

**WASTE PACKAGE SPECIFICATION AND
GUIDANCE DOCUMENTATION**

**WPS/200: Waste Package Quality
Management Specification**

**January 2008
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Bibliography

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WASTE PACKAGE SPECIFICATION AND GUIDANCE DOCUMENTATION

WASTE PACKAGE QUALITY MANAGEMENT SPECIFICATION

This document forms part of a suite of documents prepared and issued by the Radioactive Waste Management Directorate (RWMD) of the Nuclear Decommissioning Authority (NDA).

The Waste Package Specification and Guidance Documentation (WPSGD) provide specifications and guidance for waste packages, containing Intermediate Level Waste and certain Low Level Wastes, which meet the transport and disposability requirements of geological disposal in the UK. They are based on, and are compatible with, the Generic Waste Package Specification (GWPS).

The WPSGD are intended to provide a 'user-level' interpretation of the GWPS to assist Site License Companies (SLCs) in the early development of plans and strategies for the management of radioactive wastes. To aid in the interpretation of the criteria defined by the WPSGD, and in their application to proposals for the packaging of wastes, SLCs are advised to contact RWMD at an early stage.

The WPSGD will be subject to periodic enhancement and revision. SLCs are therefore advised to contact RWMD to confirm that they are in possession of the latest version of any documentation used.

WPSGD DOCUMENT NUMBER WPS/200 - VERSION HISTORY

VERSION	DATE	COMMENTS
WPS/200/01	August 2005	Aligns with GWPS (Nirex Report N/104) as published June 2005
WPS/200/02	January 2008	Responsibility for the WPSGD passed to the NDA RWMD. Aligns with Issue 2 of GWPS (Nirex Report N/104) as published March 2007.

This document has been compiled on the basis of information obtained by Nirex and latterly by the NDA. The document was verified in accordance with arrangements established by the NDA that meet the requirements of ISO 9001. The document has been fully verified and approved for publication by the NDA.

1 INTRODUCTION

The Radioactive Waste Management Directorate (RWMD) of the Nuclear Decommissioning Authority (NDA) has been established with the remit to implement the geological disposal option for the UK's higher activity radioactive wastes. The NDA is currently working with Government and stakeholders through the *Managing Radioactive Waste Safely* (MRWS) consultation process to plan the development of a Geological Disposal Facility (GDF).

As the ultimate receiver of wastes, RWMD, acting as GDF implementer and future operator, has established waste packaging standards and defined package specifications to enable the industry to condition radioactive wastes in a form that will be compatible with future transport and disposal. In this respect RWMD is taking forward waste packaging standards and specifications which were originally developed by United Kingdom Nirex Ltd, which ceased trading on 1st April 2007 and whose work has been integrated into the NDA.

The primary document which defines the packaging standards and specifications for Intermediate Level Waste (ILW), and certain Low Level Wastes (LLW) not suitable for disposal in other LLW facilities is the Generic Waste Package Specification (GWPS) [1]. The GWPS is supported by the Waste Package Specification and Guidance Documentation (WPSGD) which comprises a suite of documentation primarily aimed at SLCs, its intention being to present the generic packaging standards and specifications at the user level. The WPSGD also includes explanatory material and guidance that users will find helpful when it comes to application of the specification to practical packaging projects. For further information on the extent and the role of the WPSGD, reference should be made to the *Introduction to the Waste Package Specification and Guidance Documentation, WPS/100*¹.

Quality management is an essential part of an effective waste management process. It provides a disciplined approach which ensures that arrangements are in place covering all safety related aspects throughout the lifetime of a waste package.

Users of this document are also advised to refer to *Waste Package Quality Management Guidance Material, WPS/210*, which provides background information, guidance and advice on the interpretation of this specification.

2 REQUIREMENTS

2.1 Quality Management for Waste Packaging

Processes shall be established and implemented for the packaging of radioactive wastes, which encompass the whole lifetime of the waste packages, to ensure that packaged waste has the properties ascribed to it. These arrangements should be reviewed periodically and adequate records maintained. Persons and organisations responsible for verifying correct performance should have appropriate authority and independence.

¹ Specific references to individual documents within the WPSGD are made in this document in *italic script*, followed by the relevant WPS number.

2.2 Quality Management System

The waste packager shall establish, implement and maintain a formal and effective Quality Management System (QMS) with the objective of assuring the quality of both the waste package product and the associated data records.

As a minimum, the Quality Management System shall comply with BS EN ISO9001 [2].

The QMS should apply to all activities, interactions and aspects that can affect the quality of the waste package product, including:

- waste characterisation;
- container design;
- container manufacture;
- wasteform development;
- process development;
- plant specification and design;
- LoC Submissions and Advice actions;
- plant commissioning and operation;
- raw materials storage;
- waste package interim storage and monitoring;
- control of non-conforming packages;
- change control and continual improvement of waste package design, processing plant and interim storage;
- package records and their long-term retention.

2.3 Waste Product Specification

The waste packager shall establish and maintain a Waste Product Specification (WPrS) for the waste package. A WPrS shall fully define the waste, waste container, conditioning materials, wasteform formulation, process conditions, storage conditions and all relevant supporting R&D (including product properties and performance) for each waste package type.

Guidance on the preparation of a WPrS is provided in *Guidance on the Structure and Format of Waste Product Specifications, WPS/620*.

2.4 Demonstration of Effectiveness and Verification

The waste packager shall demonstrate to RWMD, by providing objective evidence, that:

- the QMS employed applies to all stages of the process from initial design through to final packaging and interim storage;
- the waste is being packaged in compliance with the QMS and the WPrS; and
- the implementation of the QMS and compliance with the WPrS are verified by independent audit or assessment.

2.5 Assessment by RWMD

The waste packager shall provide, upon reasonable request, access for RWMD (or its agreed agents) to conduct assessment(s) of activities that affect the quality of waste package products.

3 REFERENCES

- 1 Nirex, *Generic Waste Package Specification*, Nirex Report N/104 Issue 2, 2007.
- 2 BSI, *Quality Management Systems – Requirements*, BS EN ISO 9001.

