



Strål  
säkerhets  
myndigheten

Swedish Radiation Safety Authority

## **International Perspectives on Safety Culture in Waste Management & Decommissioning**

# **Safety culture in the context of decommissioning - a perspective from the Swedish regulator**

Simon Carroll

WM 2014, Phoenix Arizona, 4<sup>th</sup> March 2014



## About SSM

- ➔ SSM, the Swedish Radiation Safety Authority, is the Swedish national nuclear regulator
- ➔ Responsibilities in areas of nuclear safety, radiation protection and nuclear non-proliferation
- ➔ Works to protect people and the environment from the undesirable effects of radiation, now and in the future
- ➔ SSM has just over 300 employees, based in Stockholm



Strål  
säkerhets  
myndigheten

Swedish Radiation Safety Authority

# **Safety culture & SSM**

Fundamental elements



# What is safety culture?

- SSM uses IAEA:s definition of Safety Culture:

*“Safety Culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance.”*



# The underpinning philosophy

- ➔ No technical safety system can work without the close involvement of people and the surrounding organisation.
- ➔ Our regulatory supervision is based on how people work and the fact that quality and safety hinge on people, the specific context and organisation, alongside the technology itself.



# Applying safety culture

- Focuses on management and control
- Follow-up to ensure that the employees at a nuclear facility are provided with the right prerequisites for safe work
  - investigate whether they comply with their own management system,
  - ensure the right level of professional skills and adequate human and financial resources
  - a good level of safety awareness



# Assessing safety culture

- ➔ No formal detailed requirements specified
- ➔ Explicit requirements in new regulations
- ➔ Focus on licensee, safety culture one aspect of monitoring of activities with a range of themes
- ➔ Observations deemed relevant to safety culture are identified in our inspections database
  - Holistic determination to identify whether there may be a problem area
  - ***Indications***, rather than ***indicators***



# What happens during a compliance inspection? (1/2)

**Reviews and inspections of the formal systems and how the work is performed.**

- ➔ Review documents describing management systems, procedures and instructions.
- ➔ Focus on the specific work activity and check:
  - conducted in line with management systems and necessary procedures and instructions?
  - responsibilities clearly defined?
  - rules governing authority and decision-making are clear-cut, appropriate and effective?





# What happens during a compliance inspection? (2/2)

- Interview personnel on site at all levels of the organisation
  - how they conduct their work
  - the conditions for carrying out work in a safe manner
- If we assess that the facilities do not comply with the requirements, we take a decision on necessary measures and subsequent action.



Strål  
säkerhets  
myndigheten

Swedish Radiation Safety Authority

# **Safety culture & decommissioning**

Preparing for the challenges ahead



# Introduction

- General approach to safety culture in decommissioning is the same as for other activities under our supervision
- Decommissioning is a relatively new area for SSM;
  - Decommissioning will be of increasing importance over coming years
  - Relevant experience from other activities



# Preparing for the challenges

- ➔ Decommissioning an emerging area for SSM
  - Few lessons learned (yet) from the specific supervision of decommissioning within Sweden;
- ➔ Developing awareness of potential challenges from
  - Other relevant experience of safety culture in Sweden,
  - Dialogue with our licensees
  - Experience from decommissioning in other countries
- ➔ Ongoing internal education



# Safety culture & decommissioning

## ➤ Challenges

- The overall scale and intensity of organisational change & sequential downsizing, then expansion
- The transition phase(s) themselves
- Safety culture within the new decommissioning organization
- Safety culture given the extensive anticipated use of external contractors



# Safety culture & decommissioning

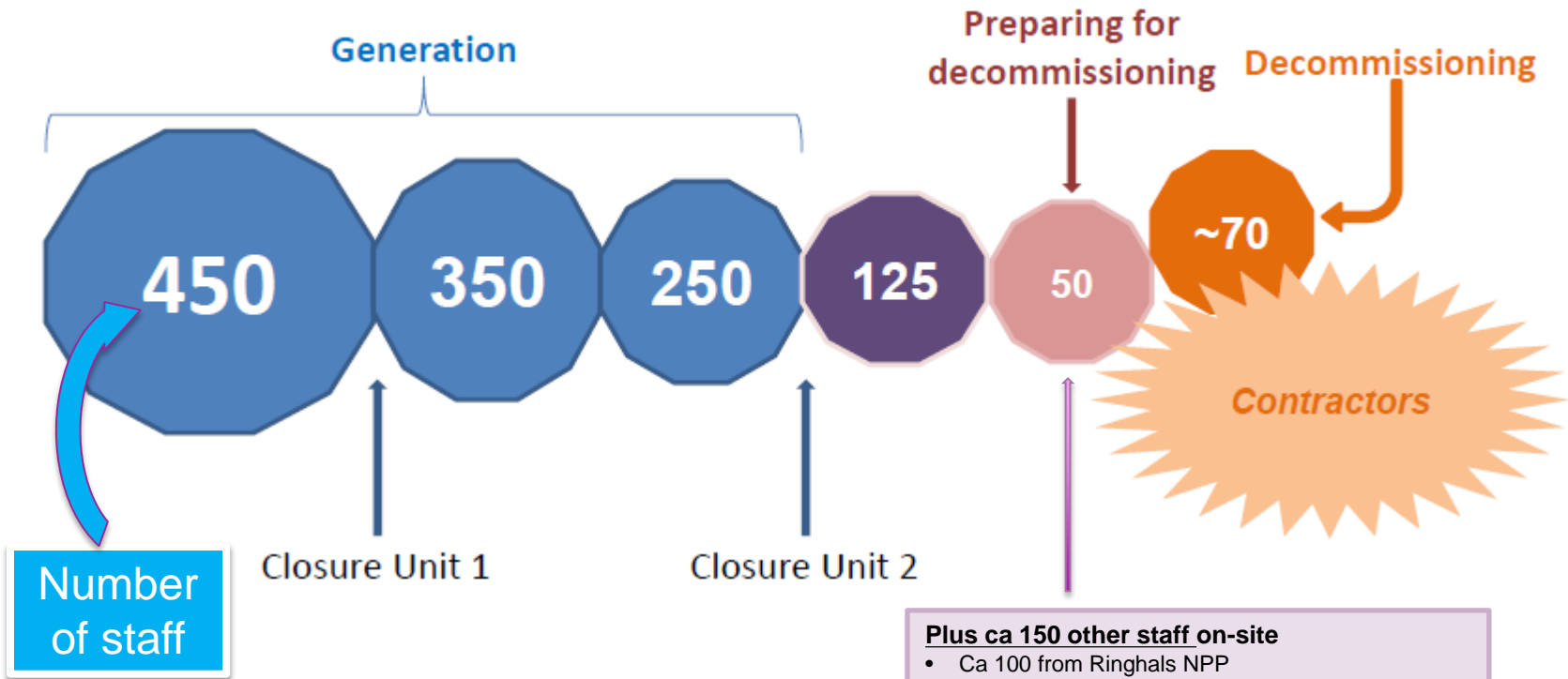
## ➤ Opportunities

- Formal continuity in safety culture within organisation (same licensee throughout)
- Functional continuity between generation and decommissioning organisation
  - Decommissioning organisation already active during final years of generation
  - No long interval between generation and decommissioning

## ➤ Continuity in regulator oversight



# Example of on-going & planned organisational change in a Swedish NPP (Barsebäck)



Simon Carroll, SSM  
WM 2014 - Panel 35, 3rd March 2014

#### Plus ca 150 other staff on-site

- Ca 100 from Ringhals NPP
- Ca 10 for KSU:s training on maintenance
- Ca 30 contractors (*Guards, foodhall, transport, cleaning, etc*)
- 5-8 companies that hire office space at Barsebäck
- Students from power companies (*20 000 education hours, 600 students*)



**Thank you!**