The staff of Central Research Institute of Electric Power Industry (CRIEPI) would like to thank the International Commission on Radiological Protection for the opportunity to provide comments on the report of Radiological protection in Surface and Near-Surface Disposal of Solid Radioactive Waste.

Specific comments:

[L74-75] It is thought that “to provide protection to humans and environment from hazards of radiation” is not a specific goal of a surface or near-surface disposal, but the goal of the system of radiological protection. On the other hand, as stated in L494, “to provide optimal levels of radiological protection suitable to the prevailing circumstances” is the appropriate goal for a surface or near-surface disposal. Therefore, it should be “The goal of a surface or near-surface disposal system is to provide optimal level of protection of humans and the environment from the hazards of radiation suitable to the prevailing circumstances.”

[L135] It should be described that:
- there are two strategic approaches, ‘Dilute and Disperse’ or ‘Concentrate and Retain’, for waste disposal,
- the ‘Concentrate and Retain’ approach is applied in this report, and
- an aggregated approach and a disaggregated dose/probability approach can be applied, if this report supersedes Publications 46, 77 and 81. Publication 122 said that it did not supersede Publication 81.

[Figure 4] The “related protection activities” in the bottom left of Figure 4 should be more accurately described as “related radiological protection activities” for clarification. Additionally, the meaning of “high-level” is unclear in the caption of Figure 4, and thus it should be deleted.

[L563 and L1594] BAT should be defined as “‘Best available techniques’ mean the most effective and advanced stage in the development of activities and their methods of operation designed to prevent and, where not practicable, to reduce emissions and the impact on the environment as a whole” in glossary for consistency with Publication 122. Application of the ‘concept’ of BAT is discussed in this report as in (79).

[L564] The concept of ‘defence in depth’ should be further explained in this report. Since the radionuclide inventories of wastes and time periods vary widely for a surface and near-surface disposal, it should be applied in a different manner from the cases of geological disposal described in Publication 122 (90) and from the nuclear reactor safety.
[Table 1] “reference levels ≤ 20 mSv and DCRLs” should be “reference levels from 1 to 20 mSv and DCRLs”.

[Table 1] "BAT" should be removed from the column of "Protective approach" in the "Beyond design basis" section in Table 1. In the first place, is it reasonable to apply BAT to events outside the design basis? It is thought that application of BAT to the design basis events is more important in order to achieve optimisation. It is difficult to consider BAT for events outside the design basis, because it is only possible to roughly estimate the impact of such events in an optimized facility design.

[L858-861] Explanation of “risk” will be helpful for understanding. In Publication 122, risk is defined in the Glossary: Risk = likelihood of occurrence x seriousness if incident occurs.

[L980] Proposed text : With such an approach, calculated dose and risk in the future might not be discriminating factors between design options. -> With such an approach, calculated dose and risk in the future might be used as an indicator for discrimination between design options.

[L1182] “and intervention” can be deleted since intervention applies to reduce exposure in emergency or existing exposure situation after some disruptive events.

Editorial:
L102  "Solid" radioactive waste
L371 Acronym for “NORM” should be described.
L413 “concentration of radioactivity” should be “activity concentration”
L475 System of Radiological Protection
L478 “RP system” should be “system of radiological protection”
L823 and/or existing "exposure" situation"(s)"
L862 Explanation of “decision makers” will be necessary. For instance, “decision makers, which are generally the operating management or a competent authority, to have ...
L997 The use of BAT should consider should consider their …
L1030 Publication”s"
L1311 existing exposure “situation”
Captions for Figures 1 and 2 and Table 1 are capitalized.

It would be grateful if you would consider our comments in the finalization of the report.

Kind regards,