

The 3rd Workshop on Science and Values in Radiological Protection Decision Making and the 3rd Asian Regional Conference

Topic 1 - Assessment and Management of Low Dose/Dose-Rate Exposures and Public Health

Topic 1 Summary

Two key (and distinct) questions when dealing with Low Dose/Dose rate exposures and the DDRF are:

1. Is there more risk when dose changes?

1. Is there more risk when dose rate changes?

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 - Historically radiation protection used a reducing factor (DDRF) because of the need to use high doses in determining risk factors.
 - New and current information and advanced analysis now require no reduction factors in determining the risk factor.
 - UNSCEAR has done the analysis, using the latest information and analysis and the risk factor for the increase in cancer risk remains at around 5%/Sv (between 3.6% and 7.7%).

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2. Is there more risk when dose rate changes?

- There is not currently enough new information to modify our scientific understanding.
- For energies of Cesium there is about one interaction per cell, per year at around 1 mSv/year.
- There is evident of dose rate effects, but there is insufficient evidence to change the system of radiation protection. Systematic review of evidence is recommended.

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Hormesis is an issue of interest to be dealt with and would benefit from a proactive approach to address it.

- There is evidence of hermetic biological effects, but hermetic effects can not be extrapolated to health impacts.
- ICRP 99 has considered this and given the high probability of no demonstrable change of the risk factor at low doses, the risk factor has prudently remain at around 5%/Sv.
- However, there is still a need for more research to be conducted on this subject.

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- Risk, as used in radiation protection, is not well understood by the public. A more effective approach, perhaps using layman's terms, should be pursued.
- Use of the term "safe" was recognized as a social agreement incorporating values informed by science.
- There is a need to better explain the rationale for how the current system of radiological protection works and use of interim values.

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- Communication is critical!
 - The role of the expert needs to be clarified and their roles and responsibilities identified.
 - In the conduct of dialogue with stakeholders it is important to be inclusive of all voices.
 - There is a need for Short and Long-term communication strategies for outreach to all stakeholders.
 - Identification of a “spokesperson” to represent the authorities would improve communications.
 - There is need for proactive initiatives for open and transparent dialogue to facilitate informed decision-making.

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- Establishing monitoring programs, or feedback, for people, food, etc. has been shown to be important to make real dose estimates and also for reassuring the public.
- Experts can then explain results, trends and their significance .
- Begins to rebuild trust.
- Establishes an integrated approach to dealing with issues facing the stakeholders.
- “Enables” people to gain control of their lives by managing their own and their families radiation exposure.

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In low dose situations, implementing self help and self determination activities provides the opportunity to create for the affected populations a sense of hope as they become active participants in the creation of their future and the future of their family and community!