

Basic Safety Standards

presentation to IRPA13

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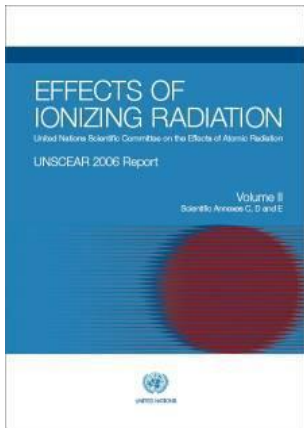
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Content of presentation

- Basis for BSSD & IBSS
- General Comments on BSSD & IBSS
- Comparison of BSSD & IBSS
- UK inputs to BSSD & IBSS
- What happens next?

Radiation Protection Framework BSSD

UNSCEAR - data on effects of exposure to ionizing radiation



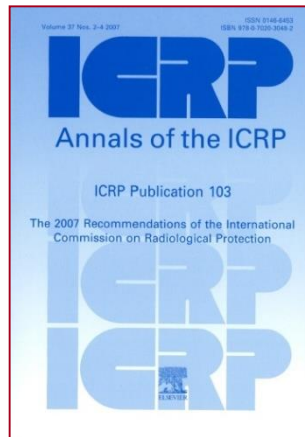
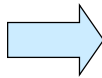
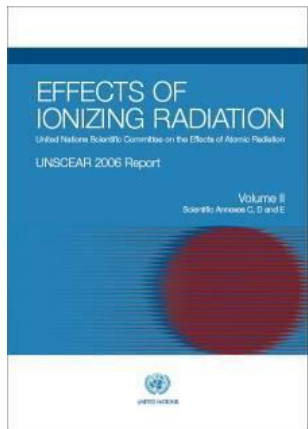
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Radiation Protection Framework BSSD

UNSCEAR - data on effects of exposure to ionizing radiation

ICRP - protection philosophy and principles



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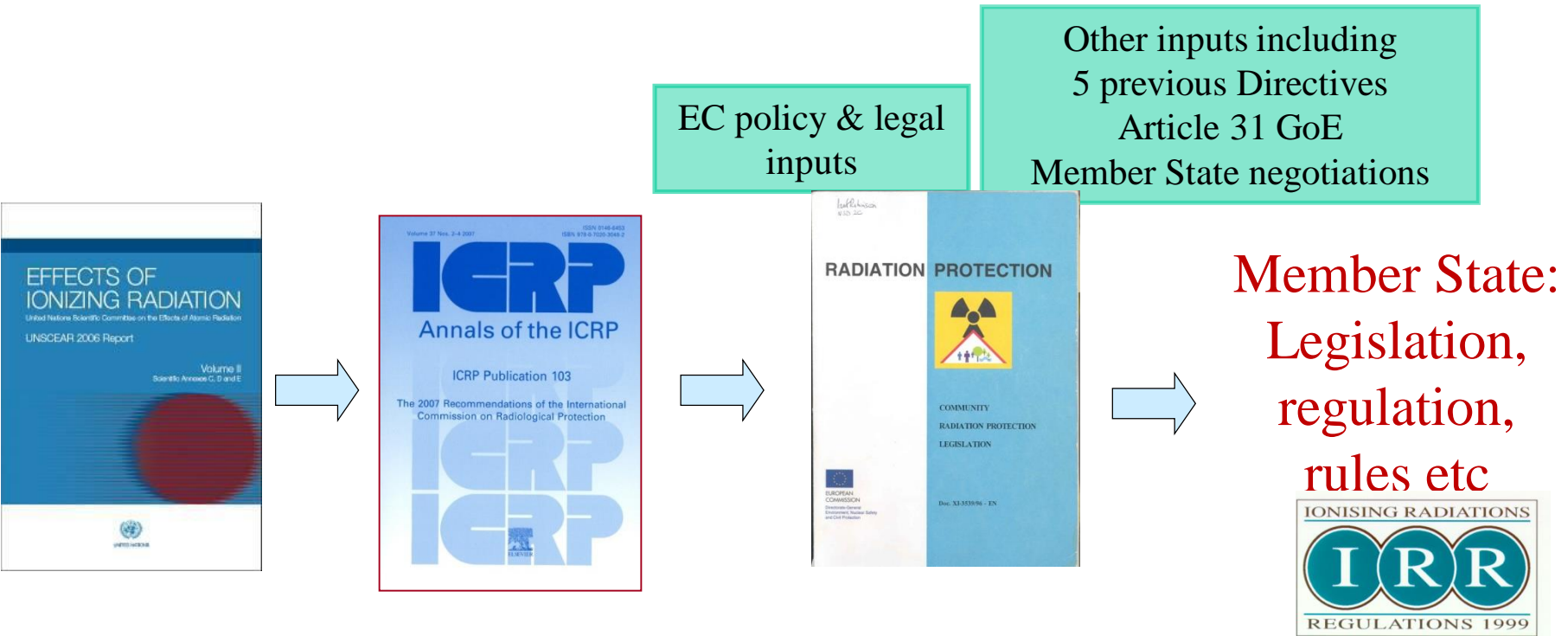
Radiation Protection Framework BSSD

UNSCEAR - data on effects of exposure to ionizing radiation

ICRP - protection philosophy and principles

Euratom - basic safety standards requirements

Member States - legislation, regulation



Radiation Protection Framework IBSS

UNSCEAR - data on effects of exposure to ionizing radiation

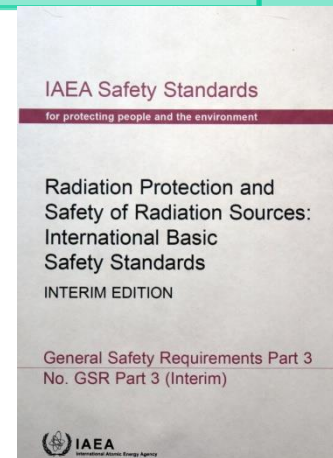
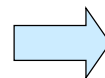
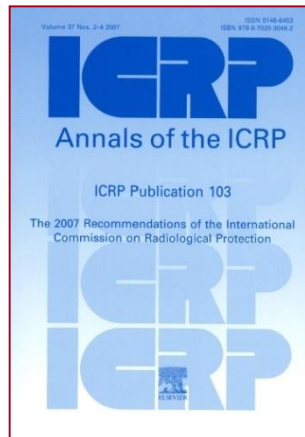
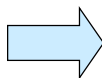
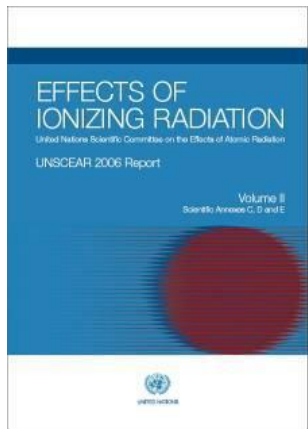
ICRP - protection philosophy and principles

IAEA - basic safety standards requirements

Member States - legislation, regulation

Other inputs including:
IAEA policy
Previous BSS
ILO convention 115
FAO/WHO Codex Alimentarius
Commission (food contamination guides)

Co-sponsors EC,
FAO, IAEA, ILO,
OECD/NEA, PAHO,
UNEP, WHO



Member State:
Legislation,
regulation,
rules etc

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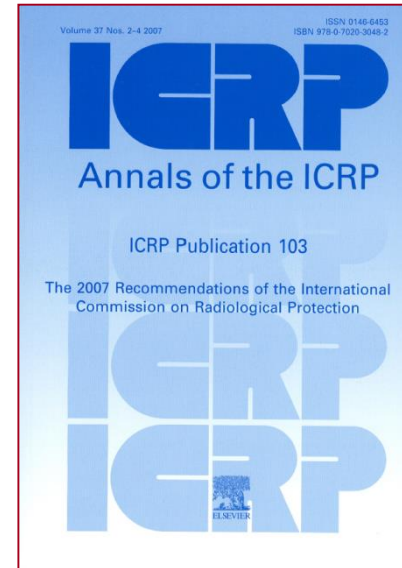
A key driver for BSS revision

ICRP 103: radiation risks have not changed significantly;

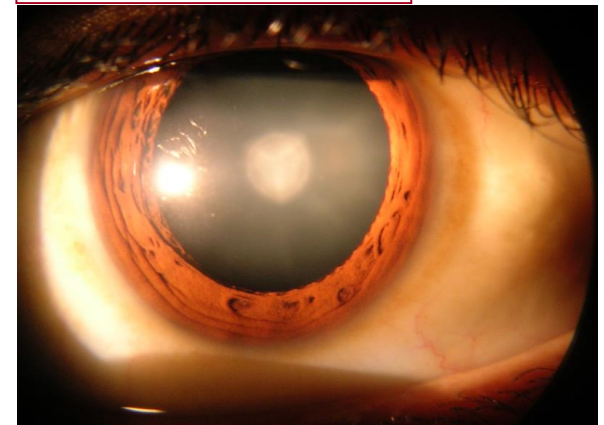
- Maintains 3 principles: justification, optimisation, limitation
- Introduces planned, emergency and existing exposure situations

BUT new data on lens of the eye

- ICRP Statement on Tissue Reactions 21 April 2011 – DL eye 100 mSv/5y and no single year exceeding 50 mSv
- Both the IBSS and BSSD have followed ICRP's recommendation



Author = Rakesh Ahuja, MD



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Basic Safety Standards

Two BSS documents

- **International BSS** – requirements level IAEA document co-sponsored by several international organisations - highly influential but not strictly mandatory on most Member States
- **Euratom BSS Directive** – mandatory on Euratom Member States

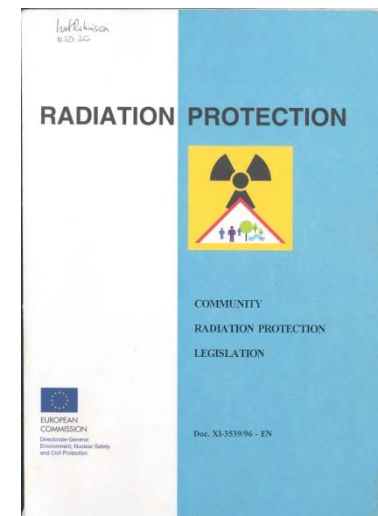
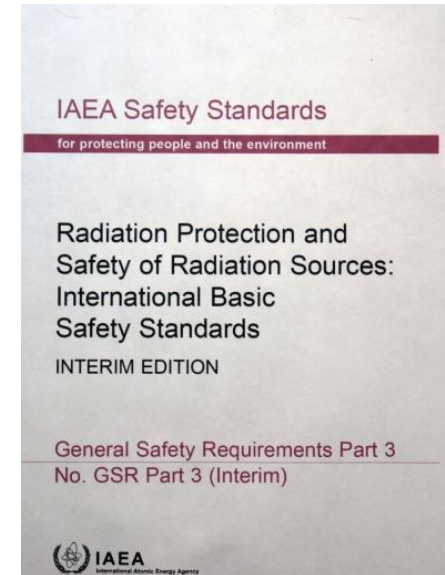


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Basic Safety Standards

- The 2 BSS documents are broadly consistent – no essential points of contradiction.
- Numerical values are essentially the same
- Considerable harmonisation e.g. the Draft Directive has moved to notification, registration & licensing
- However, there are some differences
 - Structure
 - Regulatory style
 - Definitions
 - Specific content



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Options for structure of BSS

- IBSS structure

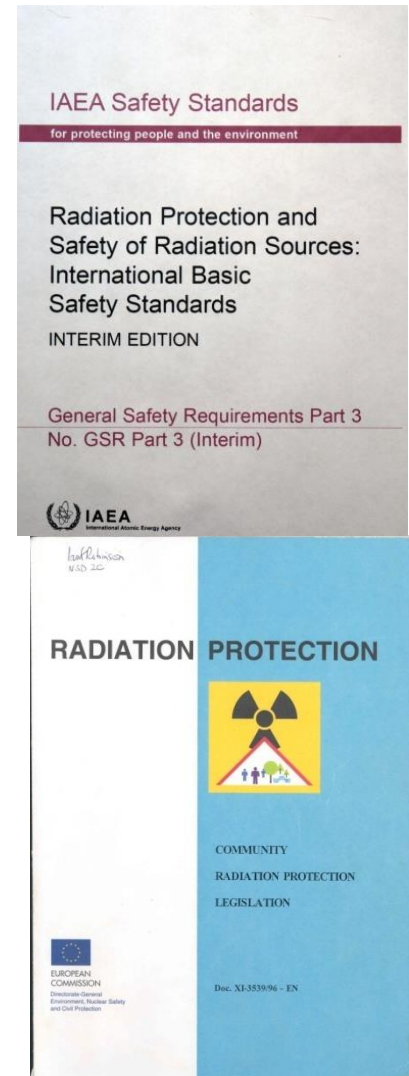
PLANNED EXPOSURE SITUATIONS	EMERGENCY EXPOSURE SITUATIONS	EXISTING EXPOSURE SITUATIONS
Occupational exposure	Occupational exposure	Occupational exposure
Public exposure	Public exposure	Public exposure
Medical exposure		

- BSSD structure

OCCUPATIONAL EXPOSURE	PUBLIC EXPOSURE	MEDICAL EXPOSURE
Planned exposure situations	Planned exposure situations	Planned exposure situations
Emergency exposure situations	Emergency exposure situations	
Existing exposure situations	Existing exposure situations	

BSS style

- IBSS tends to be rather more prescriptive than in the BSSD
- The BSSD is addressed to European Union Member States who have some flexibility on how they implement the required standards in national legislation, whereas some IAEA Member States may use the IBSS directly in their national legislation



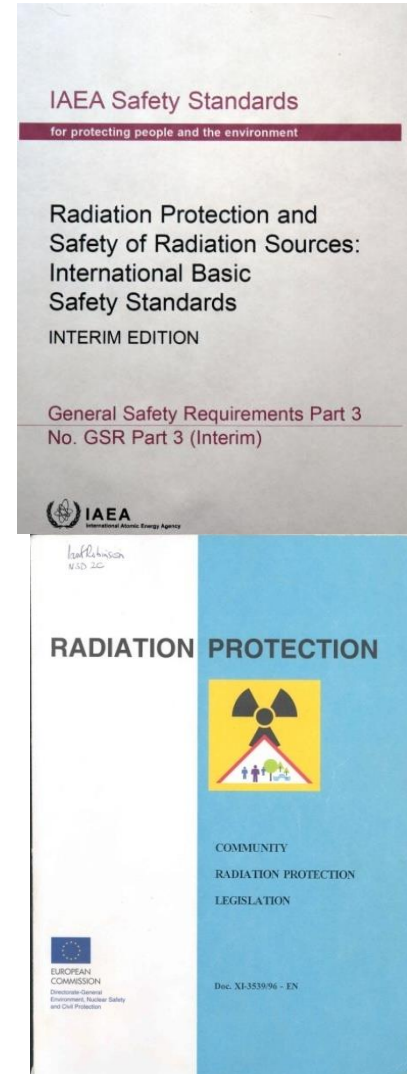
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BSS definitions

Some differences in terminology and definitions e.g.

- International BSS uses “facilities and activities” whereas the BSS Directive uses “undertaking”
- “Radiation source” has a general meaning in the Directive (includes radiation generators) whereas the BSSD is more specific
 - A source containing *radioactive material* that is used as a source of radiation



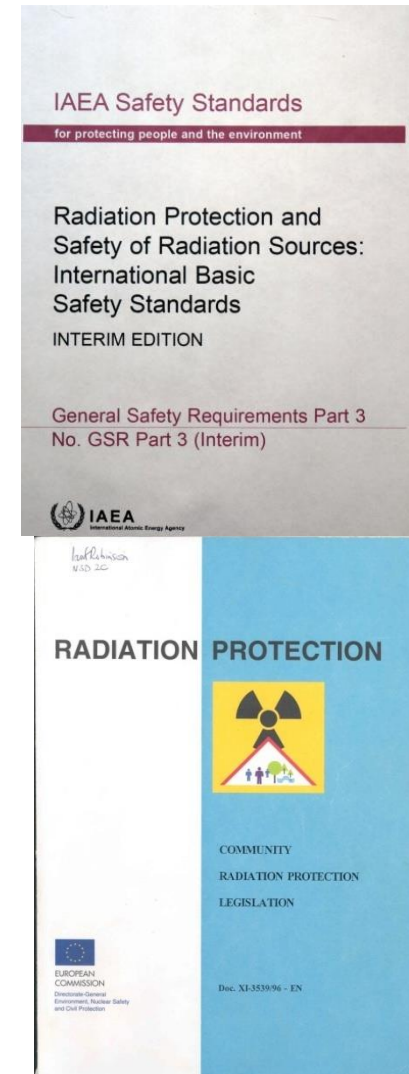
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BSS specific content

There are some differences in specific content. Examples are described in the paper in relation to:

- Dose limits
- Categorisation of workers
- Experts
- Accidental and unintended medical exposure
- Optimisation of medical exposure
- Responsibility for medical exposure
- Diagnostic reference levels
- Aircrew and space crew
- Industries dealing with NORM
- Building materials



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UK input to BSSs

International

UK provided significant input to revision of the IBSS – committees, TMs, CMs

European

BSSD currently being negotiated

UK formed a BSS Cross Government (and Agencies) Group with three stakeholder working groups covering:

1. Medical exposures;
2. occupational radiation exposures;
3. public & environment

DCLG

DECC

DEd

DfT

DH

EA

EnvNI

HO

HPA

HSE + ONR

MCA

MOD

ScotGov

SEPA

WelshAGov

Potential Issues with Euratom Directive

A Occupational Exposures

- Licensing where workers $>6\text{mSv/y}$ [article 53.2]
- New DL for lens of the eye [article 10, 12, & 13]
- extension of scope of Outside Workers [article 4]
- Removal of direct references to individual monitoring documents

B Medical Exposures

- Fitting exposure meters to dental intra-oral equipment [article 85.5]
- Will recognition of RPE impact on existing MPE arrangements? [article 19, 20]

C Public & Environment Exposures

- elimination of ionising radiation exposure from licensed practices [article 91.1]
- classifying building materials as radioactive material where they give 1mSv/y [article 101.6]

What Happens Next?

BSSD

- Discussion/amendment in AQG of Council – negotiations liable to last about 2y
- Adoption by Council
- Transposition into national legislation – expect to have a number of years to implement some Titles of Directive

IBSS

- confirmed co-sponsorship by UNEP, OECD/NEA, FAO and ILO
- Processes in hand for Euratom, WHO and PAHO

Conclusion

- Previous BSSs offered a generally satisfactory level of protection
- New scientific evidence & experience gave an opportunity for update the two BSS documents and achieve some convergence
- Although there are some differences between the IBSS and BSSD they are broadly consistent with no essential points of contradiction.
- A greater degree of harmonisation has been achieved while maintaining a level of regulatory stability consistent with the need for update



Thank you for your attention

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Differences between Euratom & IAEA BSS

- DL for workers: IAEA 100mSv/5y 50mSv/y; Euratom 20mSv/y higher dose may be authorised in a single year
- DL for public: IAEA allows 5y averaging, Euratom does not
- Euratom has Cat A & Cat B workers; IAEA do not have different categories of workers
- Euratom RPE; IAEA QE

Differences between Euratom & IAEA BSS

- Euratom has requirements on accidental and unintended medical exposures but no equivalent IAEA requirements
- IAEA require all sources giving rise to medical exposure to be calibrated, no equivalent Euratom requirement
- IAEA require protection and safety is optimized for all medical exposures, whereas Euratom requires doses to be ALARA ***consistent with the medical purpose***
- IAEA says radiological medical practitioner responsible for justification & optimisation; Euratom more flexible - undertaken under the clinical responsibility of a radiological practitioner but MS may define level of involvement of practitioner and referrer
- IAEA require government to establish DRLs; Euratom requires governments to promote establishment and use of DRLs



Differences between Euratom & IAEA BSS

- Aircrew and space crew – Euratom BSS treat as planned exposure situation; IAEA regard as existing exposure situations
- NORM industries: Euratom BSS treats occupational exposure as planned exposure situation; IAEA regard as existing exposure situation - but apply requirements for planned exposure situations
- Euratom BSS - much more specific requirements on building materials

