

# THE IAEA RADIOACTIVE WASTE SAFETY STANDARDS

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## INTRODUCTION

Radioactive waste is generated from the production of nuclear energy and the wide ranging application of radionuclides, for example in industry, research and medicine. The safe management of these wastes is important for the protection of human health and the environment.

The Radioactive Waste Safety Standards (RADWASS) programme is a contribution by the IAEA to the safe management of radioactive waste. Within the programme a set of internationally agreed documents is being developed to assist Member States in complementing or establishing a national framework for the safe management of radioactive waste.

## INITIATION OF THE RADWASS PROGRAMME

More than thirty publications in the IAEA Safety Series had been issued on various aspects of radioactive waste management by the mid 1980's but the coverage of the subject areas was not consistent or comprehensive. Accordingly it was decided to establish an ordered structure to ensure a systematic approach to the subject. This was carried out through a review and reorganization of the IAEA publications in the waste management area and at the end led to the creation of the Radioactive Waste Safety Standards (RADWASS) programme.

The initial concept of the RADWASS programme was developed in 1988. The structure, content and scope of the programme was elaborated by international experts in 1990 and work on the programme started in 1991. The development of the programme included submissions to the IAEA Board of Governors at various stages, endorsement by the International Radioactive Waste Management Advisory Committee (INWAC) and in-house approval by the Director General.

The programme included a total of twenty four documents consisting of one Safety Fundamentals document, six Safety Standards (one in each of the six subject areas: Planning, Predisposal, Near Surface Disposal, Geological Disposal, U/Th Mining and Milling Waste, and Decommissioning) and seventeen Safety Guides. The programme was planned to be carried out in two phases, a Phase I from 1991 - 1994 and a Phase II in the post 1994 period.

## PROGRESS OF THE RADWASS PROGRAMME

When the RADWASS programme was initiated it was already envisaged that a formal review of the programme would be undertaken in 1993 to define publication production rates and resources needed for the post 1994 period. INWAC carried out this planned review in March 1993 which resulted in a expansion of the programme from twenty four to fifty five documents. This expansion included the addition of eleven Safety Guides, e.g. on licensing, quality assurance, discharge limits, safety assessments and definitions, and twenty Safety Practices to the programme. Furthermore, "Environmental restoration" was added to the subject area "Decommissioning". The status of the programme at that time and the key results were presented at the SPECTRUM '94 in Atlanta [1].

Recently, the two highest ranking documents, the Safety Fundamentals "The Principles of Radioactive Waste Management" [2] and the Safety Standard on "Establishing a National System for Radioactive Waste Management System" [3], have been published in the IAEA Safety Series. That means that six out of twelve Phase I documents are now available. Three Safety Guides are finished and on their way to publication and fourteen documents are under preparation.

## NEW DEVELOPMENTS

At the March 1995 session of the Board of Governors, the Director General of the IAEA announced a major reorganization of the Department for Nuclear Energy and Safety. He announced that the existing Department would be split into two new Departments for Nuclear and Radiation Safety and for Nuclear Energy in order to separate safety related and promotional activities of the IAEA. This reorganization became effective from 1st January 1996.

The new Safety Department will cover all radiation and nuclear safety activities performed by the IAEA including activities on the safety of radioactive waste management. At the same time new procedures for the preparation of all safety related documents are being established with the aim of further harmonization of their content, structure and format. For this purpose new advisory bodies are being established to assist the IAEA in the review of all safety related programmes and the preparation and review of the respective documents.

All these activities coincided with a review of the RADWASS programme that had already been planned for 1995. As a consequence, the 1995 review of the RADWASS programme is proving to be more intense and deeper than expected in 1993. This paper will focus on the results of the ongoing discussion, the decisions to be expected in the first half of 1996 and the effects of these activities on the course of the RADWASS programme. At present it seems to be most likely that the programme will be further expanded in the subject areas "Environmental Restoration" and "Discharge" and that the scope of the other subject areas will remain the same but the number of documents will be decreased.

## NEW ADVISORY COMMITTEES

In the past, different processes have been applied for the preparation and review of IAEA's Safety Series publications. In order to achieve a better compatibility between the Safety Series publications a new, more uniform, preparation and review process is being introduced. The following set of advisory bodies with harmonized terms of reference is being created:

- the Advisory Commission for Safety Standards (ACSS),
- an Advisory Committee in each of the areas of Nuclear Safety (NUSSAC), Radiation Safety (RASSAC), Transport Safety (TRANSSAC) and Waste Safety (WASSAC).

The ACSS is a standing body of senior government officials holding national responsibilities for establishing standards and other regulatory documents relevant to nuclear, radiation, waste and transport safety. It provides advice to the Director General on the overall safety-standards-related programme and will, for example, resolve outstanding issues referred to it by any of the above mentioned advisory committees.

The advisory committees are standing bodies of recognized senior experts in the respective subject area. They provide advice to the Secretariat on the overall safety programme in the respective subject area.

The new Waste Safety Standards Advisory Committee (WASSAC) provides advice to the Secretariat on the overall radioactive waste safety programme and has the primary role in the development and revision of the Agency's radioactive waste safety standards. It will provide advice and guidance on the RADWASS programme which, in the past, has been the task of INWAC or extended INWAC (INWAC was extended by a regulator if the national representative was an operator). WASSAC, for example, will have to agree on the texts of Standards, Guides and Practices and will make recommendations to the ACSS in accordance with the IAEA's safety standards preparation and review process.

## REVISED RADWASS PROGRAMME

The RADWASS programme, Safety Practices excluded, has been reviewed within the IAEA. In particular, this review was done in close co-operation with establishing the RASS (Radiation Safety Standards) programme in order to avoid any unnecessary overlaps or duplications between the two programmes. The resulting draft of the revised programme will be subject to the review by WASSAC in its February 1996 meeting. The following major changes of the RADWASS Programme will be proposed to WASSAC for approval:

1. The programme is organized below the Safety Fundamentals in the three areas "Infrastructure and General Aspects", "Waste Management (Practices)" and "Restoration (Interventions)".
2. "Infrastructure and General Aspects" is replacing the previous subject area "Planning" with only a few modifications.
3. "Waste Management (Practices)" will be subdivided into the three subject areas "Predisposal", "Discharges into the Environment" and "Disposal". The relevant parts of "Decommissioning" and "U/Th mining and milling waste" will be included into these subject areas.
4. "Discharges" are now organized as a new subject area, whereas it was covered previously by a Safety Guide only. Those aspects that are closely related to radiation protection have been moved from RASS into RADWASS.
5. "Restoration (Intervention)" is expanded in the programme because it is organized as a new area whereas it was previously in a common subject area with "Decommissioning". It is covering the subject areas "Environmental Restoration" and "Facility Restoration".
6. Numerous documents on the level of Safety Standards and Safety Guides were combined. For example, the Safety Standard on "Disposal" will include near surface disposal, geological disposal and disposal of U/Th mining and milling waste.

The proposals for a revised RADWASS programme may be changed during the review by WASSAC in February 1995.

## CONCLUSIONS

The overall goal of the RADWASS programme still stands, however the in-depth review being carried out with the framework of a more unified approach to Safety Standards is likely to result in a substantial "mid-course" correction.

## REFERENCES

- [1] WARNECKE, E., Safety Standards for Radioactive Waste Management, "Nuclear and Hazardous Waste Management - SPECTRUM '94", (Proc. Int. Topical Meeting, Atlanta, 1994), American Nuclear Society, La Grange Park, Vol. 1 (1994) 546 - 551.
- [2] INTERNATIONAL ATOMIC ENERGY AGENCY, The Principles of Radioactive Waste Management, Safety Series No. 111-F, IAEA, Vienna (1995).
- [3] INTERNATIONAL ATOMIC ENERGY AGENCY, Establishing a National System for Radioactive Waste Management, Safety Series No. 111-S-1, IAEA, Vienna (1995).