Safety and Security of radioactive sources: The next 25 years

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2. Background

Safety of radioactive sources

as defined in IAEA IBSS

Security

- Higher terrorist threat
- Potential exposures in case of lose control

Increased Concern about security of radioactive sources

3. Accidents with radiation sources

LOCATION	SOURCE	CIRCUMSTANCES	CONSEQUENCES
Juárez, Mexico, 1977-1983	37 TBq Co-60 Teletherapy	Removed to sell for scrap	Economic
Morocco, 1984	1.1 TBq Ir-192 Gammagraphy	Loss control, taken home	8 people died
Goiania, Brazil, 1987	50 TBq Cs-137 Teletherapy	Loss control, taken home	Major contamination, people evacuation
Tammiku, Estonia 1994	0.1 – 7 TBq Cs-137 Disused	Stolen to sell for scrap	1 person died, 2 severely injured
Lilo, Georgia, 1997	12 Cs-137	Abandoned in military site	11 people severely injured
Istambul, Turkey, 1998/9	3.3 and 23.5 TBq Co-60 Teletherapy	Loss control, sold as scrap	10 people severely injured
Yanango, Peru, 1999	1.37 TBq Ir-192 Gammagraphy	Loss control, taken home	1 person severely injured
Cairo, Egypt, 2000	1.85 TBq Ir-192 Gammagraphy	Loss control, taken home	2 people died
Samut Prakarn, Thailand, 1999/2000	15.7 TBq Cs-137 Teletherapy	Dismantled, sold as scrap	3 people died, 7 severely injured
Georgia, 2002	1,110 TBq Sr-90 RTG (2 sources)	Abandoned	3 people severely injured

4. IAEA Initiatives

International Conferences

- Dijon 1998
- Vienna 2003

General Conference September 2003

Code of conduct on the safety and security of radioactive sources

Member States: Urged to send a Communication to IAEA D.G. to

- Support the Code of Conduct
- Inform that it is being implemented

5. Code of Conduct: Objectives

Help Member States to assure that radioactive sources are used in an appropriate way:

- Safety: to avoid unexpected exposures
- Security: to avoid
  - Unauthorized access
  - Loss
  - Robbery
  - Unauthorized movement

Considering both:

- Radiological accidents
- Willful damage

6. Code of Conduct: Approach

Define and implement an effective system for radioactive sources control

- During and at the end of their useful lives
- Specially watching over source transferences

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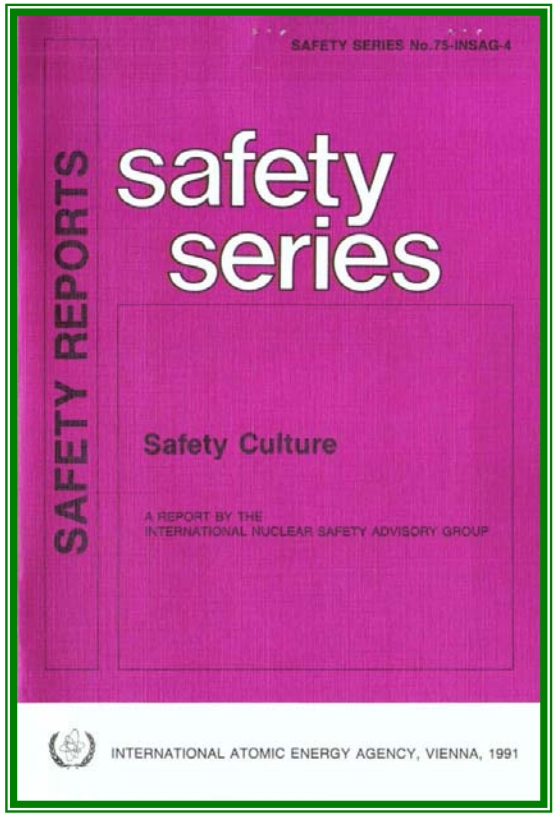
Promote → Safety → Culture
Promote → Security → Culture



7. Security: Future work

- Assure appropriate/harmonized identification of sources (marking, labeling, pictures)
- National Inventory of R.S. + transferences tracking
- Management (technical, financial) of R.S. out of use
- Measures to prevent malefic actions, based on defined state specific design threat
- Early detection of situations of lose control
- Workers training on consequences and management of R.S. lose control
- Confidentiality of info related R.S. security
- Global implementation of R.S. import-export control procedures (IAEA Guide)

8. Orphan sources

- Concern extended to non-radiological international organisations (UNECE, Custom org., BIR)
- Surveillance of activities with potential risk with orphan sources (metal recycling..)
- Co-operative initiatives at national level
  - **Companies of affected activities**
  - **Regulatory Body**
  - **Radioactive waste agency**
  - **Authorities**

Positive experience in some countries (U.K., Spain...)

- National campaigns to find and recover orphan sources




9. Orphan sources: Future work

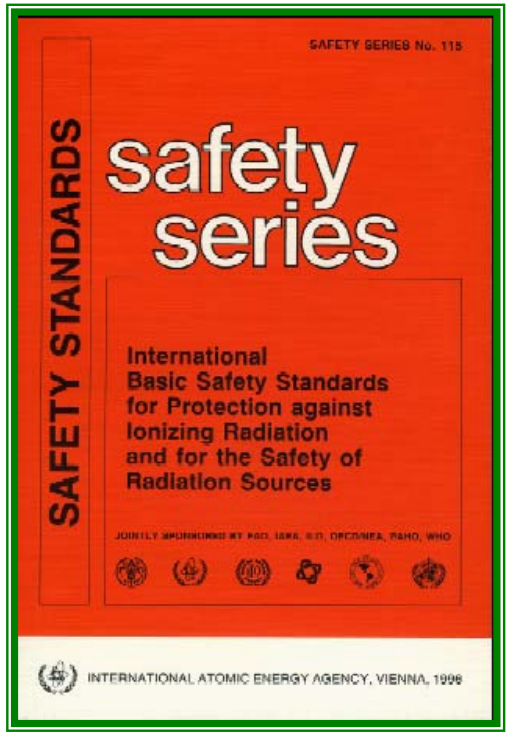
- Harmonization of surveillance & control criteria
- International agreement to send back to origin country orphan sources found
- Clarify responsibilities related to radiological consequences of events with orphan sources. Trans-boundary co-operation
- Engage all authorities and stakeholders
- Fight against illicit trafficking. International share of info on orphan sources events

- Management of emergency situations derived from orphan sources events

10. Conclusions

- Evolve to a more binding requirement for Code of Conduct implementation?
- Continue guidance development for implementation of the Code of Conduct in practice
- Better integration of safety/security of radioactive sources issues. Ongoing BSS revision:

  good opportunity



Thank you