Upcoming IAEA Safety Guides on Control of Exposures to the Public and the Environment

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Background

• Previously, to assess and control the level of radiological protection of public and the environment the IAEA Safety Standards adopted:
  • the principles of ‘justification’, ‘dose limitation’ and ‘optimization’ and;
  • the concepts and models of the ICRP ‘reference person’ and ‘representative person’ and the relevant criterion (1 mSv in a year; dose constraint).
• The assumption that the standards to protect public provide protection to the environment.
Background

• 2003 Stockholm Conference on protection of the Environment from Ionizing Radiation:
• “the time is ripe for launching a number of international initiatives to consolidate the present approach to controlling radioactive discharges to the environment by taking explicit account of the protection of species other than humans.”
Background

- 2005 IAEA Plan of Activities on Protection of the Environment (ICRP, UNSCEAR, IUR, NEA, EC, Member States):
  - A framework for environmental radiation protection needs to:
    - be based on the knowledge available,
    - be applicable in different contexts,
    - be practical and simple,
    - avoid undue burdens on regulators and operators,
    - allow for relevant stakeholder involvement,
    - allow for harmonization with analogous approaches for human and other pollutants.
    - considers ICRP developments.
ICRP developments


Scheme for development of IAEA Safety Standards and Guidance

1. Users
2. Member States (MS)
3. Safety Standards Advisory Committees (MS)
4. IAEA Secretariat
5. Document Preparation Profile
6. Safety Standards Advisory Committees (MS)
7. Drafting Safety Standard by IAEA Secretariat + MS experts
8. Approval by Safety Standards Advisory Committees (MS)
9. Member States (MS)

Flow:
- Users provide feedback to IAEA Secretariat.
- IAEA Secretariat prepares the Document Preparation Profile.
- Profile is reviewed by Safety Standards Advisory Committees (MS).
- Committees draft the Safety Standard with input from IAEA Secretariat and Member States.
- Draft is approved by Safety Standards Advisory Committees (MS).
Safety Standards Categories

- **Fundamental Safety Principles**
- **Requirements: What to do?**
- **Best Practice to meet Requirements: How to do?**
Protection of public and the environment

- 2006 Fundamental Safety Principles, SF No 1, IAEA et al.
  - The fundamental safety objective is to protect people and the environment from harmful effects of ionizing radiation
  - Principle 7: People and the environment, present and future, must be protected against radiation risks.
  - The general intent of the measures taken for the purposes of environmental protection has been to protect ecosystems against radiation exposure that would have adverse consequences for populations of a species (as distinct from individual organisms).
Protection of public and the environment

  - Considerations on explicit demonstration on protection of the environment.
  - Definition of environment and protection of the environment (protection of humans, non-humans, goods, resources).
  - Requirement of radiological environmental impact assessment for planning and existing exposures situations (discharges and remediation).

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Upcoming Safety Guides (drafts)

- **IAEA Safety Standards**
  - Fundamental Safety Principles
  - Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards
  - General Safety Requirements Part 3

- **SAFETY GUIDE**
  - DS432: Radiation Protection of the Public and Protection of the Environment
  - DS427: A general framework for prospective radiological environmental impact assessment and protection of the public
  - DS442: Regulatory Control of Radioactive Discharges to the Environment
Radiation Protection of the Public and Protection of the Environment: Safety Guide DS432

- Framework for the Protection of the Public and the Environment
  - Exposure situations
  - Radiation protection principles
  - Responsibilities
  - Graded approach
- Radiation Protection of the Public
  - Planned exposure situations
  - Emergency exposure situations
  - Existing exposure situations
- Protection of the Environment

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A general framework for prospective radiological environmental impact assessment and protection of the public: Safety Guide DS427

- Framework of Assessment of Facilities and Activities for Protection of the Public and Protection of the Environment
  - Assessment for the Authorization Process
  - Assessment as part of a Decision Process (EIA)
  - Assessments for Other Purposes
  - Communication of Results

- Methodology for Assessment of Facilities and Activities for Protection of the Public and Protection of the Environment
  - Assessment for protection of the public for normal operation
  - Assessment for Protection of Flora and Fauna for Normal Operation
  - Assessment Protection of the Public against Potential Exposures
  - Comparison of dose/risk with criteria

- ANNEX I: Considerations on Assessments for Protection of the Environment
- ANNEX II: Considerations in the Assessment of Potential Exposure of the Public
Regulatory Control of Radioactive Discharges to the Environment: Safety Guide DS442

- Principles of Protection to Control Discharges
- Establishing the need for a Discharge Authorization
- Authorization Process
  - Development of a discharge authorization
  - Characterisation of discharges and exposure scenarios
  - Consideration of optimization of protection
  - Assessments of doses to representative person
  - Authorization of discharge and conditions
  - Demonstration of compliance
  - Inspection and enforcement
  - Involvement of interested parties
- Facilities with Naturally Occurring Radioactive Material
- Discharge Control during Decommissioning
- Previously unregulated practices
- Annex: Practical Considerations Setting Discharge Authorizations
Scheme for development of IAEA Safety Standards and Guidance

IAEA Secretariat

Document Preparation Profile

Safety Standards Advisory Committees (MS)

Drafting Safety Standard by IAEA Secretariat + MS experts

Approval by Safety Standards Advisory Committees (MS)

Member States (MS)

NOW

SOON
Supporting documents

- Technical Reports (TRS 422, 472, 479)
- Safety Reports (Update SRS 19)
- TECDOCS with applications for different installations (in preparation)
Thanks!
We appreciate your continuous support

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