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MANAGEMENT OF METALLIC SCRAPS CONTAMINATED WITH NATURAL RADIONUCLIDES

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Throughout the last twelve years some hundreds pieces of metallic scrap contaminated with natural radioactive materials have been detected in Spanish scrap yards and melting installations (about 50% of the total detections). This scrap is mainly originated in the decommissioning of ore processing industries and in oil and gas extraction and production facilities.

The detection of these materials is a consequence of the global programme established in Spain to control the presence of radioactivity in metallic scraps after the melting in 1998 of a rather high activity Cs-137 source in a melting facility (the so called "SPANISH PROTOCOL"). This programme has been widely implemented in Spain and the industries joining this programme (most of those existing in the Country) have installed control and monitoring systems to detect the inadvertent presence of any kind of radioactivity in the scraps before entering the plant.

As part of this "Protocol", it is the task of the Spanish National Company for Radioactive Waste Management (ENRESA) to recover and dispose in suitable installations the materials when classified as radioactive waste. If the radioactivity content in the scrap is low enough, the materials can be otherwise processed in the facility, with special consideration when the content is just radioactivity of natural origin. The radioactivity levels to decide were proposed by the Nuclear Safety Council and were published by the National Authority competent in this matter. These values are based on the recommendations of the European Commission for recycling of metals obtained during dismantling of nuclear installations.

In this paper the main characteristics of these materials detected are presented together with the methodology to evaluate and quantify the activity content (total and concentration). According with this activity content the materials can either be melted in the facility or removed as a radioactive waste by ENRESA. Several operations are performed "in situ" to reduce the volume of radioactive wastes to be removal. These operations are also described in this paper.

The conclusion of this paper is that the majority of these pieces with natural radioactive content can be melted in the facilities.