Management systems and safety culture; reflections and suggestions for research

Carl Rollenhagen, Björn Wahlström
Content of the written paper

I. INTRODUCTION

II. AN INITIATIVE WITHIN VATTENFALL
   A. A training course in safety management
   B. Research tasks identified

III. MANAGEMENT SYSTEMS
   A. Safety management – a brief historical perspective
      1) Quality systems
      2) Instructions
      3) Safety culture
   B. Integrated management systems
      1) The organisational handbook
      2) A process oriented view
   C. Requirements on management systems
      1) General requirements
      2) The need for a line organisation
      3) A need for reviewability

IV. RESEARCH NEEDS
   A. Organisational structures
   B. Adapting the management system to people
   C. The construction of safety
   D. Individuals and the system

V. CONCLUSIONS
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
Leadership

Policy and strategy

Partnerships and resources

People

Processes

People results

Customer results

Society results

Key performance results

enablers

results

innovation and learning
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