Why graduate courses in Brazil do not fullfil market's need on accelerators specialists?

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Monopoly

- Following global trends the production and distribution of radiopharmaceuticals are, since 2006, no longer a state monopoly in Brazil.

- Currently the Brazilian congress addresses the uranium exploitation activities and the remaining monopoly in this area is also expected to be broken.

- This new scenario brought to a number of initiatives by the industry in starting at both national and international levels looking for establishing a supply chain of materials initially destined to medical purposes.

R2

- R2 – a Brazilian private organization – has started an ambitious project to import, license, install and operate 3 accelerators;

- Mainly designated to production and distribution of ^{18}Fluorine targeting the worldwide expanding PET-CT machines market.

- The first action taken by R2 was a search for qualified professionals in the fields of Physics, Engineering, Pharmacy, Management, Procurement, Nuclear Law and Information Technology was performed.

Issues

- It was then noted that the lack of human resources in the mentioned areas of study was beyond expectations.
- There were no fully dedicated education courses that would fulfill the company needs.
- Most of experienced professionals in these field is retired or in process of retiring. Even in the governmental agencies on health and nuclear applications the lack of qualified personnel is a reality.
- No specific regulations concerning accelerators nor the licensing process.

Causes

- Firstly, the long term of Union's monopoly regarding the production, usage, handling, mining and distribution of radioactive material which remained up to 2006 and, secondly the wide negative concept of the usage of radioactivity (and radioactive material) which still remains.

Heritage

- There education centers did not encouraged the preparation of new specialists in this field

- The culture of risk perception due to the nuclear technologies usage.

Training

- The way forward was then to start preparing our own personnel: for the ones hired without background in nuclear field the education process had to be started from the very basics – i.e. concepts of the radioactivity, licensing, regulations, procedures, safety culture, etc. - No need to mention that the initial six months gap had to be extended to, at least, one year.

Conclusions and motivation for discussion

- Breaking down a monopoly is not enough to enable a country to get free from importation of radiopharmaceuticals. It seems to be necessary taking advanced steps to fulfill market with qualified human resources;

- The government, through national agencies, should take the initiative – as recommend by the IAEA – to discharge their responsibilities in contributing for the establishment of a clear regulatory regime and for the formation necessary expertise;

- Industry should be able to start developing its own expertise while pushing/encouraging governmental agencies and educational centers to accomplish their attributed tasks;

Conclusions and motivation for discussion

- Cooperation at regional and international levels may be a way forward in minimizing the barriers for the establishment of a independence in the field of radioactive material for medical purposes;

- The experience and lessons learned in the field of radiopharmaceuticals production may be used to avoid similar problems in the uranium mining/milling when the state monopoly finally ends.

Thanks!!!

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