ISO31000 - Risk Management with implementation in Statoil

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History

- ISO and IEC standards have included risk management requirements for many years across all disciplines
- In 1999 “Guide73: Risk Management – Vocabulary” were issued for those writing standards
- 15.11.2009 a suit of documents were issued
  - Main document “ISO31000: Risk Management – Principles and guideline”
  - A new and more comprehensive version “Guide73: Risk Management – Vocabulary”
  - Additional standard describing a set of methods, “IEC31010: Risk Management – Risk assessment guidelines”

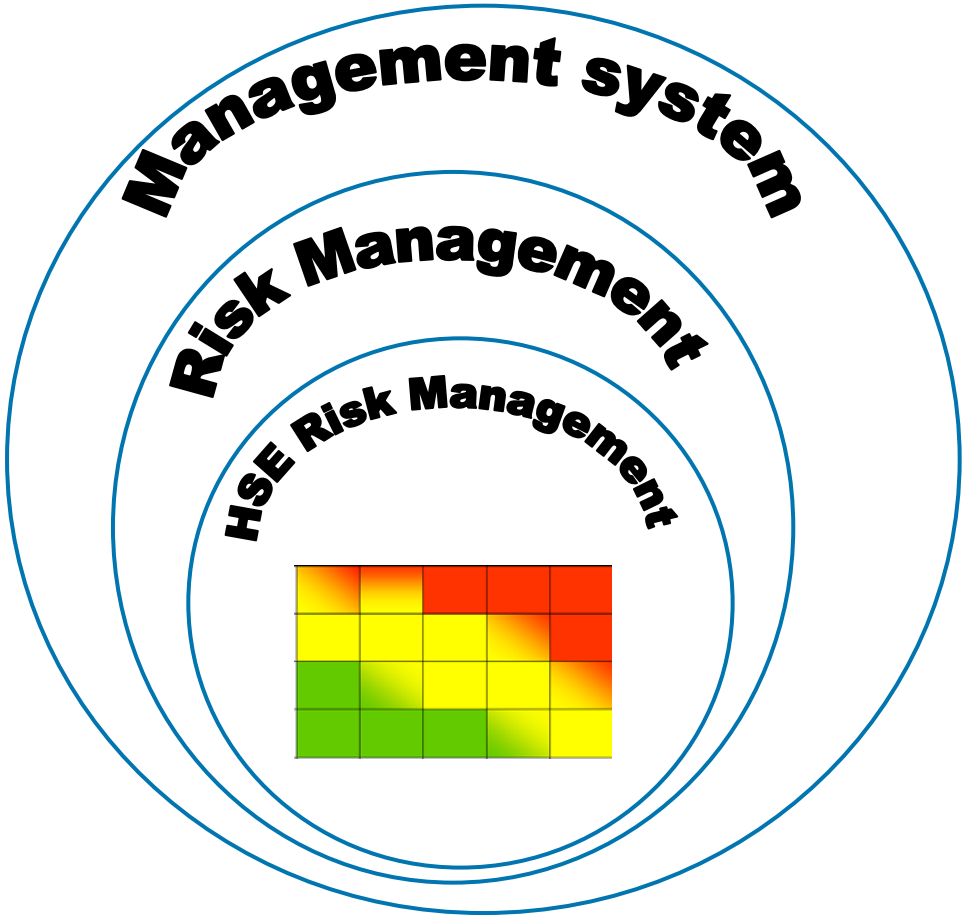
Hva er risiko?


If she hasn't....she will soon

What is risk? - Definition

- Effect of uncertainty on objectives
  - NOTE 1 An effect is a deviation from the expected — positive and/or negative.
  - NOTE 2 Objectives can have different aspects (such as financial, health and safety, and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, product and process).
  - NOTE 3 Risk is often characterized by reference to potential **events** (2.17) and **consequences** (2.18), or a combination of these.
  - NOTE 4 Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated **likelihood** (2.19) of occurrence.
  - NOTE 5 Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of an event, its consequence, or likelihood.

Statoil HSE Risk Management as part of the management system



- Safety
- Environmental management
- Health and Hygiene
- Working environment
- Security
- Emergency response
- HSE management

ISO - Principles for managing risk

Gives guidelines and promotes uniformity, but emphasizes the need for purpose built RM

a) Creates value

b) Integral part of organizational processes

c) Part of decision making

d) Explicitly addresses uncertainty

e) Systematic, structured and timely

f) Based on the best available information

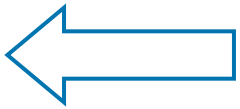
g) Tailored

h) Takes human and cultural factors into account

i) Transparent and inclusive

j) Dynamic, iterative and responsive to change

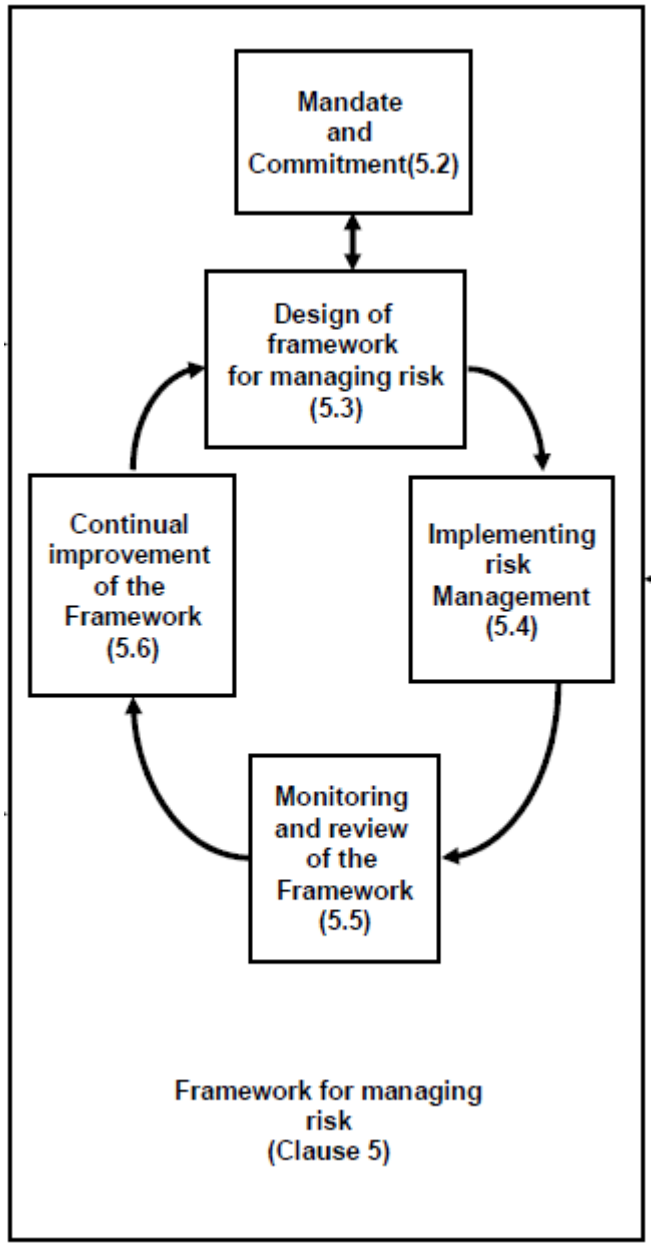
k) Facilitates continual improvement and enhancement of the organization



Document structure

1. Scope
2. References
3. Terms and definitions
4. RM Principles
5. RM Framework
6. RM Process

Annex



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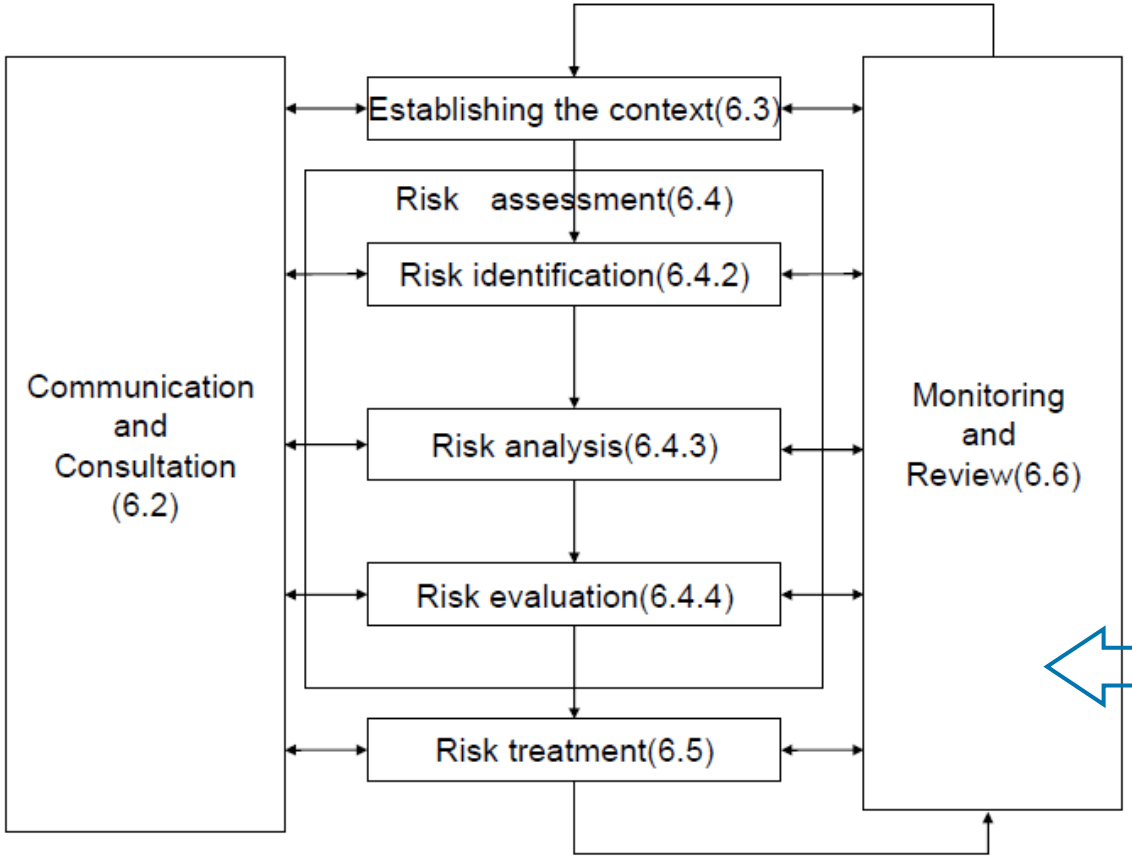
ISO31000 - Process

1. Communication and consultation
2. Establishing the context
    1. Establishing the external context
    2. Establishing the internal context
    3. Establishing the context of the risk management process
    4. Defining risk criteria
3. Risk assessment
    1. Risk identification
    2. Risk analysis
    3. Risk evaluation
4. Risk treatment
    1. Selection of risk treatment options
    2. Preparing and implementing risk treatment plans
5. Monitoring and review
6. Recording the risk management process

ISO - Risk Management Process diagram



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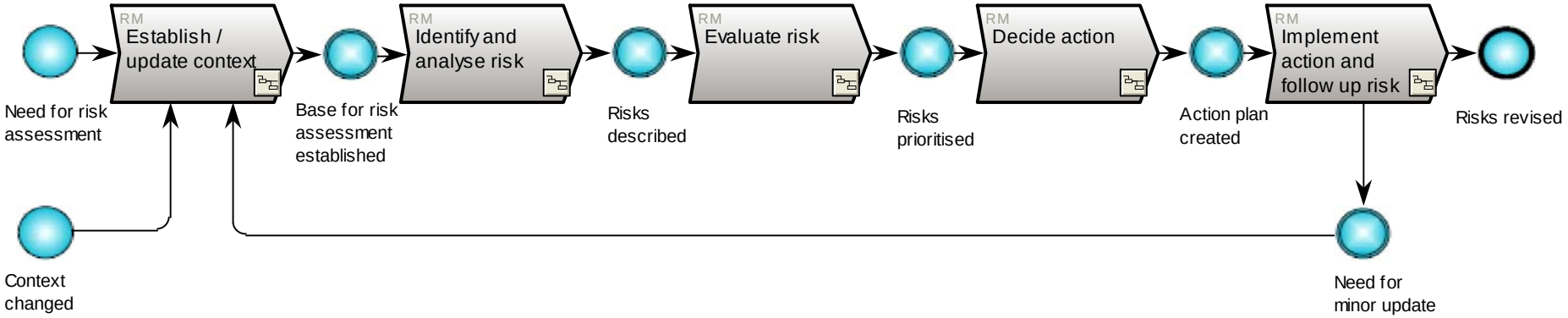
Statoil - Risk Management Process



- Same process used for HSE Risk Management
- Now uses process modelling for all work
  - Requirements or sub processes are found by clicking each box
- Communication, consultation, monitoring is then sub-processes on some places in the work flow

ISO - Framework

5.1 General

5.2 Mandate and commitment

5.3 Design of framework for managing risk

- 5.3.1 Understanding of the organization and its context
- 5.3.2 Establishing Risk management policy
- 5.3.3 Accountability
- 5.3.4 Integration into organizational processes
- 5.3.5 Resources
- 5.3.6 Establishing internal communication and reporting mechanisms
- 5.3.7 Establishing external communication and reporting mechanisms

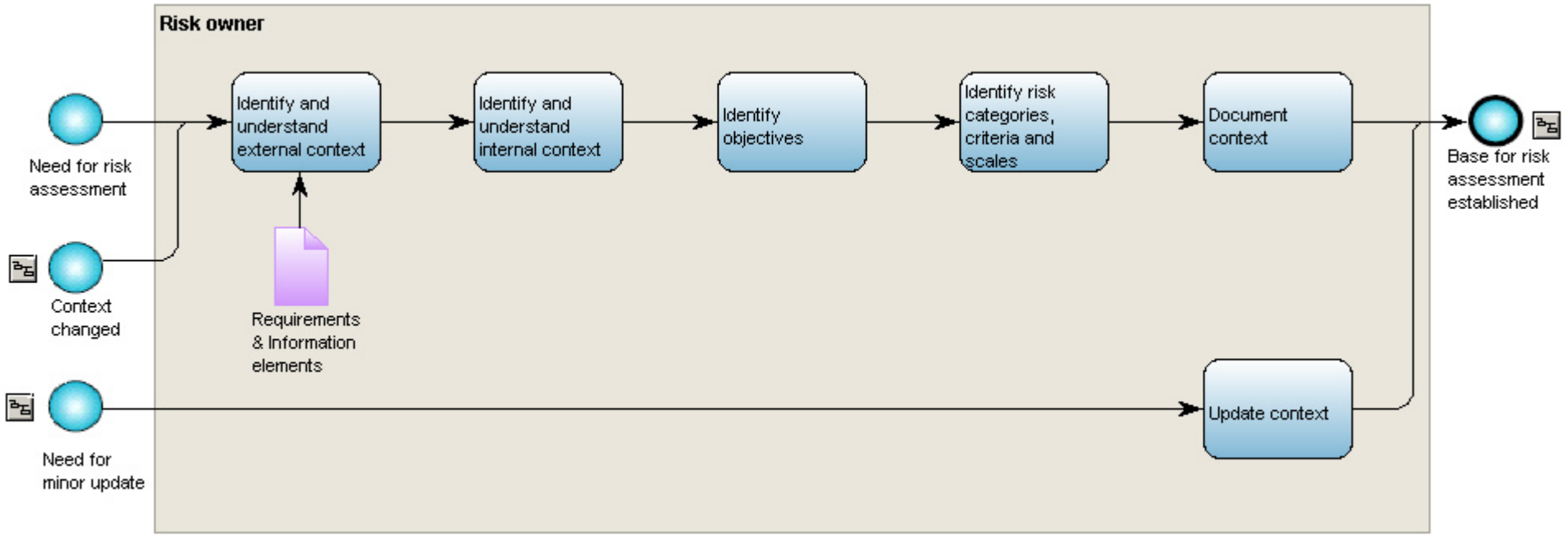
5.4 Implementing risk management

- 5.4.1 Implementing the framework for managing risk
- 5.4.2 Implementing the risk management process

5.5 Monitoring and review of the framework

5.6 Continual improvement of the framework

Context - Statoil



- Checklists for aspects to be considered when establishing context
- Lists internal requirements that are valid company wide
- Specifies scales and matrices as guidance, points to examples of risk tolerance criteria

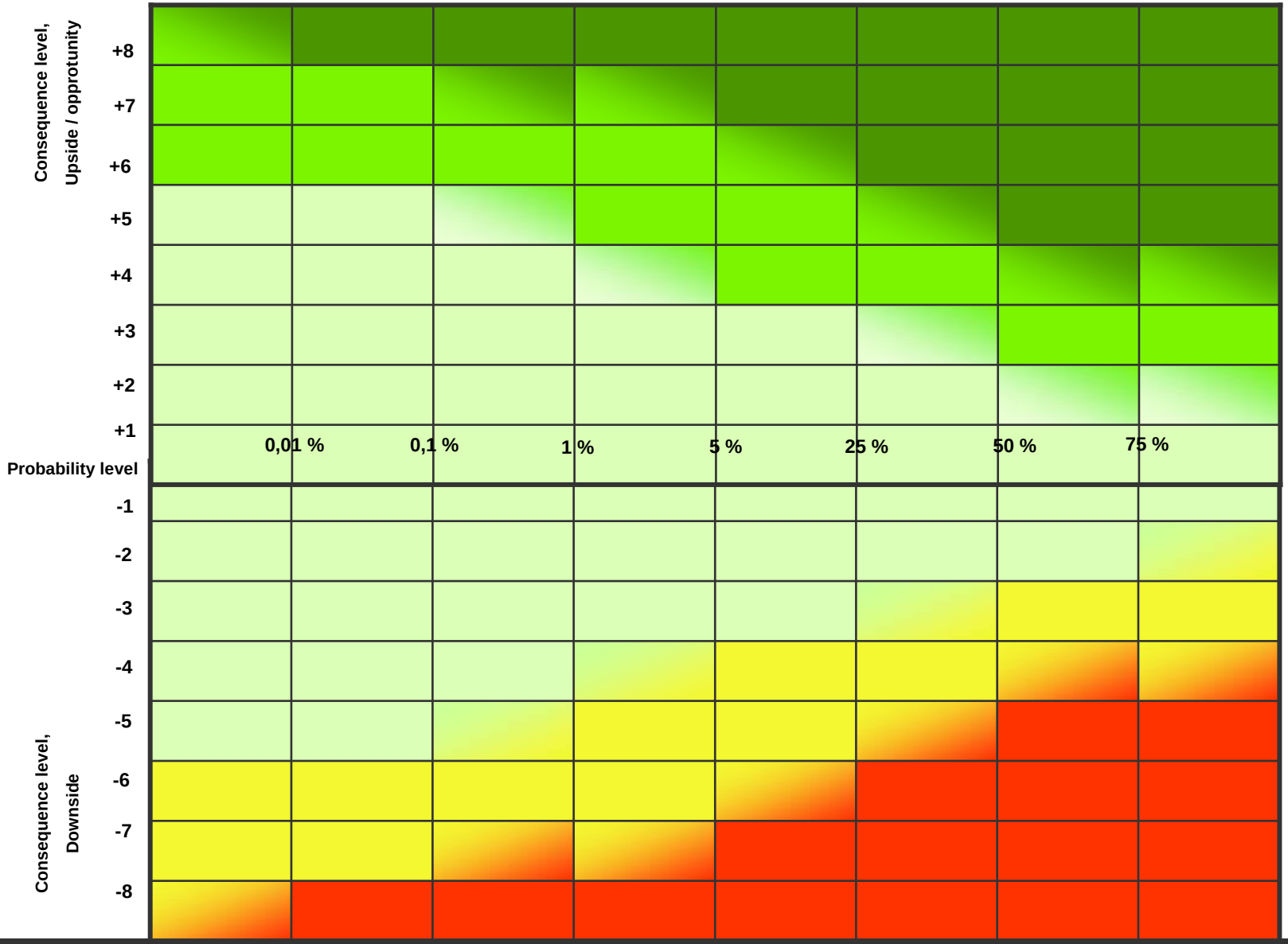
Context is important; cultural example

Context defines objectives, external and internal parameters to be taken into account, sets the scope and risk criteria; examples of external context:

- Cultural, political, legal, regulatory, financial, technological, economic, natural and competitive
- Environment, whether international, national, regional or local;
  - key drivers and trends having impact on the objectives of the organization; and
  - relationships with and perceptions and values of external stakeholders.

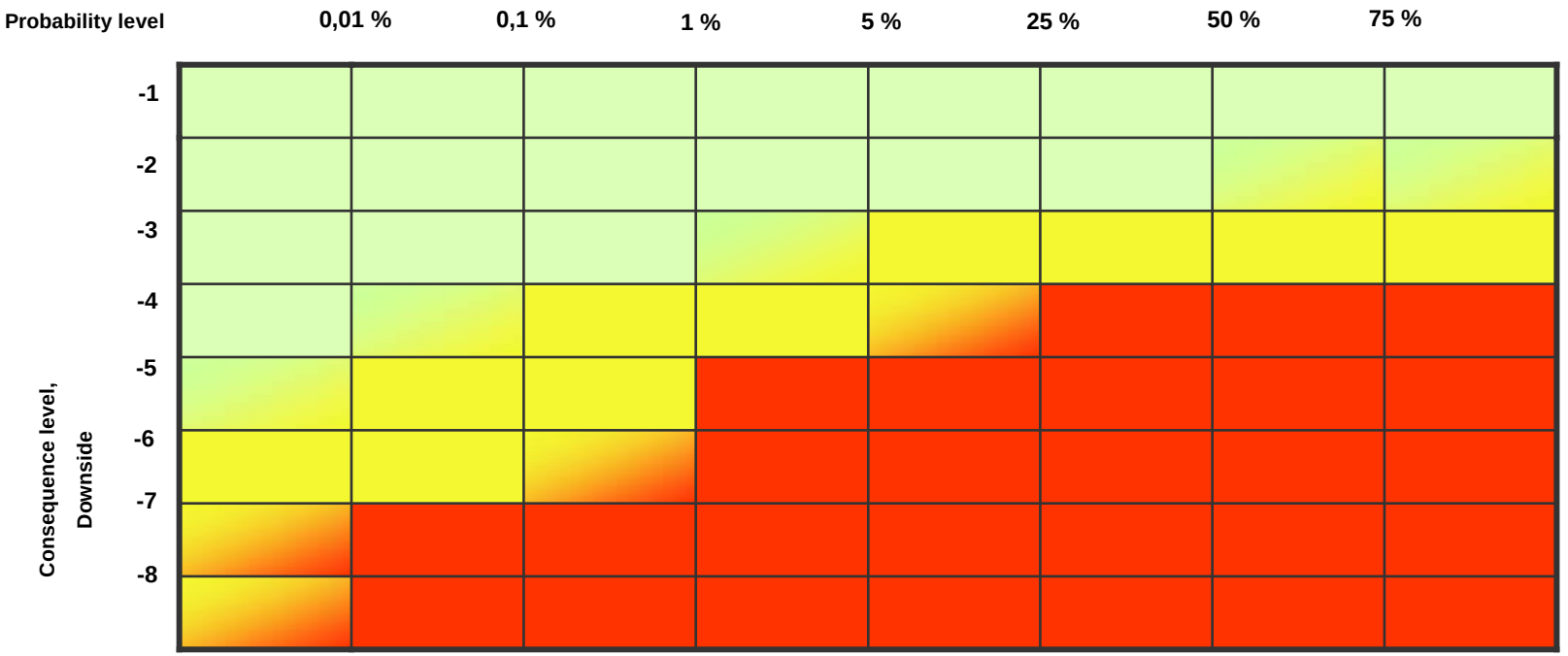
Category	People's health and safety	Environment	Comment
8 / **Catastrophic**	- Large scale fatalities (>20), majority of an installation/plant and/or several fatalities for neighbours	- Adverse permanent impacts on key ecosystem functions and services in larger natural habitats (e.g. restitution time >10 years) - Adverse impact on globally threatened species. Adverse impact on protected areas of international importance or other areas (non-protected) of international biodiversity value	Category 7 and 8 together are often denoted "Major accidents"
7 / Major	Several workforce fatalities (4 - 20), larger parts of an installation/plant and/or fatalities for neighbours. Fatalities include work related illness w/ significant life shortening effects.		
6 / Severe	- 1-3 fatalities on workforce - Serious injury /illness on 3rd party - 1-3 Serious, work related illness or exposure resulting in significant life shortening effects/ fatalities	- Adverse long term impact ecologically valuable natural habitats (e.g. restitution time 3 -10 years) - Adverse impact on threatened species on a national level - Adverse impact on protected areas of national importance	
5 / Serious	Serious injury or work related illness with absence from work, restricted work or permanent health effects. High level of medical treatment, serious functional impairment.	- Adverse medium term impacts on ecologically valuable natural habitats, or long term impacts on a significant part of such habitats (e.g. restitution time 1 - 3 years) - Adverse medium to long term impact on the population on one or more species - Adverse impact on protected areas of regional importance	
4 / Moderate	Other injury or work related illness that result in brief absence or restricted/substitute work or some functional impairment. Medically manageable.	- Adverse short term impact on the population of one or more species - Adverse short term impact on natural habitats (e.g. restitution time < 1 years) -Adverse impact on protected areas of local importance	
3 / Minor	Medical treatment, injury or work related illness with need for treatment or with temporary health effect	- Very limited impacts on natural habitats - Very limited impact on population level or impact on key species on individual organism levels	
2 / Negligible	First aid injury or work related illness/effect with limited or no impact on health		
1 / No impact	No injury, no work related diseases, no	- No impacts on natural habitats	

Risk diagram for HSE events – Corporate level

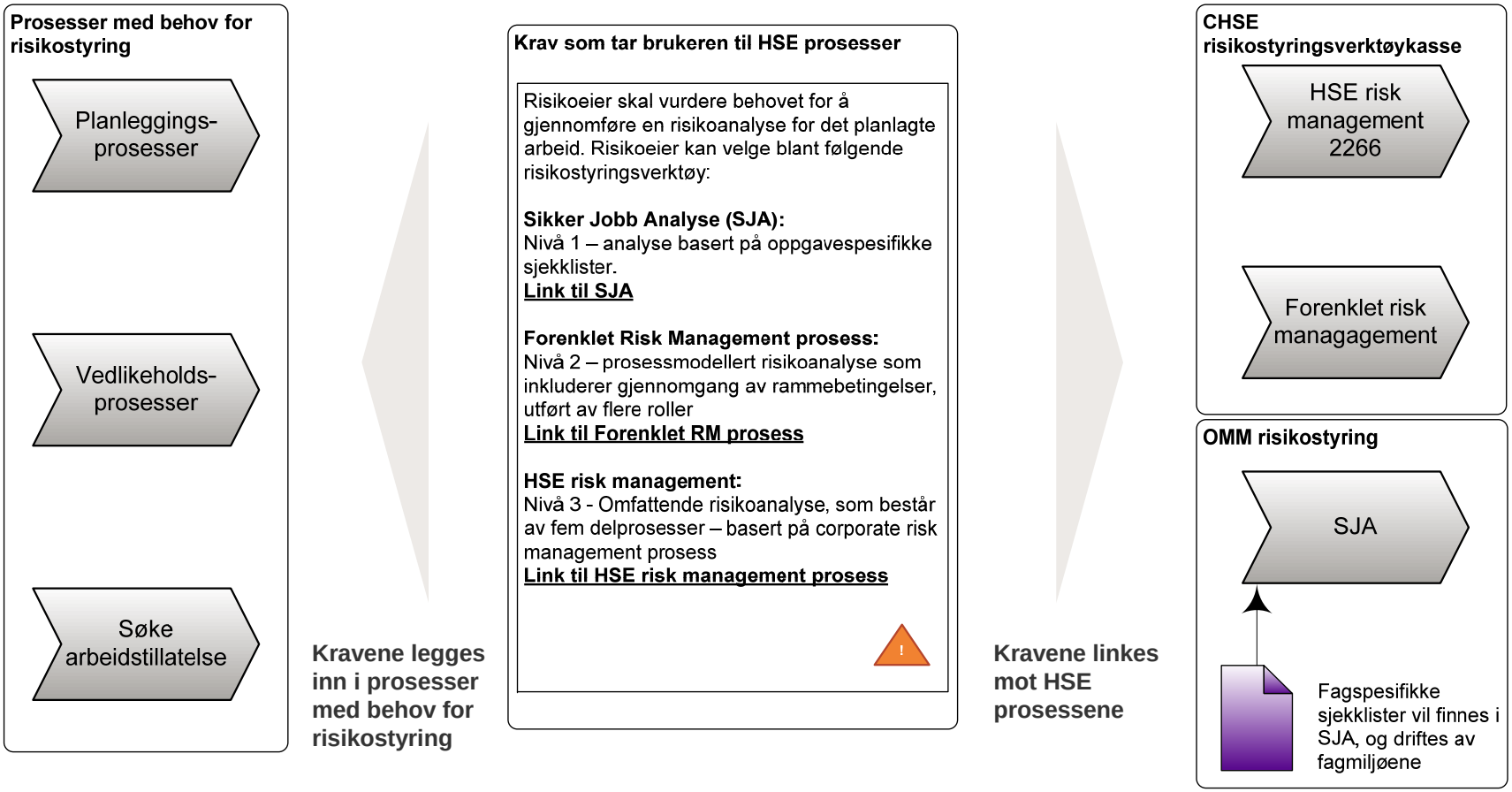


HSE risk matrix, basic guideline

This applies to evaluation of single hazards, sources or scenarios, occurring during normal/repeated operational and maintenance tasks. For risk assessment of a total facility including all risk contributors, the matrix is not suitable and other criteria will be needed. Also, for specific, non-recurring activities, separate criteria are indicated on the last page.

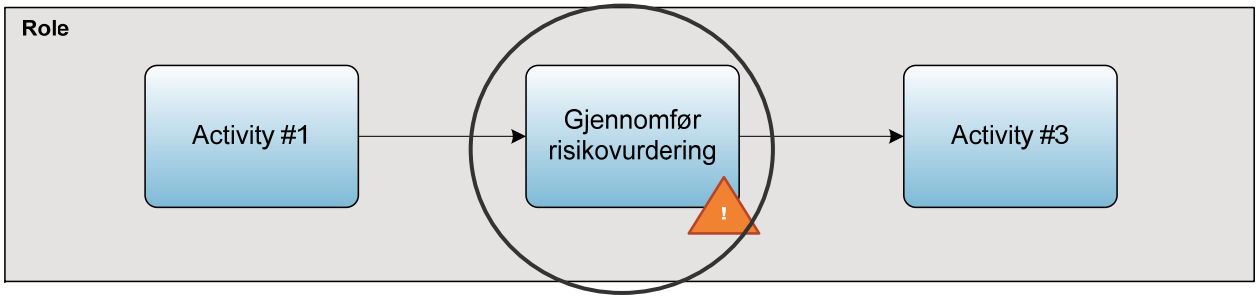


Risikostyringen gjennomføres ved forenklet modell med krav i andre prosesser som triggere



1

Bruker jobber med en prosess som krever at det gjennomføres en form for risikovurdering



2

I aktiviteten kommer det opp et krav om at det skal gjennomføres risikoanalyse:

Krav:

Gjennomfør en risikovurdering av den/de planlagte prosessen/er ved å bruke en av de følgende risikostyringsverktøy:

HSE Risk Management

Forenklet risk management

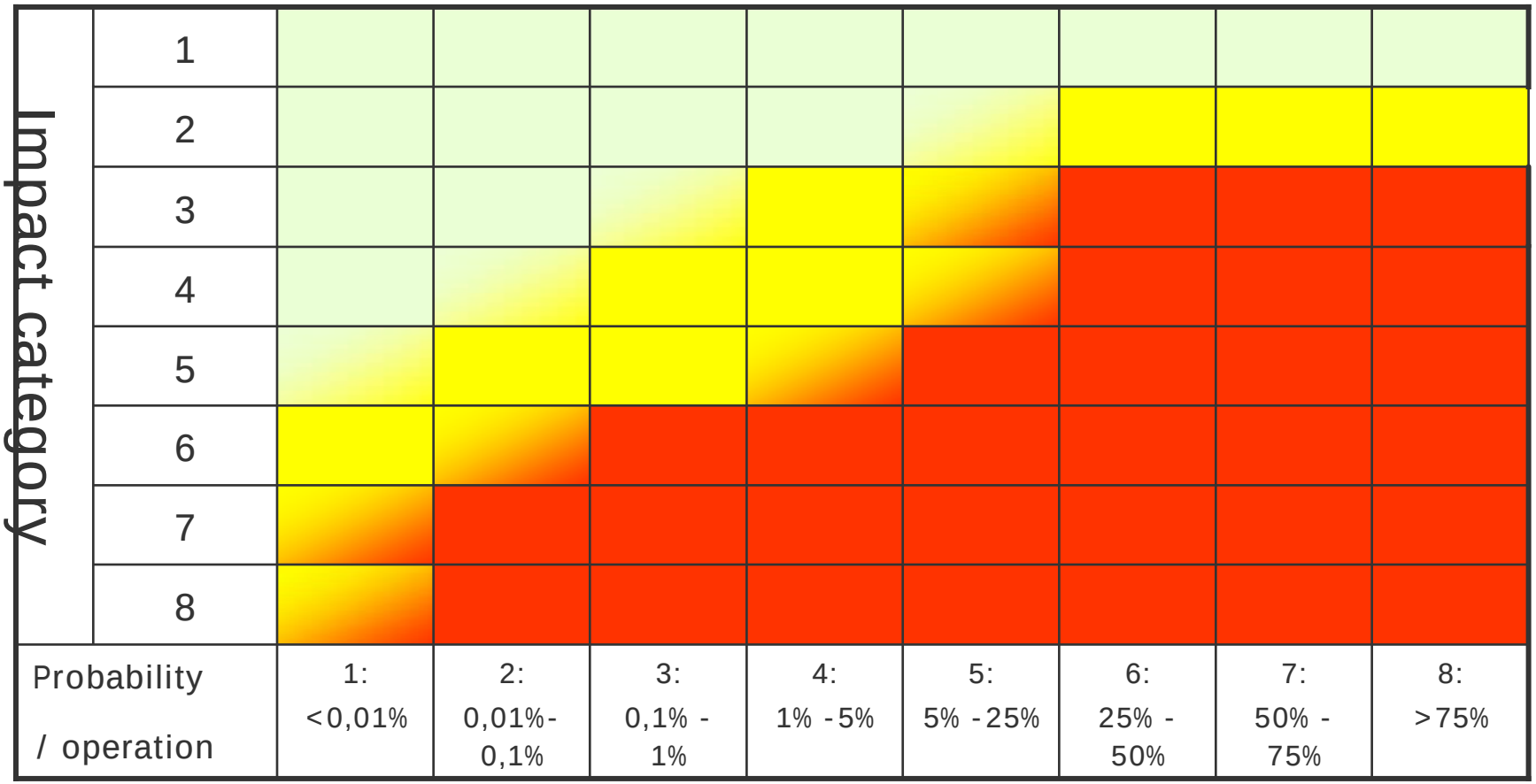
Sikker Jobb Analyse

Informasjon:

Valg av risikostyringsverktøy avhenger av planleggingshorisont og aktiviteten(e)s natur. Følg den beslutningsmodellen nedenfor for å identifisere korrekt verktøy.

Beslutningsmodell…

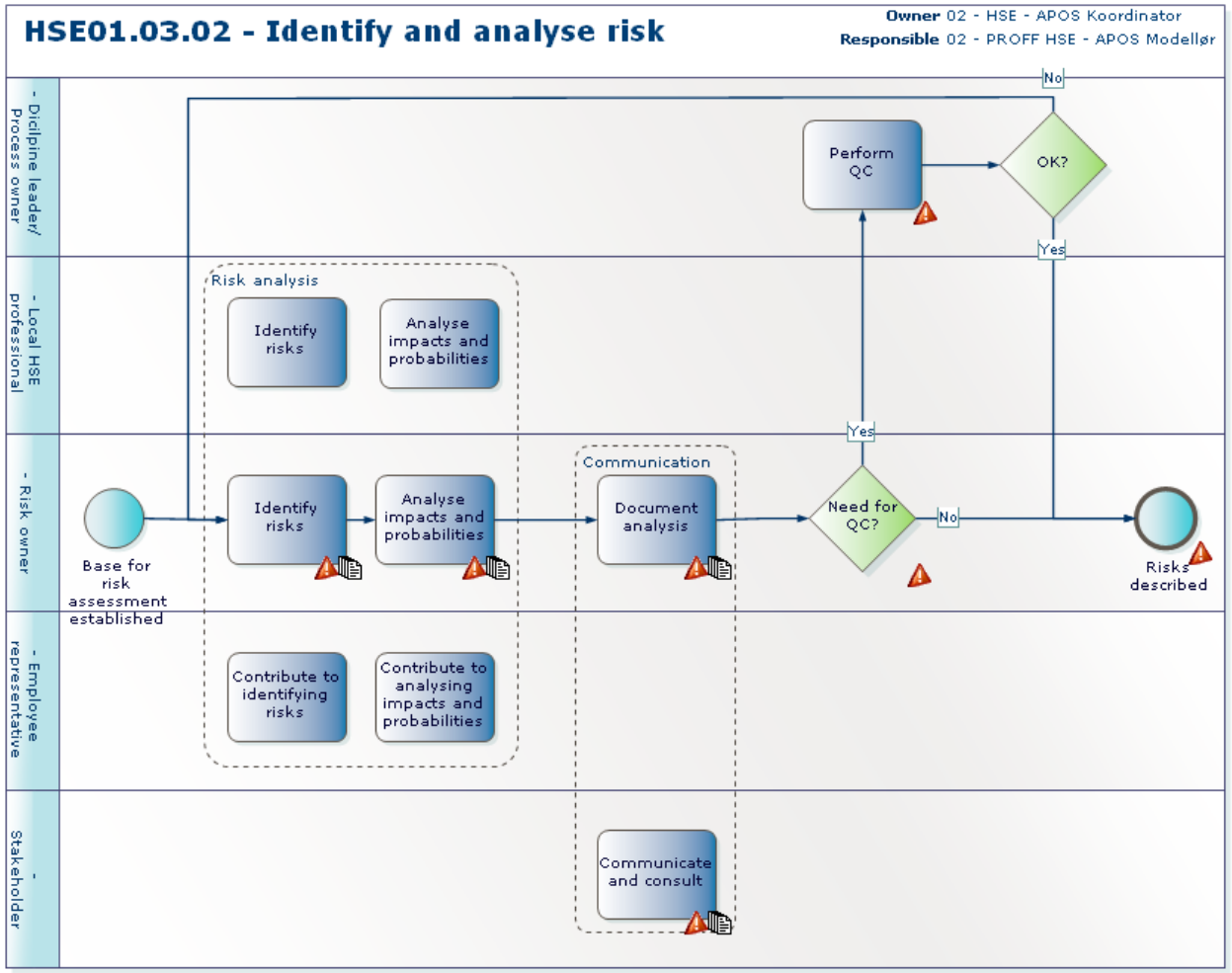
HSE risk matrix, One of a kind operation



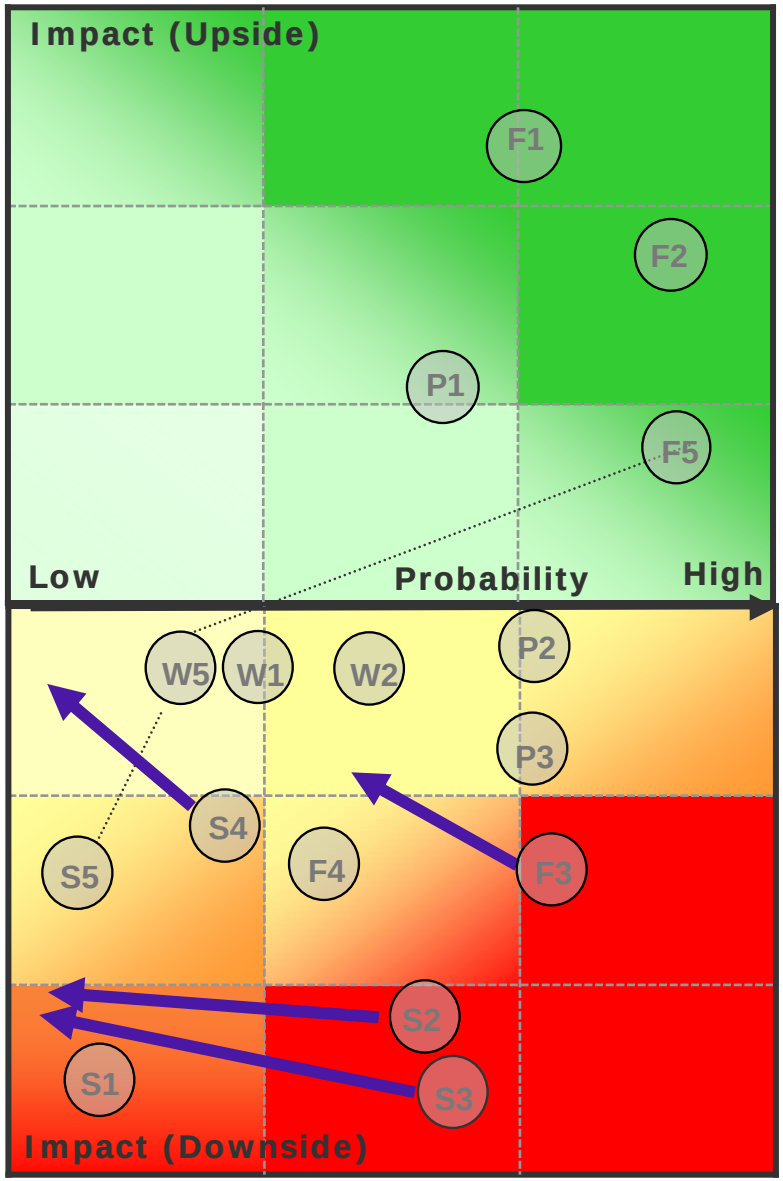
Attributes of enhanced risk management

- **Key outcomes**
  - The organization has a current, correct and comprehensive understanding of its risks.
  - The organization's risks are within its risk criteria.
- **Continual improvement**
- **Full accountability for risks**
- **Application of risk management in all decision making**
- **Continual communications**
- **Full integration in the organization's governance structure**

Identify and analyse risk



- Systematic run through of operation or system
- Checklists are available
- Involve HSE professional when needed, they shall know the total process
- Involve users, those who know the operations or systems



Example –Risk assessment Integration

F=**Finance**
S=**Safety**
W=**Working environment**
P=**Personnel**

F1: Efficiency increase

F2: Standardisation

F3: Implementation plans not well coordinated

F4: Large control span, ”Hands on”, ”Snorre A measure”

F5,W5,S5: Offer 58+ with no new recruiting, lack of competence and capacity

S1: Errors due to frustration, major accident

S2: Major accident due to “too much at same time”

S3: Major accident due to lack of maintenance backlog (manageable), capacity on critical tasks

S4: Emergency preparedness, roles to be defined

W1: Errors due to frustration, work accident

W2: Work accident due to “too much at same time”, incl stress and psychosocial effects

P1: Personnel may rotate between installations, flexibility

P2: Loss of platform relationship, personnel rotation

P3: Massive opposition from employees, worsened working environment

Summary

- Almost consensus on the text world wide
- Norwegian translation soon
- Good principles, but not easy to always meet
- Checking compliance to all requirements would damage the process
- Risk, context, risk identification and the risk monitoring is new for many
- Large number of definitions that should be adhered to also in regulations and company practices
- The model is useful

ISO31000 - Risk Management

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