Follow up discussion at RASSC on proposal for the development of IAEA technical document on “Assessment of Individual Radiation Health Risk due to Planned Occupational Exposure to External Radiation”

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History
This work is the part of Practical Agreement between IAEA and State corporation “Rosatom”.
It was start at September 2015.

At 15.11.2016 in IAEA technical meeting for consideration of proposal development of IAEA technical document on “Assessment of Individual Radiation Health Risk” was done. The reviewer (from Germany) gave general comments and recommendations.

As a result of discussions:
The approach of calculating cumulative lifetime risks and annual risks for the incidence of all solid cancers and leukaemia from external exposure for ROSATOM nuclear workers, following the recommendations of ICRP publication 103 (2007), was presented in clear and reproducible manner.
Next step was done at RASSC-41 meeting at November 2016. The main questions concerned my presentation:
- inhalation and ingestion can be important exposure pathways and why the current work is limited to external exposure only.
- WHO commented that organ dose is more appropriate than effective dose for assessing radiation risks
- It is not clear how a TECDOC on communication will assist the director of a nuclear facility to inform individual workers of their individual risk.

RASSC-41 decision:
RASSC indicated that further discussions between the Agency and Rosatom could be useful in clarifying the scope and intent of the document and agreed to consider at a future meeting.
BACKGROUND

Radiation risks should be estimated and controlled in compliance with the Fundamental Safety Principles 5 and 6.

To determine whether radiation risks are as low as reasonably achievable, all such risks ... must be assessed ... a priori and periodically reassessed throughout the lifetime of facilities and activities.

... Measures for controlling radiation risks must ensure that no individual bears an unacceptable risk of harm.

Requirement 26 of the International Basic Safety Standards states that “Employers... shall provide all workers with adequate information on health risks due to their occupational exposure.”
The basic principles of a state policy in the field of ensuring nuclear and radiation safety are:

- realization of the principle of socially acceptable risk, aimed on minimization of the nuclear and radiation risks

«2.3. … Under standard conditions of operation with sources of ionizing radiation annual limits of radiation doses are set on the basis of individual lifetime risk:

- Workers - $1.0 \times 10^{-3}$, year$^{-1}$;
- Public - $5.0 \times 10^{-5}$, year$^{-1}$.»
Individualized radiation health risks for workers of “Rosatom” due to planned occupational exposure to external radiation

Under Practical Arrangements between IAEA and Rosatom
The document “Individualized radiation health risks for workers of "Rosatom" due to planned occupational exposure to external radiation,” was approved for publication by Russian Scientific Commission on Radiological Protection in December 2016.

This document describes the technique of radiation risk estimation for workers and the system of monitoring occupational radiation risks, "ARMIR," which is in operation at the "Rosatom"...
Individual Radiological Risks for the Workers of the State Corporation Rosatom

99.8% of all the workers monitored

- Heightened risk – 1.36% of personnel
- Acceptable risk – 14.00% of personnel
- Trivial risk – 84.64% of personnel
OBJECTIVE AND SCOPE of the proposed document

*The aim* is to present recommendations on methods for calculation of individual radiation risks of cancer incurred by workers from occupational external radiation exposure and to inform about uncertainties associated with the use of various risk factors and models. These data may serve for justification of managerial decisions on limiting risks and for information of personnel on existing risk of adverse health effects.
STRUCTURE AND CONTENT

4 main sections and annexes

INTRODUCTION
RADIATION RISK MODELS
RISK CALCULATION
SOURCES OF UNCERTAINTY
SUMMARY
ANNEX
REFERENCES
Action requested

To support our proposal for preparation TECDOC IAEA on individual radiation health risks assessment for occupational workers. It will be fruitful for all of the MS and international organization.
Thank you for your attention