Plenary Panel Session 2: The ICRP Proposal for the 21st Century

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The Aim and Scope of the Commission’s Recommendations

• “The Commission now strengthens its recommendations by quantifying constraints for all controllable sources in all situations.”

• Radioactive sources can “legitimately be excluded.”

• Exempted materials remain subject to the system of protection, although without regulatory control.

• Incremental risk, above background, is of interest to decision makers.
Biological Aspects of Radiological Protection

- New data since 1990 has strengthened recommendations, particularly tumorigenesis.
- New estimate of genetic risk up to the second generation is around 0.2% per Gy.
- Reduced nominal probability coefficients for stochastic effects ($10^{-2}$ Sv$^{-1}$).
- True dose-threshold of around 100mGy for the induction of malformations, and 300mGy for severe mental retardation.
Potential Exposures

• It is necessary to control both the probability and severity of exposures.
• Consider the individual probability of attributable death, rather than the effective dose.
• If forecasted effective dose is <100 mSv, manage the exposure.
• If forecasted effective dose is >100 mSv, reduce the probability of event occurring.