



## OVERVIEW IN ARGENTINA ON SPENT/DISUSED RADIATION SOURCES

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Argentine nuclear activities have begun since about 1950. Since those days the peaceful applications of nuclear energy have been developed and together with them radioactive wastes have taken more and more relevance day by day. To deal with this special subject the Radioactive Waste Management Programme (RWMP) has been established.

Spent/disused radiation sources are a very important task to consider in the management of radioactive waste. A great number of sources have been received along these years by the RWMP. Tables with the different sources categories handled together with their figures and radionuclide activities will be presented. Also, it will be described the steps that have to be followed by the users/owners of spent/disused radiation sources to transfer them to the RWMP.

Once the sources are in the RWMP custody, they can be stored or they can be conditioned in order to be stored in an interim storage or disposed of. Table I shows how the different sources are managed, taking into account the radionuclide's half life, its activity and the available facilities.

Besides a record-keeping system for tracking all spent/disused radiation sources has been developed. It consists on a computerized database that contains essential information about the sources as well as the whole radioactive wastes managed by the RWMP.

The main objective of the waste management registry-database system is to collect, identify, process and follow the related information about the radioactive wastes among all the management steps. It is also able to calculate the actualized activity inventory for the storage and final disposal facilities.

In order to implement this system, it was necessary to write the related technical documentation. These documents established the radioactive waste acceptance requirements, that together with others integrates the Quality Assurance System applied to the radioactive waste management.

Regarding the disused sources little could be done. They are stored in an appropriate storage facility, but very few of them could re-entered to the market with other use.

All these activities are under the control of the Regulatory Authority, who is in permanent contact, through the inspectorate body, with the waste management operators as well as with the users/owners of radiation sources.

With regard to radium sources a campaign has been organized by both the RWMP and the Regulatory Body to collect all the radium sources along the country. This is a free cost campaign which is almost finished. The plan is to have all the radium sources safe stored in Ezeiza interim storage by the end of this year

Radionuclide	Typical Activity	Decay Energy (Kev)	Half-life	Origins	Applications	Management
<sup>60</sup> Co	50 - 1000 Tbq	γ(1173;1333) β(max.: 318)	5.3 a	Medical	Teletherapy	Interim Storage
<sup>137</sup> Cs	500 TBq	γ(662) β(max.: 512) e(624)	30 a	Medical	Teletherapy	Interim Storage
<sup>192</sup> Ir	0.1 - 5 TBq	γ(317) β(max.: 675) e(303)	74 d	Industrial	Industrial radiography	Decay Storage for about two years, then disposal at landfill
<sup>241</sup> Am/Be	1 - 500 GBq	γ(60) α(5486) neutrons	433 a	Industrial	Well logging	Cementation in stainless steel drums followed by interim storage
<sup>226</sup> Ra	30 - 300 MBq	γ(186) α(4784)	1600 a	Medical	Manual brachytherapy	Retrievable interim storage
<sup>60</sup> Co	0.1 - 10 Gbq	γ(1173;1333) β(max.: 318)	5.3 a	Industrial	Level gauge	Cementation in iron steel drums followed by disposal at LLSWT
<sup>137</sup> Cs	0.1 - 20 GBq	γ(662) β(max.: 512) e(624)	30 a	Industrial	Level gauge density gauge	Cementation in iron steel drums followed by interim storage
<sup>85</sup> Kr	0.1 - 50 GBq	β(max.: 687)	10.8 a	Industrial	Thickness gauge	Cementation in iron steel drums followed by interim storage
LLSWT: Low level solid waste trenches						
Table I: Spent/disused sources management						

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