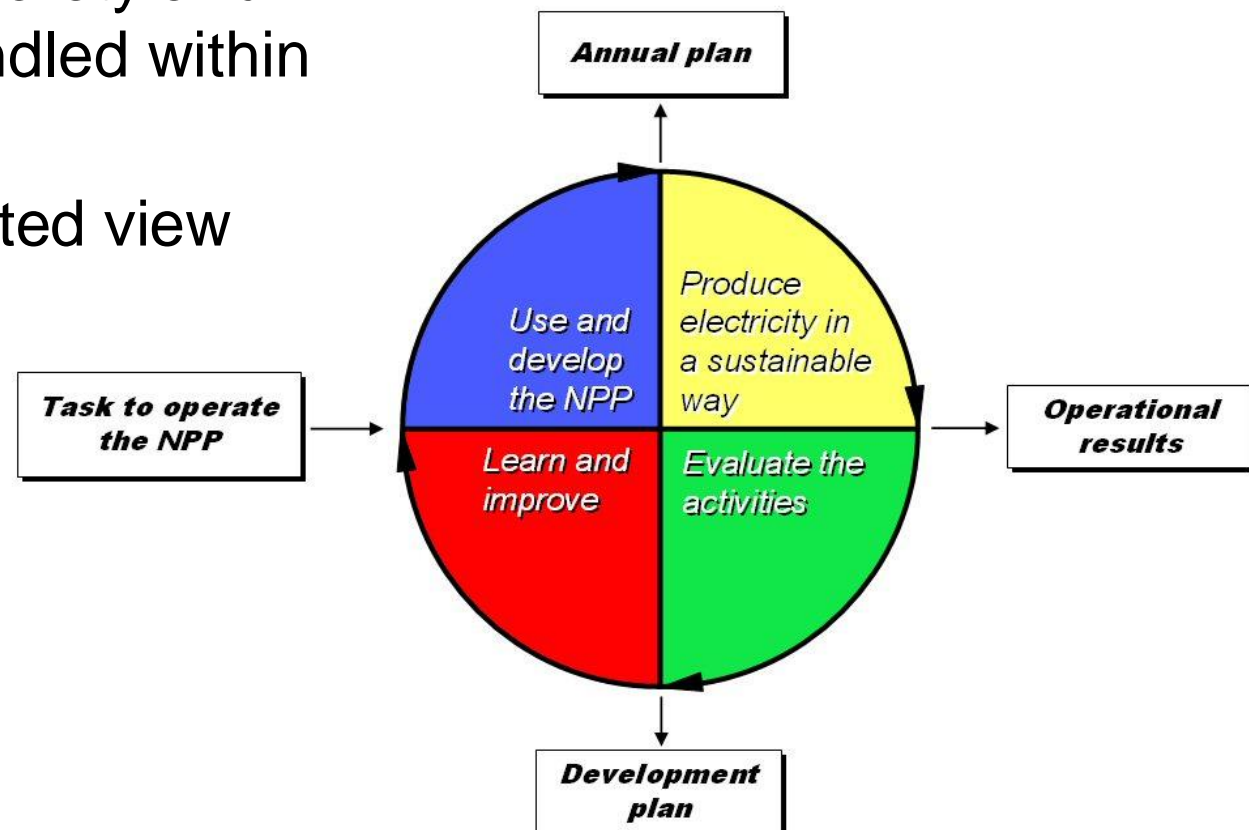
A brief historical perspective

- Quality systems
 - Japanese management thinking
 - Total Quality Control
 - systematic methods to achieve high repeatability
- Instructions
 - control room instructions were influenced by TMI
 - instructions has become the standard fix to all problems
- Safety culture
 - introduced after the Chernobyl accident by IAEA
 - the guiding concept in the new IAEA guides



Integrated management systems

- Nuclear safety, labour safety, environmental safety and security are handled within one system
- A process oriented view



The management system is a tool that

- Documents practices and ways of working
- Serves as a reference in different situations
 - what is allowed
 - what is not allowed
 - give confidence to managers and co-workers
- Gives a norm for audits and reviews
- Is intended to engage and motivate the personnel
- Describes the organisation to outsiders

Requirements on management systems

- Exists and is documented,
- Understood, accepted and used,
- Reasonable complete,
- Descriptions of organisational structure, positions, roles, responsibilities and authorities,
- Descriptions of requirements and solutions (instructions, methods, tools, practices),
- A graded approach towards safety,
- The system is assessed, audited and updated at regular intervals.

Research needs

- Organisational structures of safety oriented organisations
 - guidance and recommendations
- Adapting the management system to people
 - making the systems easy to use
 - ensuring commitment to the systems
- The construction of safety
 - what is important and what is not that important
- Individuals and the system
 - how to share responsibilities

Conclusions

- A better understanding of the structure and content of management system is needed
- Act on the difficulties, which have been observed in the application of present management systems
- The management systems as a tool that should be adapted to its purpose
- Safety of nuclear power has always to rely on knowledgeable people
- When is it better to use pre-planned and analysed actions as compared to ad hoc responses