ICRP recommendations
Consultation Comment

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Document 2005 ICRP Recommendation

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SRP comments on ICRP draft recommendations 2005

General Comments

The draft recommendations are too detailed at this stage. The lack of a fully developed fundamentals document leads to some inconsistencies and a lack of clarity concerning the target audience, is it just those in radiation protection or the wider stakeholders. Nevertheless our view was that all stakeholders would welcome the evolution and the wide consultation. The publication of the fundamentals document will aid development of the recommendations and enable a more focussed consultation. Overall ICRP's consultative approach is welcomed with the correct emphasis is being placed on continuity, evolution and rationalisation rather than major change.

The recommendations should be international in their application and development. As written there appears to be some areas where there is a bias towards European thinking rather than world-wide approaches.

The draft recommendations move away from strategy and stray into detail where it is considered to be the responsibility of national organisations to implement. This has the potential for constraining approaches and lead to inconsistencies.

The document is evolution rather than revolution but there are a number of changes that are proposed. In modern organisations a key issue is change control or configuration management. ICRP have not addressed the issue of transition and change management process. An example is the proposed changes to the tissue weighting factors.

The meaning and context of constraints has changed markedly from the role set out in ICRP60, and that this has come through without any proper discussion or justification. The current consultation is welcomed as it provides the opportunity for clarification, as there is concern from respondents.

Specific Issues

Structure and readability and suitability for development into international/national legislation.

The majority of respondents believed that the document is structured, readable and suitable for development into international/national legislation, provided the reader has a baseline knowledge and understands the historic evaluation of the existing system of protection, nevertheless there are inconsistencies in text. Whilst the recommendations need to be written for all stakeholders the focus needs to be on understandable key principles and the detail incorporated into annexes. Because of the wide target audience inconsistencies have arisen leading to confusion.

Coverage of all stakeholder interests.

There are a wide range of stakeholders who will have an interest in the draft recommendations. There is a need to consult with all but some need more targeted information. The document attempts to do both and succeeds to varying degrees. In particular, environmental protection proposal is considered inadequate by some stakeholders. It would be sensible to have focussed on building on the current system of protection.

As a separate exercise ICRP should consider a "communications" document for the wider stakeholder audience and would be prepared after the current programme for promulgation of the recommendations.

Change the "equivalent dose quantity" to the "radiation weighted dose".

Radiation weighted dose is a much more sensible name as it conveys the right message. However it has taken a long time for people to understand the equivalent dose quantity. The name change would lead to difficulties in practical situations. A significant issue is whether it is worth going through the future pain to introduce this concept. On balance the position is that respondents see value in the change.

From a pure science viewpoint respondents stated that there is no such measurable quantity. ICRP should note that, in other areas of metrology, it is not customary to assign separate units to quantities that have dimensional equivalence but differ only in relation to their use of specific dimensionless scaling factors (radiation weighting factors). Radiation weighted dose, if introduced, should ideally be seen as a tool to get you from A to C, i.e. absorbed dose to effective dose and not introduced as a quantity in its own right. As such it should not have a separate name for the same dimensionally equivalent quantity.

Introduction of a continuous function for the radiation weighting factor for neutrons.

It is better explained, but gives an undue impression of accuracy on which one should not place reliance. It is probably helpful for assessment of dose from a known neutron flux, but in day to day situations it is probably an added complexity that can be done without.

Changes in the tissue weighting factors are practical and helpful.

There is a general agreement that this change is helpful, but the majority of responses may not necessarily represent the groups where it has a significant impact. There is concern that there will be confusion between the two sets of weighting factors, particularly in the medical sector. It is of significance where dealing with individual organs, such as gonads. This is one of the key areas where change control will need to be addressed.

No changes to dose limits on the basis of no significant change to detriment coefficients.

The majority agrees with this recommendation. Given the uncertainties in the determination of the risk coefficient, the magnitude of the change is insufficient to warrant a change in the dose limits.

The discussion on annual limits of intake and derived air concentration, in addition to ICRP 60, clarifies and provides greater flexibility.

The general view is that the ALI and DAC concept are simple, useful and practical - especially when it comes to prior risk assessments, particularly within the small user groups. There are good practical reasons for this concept and the customers would like to retain it. This view should be taken into account by Committee 2 in its proposed work.

Exclusion levels.

It is arguable whether this is in ICRP's remit. Certainly setting of exclusion levels strays into national remits and international guidance from organisations such as IAEA. Specifically, the values recommended are not consistent with those within IAEA safety standard RS-G-1.7 and the draft recommendations on foodstuffs from the Codex Alimentarius Commission. Setting of exclusion levels will have an impact on practical and environmental radiological protection, particularly in the areas of waste disposal, health care, transport, environmental monitoring. It may affect how radiological protection is communicated in the future.

The term "dose constraint" is unambiguous and can be translated into national legislation.

The views are very mixed which indicates that ICRP have not come up with a persuasive explanation and supporting argument. Too much emphasis is being placed on constraints to the detriment of ALARA/ALARP, and approach, which is currently well understood. Workplace dose is controlled through the use of management systems, ALARP/ALARA and more recently an emphasis on developing a safety culture. A shift totally to constraints could undermine the ALARA principle.

Dose constraints can be personnel related or source related and there are concerns that the wider radiation protection community may not understand the differences in practical situations. Equally those not in the radiation protection community could use dose constraints out of context.

The comments indicate that there is general concern from past experience that any constraints may become de facto limits. There is a genuine fear that constraints will become limits that have to be incorporated into national legislation. The need for such a change is not borne out by ICRP's view on radiation risks.

There does not seem to be any obvious need or accepted justification to define at an international level of constraint. The general view is that the specific constraints should be left for discussion at local level between national regulators and stakeholders.

The use of dose constraints and levels proposed represent an enhancement in protection.

There is not a clear definition of dose constraints, although this underpins the recommendations. It is felt that there is too much detail included for specific situations, e.g. Radon exposure.

"Optimisation" is well understood and can be translated into national legislation.

Optimisation is generally well understood within the radiation protection community. There is however some concern that too much emphasis on constraints will have an impact on optimisation at a practical level.

The new principle of "exclusion of radiation sources"

The principle is accepted, but scope of control should be set at a national level.

Recommendations regarding medical exposure are appropriate.

There were limited views put forward. The main concern was relating to the defocusing of ALARP and the practical difficulties this may have.

The “dose matrix” approach is an improvement on “collective dose”.

There were no particularly strong views expresses. There was also the view that more guidance is required on the interpretation.

Balance between environment and safety

The basis of environmental protection is not clearly set out. This is a developing area but there is a danger of making an early fundamental shift in philosophy because of increased public and political pressure. The views received leaned towards accepting that the current system has adequately protected the environment.

There is a need to focus on the links between the effects at an individual and group level. Greater clarity is required in the balance/optimization of environmental benefits and detriment within the system of protection.

General Comments

The ICRP role is to give recommendations. These should be at the level of principles and guidance to our thinking and not dictate a specific approach.

The foundation document should have been published before the recommendations.

Comparison with background radiation levels does not seem to be an adequate basis to judge acceptability and is open to criticism. Background radiation levels vary considerably both nationally and internationally. In addition no account is taken of dose arising from exposure to Radon

There were significant concerns regarding the proposal to omit the concept of “justification”. This is considered to be a fundamental and primary concept of ICRP. Further clarification is required.

Appendix 1

Draft 2005 Recommendations of the International Commission on Radiological Protection

SRP Members Consultation Exercise - Results

Please select the appropriate box and add any additional views. Use Tab or arrow keys to navigate through the form.

1. Which sector of the industry do you represent?

Nuclear industry [19]
Health Care [11]
Industrial users [6]
Research and Teaching [6]
Other government depts. [6]
Consultant [7]
Regulators [9]
Other [9]

2. Which professional society are you a member of?

SRP [51]
Other [19]

3..The document is structured, readable and suitable for development into international/national legislation.

Strongly agree [4]
Agree [34]
No particular view [10]
Disagree [12]
Strongly disagree [5]

4. The document adequately covers all stakeholder interests.

Strongly agree [1]
Agree [25]
No particular view [29]
Disagree [8]
Strongly disagree [2]

Technical issues

5. There is a need to change the “equivalent dose quantity” to the “radiation weighted dose”.

Strongly agree [9]
Agree [26]
No particular view [12]

Disagree [12]
Strongly disagree [6]

6. There is a net benefit in changing the name for the “radiation weighted dose”.

Strongly agree [8]
Agree [29]
No particular view [10]
Disagree [10]
Strongly disagree [7]

7. The introduction of a continuous function for the radiation weighting factor for neutrons is practical and helpful.

Strongly agree [4]
Agree [18]
No particular view [35]
Disagree [5]
Strongly disagree [1]

8. The changes in the tissue weighting factors are practical and helpful.

Strongly agree [4]
Agree [34]
No particular view [22]
Disagree [3]
Strongly disagree [1]

9. ICRP are proposing no changes to dose limits on the basis of no significant change to detriment coefficients.

Strongly agree [17]
Agree [37]
No particular view [9]
Disagree [2]
Strongly disagree [0]

10. The discussion on annual limits of intake and derived air concentration, in addition to ICRP 60, clarifies and provides greater flexibility.

Strongly agree [2]
Agree [23]
No particular view [28]
Disagree [9]
Strongly disagree [0]

11. The recommended exclusion levels are appropriate.

Strongly agree [1]
Agree [24]

No particular view [22]
Disagree [11]
Strongly disagree [7]

Issues of principle

12a. The introduction of the term “dose constraint” is unambiguous and can be translated into national legislation.

Strongly agree [3]
Agree [22]
No particular view [7]
Disagree [14]
Strongly disagree [12]

12b. The use of dose constraints and levels proposed represent an enhancement in protection.

Strongly agree [3]
Agree [26]
No particular view [16]
Disagree [12]
Strongly disagree [7]

13. The term "optimisation" is well understood and can be translated into national legislation.

Strongly agree [9]
Agree [33]
No particular view [6]
Disagree [11]
Strongly disagree [3]

14. The new principle of "exclusion of radiation sources" is an enhancement on ICRP.

Strongly agree [6]
Agree [28]
No particular view [20]
Disagree [10]
Strongly disagree [1]

15. The recommendations regarding medical exposure are appropriate.

Strongly agree [5]
Agree [22]
No particular view [33]
Disagree [3]
Strongly disagree [0]

16. The “dose matrix” approach is an improvement on “collective dose”.

Strongly agree [8]

Agree [18]
No particular view [23]
Disagree [13]
Strongly disagree [1]

17. Is the balance between environment and safety adequate?

Yes [42]
No [17]

18. Should the term "safety culture" be replaced by "organisational culture"?

Yes [6]
No [56]

Total number of responses = 65

Any additional comments

End