Meetings of the Review Committees
June 2019

Progress report on the preparation of a Safety Report on the application of the concepts of attribution of health effects and inference of risk (Action 43.03 from the 43rd CSS meeting)

K. Asfaw/D. Delattre
Safety Standards and Security Guidance Development Section
NS/NSOC/SSDS
Consultants meeting held from 5-8 March 2019
Purpose of the meeting was to prepare a detailed draft Document Preparation Profile (DPP) for a Safety Report on how to apply the concepts of:

- Retrospective attribution of radiation health effects to past radiation exposures
- Prospective inference of health risks from radiation exposures
- Prediction of notional health effects for comparative purposes (e.g., use of collective dose)

The DPP was to include an elaborated table of contents with an indication of the expected content of each section.
Consultancy Meeting

• Scientific Secretaries: Katherine Asfaw and Dominique Delattre
• Attended by:
  – Mr Volodymyr BERKOVSKYY, WASSC
  – Ms Ritva BLY, RASSC
  – Mr Tiberio CABIANCA, TRANSSC
  – Mr Christopher CLEMENT, ICRP
  – Mr Abel GONZÁLEZ, Argentina
  – Ms Gillian HIRTH (Chair), Australia
  – Mr Toshimitsu HOMMA, EPReSC
  – Mr Wolfgang-Ulrich MÜLLER, UNSCEAR
  – Mr Ferid SHANNOUN, UNSCEAR
  – Mr Philip WEBSTER, NUSSC
  – Several Agency staff
Participants
Presentations and discussions

• Several presentations:
  – from UNSCEAR, on Attributing Health Effects to Ionizing Radiation and Inferring Risks
  – from ICRP, on Risk in Radiological Protection,
  – from Mr González, on Concepts of Radiation Risk
  – from Ms Hirth and IAEA staff on applications of the concepts in
    • past practices
    • emergencies
    • closure of a waste disposal facility
    • occupational radiation protection

• Consideration of comments provided by the United States
• Extensive discussions on scope, objective and content of the Safety Report
Recommendations (1)

1. The CM developed and agreed an annotated draft DPP and recommended that this annotated DPP be provided to the drafters of the Safety Report.

2. The CM recommended that the Secretariat, on the basis of the annotated draft DPP, prepare a more concise draft DPP for approval in accordance with normal procedures.

3. The Secretariat should provide progress reports on the development of the Safety Report to the SSCs and the CSS.
4. The CM further recommends that consideration be given to preparing an internal document (for example as internal working material or a SPESS document) for the Secretariat of the IAEA to guide the future development of Safety Standards with respect to attribution of health effects and inference of risk. This would be prepared to be consistent with the content of the Safety Report.
DPP for the Safety Report
Objective: to provide practical guidance on the application of the concepts of attributability of health effects and inference of risks, as set out in the UNSCEAR 2012 report, with regard to the facilities and activities covered by the IAEA safety standards.

Target audience: experts on safety and radiation protection in regulatory bodies, other relevant authorities, operating organizations, TSOs and international organizations. The Safety Report is also expected to be of wider interest among the scientific community.
Content of the Safety Report (2)

• **Scope**: same as the safety standards. Not intended to duplicate the UNSCEAR 2012 report content

• **Place in the overall structure:**
  – Close link with all safety standards
  – All NS sections to be consulted
  – ICRP and UNSCEAR Secretariat will be invited to be involved in the drafting and review
  – Progress reports to all SSCs and the CSS
  – Cosponsorship by UNEP to be discussed with UNSCEAR
Chapter 1 – Introduction
- Background
- Objective
- Scope
- Structure

Chapter 2 – Basis of the Safety Standards
- Aim is to explore how basic concepts in the standards can be better understood and applied
- Application of attribution and inference in relation to justification
- Application of attribution and inference in relation to optimization of protection
- Application of attribution and inference in relation to individual dose restrictions
- Provision of information about risk
Content of the Safety Report (4)

• Chapter 3 – Risk-related concepts
  – Health effects of radiation
  – Radiation risks
  – The risk-dose relationship
  – Attribution of effects
  – Inference of risk
  – Considerations on exposure: retrospective and prospective, background
  – Uncertainties and certainties, variabilities, sensitivities

• Chapter 4 – Practical application of risk-related concepts in different circumstances

• Chapter 5 – The implications of the concepts of attribution of health effects and inference of risk for communication
• **Appendix** – A plain language explanation of the concepts of attribution and inference to support public communication and in particular media outreach

• **Annexes** – Case studies on application of the concepts of attribution and inference in practice
Next steps

• Home based assignments to draft text
• One more consultancy meeting to review and refine the text
• Progress reports to be provided to the SSCs and the CSS
• Target publication date: End 2020
Thank you!