

Introduction

This notice is to remind customers of the importance of controlling reactive metal disposal in consignments to the Low Level Waste Repository and to advise customers that for future consignments containing reactive metal the expected grouted weight must not exceed 40 tonne.

Safety of Disposal of LLW Reactive Metals

LLWR have recently prepared a safety assessment that addresses hydrogen production. In addition to assessing radiological consequences (which has always been done), this assessment properly considers the conventional force of an explosion.

Hydrogen is produced by reaction of reactive metals with grout/water.

There is already a 10 m² limit on unpainted reactive metal in the WAC, but if it is not applied, there is a possibility of an explosion with fatal consequences. This 10 m² exposed surface area limit is the only definitive safety measure we have. Thus it is particularly important for operator safety at LLWR that this limit is always applied. While all WAC Conditions are important for safety and/or the environment, it is imperative that the following part of the existing WAC Condition L2.5 is implemented properly:

“Customers shall use *Best Available Techniques*, which might be by painting or wrapping, to limit the surface area of *Reactive Metals* accessible by grout. In any case, the total exposed (including any wrapped metal but not painted) surface area of Reactive Metal must not exceed 10 m².”

The definition in the WAC Glossary is ‘*Reactive Metals and Materials* means those metals and non-metals that react to produce either heat or flammable gases. Non-metals in this context includes minerals such as zeolites.’ **In case of any doubt, reaction is not just about reaction with strong oxidising agents; it includes reaction with air/grout/water.**

The initiating event for the fault scenario at LLW Repository Ltd, is a container not being completely filled with grout. While this could happen as a result of a grout plant outage, it has historically occurred mainly because the weight of the container would exceed the capacity of the heavy-duty fork lift trucks used on the LLWR site. Thus the safety assessment has introduced a safety margin in the weight of grouted containers in the following Requirement for Consignment:

“Consignors must not load reactive metals into IP-2 containers such that they would exceed 40 tonne when fully grouted.”

It is intended that this requirement will become part of the WAC at the next revision, but in the meantime, the limit will be applied by the waste compliance team. Note the reduction in the expected fully grouted weight from 42 tonne to 40 tonne for containers containing reactive metals. The 42 tonne weight limit for other containers remains.

By abiding by the 40 tonne weight limit on expected fully grouted weight, and the 10 m² exposed surface area limit, for containers containing reactive metals, the safety of LLWR operators will be maintained.

As the controls for reactive metals are so important, it is likely that some future LLWR audits of waste consignment practices will include a focus on this issue. Any consignment containing reactive metals with an expected grouted weight in excess of 40 tonne will be rejected.

Further Information and Questions

If you require any further information or have any queries relating to this Customer Notice, please send an e-mail to: wasteacceptance@llwrsite.com or call: Jill Chester on 019467 70247

Distribution List

We have issued this Notice to the following people from your Company's Contact Details Form (Reference: WSC-FOR-CON):

- All nominated representatives

If you need to update these details, please submit a revised Form: <http://llwrsite.com/waste-services/new-customers/>