

§9. Safety Strategy and Optimization on Radioactive Discharges

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The purpose of this study is to list up discussion items for optimization on radioactive discharges from facilities using radioactive materials in order to establish safety strategy.

Revision task on WS-G-2.3 Safety Series “REGULATORY CONTROL OF RADIOACTIVE DISCHARGES TO THE ENVIRONMENT (2000)” of IAEA is one of the most important international movements on the related discussion. After the publication of WS-G-2.3, several international documents have been open to public, ideas and description in these documents would be basis of future safety strategy. For example, IAEA SF-1 “BASIC SAFETY STANDARDS (2006)”, ICRP Publication 101 “Assessing Dose of the Representative Person for the Purpose of Radiation Protection of the Public and the Optimisation of Radiological Protection(2006)”, ICRP Publication 103 “The 2007 Recommendations of the International Commission on Radiological Protection (2007)”, IAEA International Basic Safety Standards -Radiation Protection and Safety of Radiation Source (2012), etc. would be the core documents.

In BY of 2012 as the first term of this research, important discussion items for optimization on radioactive discharges from facilities using radioactive materials have been listed up and some of these have been discussed concretely.

Discharge

Definition of “discharge” is different from that of “release” in international documents, even if both are called in Japan as “housyutsu”. The former means all releases and discharges, and the latter is a part of release which is approved by the authority and done under planned situations.

What is the definition of “discharge to environment”? Case study is strongly needed to discuss the scope of the strategy. Accidental discharge is completely different from planed discharge. Revision task on WS-G-2.3 does not consider accidental discharges in the scope. It is important to imagine large number case examples to be treated.

Protection of Public and Protection of Environment

According to ICRP Pub.103 and revised IAEA BSS, protection of environment would be an additional scope of the discussion. Unfortunately, we do not have international consensus on this now.

The first target would be to control exposure dose for protection of public. The second would be to control radioactive sources for protection of environment.

Dose Criteria

How to set and use dose constraints has not been determined under the consensus of international discussion. Dose limit, constraint, operational limitation of control, approval limitation of discharge, optimised level, etc. should be understood by all stakeholders. Outlook of relationship among them is shown in Fig.1.

Application of the strategy, steps of optimization, how to control facilities of NORM, step-wise or graded approach, etc would be also important keywords in the future.

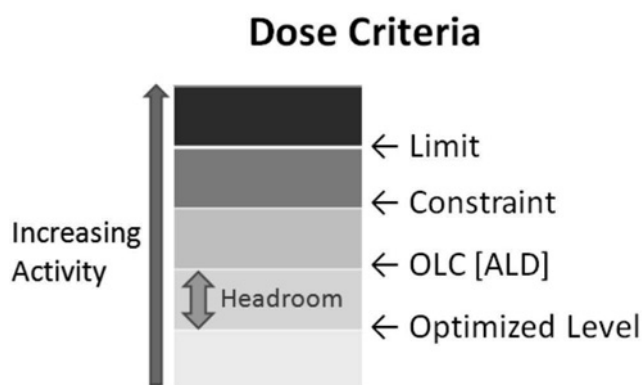


Fig.1 Outlook of Dose Criteria