



The Norwegian Operator
- Safety and security integration
(Norwegian practices for developing an integrated organisational culture)
Regional Workshop on Strengthening Security Culture

Jeanette Juul Jensen
Chief Advisor Nuclear Security
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Introduction

Consequences from a safety or security incident?

Health



Economic



Environment



Societal



Introduction

- Both security and safety have a common aim – to protect persons, society and the environment from harmful effects of radiation.
- The introduction of security in a safety dominated field – not a straightforward process. IFE faced several challenges.
- Examples and experiences from Norway during six years with intensified focus on NS and NSC. And how we worked with awareness on *why* and *how* the inter-dependency between safety and security is important to understand.



- A well-coordinated approach in security and in safety is **mutually beneficial**

→ How to establish **trust** within the different sectors of the organization?

- Some of the early success criteria for establishing a robust and sustainable security culture (as IFE considered it);

“One culture”

“Integrated approach”

“Leaders play a crucial role”

“Resources” ← Prioritize well

“Consider strategic, operational

and personnel layers when addressing NSC”

A simplified framework – a way to be practical

1. Start with a societal assessment

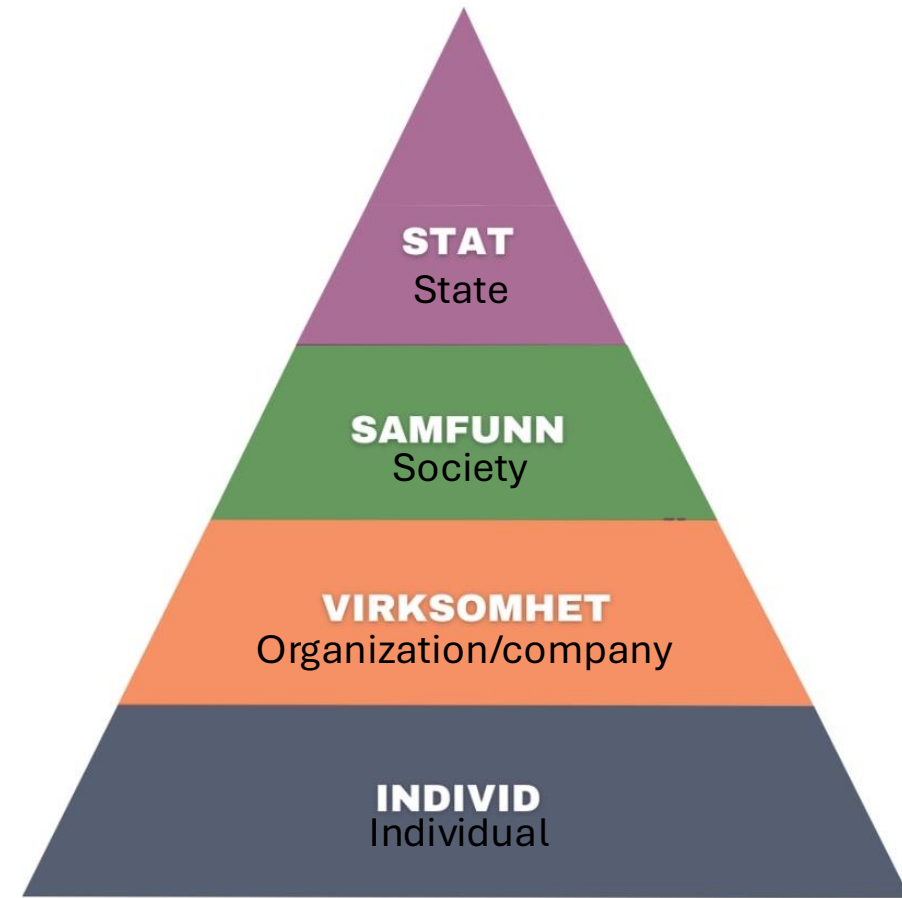
Assess the underlying societal culture (risks). Identify specific cases where culture contributed to a safety or security breach.

For IFE we would prefer lessons from (practices.. Instead, we had to look to Norway also to experiences from Sweden and the US.

2. Decide between adapting or clarifying

Consider where practices have flexible relevance.

Identify where practices are not flexible tasks and **clarify** in procedures to eliminate (safety – security, inter societal wise).



3. Organizational culture change management

Important with alignment between societal, organizational and other “nuclear cultures” in training, leadership development, in systems and in processes. This may involve creating psychological mechanisms, and an externally lead facilitating process might be beneficial.

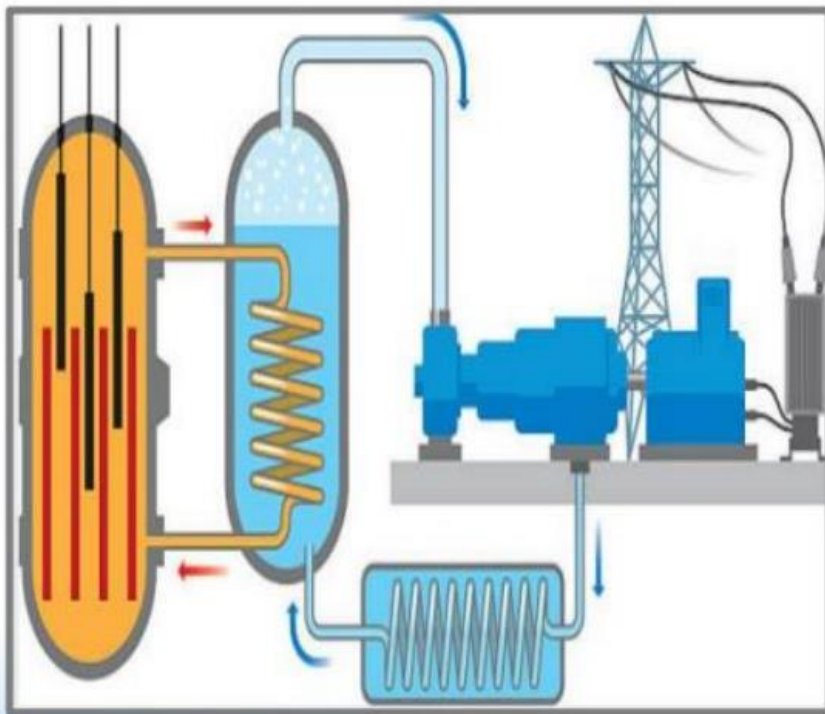
4. The importance of establishing cross-cultural skills

Cross-cultural skilling will strengthen our ability to recognize and respond to differences that may impact safety and security.

Ongoing practice through training, case studies and dialogues will keep skills sharp – especially as things change over time.

We MANAGE the Complicated

Technological Systems (Engineering Paradigm)



IAEA

We LEAD through the Complex

Ecological Systems (Adaptive Paradigm)





Complicated vs. Complex

Technological Systems (Engineering Paradigm)

Ecological Systems (Adaptive Paradigm)



Limited resources – IFE's prioritizing

- At IFE (2019) we faced several limitations in resources. The security organization and personnel was “stretched thin”. At the same time the risks at hand (and also the requirements by law) made it very clear that a lot needed to be addressed promptly. And the budget was way to small.
- IFE had to prioritize as well as strategize and plan ahead for our NSC strategy. As a helpful starting point, we sorted our ‘challenges to be addressed’ into two categories of *i) immediate action* and *ii) long term plan/execution*
- In addition to upgrading our physical protection measures in a large scale (and the considerable upscaling of our security guard force as well), IFE needed a thorough investement targeting building a resilient nuclear security culture. With out the «human firewall», the other investements in security measures would fall short.

Independent, complemented or integrated manner ?



Independent

by keeping recommended safety and security measures independent, avoiding impact/interface between safety and security

Complemented

by assessing every recommended safety and security measures whether they have adverse impact on each other, and covering each technical area from either safety or security point of view

Integrated

in integration, in coordination and concertation using synergies for the mutual benefit for safety and security

Integrated manner – how?

Some basic agreements should be in place;

- Personnel
- Security measures and safety measures
 - must be (SF-1)/have to be (NSS No. 20) designed and implemented in **an integrated manner** so that
 - security measures **do not compromise** safety and safety measures do not compromise security.
- Humanized interfaces, senior managerial involvement and support.



Safety Aspects Useful for Physical Protection

Safety studies are also useful for security: Safety studies utilized as entry data for sabotage studies:

- Nuclear safety experts have already identified most of the SSCs which if damaged could lead to unacceptable radiological consequences (URC)
- Probabilistic safety analysis (PSA) used for vital area identification (VAI)
- Nuclear safety experts can provide to security experts the level of radiological consequences in case of sabotage of some equipment

IFE considerations (examples)

- Keeping in mind the transitioning environment during the life cycle of a nuclear facility. “Everything” is changing constantly - how is the *threat* changing?

→ Why must safety and security collaborate

- Specialized training and refresher training (security and safety) - incorporate any lessons into the work procedures (develop combined procedures?)
- Consider how to maintain continuity of *knowledge* during the many yearlong processes of a nuclear facility.

→ “Learning culture” and “questioning attitude” has proven very beneficial in Norway’s nuclear security (and safety) fields.

- As a representative for “the new” field in a long existing company, how to build trust and create areas to collaborate with the safety-organization? **How to establish trust**

How about ?


Intranet for “human firewall”?

(covers all basic areas regarding security)

- Organization*
- Policies and Guidelines*
- Information classification*

Security Month (October)?

- Presentations*
- Videos*
- Posters*
- Training/e-learning*
- Promotional items*



Remember an integrated manner!

Leadership is identified as one of the most important key elements for establishing effective safety and security

- IAEA Nuclear Security Leadership Academy 2022



Summary

- Security and safety have a common goal to protect people and the environment against unacceptable radiological consequences – this is bringing “our” areas together
- There exists some challenges between security and safety that needs to be properly addressed and coordinated. The benefits we gain from an integrated manner makes this worth the time.
- Safety assessments contributes to better security assessments
- Where safety might be more static (to optimize), security might need more of a dynamic approach and adhere to sudden changes (changing threat landscape)
- Integrated approach to optimize security and safety, - the best approach depends on the context, and this is important for obtaining a good nuclear culture, “one nuclear (safety and security) culture” is already born
- Leaders have responsibilities; leverage for quality, time and effectiveness for the NSC investments. They should motivate – they are important role models in NSC
- Create awareness among all personnel; “Ask yourself if there are security processes going on at the company where inclusions of safety roles would be beneficial (or the other way around)”

Key take-aways

- 1) A well integrated approach to security and safety is important to achieve a robust and sustainable nuclear security culture – the threat environment makes a resilient NSC one of the most important investments
- 2) Good practices is necessary to obtain and maintain an effective nuclear security culture – remember good involvement of safety personnel, work collaboratively with other stakeholders and other parts of the organization
- 3) Leadership is one of the key elements for achieving beneficial security and safety culture
- 4) A well functioning „human firewall“ requires continuous training and awareness - training must be tailored to the needs of different target groups (multi-stage approach), resources and budget needs to be in place
- 5) Continuous training – and information must be easily accessible

Suggestions for further reading

- WINS (Best Practice Guide on Nuclear Security Culture and associated Assessment Guidelines)
- WINS (Managing Interfaces Between Nuclear Safety and Nuclear Security)
- IAEA Nuclear Security Series No. 7 (Nuclear Security Culture)
- IAEA Nuclear Security Series No. 38-T (Enhancing Nuclear Security Culture in Organizations Associated with Nuclear and Other Radioactive Material)
- IAEA AdSec/INSAG Report No. 1. 2023. A Systems View of Nuclear Security and Nuclear Safety: Identifying Interfaces and Building Synergies
- IAEA Technical Reports Series No. 1003. Regulatory Oversight of the Interfaces Between Nuclear Safety and Nuclear Security in Nuclear Power Plants (2024)



Contact information:
Jeanette.Jensen@ife.no

Jeanette J. Jensen
Chief Advisor Nuclear Security