

**WORKSHOP ON INNOVATIVE APPROACHES TO ACCELERATOR SCIENCE AND TECHNOLOGY  
FOR SUSTAINABLE HERITAGE MANAGEMENT**

**RLA1019-EVT2202072**

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**Institution:** Bolivian Agency of Nuclear Energy

**Country:** Bolivia

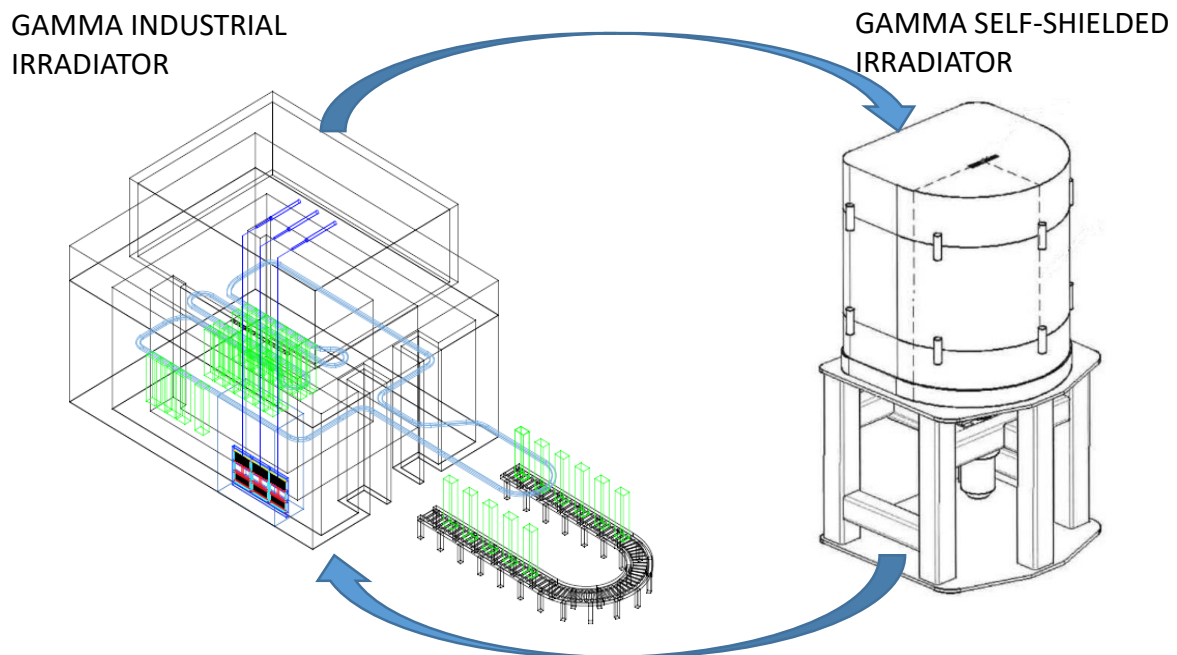
The aim of the Bolivian Nuclear Energy Agency in Bolivia is to develop, supply and commercialise nuclear technology goods and services for peaceful purposes, for which it is responsible for the construction and operation of the Nuclear Technology Research and Development Centre - CIDTN. The Centre for Research and Development in Nuclear Technology - CIDTN has the following components:

- Nuclear research reactor
- Cyclotron - Radiopharmacy - Preclinic
- Multipurpose Irradiation Centre

The multi-purpose Irradiation Centre has two main facilities:

- a. One Industrial Gamma Irradiator (1 MCi capacity);
- b. One Self Shielded Laboratory Irradiator (12 kCi capacity)

**Figure 1. - Multipurpose Irradiation Centre Irradiators**



Source: Bolivian Nuclear Energy Agency

The Multipurpose Irradiation Centre aims to:

- Preventing food-borne diseases
- Food preservation and cultural heritage
- Insect control
- Delayed germination and maturation
- Sterilisation of medical supplies

One of its applications is the conservation of cultural heritage using Gamma Irradiation technology from cobalt-60 sources.

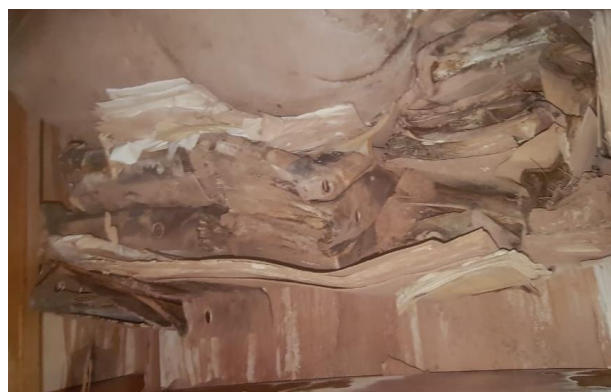
Bolivia has historical, artistic, palaeontological, archaeological, ethnographic, documentary, bibliographical, scientific and technical assets of great value. Bolivia's cultural heritage is distributed in different repositories in the country, and for its conservation, Bolivian conservators use conventional techniques, delaying the conservation process for several days.

The Multipurpose Irradiation Centre plans to start its operation with the irradiation of cultural heritage for conservation with the following institutions and focal points (end-users) of the RLA 1019 project:

1. The Cultural Foundation of the Central Bank of Bolivia. - Which has in its custody historical documentation considered the country's cultural heritage.
2. The Historical Archive of the Mining Corporation of Bolivia. - It holds important documentation on the protection of the country's mining industry.

Starting with the irradiation of documentation from the country's historic Mining Archive, whose documentation is in poor condition due to the humidity and environment in which it was found, with spores and mould, as can be seen in the photographs:

### **Photograph of Fungi, micro-organisms in documentation**



SOURCE: Photographs taken from the Mining Archive

Given the importance of the documentation of the Historical Archive for the country and the fact that it is difficult to treat by the preservationists due to the danger of diseases that could be caused by its handling, it is intended to inactivate the fungi and microorganisms present in the documentation by means of irradiation in the Multipurpose Irradiation Centre. After irradiation, the documents will be digitised and kept in appropriate environments for their preservation.

The Multipurpose Irradiation Centre, which is already in place, is expected to start operating this year. Given that the technology is new in the country, there is a need for the experience of experts and countries in Latin America with experience in the use of technology in the application of nuclear techniques for the conservation and characterisation of cultural heritage.

One of the areas that needs to be strengthened in the country and which is of great interest to the RLA 1019 focal points, end-users, is the use of nuclear techniques for the characterisation of cultural heritage.