The Norwegian Operator
- Methodologies and tools to assess the effectiveness of security culture

Regional Workshop on Strengthening Security Culture
Jakarta, Indonesia from 05 to 07 November 2024

Jeanette Juul Jensen
Chief Advisor Nuclear Security
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Introduction

- Organizational culture is a field that is concerned with the *shared beliefs, values and behaviors* within an organization

- **The IAEA defines security culture as** the "The assembly of characteristics, attitudes and behavior of individuals, organizations and institutions which serves as a means to support and enhance nuclear security."

- It is recommended that review and evaluation of nuclear security culture be done on a periodic basis with attention paid to any findings, conclusions, recommendations and suggestions for improvements.

→

- The measure of nuclear security culture is not a straightforward process, and some challenges must be considered.

  → Deciding on which key indicators will be suitable to measure for *your* Nuclear Security Culture is part of the organization's starting point..

  "What makes our security culture *effective*"

  IFE relies heavily on IAEA and international (nuclear) best practices

Self-Assessment of Nuclear Security Culture

- In the IAEA Technical Guidance Nuclear Security Culture Self-Assessment (2017) says;

  Security culture self-assessment plays a key role in developing and maintaining an awareness of the strengths and weaknesses of the organization's nuclear security culture.

- Regular assessments help managers understand the reasons for an organization's 'patterns of behavior' in certain circumstances.

- Self assessments is also "beneficial to devise optimal security arrangements, to predict how the workforce may react to the unknown, and should focus on perceptions, views and behavior (preferably at all levels of the organization)"

Presenter

Jeanette Juul Jensen

Chief Advisor Nuclear security – Nuclear Division Dir. Staff

(Chief Security Officer)

Professional experience

- The Norwegian Defence Estate Agency (risk analysis, pen testing, special forces and national security)

- The Norwegian Government Security and Service Organization (security of PM residence, security of Norwegian ministries, *PP, ESS, and VIP-service*).

- Norwegian Research Defence Establishment (FFI) (Sci. ass.: modern terror threats, NATO JCPs, Total Defence Concept)

Academic background

A **Master's degree in Security Management and Cultural Understanding**, and also background from risk and security governance and analysis, criminal law, technical/physical security, strategically management of uncertainties of the modern threat environment, emergency planning and response and crisis and catastrophes management. Also a bachelor degree in Product design and development.

The Norwegian Defence University, Norwegian Police University College, Norwegian Firefighter Academy, The Arctic University of Norway, Norwegian Business School and the University of Stavanger ++
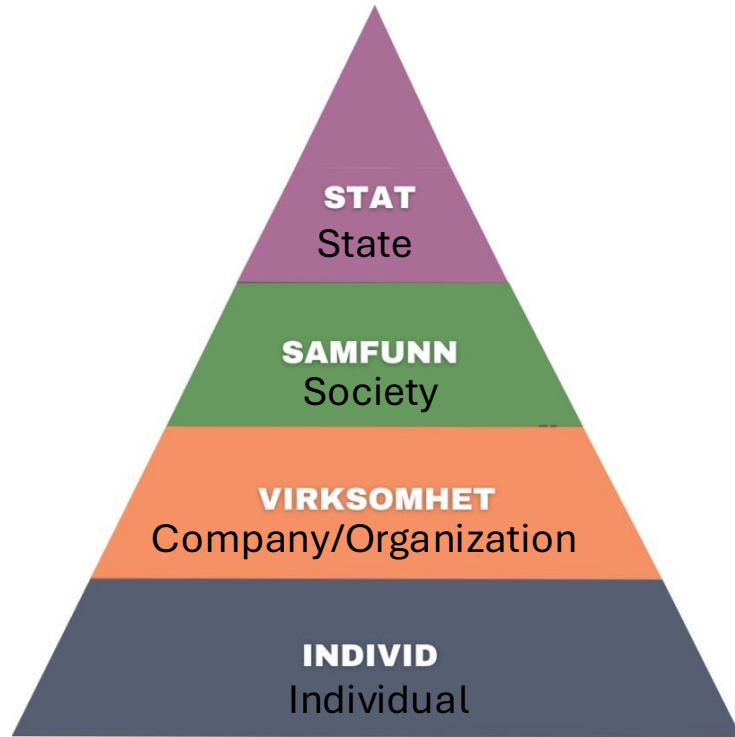
Measuring Nuclear Security Culture – in Norway

- National culture VS Organizational culture..
- Organizational culture VS Security culture..
- National security culture?

STAT
State

SAMFUNN
Society

VIRKSOMHET
Company/Organization

INDIVID
Individual

General conscription in 2015

"A National security culture can only be developed collectively"
From National Threat Intelligence Services - Annual (open) Report 2024

IFE – Institute for Energy Technology

- Histo...

-

- I...ment
  ...
  N...Nuclear
  S...

- T...culture
  w...
  ...overall security needed to be upscaled.

Press-release 2019:

«The closing of the Reactor at Kjeller will change the need for competence and also bring forward a reduction of employees. IFE is working to clarify the extent of the downsizing as soon as possible»
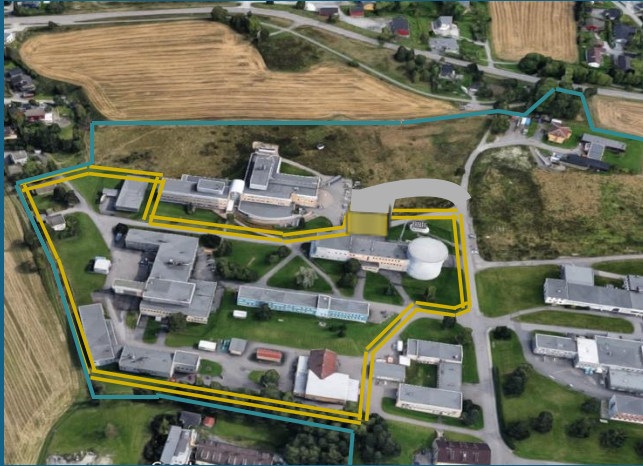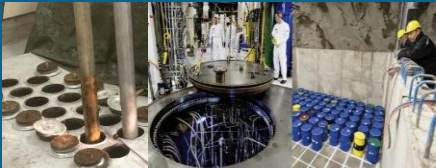
Institutt for Energy Technology
- established in 1948

Nuclear Research Reactor - Kjeller Facility (2 MW)

Combined Storage and Repository for Radioactive Waste (KLDRA) Himdalen

Nuclear Research Reactor - Halden (HBWR) Facility (25 MW)

IFE Today (730 employees)

Activ societal contributer for national, regional and local development

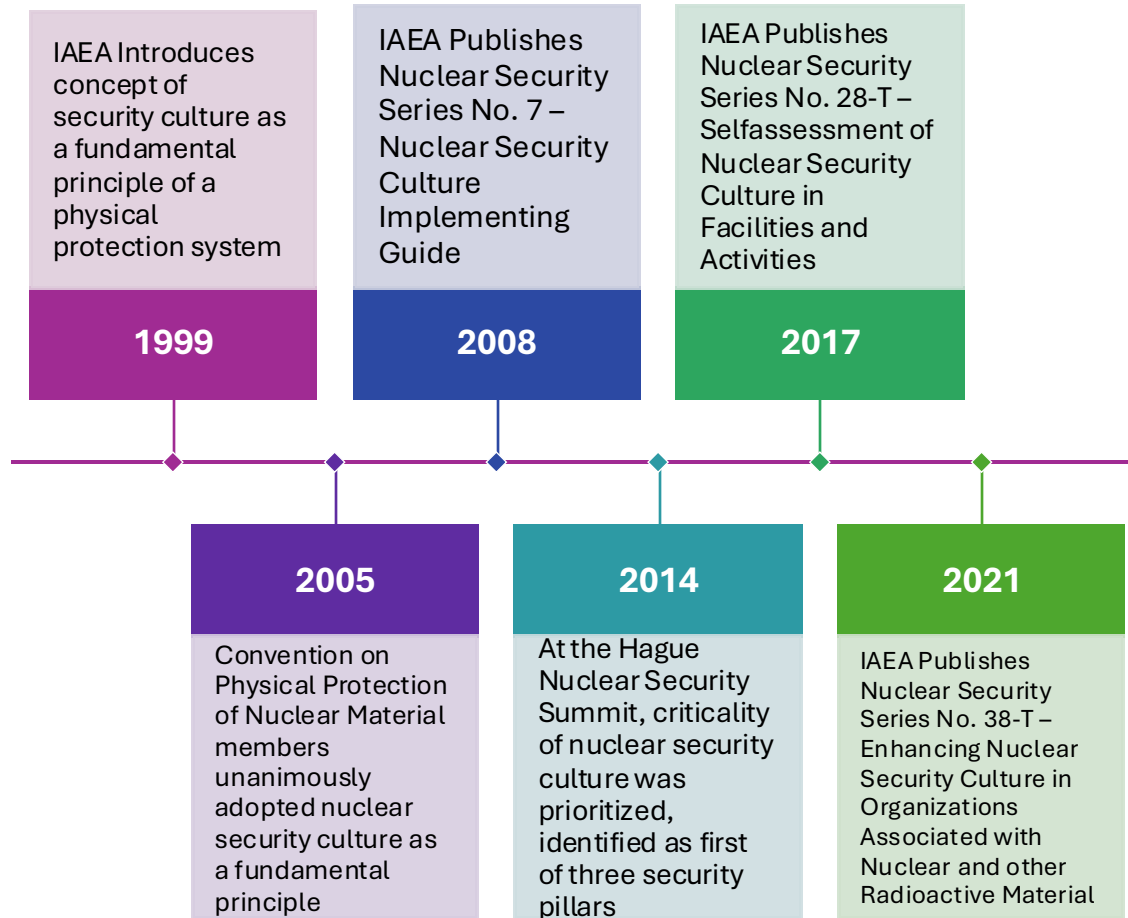Research, innovation and commersialization

Development and production of cancer medicine

Preparing safe and secure decommissioning of nuclear facilities and materials

"Nuclear Security Culture" – a timeline

IAEA Introduces concept of security culture as a fundamental principle of a physical protection system

1999

IAEA Publishes Nuclear Security Series No. 7 – Nuclear Security Culture Implementing Guide

2008

IAEA Publishes Nuclear Security Series No. 28-T – Selfassessment of Nuclear Security Culture in Facilities and Activities

2017

2005

Convention on Physical Protection of Nuclear Material members unanimously adopted nuclear security culture as a fundamental principle

2014

At the Hague Nuclear Security Summit, criticality of nuclear security culture was prioritized, identified as first of three security pillars

2021

IAEA Publishes Nuclear Security Series No. 38-T – Enhancing Nuclear Security Culture in Organizations Associated with Nuclear and other Radioactive Material

Methods (and value) of Measurement

- Organizations may use a variety of methods to assess their security culture - including surveys, interviews and onsite observations.

- From the beginning IFE used guidelines and best practices from WINS and the NTIAs. But especially ...

"To establish a proactive, organization-wide security culture; employee views about - and support for - nuclear security are important and need to be understood"

- ... thorough risk-analysis was conducted to assess the organizational culture at IFE (combination of in-house expertise and external consultants). This gave many valuable inputs, and a solid baseline to target further NSC strategy.

- The survey; Paper-based or digital-based?

- Preparing IFE employees to take the survey, who will the audience be? Very important: Assurance of anonymity!

- In this (borrowed) example respondents are asked to indicate their level of agreement, with each statement on a scale of **1** to **9** (plus an additional option of "Don't Know").

O	O	O	O	O	O	O	O	O	O
1	2	3	4	5	6	7	8	9	10
Strongly Disagree								Strongly Agree	Don't Know

Approximately one-third of the statements are designed so that a response of "Strongly Disagree" is a positive result. (The purpose is to help detect whether respondents simply tick "Strongly Agree" without first reading the question.)

Peer Review and Evaluation

The scope of any peer review and evaluation service should include at least the following areas for consideration:

1. Threat context and perception of threat

2. Leadership and management

3. Nuclear security standards, professionalism and continuous improvement

4. Effectiveness of communication supporting nuclear security

5. Personal accountability of all staff

Topic 1: Threat Context and Perception of Threat

- ***Communication*** of the threat within the organization (what is the common understanding at all levels? Combine internal and external presenters?)

- Understanding the evolution of the threat and in particular the evolving capability; modern threat technology, cyber, physical or blended attacks (is there an understanding/acknowledgment also of the "unknown"?)

- Recognition of the threats (are the specific mitigation measures understood as important?)

- At IFE the security arrangements are designed based on the outcome of formal risk assessments of threats. We see that the quality of assessment naturally is an important factor, and its also very important to create *ownership and participation* among leaders and responsible roles/ decision makers)

Topic 2: Leadership and Management

- Attitude of leaders and managers toward nuclear security (including belief in the credibility of the threat and promotion of a robust nuclear security culture) ← IFE also measure *maturity* in the upper management, presents a yearly review

- Governance and organizational structure (including definition of roles and responsibilities) ← Norway's (performance-based) law are underlining this requirement

- The allocation of resources (personnel, technical, budget, decision maker's support and time) to nuclear security measures

- Use a "risk-informed" approach; including management of the safety and security interface

- Oversight and monitoring of the performance of the nuclear security arrangements (including fair actions in the case of non-compliance and a continuous improvement process).

Topic 3: Nuclear Security Standards, Professionalism and Continuous Improvement

- Signs of a professional and proactive attitude toward nuclear security among all staff – *IFE top level management as well*

- Expectation of nuclear security compliance by all staff

- The importance of ensuring competences of each individual with nuclear security responsibilities at all levels of the organization

  – *A key starting point for IFE, and also in law and regulation*

- Mechanisms for consolidating lessons learned, ensuring continuous improvement and for supporting benchmarking

- Mechanisms to allow staff to report serious concerns and give evidence that proper follow-up is done.

Topic 4: Effectiveness of Communication Supporting Nuclear Security

- Internal communication campaigns which aims to promote nuclear security and support the development of a robust nuclear security culture.

- Mechanisms to communicate relevant nuclear security information to selected external stakeholders.

- "The use of indicators reflecting the health and performance of the security program to support communication campaigns toward internal and external stakeholders".

- Mechanisms to assess the effectiveness of communication efforts and information campaigns.

Basic - Education

Recurring staff training

Awareness

Topic 5: Personal Accountability of Staff

- "Attitude of staff towards the need for effective nuclear security and compliance with nuclear security rules"

- "Understanding by staff of nuclear security expectations placed on them"

- "The belief by staff that implemented security measures are adequate and proportionate to the risk"

- "The belief by everyone about the reliability of other individuals accessing information, facilities and materials"

Prioritized at IFE !

Summary

- Nuclear Security Culture is important and underlines the overall security of the nuclear facility. IFE referred to the credible insider threat, and to the best practice for implementing security measures at organizations and facilities, to budget for immediate action prompting a security culture program and action plan.

- There is no single, definitive way to measure nuclear security culture, several best practices and guidelines are available (WINS, IAEA +). Identify and develop a shared vision of what NSC means at *your* company.

- Leaders have a lot of responsibility; by being good role models they can motivate the employees. If the managers themselves skip the surveys.. Why should the rest of the employees not do the same?

- The measure of nuclear security culture is not a straightforward process, but its an important process necessary to know what the baseline is, and to from that make a plan/strategy. Prioritize – not everything can be measured at once ☺

Key take-aways

1) Understand the changing work environment, the importance of the human factor, and remember that the key indicators might be visible or more underlying (ref. the "Ice berg"-image of organizational culture)

2) Conduct *regular assessments* of security controls to identify any weaknesses or gaps, <u>and follow up on findings.</u> Decide on who should participate in the assessment developing team, and who will the analyze the results.

3) Know your ongoing activities addressing the security culture (Basic NSC education – Recurring training – Awareness activities) and check if they are working.

4) You may design a survey (or another way to measure) among the main **5** elements that contributes to security culture; *Perception of threat, Leadership and management, Standards, Professionalism, Continuous improvement, Effectiveness of communication*, and *Personal accountability.* Look to WINS Nuclear Security Culture Internal Guidelines.

5) At IFE, we as the operator thrived from an early focus on establishing a resilient nuclear security culture, - especially because it takes time, and there will be issues that must be handled. This is recommended for everybody ☺

Suggestions for further reading

- WINS (Best Practice Guide on Nuclear Security Culture and associated Assessment Guidelines)

- WINS Guidelines for Conducting Peer Reviews of NSSCs (2019)

- WINS (Advancing Gender Equality, Diversity and Inclusion in Nuclear Security - SELF-ASSESSMENT, EVALUATION & ACTION PLAN TOOL)

- IAEA Nuclear Security Series No. 7 (Nuclear Security Culture)

- IAEA Nuclear Security Series No. 28-T (Self-assessment of Nuclear Security Culture in Facilities and Activities)

- IAEA Nuclear Security Series No. 38-T (Enhancing Nuclear Security Culture in Organizations Associated with Nuclear and Other Radioactive Material)

- WINS Performance and Evaluation Series Peer Review of Corporate Security Assurance (2018)

Contact information:
Jeanette.Jensen@ife.no

Jeanette J. Jensen
Chief Advisor Nuclear Security