

# Radon Requirements in the International BSS and Difficulties in Implementation of National Action Plans

Radon National Action Plan Workshop

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**IAEA**

International Atomic Energy Agency

# Structure of the Presentation

- IAEA Safety Standards
- Radon and the International Basic Safety Standards
- Key Implementation Issues

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# Mandate of IAEA

## IAEA Statute (Article III.A.1-3)

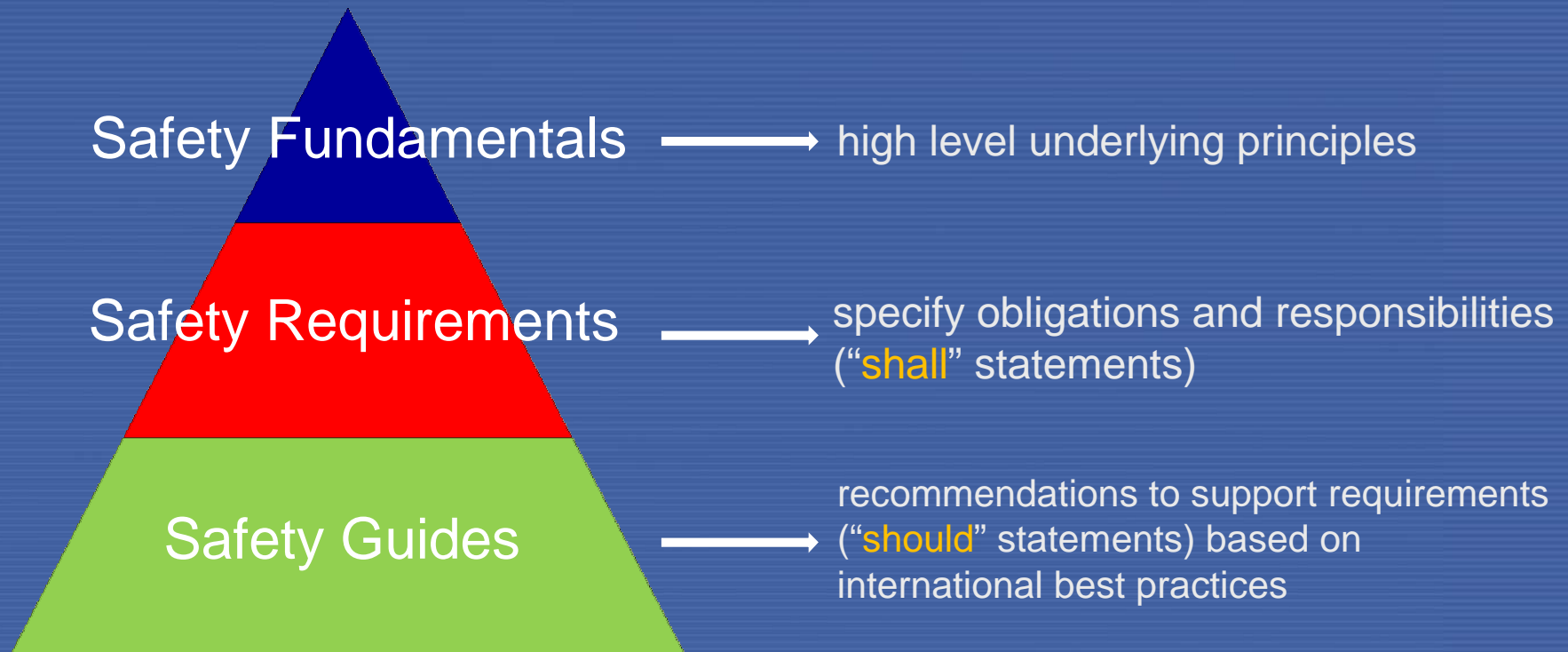
1. To encourage and assist research on, and development and practical application of, **atomic energy** for peaceful uses throughout the world; and..... to perform any operation or service useful in research on, or development or practical application of, **atomic energy** for peaceful purposes;
2. To make provision.....research on, and development and practical application of, **atomic energy** for peaceful purposes, **including the production of electric power**, with due consideration for the needs of the under-developed areas of the world;
3. To foster the exchange of scientific and technical information on peaceful uses of **atomic energy**;

# Mandate of IAEA

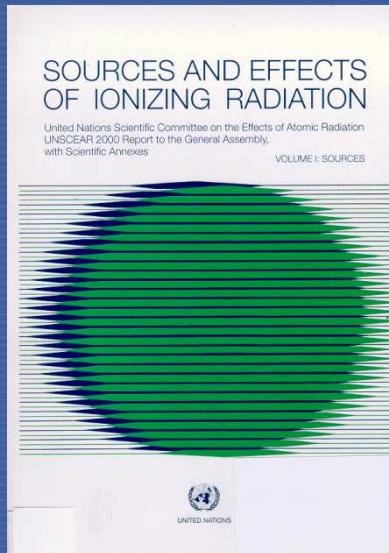
## IAEA Statute (Article III.A.6)

6. To establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property (including such standards for labour conditions), and to provide for the application of these standards to its own operation as well as to the operations making use of materials, services, equipment, facilities, and information made available by the Agency or at its request or under its control or supervision; and to provide for the application of these standards, at the request of the parties, to operations under any bilateral or multilateral arrangements, or, at the request of a State, to any of that State's activities in the field of atomic energy

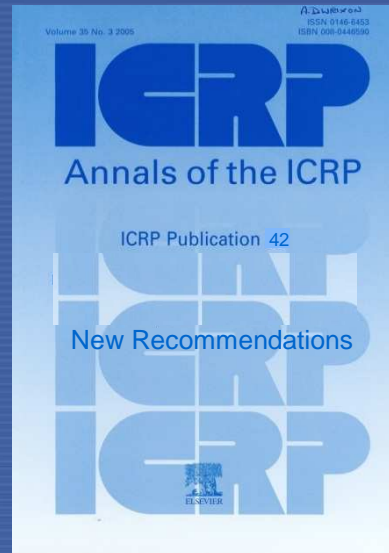
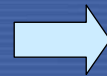
# IAEA Safety Standards



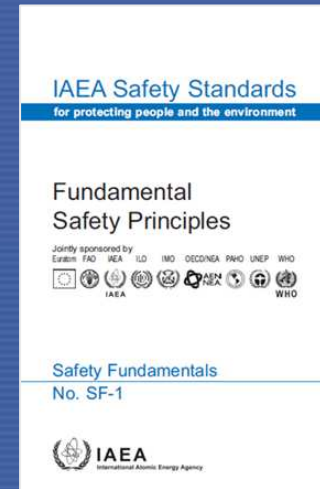
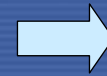
# IAEA Safety Standards



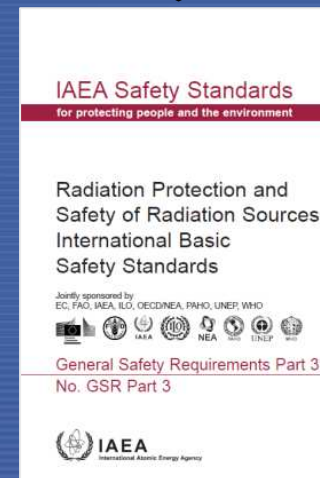
Effects of Radiation



Recommendations for protection



Essential Principles  
*(moral obligation)*



Essential Requirements  
*(legal obligation)*



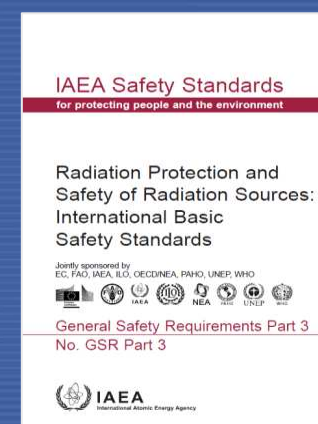
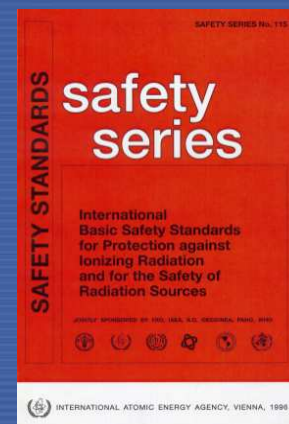
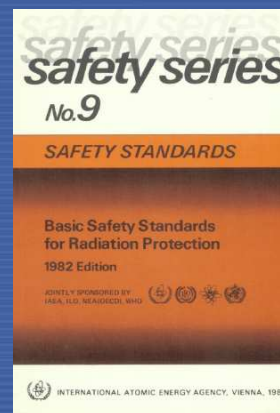
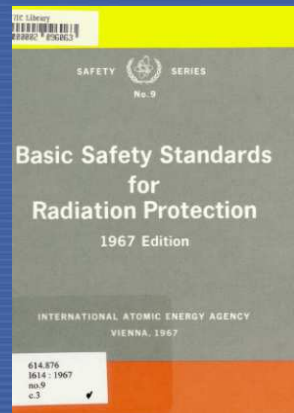
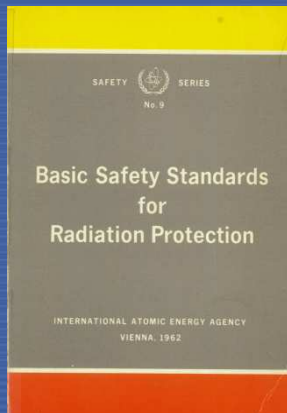
# Basic Safety Standards

## ICRP recommendations

- 1958 (“Publication 1”)
- 1966 (Publication 9)
- 1977 (Publication 26)
- 1990 (Publication 60)
- 2007 (Publication 103)

## International BSS

- 1962
- 1967
- 1982
- 1996
- 2014





# Relationship to European BSS

- Not legally binding on Member States
- Direct link to ICRP Recommendations
- Jointly sponsored
  - outreach to over 190 countries, with very different levels of expertise
  - requirements addressed to specific sectors (employers, medical professionals etc)
- Development process had full involvement of International Organizations and national experts from the start

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- **Radon and the International Basic Safety Standards**
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# BSS Requirements on Radon

## Requirement 50: Public exposure due to radon indoors

*The government shall **provide information** on radon indoors and the associated health risks and, if appropriate, shall **establish and implement an action plan** for controlling public exposure due to radon indoors.*

Protection of the Public against Exposure Indoors due to Radon and Other Natural Sources of Radiation (SSG 32)

National and Regional Surveys of Radon Concentration in Dwellings: Review of Methodology and Measurement Techniques (IAEA/AQ/33)

# BSS Requirements on Radon

## NATIONAL RADON STRATEGY

INFORMATION

+

ACTION PLAN

# BSS Requirements on Radon



to know if an action plan is required, we need to know the activity concentrations of radon that are present i.e. **we need a measurement programme**

**A MEASUREMENT PROGRAMME DOES NOT NECESSARILY MEAN A NATIONAL RADON SURVEY**

# Radon Action Plan (1)

1. Establish a reference level for radon in dwellings (100 Bq l<sup>-1</sup>)
2. Establish a reference level for radon in workplaces (300 Bq l<sup>-1</sup>)
3. Identify “radon prone” areas
4. Implement corrective actions to reduce radon
5. Develop building codes for new buildings
6. Implement the action plan
7. Evaluate effectiveness



# General Approach to Existing Exposure Situations (ICRP)

- Evaluate the exposure situation – where, when and how are people exposed
- Identify the possible corrective actions
- Select the best protective action(s) under the prevailing circumstances, prioritizing the protection of those receiving the highest exposures
- Implement the selected actions
- Evaluate the effectiveness of the actions taken.

**AS TIME GOES BY, GREATER ATTENTION IS GIVEN TO  
PREVENTING EXPOSURE RATHER THAN MITIGATION**



# Summary

## National Radon Strategy

**Information** – whether or not there is a radon action plan

**Radon Measurements** – to decide if you need a radon action plan

### Radon Action Plan

- establish
- implement
- review and update



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# Regional Project RER 9127

## Establishing Enhanced Approaches to the Control of Public Exposure to Radon

Albania

Armenia

Azerbaijan

Belarus

Bosnia

Bulgaria

Croatia

Cyprus

Czech Rep.

Estonia

Georgia

Greece

Hungary

Kazakhstan

Kyrgyzstan

Latvia

Lithuania

Macedonia, FYR of

Malta

Montenegro

Moldova

Poland

Romania

Russian Fed.

Slovakia

Slovenia

Serbia

Tajikistan

Turkey

Ukraine

Uzbekistan

14 EU MSs and 4 EU Candidate Countries

# Inhibitors to Action

- Coordination among different government agencies
  - radiation protection, health and construction
  - “language” is different
- Tendency to underestimate the risks
  - is radon an issue only for smokers?
  - programme effectiveness is long-term and difficult to measure
  - international organizations are not always visible
  - Ministries of Health do not highlight the problem
  - Ministries of Construction are not aware of the issue
- Lack of resources (financial and personnel)
  - new programmes take money away from existing programmes
  - lack of experts to start the programme

# Inhibitors to Action

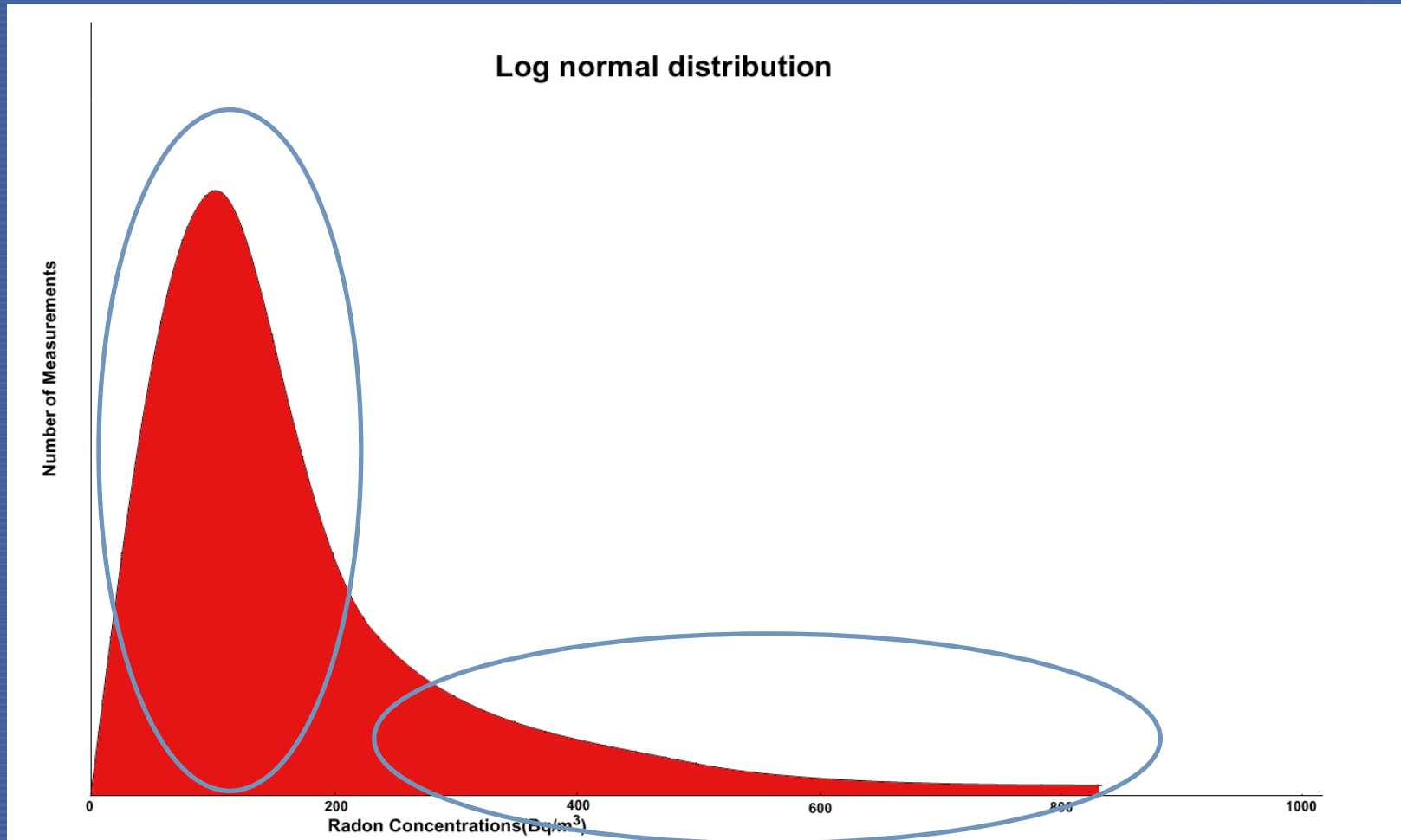
- We know how to measure radon
- We know how to build new homes
- We know how to apply corrective measures
- The real challenges are
  - communication of the problem
  - policy development and implementation



# Key Issues for Discussion

- What is the right balance in responsibilities between the State and the individual (taking into account national differences)?
- Is the concept of “radon prone” areas useful and do we use it effectively?
- Do we do a good enough job in explaining the risks for non-smokers?
- Do we have appropriate outreach to building professionals?
- Should we give less attention to reducing high radon concentrations in the current housing stock and more/full attention to new/future housing?

# Distribution of Radon





# Thank You



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