



World Institute for  
Nuclear Security

# Managing Nuclear Safety and Nuclear Security Interfaces at Nuclear Facilities: *Learning from Operational Experience*

16 – 18 NOVEMBER 2021



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# INTRODUCTION

# PRACTICALITIES / ZOOM INTRODUCTION


# How to use Zoom

- ☐ Microphone on mute unless requested
- ☐ You will be asked to unmute and turn on your camera, if practical, for discussions
- ☐ To get the facilitator's attention – please “raise your hand”
- ☐ The chat-box to be open throughout sessions. Do not hesitate to ask questions or put comments.
- ☐ When answering questions posed by facilitator – send response to everyone
- ☐ There will be polls throughout sessions

# Workshop materials

- Recorded presentations are available on the WINS website
- All presentations will be uploaded at the end of each day to the WINS website
- Sessions are recorded and will be made available on the WINS website shortly after the event
- A draft workshop report will be circulated for comments no later than 03 December 2021

# Your biographies



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WHO WE ARE ▾

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EVENTS


NEWS

CART(0)





EVENT PARTICIPANTS


Online Workshop on Managing Nuclear Safety and Nuclear Security Interfaces at Nuclear Facilities: Learning from Operational Experience




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Austria


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Centre for Energy research and training  
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**Mehl Douglas**  
National Nuclear Regulator  
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**Julie Murray**  
ARPANSA  
Australia

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**Neil Carrick**  
Sellafield Ltd



**Raymond Agalga**  
Ghana Atomic Energy



**Görkem Güngör**  
Republic of Turkey Ministry



**NURUDDEEN ABUBAKAR**



## OPENING REMARKS

**Lars van Dassen**  
WINS Executive Director

# Workshop Agenda

## Tuesday 16 November

- 14:00 Opening Session
- 14:30 Session I – Why an Effective Management of Safety & Security Interfaces is Important
- 15:30 Break
- 15:45 Session II – National Approaches to Managing Safety & Security Interfaces
- 17:15 End of Day 1

## Wednesday 17 November

- 14:00 Summary of Day 1
- 14:15 Session III – Nuclear Operator Experiences in Managing Safety and Security Interfaces
- 15:45 Break
- 16:00 Continuation of Session III (Break-out groups)
- 17:15 End of Day 2

## Thursday 18 November

- 14:00 Summary of Day 2
- 14:15 Session IV – Strengthening the Coordination between Safety and Security
- 15:30 Break
- 15:45 Continuation of Session IV
- 16:30 Conclusion Session
- 17:15 End of Workshop

# Workshop Objectives

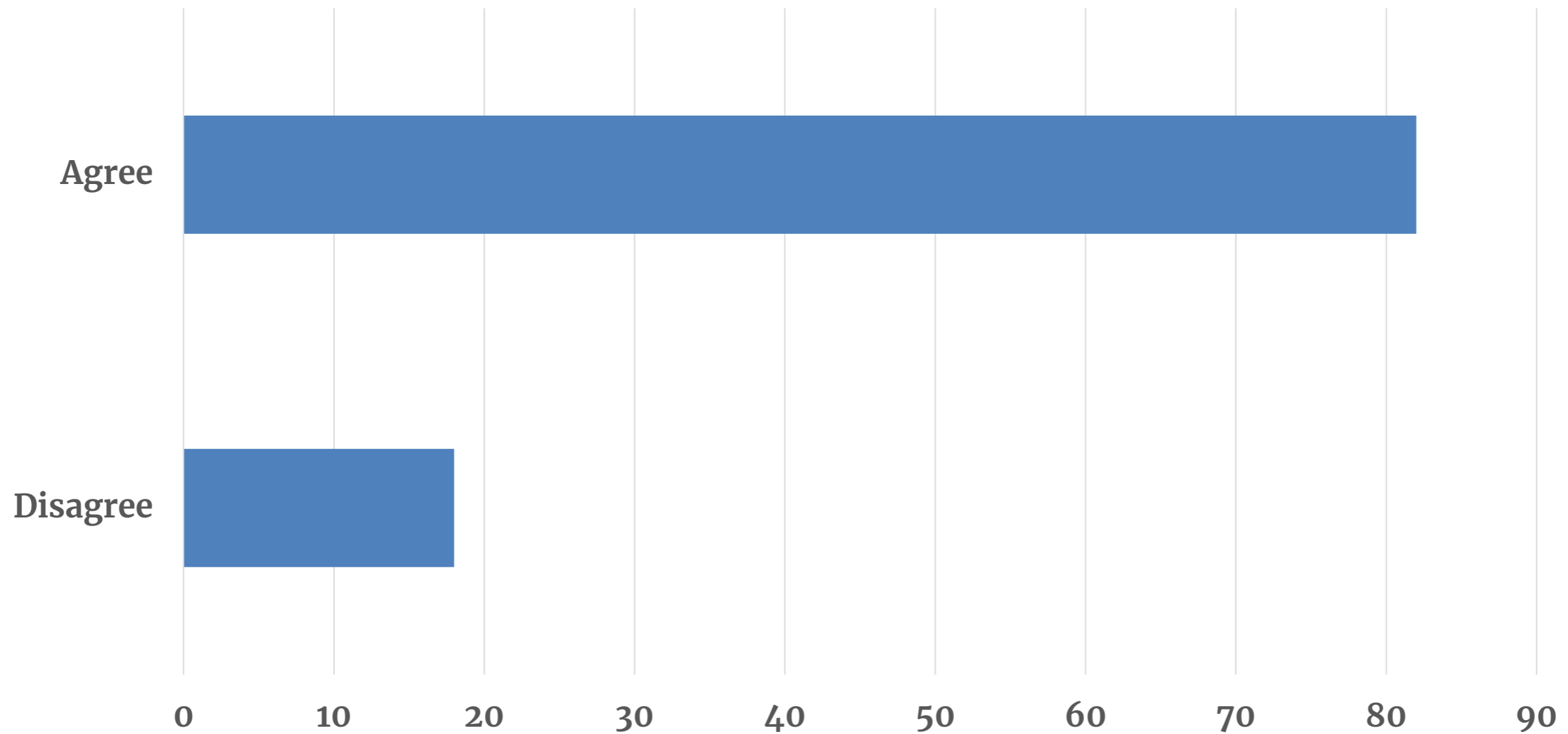
- To provide attendees with a better understanding of the benefits of a stronger coordination between nuclear safety and nuclear security
- To identify nuclear safety and nuclear security interfaces and review the role of various stakeholders, in particular nuclear operators and regulators, in effectively managing these interfaces
- To identify challenges, gaps and good practices in bringing the two disciplines closer
- To strengthen nuclear security and nuclear safety by encouraging and facilitating sharing of operational experience and the learning from respective practices and experiences

# Pre-workshop survey results

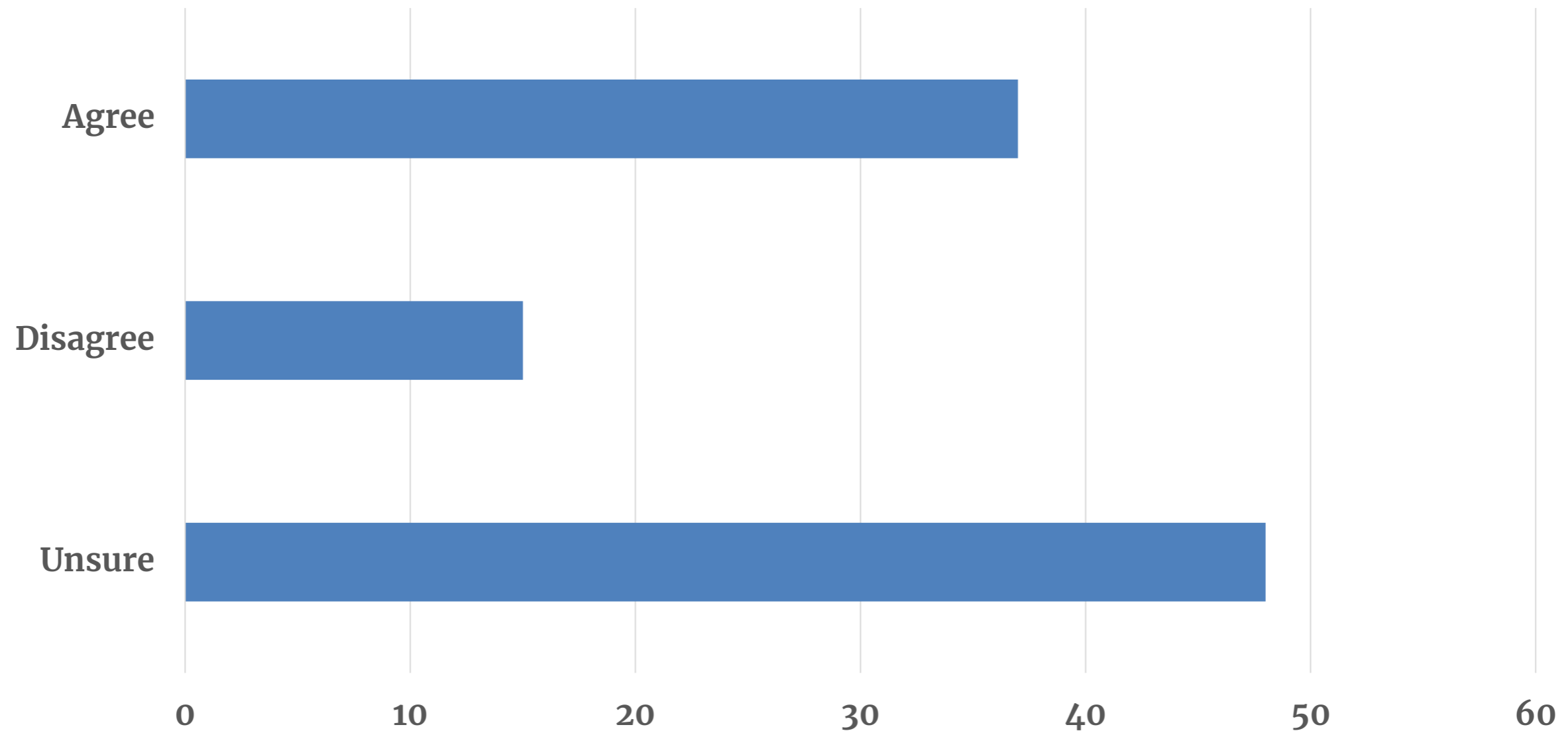
Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree	Agree Completely
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# Question 1

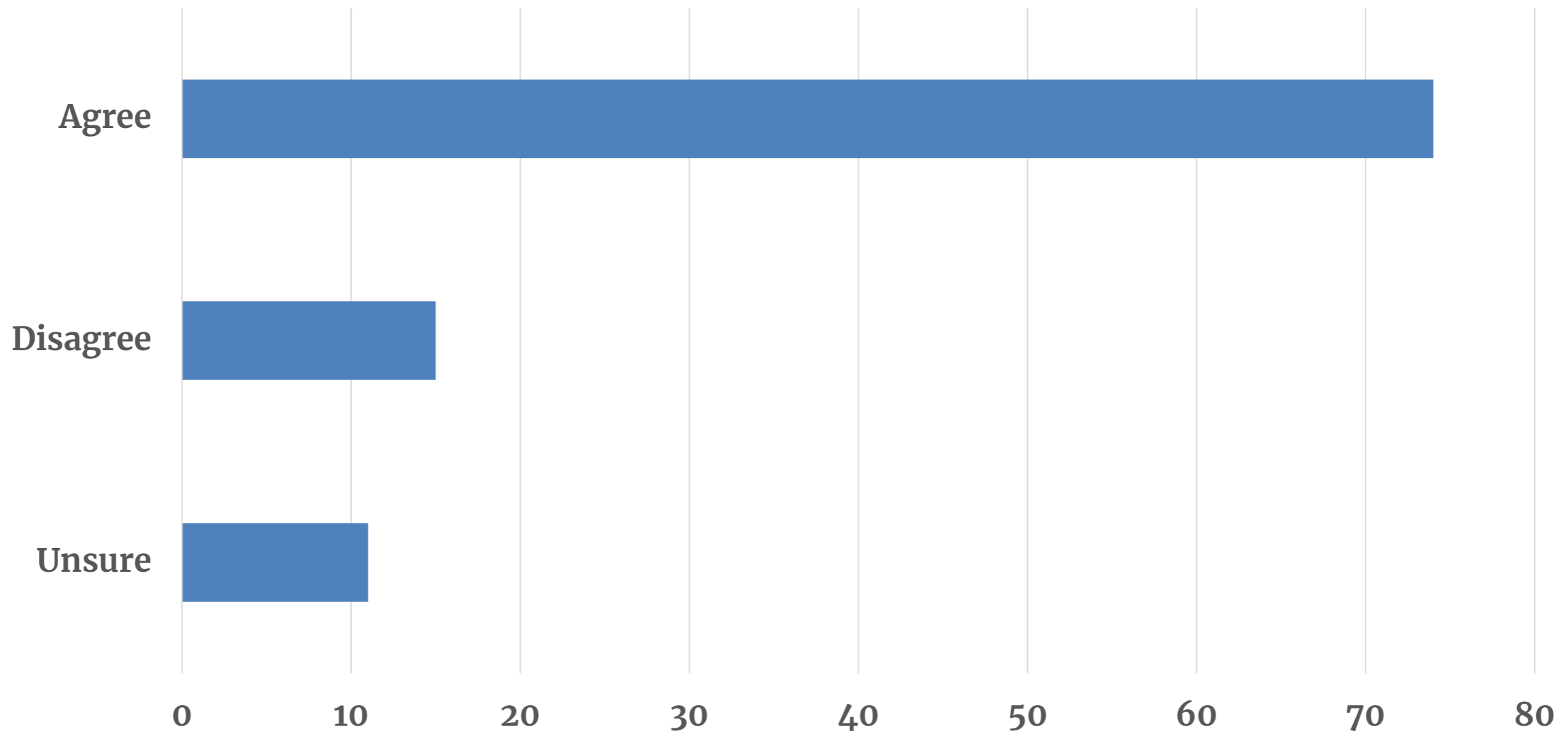
I have a good understanding of nuclear safety and security interfaces



## Nuclear operators effectively manage nuclear safety & security interfaces

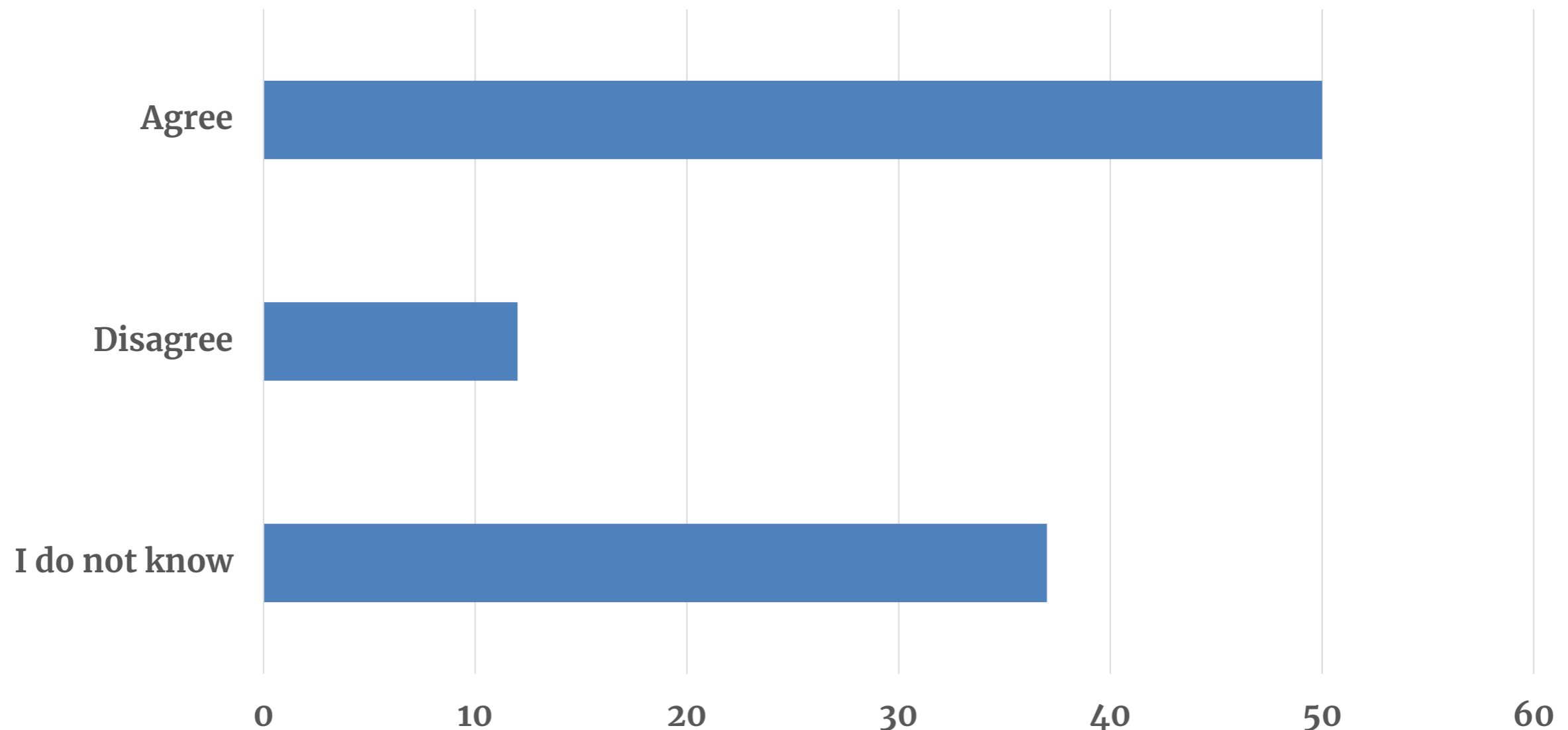


## Regulations facilitate the effective management of safety & security interfaces



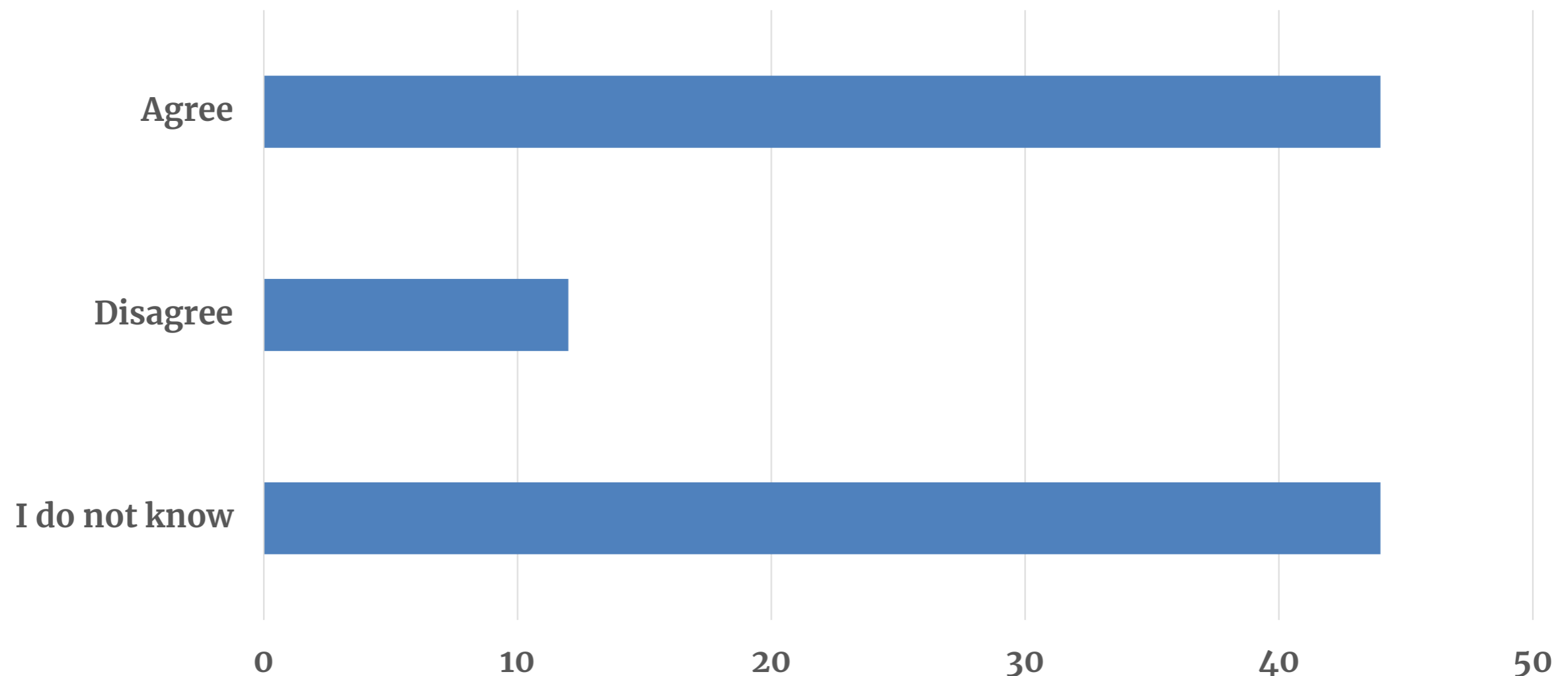
## Question 4

International recommendations for effectively managing safety & security interfaces are clear and comprehensive



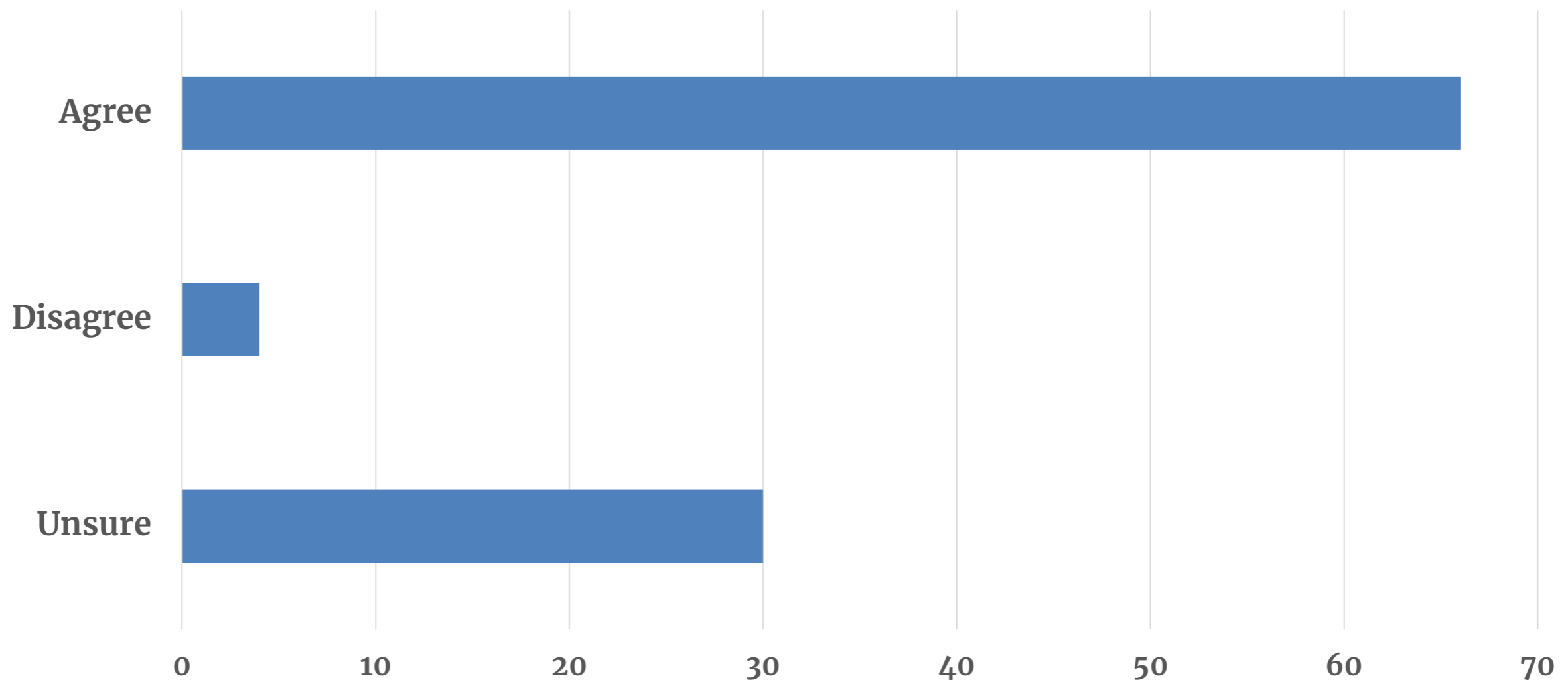
## Question 5

**There are mechanisms in place within the nuclear industry to facilitate sharing of lessons learned on effectively managing safety & security interfaces**



## Question 6

**There are mechanisms in place at the international level to facilitate sharing of lessons learned on effectively managing safety & security interfaces**



- Different mindset; different priorities
- People are specialized in one topic. Lack of understanding of each other. Lack of willingness to work with others?
- Safety first! Staff think safety only. Safety rules sometimes conflict with security needs.
- Lack of awareness and training sessions supporting collaboration
- Lack of joint planning and implementation (e.g. training, exercises, etc.)
- Not enough forum for dialogue and exchange of good practices
- Inadequate research on interaction mechanisms and opportunities to bring the two disciplines together
- Not sure/Do not know

- Give equal importance to both disciplines. Change the mindset. Find common ground and common language
- Adapt organisational structures. Create safety & security committees
- Develop a common 'doctrine' that informs an integrated culture (top-down driven and embedded over the long term)
- Integrate safety and security as early as possible in every process (and Safeguards?...and Operations?)
- Establish integrated project teams. Bring safety and security people together.
- Identify barriers and take actions. Addressing the root of potential conflicts
- Highlight what each discipline can learn from the other one
- Support exchange of experience between institutions
- Ensure the two disciplines working together in all areas (i.e. national, regulations and operations)



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# **SESSION I – WHY AN EFFECTIVE MANAGEMENT OF NUCLEAR SAFETY AND SECURITY INTERFACES IS IMPORTANT**

## Key issues

- What are the interfaces between nuclear safety and nuclear security?
- What are the benefits of strengthened coordination and the risks of potential gaps?
- What are international recommendations for effectively managing these interfaces?

# Structure of Session I

- **Presentation** by Mehl Douglas, NNR, South Africa
- **Plenary discussion** on achievements and remaining challenges
- **Discussion** with Kristof Horvath, IAEA, on international recommendations and guidance

# Plenary discussion

- Why do we need to take the effective management of safety and security interfaces seriously ?



**Mehl Douglas**  
Senior Inspector  
National Nuclear Regulator (NNR)  
South Africa

# Plenary discussion

- What is our global feeling on achievements and remaining challenges?



**Kristof Horvath**

Unit Head, Security of Nuclear Material  
Nuclear Security Division (NSNS)  
International Atomic Energy Agency (IAEA)

## International recommendations and guidance

- Top 3 messages
- Lessons learned
- Application of international guidance
- Helping the IAEA



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# BREAK



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# **SESSION II – NATIONAL APPROACHES TO MANAGING NUCLEAR SAFETY AND SECURITY INTERFACES**

## Key issues

- What are some examples of national practices for addressing this topic? What are the differences and/or similarities between these examples?
- What are best practices for establishing a national framework on effectively managing safety and security interfaces?
- What are the challenges that remain?

## Structure of Session II

- **Discussion** with Luiz Fernando Bloomfield Torres CNEN, Brazil, on sharing experiences on the role of regulators in developing an effective interface between safety and security
- **Presentation** by Tapani Honkamaa, STUK, Finland, on a national approach to managing nuclear safety and nuclear security interfaces
- **Discussion** with Stephanie Morrow, NRC, USA



**Luiz Fernando Bloomfield Torres**  
Nuclear Security Officer  
National Nuclear Energy Commission (CNEN)  
Brazil

**In my opinion, regulations facilitate the effective management of safety & security interfaces.**

1. Agree
2. Disagree
3. Unsure



**Tapani Honkamaa**  
Primary Advisor  
STUK  
Finland

## Safety and security interfaces – regulatory perspective and related matters, what are the key areas we should be focusing on?

- Organisational structure of the regulator
- Education of regulatory staff
- Combined publications of safety and security requirements
- Joint inspections
- Other



**Stephanie Morrow**  
Human Factors Psychologist  
Nuclear Regulatory Commission (NRC)  
United States

## Regulatory perspectives and related matters

- Misconceptions between safety and security perspectives
- Preparing to observe safety and security perspectives
- On-going efforts to bring safety and security culture closer to each other
- Changes in the safety and security interface

# Wrap up of Day 1

Please watch (again) the recorded presentation *Coupling Safety, Security and Operator Actions at Nuclear Power Plants* by Jim Raines, ARES Security

Decide what break-out group you wish to attend (abstracts on the WINS website)

1. Sabotage prevention (Commie Byrum, ORNL, USA)
2. Emergency preparedness and response, including joint exercises (Neil Carrick, Sellafield, UK)
3. Cyber security aspects of safety/security interfaces (Nick Howart, ANSTO, Australia)



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# *Managing Nuclear Safety and Nuclear Security Interfaces at Nuclear Facilities: Learning from Operational Experience*

16 – 18 NOVEMBER 2021  
DAY 2

## Day 2 Agenda

14:00 Key findings of day 1

14:10 Session III – Nuclear Operator Experiences in Managing Nuclear  
Safety and Security Interfaces

15:45 Break

16:00 Continuation of Session III

17:15 End of Day 2

# KEY FINDINGS OF DAY 1

## Examples of interfaces between nuclear safety and nuclear security

- ☐ Sabotage risk mitigation
- ☐ Access and escape routes
- ☐ Emergency preparedness and response
- ☐ Communication, transparency and confidentiality
- ☐ Cyber security of IT systems related to nuclear safety
- ☐ Human factors

## Why do we need to take the effective management of safety and security interfaces seriously ?

- ☐ Cannot be safe without security; cannot be secure without safety
- ☐ Transform risk of interference/conflict into synergies
- ☐ Otherwise efforts might be duplicated
- ☐ For the potential benefits (safety, security, operations/costs)
- ☐ An integrated approach strengthens emergency response
- ☐ Foundations for effective management of other interfaces (e.g. safeguards; operations)
- ☐ Convergence towards integrated risk management

**No choice! We cannot meet our overall objectives if both are not harmonised !**

## Selected key findings (1/2)

- ❑ The topic is clearly on the table. Increasing attention by all stakeholders.
- ❑ Safety and Security are natural interfaces. They might not be that different (common goal). Implementation might differ but a lot of behaviours are pretty similar.
- ❑ It is a journey! There is a momentum. We need time.
- ❑ We still need to recognize the challenges ahead of us and the need for stronger collaboration.
- ❑ There is Lack of consistent terminology and some silos attitude remain
- ❑ We need to ensure a balance between the 2 disciplines. When one dominates it is not good
- ❑ Safety remains a priority among senior management. It is vital to get senior management on board to elevate security within the organisation.

## Selected key findings (2/2)

- ❑ A number of factors (international efforts; regulations, policy statements, communication between stakeholders, etc..) are needed to support safety/security interface
- ❑ International recommendations and guidance already exist and are further developing
- ❑ Regulations are necessary but not sufficient. Operators should look beyond the regulations and implement best practices.
- ❑ There are many tools in the regulatory toolbox. They should all be used to support management of interfaces
- ❑ Need for a 2-way communication between the 2 disciplines. Constant conversation
- ❑ Leadership role, at all levels.
- ❑ Behaviour is key in changing organisational culture, therefore HR is vital for any cultural change.



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# **SESSION III – NUCLEAR OPERATOR EXPERIENCES IN MANAGING NUCLEAR SAFETY AND SECURITY INTERFACES**

## Key issues

- What can we learn from those who are managing safety/security interfaces at nuclear facilities?
- What works well? What are the challenges that remain?
- How can we ensure the sharing of experience and lessons learned?

## Structure of Session III

- **Poll** to discuss whether nuclear operators effectively manage nuclear safety and security interfaces
- **Presentation** by Mari Lahti, Posiva Oy, Finland, on a nuclear operator experience in managing nuclear safety and security interfaces
- **Discussion** with Hasan Shurafa, Nawah, UAE on organisational arrangements and mechanisms in place at a NPP to ensure safety and security coordination and an effective interface management
- **Panel of experts** with Florence Bloise, CEA, France and Houda Abbassi, CNESTEN, Morocco
- **Break-out groups** to explore specific areas of safety and security collaboration and share good practices to ensure enhanced collaboration between those in safety and security

# Guest speakers



**Mari Lahti**  
Nuclear Safety Manager  
Posiva Oy  
Finland



**Hasan Shurafa**  
Security Regulatory Compliance  
Specialist  
Nawah Energy  
United Arab Emirates

In my experience, nuclear operators effectively manage nuclear safety & security interfaces

1. Agree
2. Disagree
3. Unsure

## Panel discussion

How can we help operators, both senior management and staff to have a discussion on safety/security interfaces?



## Organisational Arrangements and Mechanisms in place at a NPP

- Nawah's organisational structure
- The role of international cooperation
- Mechanisms, monitoring and evaluation
- Planning Activities
- Challenges and lessons learned

# Guest speakers



**Florence Bloise**

Safety and Security Engineer  
CEA Cadarache  
France



**Houda Abbassi**

Head of Workers and Site Protection  
Division  
National Centre for Nuclear Energy,  
Science and Technology (CNESTEN)  
Morocco

# Examples of safety and security interfaces at operator level

- ☐ Human Reliability Programmes
- ☐ Alarm Assessment
- ☐ Exercises



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# BREAK

**Parallel Break-out groups: Exploring specific areas of safety and security collaboration and share good practices to ensure enhanced collaboration between those in safety and security.**

- **Sabotage prevention (Commie Byrum, ORNL, USA)**
- **Emergency preparedness and response, including joint exercises (Neil Carrick, Sellafield, UK)**
- **Cyber security aspects of safety/security interfaces (Nick Howart, ANSTO, Australia)**

# Break-out groups process

1. Access the breakout group you want to join
2. Nominate someone in your group to feedback
3. Listen to the invited expert
4. Reflect and react on the presentation
5. Discuss the following questions
  - How is the interface established between safety and security in your area (sabotage, emergency, cyber)?
  - What is the greatest challenge to successful cooperation between safety and security personnel or operational requirements in your area?
  - What are some good practices/lessons learned that can improve the interface between safety and security?

(Each group will have a moderator and a note-taker)

## Break-out group debrief

- How is the interface established between safety and security in your area (sabotage, emergency, cyber)?
- What is the greatest challenge to successful cooperation between safety and security personnel or operational requirements in your area?
- What are some good practices/lessons learned that can improve the interface between safety and security?

# Wrap up of Day 2



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# *Managing Nuclear Safety and Nuclear Security Interfaces at Nuclear Facilities: Learning from Operational Experience*

16 – 18 NOVEMBER 2021  
DAY 3

## Agenda of Day 3

- 14:00 Key findings of day 2
- 14:10 Session IV – Strengthening the Coordination Between Nuclear Safety and Nuclear Security
- 15:35 Break
- 15:50 Continuation of Session IV
- 16:30 Conclusion session
- 17:00 Evaluation session and closing remarks
- 17:15 End of Workshop

# KEY FINDINGS OF DAY 2

## Some experience from those who are managing safety/security interfaces at nuclear facilities (1/2)

- ❑ Regulations provide good framework for operators. They support the design and implementation of safety and security measures in a way that complement each other.
- ❑ Security still lag behind. Since safety is continuously progressing, we need to intensify our efforts if we want to catch up
- ❑ There are solutions. Changing terminology and concentrating on safety/security interface work!
- ❑ Secrecy is still slowing down communication. More transparency is needed in WHY the information needs to be protected.
- ❑ Are low rates of incidents an indicator that operators are effectively managing the interface?
- ❑ Difficult to get upper management to buy into security; even if they do, all members of the organisation need to display strong security culture

## Some experience from those who are managing safety/security interfaces at nuclear facilities (2/2)

- ❑ In terms of sabotage prevention, the follow-through on safety/security interfaces (lots of talk, not a lot of action)
- ❑ Still a long way to go in harmonising the two interfaces, particularly when it comes to offsite responders
- ❑ In terms of emergency preparedness, tendency to rely on probabilistic risk analysis
- ❑ Still some uncertainty over who does what in an emergency

## Some good practices in managing nuclear safety and nuclear security interfaces (1/2)

- ❑ Organisational structure is essential. Consider establishing safety/security working groups or committee
- ❑ Having a “responsible” manager – does not need to be an expert in all the S’s but will oversee a team of experts; does need to be familiar with all the regulations
- ❑ Human factor lies at the heart of this (education and training; Human Reliability Programmes; etc.)
- ❑ Keeping the message consistent within the organisation and toward external stakeholders
- ❑ Power of example

### Some good practices in managing nuclear safety and nuclear security interfaces (2/2)

- ❑ Importance of the first responders to determine the origin of an emergency during the “golden hour”
- ❑ Incorporating both safety and security elements in exercises to ensure emergency preparedness
- ❑ In terms of cyber, have a competent cyber expert in the room at the beginning of any project
- ❑ Identify all cyber assets, including both safety and security assets
- ❑ Increase sharing of lessons learned nationally and internationally



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# **SESSION IV – STRENGTHENING THE COORDINATION BETWEEN NUCLEAR SAFETY AND NUCLEAR SECURITY**

# Key issues

- What are prerequisites and possible mechanisms for supporting enhanced coordination?
- How can we facilitate mutual learning and transparent interactions?
- What is the role of culture? What is the role of education and training?
- How do we assess the level of coordination?

## Structure of Session IV

- **Break-out discussion** on coordination gaps and prerequisites to effective coordination
- **Presentation** by Nestor de Lorenzo, INVAP, Argentina, on addressing nuclear safety and security interfaces starting at the design phase
- **Discussion** with Erin Bidwell, LAM LHA, to gain an aviation perspective
- **Presentation** by Russ Clark, Y12, USA and Lars Axelsson, SSM, Sweden, on Safety and Security Cultures: the challenges and opportunities of bringing them together
- **Panel discussion** with speakers of Day 3

## Break-out discussion: Coordination gaps and prerequisites to effective coordination

- What have we learnt so far?
- Where do we see room for improvements? Offer possible solutions to identified challenges!

## Break-out discussion: Coordination gaps and prerequisites to effective coordination

### Suggested Process:

- Turn on your mics!
- Turn on your video (if possible)
- Share your findings !
- Discuss openly! No moderation!

## Break-out discussion debrief

- What have we learnt so far?
- Where do we see room for improvements? Offer possible solutions to identified challenges!



**Nestor de Lorenzo**  
Deputy VP, Nuclear Projects Department  
INVAP S.E.  
Argentina

## Nuclear safety and security interfaces starting at the design phase

- Stakeholder management
- Impact on availability
- Profile
- Desirable design features



**Erin Bidwell**

Associate Director  
LAM LHA USA  
United States

# An aviation perspective

- Key messages from the recorded presentation
- Developing an integrated safety and security culture
- Safety and security by design
- Gender Parity in the aviation sector



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# BREAK

# Guest speakers



**Russel Clark**

Consultant

Y12 National Security Complex  
United States



**Lars Axelsson**

Analyst

Swedish Radiation Safety Authority  
(SSM)  
Sweden

## Panel Discussion with Day 3 speakers

- What lessons learned from the development of safety culture are most relevant to the development of security culture?
- What concrete actions can an organisation take to develop and integrate the nuclear safety and the nuclear security cultures?
- What are some specific considerations for countries embarking on new nuclear power programmes when developing an initial safety and security culture?



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# CONCLUSION SESSION

## Break-out discussion: Gap analysis and next steps

- ❑ What will be your take-aways from this event? What could be one action for yourself and one for your organisation!
- ❑ What are the resources available? Are we taking advantage of them? What role could international and regional programmes play in capacity building assistance?

## **Break-out discussion debrief: Gap analysis and next steps**

- ❑ What will be your take-aways from this event? What could be one action for yourself and one for your organisation!
- ❑ What are the resources available? Are we taking advantage of them? What role could international and regional programmes play in capacity building assistance?



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# WORKSHOP EVALUATION

# CLOSING REMARKS



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**Thank you for participating!**