

12th EAN Workshop
“ALARA in Safety and Security of Radiation
Sources and Security Screening Devices”

**CONCLUSIONS AND
RECOMMENDATIONS**

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Outline

- A big **THANK YOU** to the organisers
 - A modified approach...
 - Review objectives of EAN workshops
 - A (personal) summary of Oral Sessions and issues arising
 - Discuss how to report the conclusions and recommendations
 - Say goodbye and go home (and get scanned)
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EAN WORKSHOPS

Objectives

- Exchange feedback 😊
 - Different sectors
 - Different stakeholders
 - Aid the implementation of ALARA in practice
 - Identify issues for further research and developments
 - Provide conclusions and recommendations
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Aims of the 12th Workshop

- **To consider**
 - how the implementation of ALARA, in terms of planned and emergency exposure situations, involving worker and public doses, is affected by the introduction of security-related measures.
 - whether exposures arising from security screening devices can be justified.
 - how an optimum balance between protection, safety and security can be achieved.
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Issues from the 12th Workshop

Oral Presentations



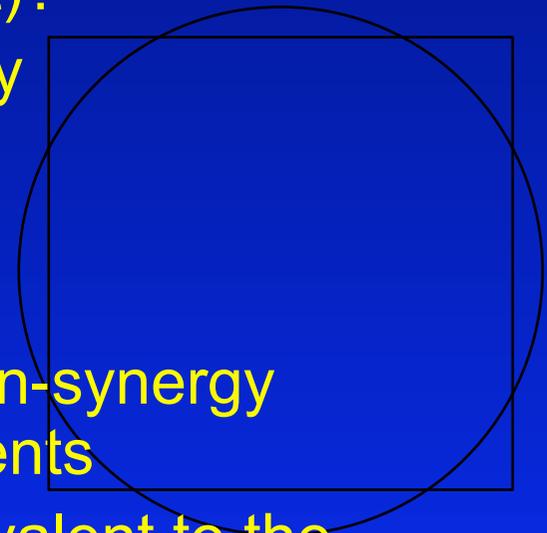
Session 1: Introduction and scene setting

- Security requirements - originally produced as separate documents , but now moving towards common documents/structures
- Harmonisation of HASS and D values will assist the integration process
 - A_1 and D values are safety-based concepts
- Work needed on practical implementation of dose constraints and reference levels
 - When do each apply ? (DC → DRL → DC/DRL)
 - Values? Applying ALARA?
- 2009/10: time for practical feedback and review
- EAN to review for ICRP Committee 4?

Session 2: Security and Safety Measures

Circles and squares?

- Safety and Security: both aim to protect people from harm. But different philosophy ?
 - Safety: control the source
 - Security: control people
- And different cultures (trust vs mistrust)?
- Source-related controls have a synergy
 - Examples of implementation
- People-related controls?
 - Surveillance?
- Some (but not many?) examples of non-synergy between safety and security requirements
- Graded approach? ASSARA? an equivalent to the ALARA procedure?



Session 3: Planned Exposure Situations

- Applies to Prevention (before) and Recovery (after)
- Training of security-related staff
 - Large numbers of people, high cost
 - ALARA? Societal and economic factors?
 - Maintaining and developing expertise?
- Dose constraints
 - Security workers (≤ 1 mSv/y)
 - For recovery workers?
 - For training exercises with radiation sources!
- Detection of orphan sources
 - How do detection limits compare with public dose reference levels?

Session 4: Emergency Situation Management

- **Planning and more planning**
 - For different types of incident; flexible and extendible
 - **Dose reference levels for emergency responders**
 - For different events, and different levels of response?
 - Need for consistency?
 - **Still a need for dose constraints?**
 - Emergency and recovery happen simultaneously
 - **and derived reference levels (dose rate, contamination) to help implement ALARA in practice**
 - **Appropriate response and risk communication/information**
 - **Training of emergency responders**
 - Harmonisation , communication of risk, exercises
 - **Lot of published material and tools (IAEA)**
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Session 5

Security devices: justification and optimisation

- **X-ray security screening (body scanners)**
 - Are very low (e.g. $\ll 1\mu\text{Sv}$) doses ever automatically justified, or optimised?
 - Selection criteria and informed consent?
 - What about collective dose?
 - Need reference doses for scans (better than a DC?)
- **New security technologies**
 - Increasing potential risk? (neutron generators)
 - Safety in use (portable equipment)
 - Training of operators (security staff)
- **Technology moving faster than the standards**

Summary of recommendations from Working Group 1

- When the EU MS report their experience gained with the implementation of the HASS Directive to the EC in 2010, **EAN** should support this process by ensuring that practical aspects of the implementation are included.
- Better cooperation and information between authorities of EU countries on the movement of sources is necessary. This should be supported by **ERPAN** and the **EC**.
- The Regulation Euratom 1493/93 needs to be revised in order to comply with the IAEA import/export guidance with due consideration of the EU open market. This should be initiated by the EC.
- When implementing safety and security measures the ALARA principle has to be applied to ensure that protection of workers/public is optimised. This issue has to be addressed by all parties involved. The EAN could promote this idea in training courses and other events.

Summary of recommendations from Working Group 2

- **To operators ?**
 - Security should consider all credible threats (e.g. theft, sabotage,...)
- **To regulatory EU authorities ?**
 - Definition of a harmonised security level (e.g. source security, EU unified approach to border control)
- **To national authorities**
 - Consider security in the licensing process and inspection
- **To EAN ?**
 - Security issues should be kept in focus for review

Summary of recommendations from Working Group 3

- Structured collaboration (first responders, cbr-staff, radiological experts), graded approach
- Estimate doses for first responders and the public in case of missing sources
- Enhance information exchange from police to national radiation protection authorities (emergency staff / radiological experts)
- Assure radiation protection staff to be on site as soon as possible depending on the capabilities of the state.
- Medical responders and police should be equipped with FFP3-masks and gloves
- First responder training with regard to awareness of radiological threat
- Scenario based exercises to ensure proper working of the organizations involved in the graded approach should be completed in regular intervals

Summary of recommendations from Working Group 3

- The perimeter of the scene should be defined and set up as quick as reasonably achievable (AQARA)
- Radiation experts should be available on On-call-duty
- Structure that is flexible to adopt to the needs of the deployment
- Introduction of a common “Language” of involved organisations (fire brigade, police, radiation protection agency)
- Communication to the public should to planned in advance, establishment of a “Crisis Command Center”

Summary of recommendations from Working Group 4

- **National authorities to require**
 - Only to be used by or under direction of law enforcement bodies?
 - Each use to be justified/ licenced
 - Optimisation - keep doses below 0.3 mSv/y dose constraint, further optimisation may be appropriate
 - Detailed protocols for equipment QA and selection of those to be scanned
 - Information to be provided to those selected and choice given not to be scanned (certain caveats to be taken into consideration)
- **IEC to progress and adopt draft IEC standard 62463**
- **ICRP to consider practices that involve the deliberate exposure of persons for non medical purposes**

23 Recommendations!

- How to report the findings of the Workshop?
 - EAN website
 - National journals
 - Reports to specific organisations (e.g. HASS/C of C)?

13th EAN Workshop

- ALARA in the Medical Sector
 - Norway
 - June 2011
 - Details to be announced....
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Finally, a warning...

“Security apparatuses are centrifugal in that they constantly expand and integrate new elements.....”

Michel Foucault, Philosopher, 1977
