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General comments on the ICRP draft document *Radiological Protection of People and the Environment in the Event of a Large Nuclear Accident*

Vattenfall AB supports the work by ICRP to improve the recommendations on radiological protection in case of a large nuclear accident, and further welcomes the opportunity for public consultation on this issue. Please find below some general comments on the draft document.

- The aims of the document are to provide recommendations on the responses in different exposure situations. To take actions in order to mitigate any hazards like a nuclear accident is a complex process and demands implementing several protective measures in a timely manner. ICRP emphasizes that the focus of optimizing the protection strategy should be on using reference levels for benchmarking, which seems doubtful under the prevailing circumstances. A key to successful optimization in case of an emergency rests to a large extent on good planning, i.e. to be proactive and not exclusively reactive when a tentative accident occurs. The reference levels should primarily be used as tools in planning when there is enough time for exploring various options to be considered in an optimized strategy. However, primarily relying on reference levels for optimization when an emergency is already ongoing seems farfetched and highly impractical, if not impossible. Thus, the focus in describing optimization during an emergency in this document needs to be ameliorated.
- ICRP indirectly introduces a new reference level of 10 mSv and further a new band (1-10 mSv) for existing exposures which seemingly contradicts the recommendations in ICRP 103. The justification for these new values is weak and also add further confusing on the application of reference levels. The optimization process decides when protective actions are needed or not, and subsequently these new values should preferably be withdrawn.
- The majority of evaluations of large catastrophes (not necessarily nuclear accidents) in later years have revealed problems in (and emphasized the importance of) cooperation between parties (e.g. authorities) in managing hazards, especially in the early phases. This have had a great impact specifically on the communication/information to affected people but also to the public in general and (unfortunately) caused great distrust of the authorities´ ability to handle a complex situation. The coordination problems ought to have been better/clearer addressed in this document especially in view of all the experiences that have been gained worldwide regarding this issue.
- The principle of justification (see line 93 and 282-286) encompasses features related to radiological protection (should do more good than harm) but in an emergency, other impact must also be considered (see e.g. lines 556-557). The mitigation of a large nuclear accident involves enormous economical commitments as well as significant societal obligations that authorities need considering. It is therefore reasonable to make use of the dose concept avertable dose so that undue resources are not spent on doses of marginal concern (lower than the reference level).
- Furthermore, ICRP states that *optimization of protective actions applied with reference levels aims..* etc., but it seems more appropriate to state that *optimization of protective actions should be applied where the results do more good than harm for affected people and the environment.* Using reference levels as operational benchmarks for applying various actions seems highly unrealistic regarding the extreme situation.