

APPLICATION OF INNOVATIVE MEASUREMENT TECHNOLOGY AND PROCEDURES FOR THE CLEARANCE OF WASTE

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1. Introduction

Concise overview of efficient applications of measurement technology and procedures aimed at optimising safety, efficiency and waste minimisation.

- Review of the various paths for waste disposals.
- Significance of modern measurement technology for the disposal of waste
- Economic and technical objectives.
- Presentation of a system for unrestricted release of measured material (“Clearance Measurement System”).
- Definition of the term “Clearance Measurement”.

2. Legal frame work

Short review of the legal frame work in Germany which have been stipulated especially for the clearance of waste.

Possibilities to implement the corresponding national and international legal regulations in the application of the Rados “Clearance Measurement System”.

3. “Clearance Measurement System” RTM644Inc

Description of the essential as well as the more significant parameters of the Clearance Measurement System with respect to a maximum efficient and economic disposal of waste materials.

Advantages of operating a Clearance Measurement System compared to other procedures.

4. Experiences with the “Clearance Measurement System” operated at the Research Centre Jülich

The experience gained from the application of the SINA system during the decommissioning of the fuel cell laboratory at the Jülich Research Centre is displayed in form of an overview.

- short review of the entire decommissioning project
- integration of the CMS into the decommissioning concept
- design of the infrastructure for the material flow
- pre-treatment of materials
- components for suitable pre-conditioning of the decommissioned material

4.1 Participation of the appropriate authorities and surveyors

Experiences from the approval process for the operation of the CMS

- duration of the approval process
- advantages in the approval process of the CMS compared to other procedures
- advantages for the evaluation of the measurement results during the actual release
- advantages for making changes of the approved procedure including the changes necessary in case of changed legal regulations, such as health physics regulations.
- averaging masses and areas

4.2 Re-conditioning of lots in case of exceeded limits or in case of inhomogeneity

- Differences in the application of the definitions “homogenise” and “mix” with respect to the legal regulations and the resulting consequences for the waste disposal.
- Utilisation of the spatial display of the activity location and distribution in view of the maximised unconditional release.
- Re-conditioning of lots in case of exceeded limits or inhomogeneity of the measurement material based on measurement values and the spatial display of the activity location.
- Utilisation of the limits for averaging masses and averaging areas for the release within the limits of the homogeneity criteria.
- Specialities of the RTM644Inc with respect to the resolution of the activity display.

5. Further applications of the CMS

Outlook to future applications of such a system on a national or international level.