

the charged particle beams and, in the case of BNCT, by expanding further the properties of new boron compounds that deliver highly localized doses to tumor cells. The latter are more related with the intrinsic properties of high ionization density particles, that create complex chromosomal damage and inhibits proliferation in a very effective way. Both modalities also benefit from the use of concomitant applications and procedures, which together with irradiation increase the tumor control and minimize the toxicity of the treatment. During this lecture, examples of developments and applications will be shown, and the importance of expanding regionally these options in pursuit of achieving a benefit to patients and, at the same time, increasing the scientific and technological capacities of the countries of the region.

Keywords: BNCT, Proton, Therapy

KLBN-05. - Women in the nuclear field promoting Latin American integration

Nelida Lucia Del Mastro¹, J.L Gervasoni²

¹Centro de Tecnologia das Radiações, Instituto de Pesquisas Energéticas e Nucleares, IPEN/CNEN (São Paulo, Brazil),

²Instituto Balseiro, Universidad Nacional de Cuyo, CNEA (Rio Negro, Argentina)

Nuclear energy is used for the generation of electricity, but also for the production of radioisotopes, desalination of sea water and also for the production of hydrogen. Activities in the nuclear field are in the area of science, technology and innovation that has long belonged to an essentially male domain, in which the contributions of women were neglected or underestimated. The central idea for the creation of Women in Nuclear, WiN Global, was to support and encourage women working in nuclear science and technology and encourage the promotion of understanding and knowledge of the benefits of the peaceful use of nuclear energy by the public. WiN Global currently has predominantly female members coming from 129 different countries, belonging to chapters or individually. Today, WiN Global is integrated by 53 WiN Global chapters. Forty-nine countries have their own chapters and there are also regional and international ones. The history of Latin American integration started during the political independence movement of the countries of the New Continent. Since then, up and downs were overcome in order to keep a regional ambience of good relationship. In the present study, a new form of integration is presented by the efforts of the women working in the nuclear ambit. This important movement involves Latin American WiN chapters (such as WiN Argentina, WiN Brazil, WiN ARCAL) promoting activities for the integration of our region. In order to quantify, to some extent, the participation of Latin American women, this paper presents a survey crossing data of the number of related publications to help to address an objective analysis of the trend of this integration

Keywords: Women in Nuclear, WiN, nuclear energy, Latin American integration

SPBN-01- The nuclear technologies: innovations for minimizing the environmental impact

SPBN-01.01 - Future of Nuclear Energy Beyond Electricity

Leonam Dos Santos Guimarães¹

¹Eletronuclear, Eletrobras Termonuclear S.A (Rio de Janeiro, Brasil)

Nuclear energy will continue to play a key role in the world's low-carbon energy mix, with global nuclear electrical capacity projected to double by 2050. The world's nuclear power industry has not only proven that it can be flexible even during a pandemic, but it also continues to serve a vital role in sustainable climate change mitigation. Non-electric applications powered by nuclear energy could present sustainable solutions for a number of energy challenges current and future generations will have to face. There is growing interest around the world in using nuclear energy for such applications as seawater desalination, hydrogen production, district heating and various industrial applications. Industrial applications and nuclear cogeneration involve the integration of nuclear power plants with other systems. The heat generated by the nuclear power plants can be used to produce a vast range of products such as cooling, heating, process heat, desalination and hydrogen. The use of nuclear energy for cogeneration provides many economic, environmental and efficiency-related benefits. Most of the world's energy consumption is for heat and transportation. Potential is in penetrating Transportation sector (Nuclear Hydrogen Production for H₂-FCEV) and Heat sector (Desalination, district heating/cooling, heat for industry). The nature of industrial heat market is highly fragmented, hence very much suitable for Small Modular Reactors (SMR). Individual large users with energy intensive industrial processes (desalination, petrochemical, district heating... etc) cover the remaining portion of the industrial heat market with requirements up to 1000 MWth, and exceptionally even more. Large reactors for cogeneration could fit in industrial parks. But there are a number of Challenges for Cogeneration: Public acceptance; National position (political will, Government commitment); National Regulations including licensing issues; Availability of qualified human resources; Selecting the most appropriate NPP based on demand and grid capacity; Disparity between characteristics of nuclear reactors & heat markets; Industry trends (Require small amount of heat); Buy energy but not risk build it; Demonstrate newly NPPs tailored for industry (HTR); Economics; Licenseability of tailored cogeneration NPPs with ensured safety and Siting.

Keywords: nuclear energy, heat transport applications, energy

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