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**SPANISH PROTOCOL FOR COLLABORATION
ON MONITORING RADIATION OF METALLIC MATERIALS
(Revision 1: 1 January 2005)**

Note by the secretariat

Note: The UNECE secretariat reproduces in the present document the text of the Spanish protocol as applicable as of 1 January 2005. The protocol has been prepared following an event that occurred in Spain in 1998, which caused significant physical, administrative and perceptual consequences. Source material had entered the shredded metal stream at a facility, which resulted in its contamination. The protocol was agreed by various Governmental authorities, the steel and recycling industry and labour unions. It was later broadened to include non-ferrous metals. The protocol is a voluntary, cooperative and balanced effort in which every signatory party commits to certain actions. Its goal is to promote common knowledge and agreed solutions utilizing lessons - learned and sharing of costs.

SPANISH PROTOCOL FOR COLLABORATION
ON MONITORING RADIATION OF METALLIC MATERIALS
(Revision 1: 1 January 2005)

PART 1 - INTRODUCTION

THE MINISTRY OF INDUSTRY AND ENERGY (MINER)

THE MINISTRY OF DEVELOPMENT

THE NUCLEAR SAFETY COUNCIL (CSN)

LA EMPRESA NACIONAL DE RESIDUOS RADIOACTIVOS S.A. (ENRESA)¹

LA UNIÓN DE EMPRESAS SIDERÚRGICAS² (UNESID) AND

LA FEDERACIÓN ESPAÑOLA DE RECUPERACIÓN³ (FER)

MINDFUL THAT:

- In recent years radioactive material has quite frequently been found in metal scrap, thereby giving rise to growing concern in view of the risks involved.
- The recycling of metals to produce alloys of different compositions is an industrial activity that is extremely important for the economy and the environment.
- It is necessary to adopt radiation monitoring measures in an attempt to prevent and, where necessary, detect and control the presence of radioactive material in the scrap that some metallurgical plants use as raw material in their production process.
- The implementation of monitoring measures in an attempt to exclude radioactive material from the metal materials used by metallurgical plants provides a mechanism for certifying that the product is free of radioactive contamination and, consequently, represents an added guarantee as regards the quality of the product.
- The primary objective of the activities involved in the monitoring and control of the presence of radioactive material in scrap should be to prevent the inclusion of radioactive material in the scrap recycling process and, as a minimum requirement, to detect its presence as closely as possible to the point of inclusion.

WHEREAS:

- There are a number of laws and regulations in Spain specifically regulating industrial activities involving nuclear and radioactive materials, and the possession, use and transfer

¹ The National Company for Radioactive Waste Ltd

² The Union of Metal Companies

³ The Spanish Recycling Federation

- of radioactive sources is regulated by the Nuclear Energy Act 25/1964, Act 14/1999 on public rates and prices for services provided by the Nuclear Safety Council, and the regulations on Nuclear and Radioactive Facilities, approved by decree 2869/1972.
- This regulatory framework is unable to prevent deliberate or unintentional acts that result in radioactive materials being included in scrap.
 - In view of the markedly transnational nature of the scrap market in our country, and the leading role that maritime imports play in this market, there is a need to put in place mechanisms to control metal products that enter the country through our ports.
 - This issue is being considered by a number of international agencies that are studying the many different aspects of the problem. Since this is also a major concern for other Member States of the European Union, it would be appropriate for these States to agree upon the joint adoption of measures that they consider necessary to improve the control of the presence of radioactive materials in scrap. To this end, the Spanish government has approached the European Commission with the request that it should promote the adoption of such measures, which, if appropriate, would have to be observed in the future.
 - In the meantime, it is appropriate to establish a framework for action that determines the conditions in which the aforesaid measures should be implemented.
 - Based on the results of the implementation of this Protocol or the development of international initiatives in this matter, essentially community initiatives, these monitoring measures could acquire legislative status in the future.

AGREE:

- One To sign this Protocol for Collaboration on Monitoring Radiation of metal materials and final products defined in the Technical Annex, which is an integral part hereof, with a view to introducing the monitoring and control measures stated herein.
- Two To set up at the Ministry of Industry and Energy, a Register in which companies carrying out the activities referred to in the Technical Annex can register, thereby accepting the rights and obligations arising from registration.
- Three To encourage the registration of companies in the Register referred to in the previous point, particularly the registration of companies that have facilities for the smelting or the storage and preparation of scrap.
- Four To consult every six months to analyse the results of the implementation of this Protocol and study possible amendments to the Technical Annex proposed as a result of this implementation.
- Five To appoint the Ministry of Industry and Energy as the depository of this Protocol, which will be kept open for accession by other industry associations involved in similar activities.

SIGNED BY ALL THE PARTIES CONCERNED

PART 2 - TECHNICAL INFORMATION

1. Objective

The objective of this Protocol is to establish the conditions necessary to undertake the radiological surveillance of metallic materials and resulting products, as defined in point 2, with a view to detecting the possible presence of radioactive materials and avoid the risk of their becoming dispersed and irradiating or contaminating people, property and the environment.

2. Definitions

The following definitions shall apply for the purposes of this Protocol:

Subscribing company

The physical or legal person carrying out the activities referred to in point 3 and subscribing to the Protocol.

Surveillance and control system

The set of human resources and technical, organizational, operational, logistical and training capacities established by the subscribing company to detect and, where appropriate, separate and analyze the radioactive materials potentially found in metallic materials and resulting products, and to adopt the urgent measures required to prevent the dispersion of the radioactive material.

Metallic material

The metallic scrap, ingots and half-finished products which will serve as raw material for processing in the installations in which the Protocol is applied.

Resulting product

The products, half-finished products, by-products and wastes generated during the processing of metallic materials.

Specialist in radiological protection

Technician with accredited knowledge of radiological protection and instrumentation, belonging to the subscribing company or to a Technical Radiological Protection Unit (TRPU) authorized for this purpose.

3. Scope of application

The Protocol is applicable to the following activities:

- (a) The recovery, storage or handling of metallic materials for recycling.
- (b) The processing of metallic materials.

4. Register of installations to which the Protocol is applied

The Ministry of Industry, Tourism and Commerce (MITYC) shall draw up a Register of installations belonging to the companies subscribing to the Protocol.

The subscribing companies shall include each of their installations in the aforementioned Register, submitting a declaration containing the information established in appendix 1.

This inclusion in the Register shall be updated every five years and whenever any substantial modification is made to the surveillance and control system or there is a change in the ownership of the company.

Inclusion in the MITYC Register of Installations shall be without charge.

5. Commitments deriving from application of the Protocol

5.1 The MITYC undertakes to carry out the following:

- (1) To issue a generic resolution awarding Authorization for Transfer to ENRESA of the radioactive material detected at the installations, in accordance with the legal provisions in force and in response to a report from the Nuclear Safety Council.
- (2) To create and keep updated a Register of the Installations of the subscribing companies, informing both the Nuclear Safety Council and the affected companies of the inclusion of each installation on the said Register.
- (3) To carry out whatever actions are required to resolve situations requiring exceptional measures, due to the presence of radioactive materials in the metallic materials and resulting products. Such actions shall be undertaken, where appropriate, in coordination with other competent public bodies and with the affected companies, in response to a report from the Nuclear Safety Council, which shall be mandatory and binding in its scope of application.

5.2 The Ministry of Public Works undertakes to carry out the following:

To inform the Nuclear Safety Council of any radiobiological event occurring within the framework of its competence and relating to the transport of metallic materials.

5.3 The Nuclear Safety Council (CSN) undertakes to carry out the following:

- (1) To inform ENRESA and the subscribing companies of the application of the Authorization for Transfer where appropriate.
- (2) To issue generic technical instructions and recommendations it considers necessary for the application of this Protocol.
- (3) To oversee the inclusion of installations on the MITYC Register and, where appropriate, to issue the technical instructions or recommendations it considers necessary to guarantee that the surveillance and control system fulfils the agreements established in the Protocol.
- (4) To inspect the surveillance and control system established by the subscribing company and to issue the latter with whatever instructions it considers appropriate for compliance with the Protocol.
- (5) To advise the competent authorities and subscribing companies in matters relating to safety and radiological protection for compliance with this Protocol, especially and without delay in those cases in which radioactive sources or materials may have been processed.
- (6) To promote training and education campaigns on radiological protection among the personnel of companies involved in the metal recovery and smelting sector.

5.4 The Empresa Nacional de Residuos Radiactivos, S.A. (ENRESA) undertakes to carry out the following:

- (1) To remove and take custody of the radioactive materials detected in the installations of the subscribing companies.
- (2) To provide technical advice to the subscribing companies, especially and without delay in those cases in which radioactive sources or materials may have been processed; in this case support will be given for the technical and administrative actions implemented in the affected industry, with a view to reducing recovery periods and optimizing the management of the resulting radioactive wastes. Where necessary, there will be collaboration with the companies in returning radioactive materials to the dispatching party when the latter is based abroad.
- (3) To collaborate in the training plans for technicians required to act in the event of detection of radioactive materials.
- (4) To collaborate in training and education campaigns on radiological protection among the personnel of companies involved in the metal recovery and smelting sectors.
- (5) To enter into a contract with the subscribing company for the management of radioactive materials, in accordance with the stipulations of point 6.3 (a).

5.5 The subscribing company undertakes to carry out the following:

- (1) To undertake the radiological surveillance of metallic materials and resulting products. To this end, it shall:
 - (i) Install, operate and maintain a surveillance and control system. The system shall cover the relevant metallic materials, industrial processes and resulting products pertaining to the installation, as and when applicable, depending on the type of activity and available technologies.
 - (ii) Man the surveillance and control system with technical personnel specializing in radiological protection, providing the latter with the instrumentation, areas for temporary location, action and communication procedures required to detect, separate and isolate radioactive materials.
 - (iii) Provide basic radiological protection and surveillance training for its personnel, and inform such personnel of the characteristics of the surveillance and control system.
- (2) In the case of trans-frontier movements, imports or intra-Community trade in metallic materials, the subscribing company:
 - (i) Shall require from the dispatcher a certificate of inspection of the merchandise issued by a merchandise inspection and control organization or body of recognized solvency, in which shall be noted the radiological surveillance and control system to which the metallic materials dispatched have been subjected and the results obtained.
 - (ii) Shall not unload on Spanish territory maritime shipments not accompanied by the certificate referred to in the previous point.
- (3) To initiate, by itself or with collaboration from ENRESA, the actions required to return to the foreign dispatcher whatever radioactive materials might eventually be detected.
- (4) To immediately notify the CSN of the detection of radioactive material in shipments of metallic materials or resulting products, using the form included in appendix 2.
- (5) To adopt whatever measures might be required to prevent the dispersion of radioactive material.
- (6) To enter into a contract with ENRESA for the management of radioactive materials, in accordance with the stipulations of point 6.3 (a).
- (7) To transfer radioactive material detected to ENRESA.
- (8) To collaborate in training and education campaigns in radiological protection of the personnel of companies involved in the metal recovery and smelting sector.

6. Response to the detection of radioactive materials

6.1 The subscribing company shall carry out the following:

(a) In the event of radioactive material being detected in a shipment of metallic materials arriving at the installation:

- (1) Immobilize the shipment within the installation in which it is detected. When an automatic surveillance system indicates the presence of radiation in a shipment in excess of established limits, the shipment shall be immobilized and the load investigated, even when the readings from the manual devices used outside the crate do not exceed the levels for investigation.
- (2) Alert the technical personnel specializing in radiological protection, who shall proceed as follows using adequate radiological protection procedures:
 - (i) Inspect the shipment in detail until the part or parts containing the radioactive material is/are identified.
 - (ii) Evaluate the nature and quantity of radioactivity contained therein.
 - (iii) Isolate the radioactive material under safe conditions.
 - (iv) Draw up a report describing the actions taken and the results and establishing whether the radioactive material is exempt from nuclear regulation or should be transferred to ENRESA in accordance with the criteria established by the Authorization for Transfer.
- (3) Notify the CSN using the form included in appendix 2, attaching the conclusions of the report drawn up by the personnel specializing in radiological protection.
- (4) Transfer the radioactive material to ENRESA under the terms established in the Authorization for Transfer.
- (5) Keep the radioactive material in custody under safe conditions until it is removed by ENRESA.

(b) In the event of radioactive material being detected during the process or resulting products, the subscribing company shall carry out the following, for which it shall receive without delay advisory services from the CSN:

- (1) Immediately notify the CSN via the quickest possible channel of such detection, transmitting the available information.

- (2) With advice from the CSN, attempt to ascertain whether the detection is real. To do this, the subscribing company, either through its own personnel or with the support of a RPTU contracted for this purpose, shall carry out the following actions:
 - Reset and re-operate the detection systems.
 - Apply manual detectors at the point of detection and other points in the processing chain.
 - Take samples of all relevant products and undertake their analysis.
- (3) If the detection is real, the subscribing company shall proceed as follows, with advice from the CSN:
 - Interrupt all the phases of the process that are understood to be affected, except those whose operation helps to mitigate the consequences, as well as cleaning and decontamination tasks.
 - Immediately suspend the exit from the installation of products that have been in contact with the contaminated source.
 - Provide immediate notification of the situation to any organization that has received products suspected to have been affected by the incident, where applicable.
 - Require the intervention of a TRPU authorized for this purpose, which shall determine the extent of the contamination on the processing chain and immediate surroundings.

6.2 On receiving notification of the detection of radioactive material, the CSN shall proceed as follows:

- (a) If the detection has been in metallic materials:
 - (1) Instruct the subscribing company to transfer the radioactive material to ENRESA, in application of the Authorization for Transfer.
 - (2) Notify ENRESA that the radioactive material will be transferred to it in application of the Authorization for Transfer.
- (b) If the detection has been in the processing chain or resulting products, the CSN shall:
 - (1) Notify the MITYCR and recommend actions to be taken.
 - (2) Advise ENRESA of the existing situation.

- (3) Provide immediate and direct advice to the subscribing company, issue whatever instructions and recommendations it considers necessary, taking into account the information provided by the subscribing company or otherwise available to the CSN.
- (4) Order whatever measures it considers necessary to be taken by the personnel and technical support organizations of the CSN.

6.3 On receiving notification from the CSN, ENRESA shall proceed as follows:

- (a) Remove the radioactive materials, in application of the Authorization for Transfer, for which it shall enter into a contract with the subscribing company.
- (b) Keep the radioactive material removed in safe custody until a decision is taken regarding the method for definitive management to be applied to it, which might be one of the following:
 - (1) Return to the supplier if the latter is foreign.
 - (2) Transfer to another authorized body.
 - (3) Management as radioactive waste.
 - (4) Any other legally authorized method.
- (c) Immediately provide the subscribing company with the support required for its activities, when radioactive sources or materials may have been processed.

7. Special actions

When radioactive sources or materials may have been processed, the CSN shall propose to the MITYC that it require the subscribing company to draw up an Action Plan for adoption of radiological protection and necessary management measures.

The Plan is to be submitted to the CSN and the MITYC and shall be subject to the favorable assessment of the CSN, which shall provide the company with the instructions it considers to be necessary and, where appropriate, inform the company when it may reinstate normal operations. The actions contemplated in the Plan may not be considered to have been concluded until the CSN reports favourably to the MITYC on the results obtained and the latter clears the licensee of the installation.

When, in the judgment of the CSN, the situation resulting from the contamination by the dispersion of radioactive material at the installation so requires, the MITYC may, without delay and taking into account the preliminary report issued by the CSN, require that whatever exceptional measures it considers appropriate be adopted, in coordination where necessary with other competent public organizations and with the affected companies.

8. Assignment of costs

The costs deriving from application of the Protocol shall be assigned in accordance with the following criteria:

- (a) The costs deriving from the management of radioactive materials detected, in either metallic materials or resulting products, shall be borne by the subscribing company, without prejudice to the possibility of these being applied to the supplier or dispatcher where appropriate.
- (b) An exception to what is established in previous point 8.a) shall be the costs deriving from the management of radioactive sources detected in metallic materials from the Spanish national territory, which shall be borne by ENRESA, in accordance with the Second Additional Provision of Law 14/1999, of 4 May 1999, governing public tariffs and prices for the services rendered by the Nuclear Safety Council.
- (c) Actions taken by the Nuclear Safety Council as a result of the agreements embodied in this Protocol shall give the said Organization the right to receive from the subscribing company the cost involved in performance thereof, which shall be established in accordance with the stipulations of article 31 of Law 14/1999, of 4 May 1999, governing public tariffs and prices for the services rendered by the Nuclear Safety Council.
- (d) The prices for the application of the Protocol shall be affected in a complementary manner by national, Autonomous Community or local taxes, as established in the corresponding regulations, shall be revised annually and shall be published by the Technical Tracking Commission set up in application thereof.

9. Other aspects

In order to facilitate the performance of the tasks assigned to the Technical Commission for the tracking of the Protocol, established through agreement between the signing Parties on 5 February 2002, a technical Working Group is set up. This group shall be directed by the Nuclear Safety Council and its objectives and operating modes shall be subject to approval by the aforementioned Technical Commission.

Appendix 1

INFORMATION TO BE INCLUDED IN THE DECLARATION
FOR THE INCLUSION OF INSTALLATIONS BELONGING
TO COMPANIES SUBSCRIBING TO THE PROTOCOL ON
THE RADIOLOGICAL SURVEILLANCE OF METALLIC MATERIALS

1. Name of the subscribing company
2. Descriptive report on the installation
 - 2.1 Location
 - 2.2 Basic characteristics of the installation
 - 2.3 Description of processes performed
 - 2.4 Drawings of buildings, roads, entries, etc.
 - 2.5 Approximate average annual production
3. Description of surveillance and control system
 - 3.1 Automatic instrumentation
 - 3.2 Mobile instrumentation
 - 3.3 Process surveillance instrumentation
 - 3.4 List of procedures used in application of the surveillance and control system
 - 3.5 Brief description of isolation area
 - 3.6 Performance of in-house personnel or TRPU
4. Person responsible for radiological surveillance at the installation
5. Express declaration of subscription to the Collaboration Protocol for the Radiological Surveillance of Metallic Materials, with the signature of the person authorized by the company

Appendix 2

NOTIFICATION SHEETS

2. A. Detection of metallic materials at the entry to the installation (*)

Date of detection
IDENTIFICATION OF INSTALLATION OR DETECTION LOCATION
Detection location
Address
Contact person
Contact telephone
Contact fax
E-mail
ORIGIN OF LOAD
Country of origin
Supplier of merchandise (address, contact person and telephone)
Means of transport (identify truck, ship, container, etc.)
PRELIMINARY INVESTIGATION DATA
Average values measured by fixed instrumentation (wherever possible, attach ticket)
Environmental background radiation value in the area, in $\mu\text{Sv/h}$
Extent of the area in which there is an increase in radiation values with respect to the background
Maximum dose rate value in contact with the outer surface of the container, truck or wagon, in $\mu\text{Sv/h}$ (identify situation)
Maximum dose rate measured in driver's cab, in $\mu\text{Sv/h}$

(*) *The notification shall be made initially with the information available at that point in time. The remaining information shall be submitted subsequently, once it becomes available.*

ACTIONS PERFORMED FOLLOWING DETECTION (Circle the appropriate reply)	
Unloading and segregation from the rest of the load	YES / NO
Identification of material	YES / NO
Plastic coated	YES / NO
Shielded	YES / NO
Others (please indicate)	
IDENTIFICATION OF SEGREGATED MATERIAL	
Description of material (contaminated parts, radioactive sources with or without shielding, radioactive lightning rods ...)	
Photographic information attached (circle as appropriate)	YES / NO
Dimensions and weight	
Physical status (intact, deteriorated, oxidized, corroded, ...)	
Nature (lead, steel, ceramic, brass, aluminium, ferroalloy, copper, ...)	
Encapsulated source (circle as appropriate)	YES / NO
Housed inside the shielding container	YES / NO
Labels, signs, plates, marks	
RADIOLOGICAL CHARACTERIZATION	
Measure of dose rate in contact	$\mu\text{Sv/h}$
Measure of dose rate at 1 metre	$\mu\text{Sv/h}$
Material contaminated superficially with β - γ emitters	Bq/cm^2
Material contaminated superficially with α emitters	Bq/cm^2
Radioactive isotope(s)	
Activity or concentration of activity	Bq, Bq/g

(*) *The notification shall be made initially with the information available at that point in time. The remaining information shall be submitted subsequently, once it becomes available.*

Appendix 2

NOTIFICATION SHEETS

2. B. Detection of resulting products (*)

Date of detection:	
IDENTIFICATION INSTALLATION OR DETECTION LOCATION	
Detection location	
Address	
Contact person	
Contact telephone	
Contact fax	
E-mail	
IDENTIFICATION OF AFFECTED PROCESS	
Affected product (processed scrap, ingots, smoke dust, slag)	
Description of event (Brief description of event including time of detection, location and instrumentation used and radiological values obtained)	
Parts of installation affected (Identify parts of the installation and vehicles with radiation levels in excess of the background value for the area, take samples of all resulting products and perform analysis)	
Shutdown of process phases affected (If so, indicate date and time)	YES / NO
Exit of materials from the installation (If so, identify means of transport used and destination)	YES / NO
Notification of TRPU (If so, indicate name, date and time of contact and initiation of activities)	YES / NO

(*) *The notification shall be made initially with the information available at that point in time. The remaining information shall be submitted subsequently, once it becomes available.*
