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THE NUCLEAR ENERGY, PUBLIC OPINION AND THE AWARENESS OF WORK OF NUCLEAR INSTITUTIONS

Valéria Pastura^{1,2}, Antônio Carlos de A. Mól^{1,2}, Ana Paula Legey^{1,2} e
Celso Marcelo F. Lapa^{1,2}

¹Instituto de Engenharia Nuclear

²Programa de Pós-Graduação em Ciência e Tecnologia Nucleares do IEN

Rua Hélio de Almeida, 75

21941-906 Rio de Janeiro, RJ

vpastura@ien.gov.br

mol@ien.gov.br

analegey@hotmail.com

lapa@ien.gov.br

ABSTRACT

With Brazil facing a prospect of expanding its nuclear-energy sources and the development of new nuclear techniques there is a need for imminent integration in the nuclear industry with the tool information. In this paper we propose the creation of a program aimed at the servers of the institutions that make up the Brazilian Nuclear Sector, with a view to preparing these to become multipliers in the dissemination of activities developed by the institution so that they can, with strong arguments, defending the work of industry criticism of this form of energy. The goal is to create an important process of change of mentality and attitude among people who relate to the servers in the industry, expanding the debate on the subject, so that society, clearly and free of prejudices can understand the benefits the use of nuclear energy.

1. INTRODUCTION

The energy matrix in Brazil is predominantly water. However, there is the potential depletion of hydroelectric perspective in 2025, as the country is going through a time of irregular rainfall and almost completely emptied of its reservoirs. Hence, this scenario is changing and currently is giving way thermoelectric, which they use as heat source coal, gas, diesel oil and fuel. These are accounting for almost 30% of the energy generated in the country and the trend is increasing participation to complement the Brazilian energy matrix[1].

Nuclear energy has been identified as a solution to expand the array and has more competitive advantages than other energy sources, such as competitiveness, stability, availability - demonstrated the operation of Angra 1 and 2 - security of supply fuel (we are the 6th world reserve of uranium) and possess complete mastery of the fuel cycle nuclear[1].

However, there is a key dimension when it comes to nuclear energy in Brazil, for reasons that are different. This dimension reaches even more sensitive level, in the case of clarification and formation of public opinion.

Much could talk about their own reasons and characteristics, because the country over the years, brought to nuclear energy an extremely sensitive reality distrust and sectarianism of society ranging from the shape and political environment in which nuclear energy was born to the model exclusively public management we have today. However, it is impossible to

deny the contributions of this form of energy to society, regardless of the electrical appliance, in fields such as medicine, industry, agriculture, culture. These applications are still poorly known, not only by the barriers described above, but by other factors that prevent the benefits are understood and accepted by the population.

For the scenario and prospects described in this paper materialize, actions and measures in different fields should be taken immediately as staff training, investment in science and technology, administrative organization of the sector and advances in the legal framework.

Therefore, with a view to a future and ambitious public education project on nuclear area, this paper proposes and establishes internal actions aimed at preparing the nuclear area servers to act when necessary, as enlightening and propagators of typical nuclear issues and basic that should be taken to society.

2. PUBLIC OPINION - SITUATION OVERVIEW IN BRAZIL

In fact, it is observed almost everywhere in the world that nuclear energy is subject of contestation or dispute, because the image that has been created in recent decades is the radioactive monsters, planets exploding as a result of nuclear testing, which influences significantly in the thinking of the public on this technology.

Moreover, until today, the nuclear area outreach activities are seen by both the media and the public as a way to influence rather than inform, which carries an unfavorable reception. In Brazil this problem is even more accentuated for some reasons, como[2]:

- the lack of greater participation of the population in the decision-making process on the different ways of using this energy;
- opposition to nuclear power by the scientific community, which is believed excluded from the planning and enjoys reputation with the public;
- the lack of systematic information addressed to the mass media, reinforcing the almost exclusive access to international sources, which convey both opinions as facts related to various nuclear activities in Brazil, highlighting negative aspects around incidents in facilities;
- a little articulation between institutional sources of information the nuclear area that could act systematically and work as an alternative to the aforementioned channels.

Another aggravating factor is the fact that, at the national level of the institutions of the Brazilian nuclear sector, part of the server framework ignores the work done by his institution.

3. METHODOLOGY

3.1. Proposal for indoor training the Brazilian nuclear

It is common within the institutions of the nuclear industry that the servers that are not directly involved with the core business completely unaware of what is developed in your institution. The result is that there is no "link" between them and the institution. The server

"did not wear the shirt" because it does not feel engaged. It creates a process of alienation, since there is no identification with the core business and also there is, by the institution, the interest in promoting actions that make this interaction become strong and consolidated for the server to become an agent multiplier of activities at your institution.

On the other hand, the servants of the area-end also sometimes unaware of what is developed in other sectors of its institution and even being developed by other institutions in the Brazilian nuclear sector.

Thus, there is the first necessity of direct action and implement activities to motivate servers, creating a climate of confidence and encouraging participation and seek to remove barriers between different areas. In this environment, the server will be the main multiplier of jobs that are developed in your institution and this is the first step so that people can know the nuclear area.

Note that the servers are the most important pillar of every organ and direction competes keep them abreast of what is being done, showing them their key role in the development, progress and public acceptance of the institution for which they work.

Another important point is the standardization of institutional language, as there will be only properly dialogue with society in informing and clarifying the servers. This goal can be achieved with the creation of an information program that includes internal stakeholders in an educational process that should be based on dialogue, keyword for communication. The program should involve management, researchers and multiple segments that operate in similar activities and that everyone is aware of their role as active subjects in the communication processes of the institution. The aim is to involve the server showing its importance as a subject of information to external audiences. To this end, the institution should build a program that encompasses:

- critical assessment as to disclosure requirements of its nuclear activities, identifying your values, desires and trends;
- promoting unification of concepts aimed at consolidating the organizational culture, allowing the participation of all to disclose the identity and the vocation of your institution;
- analysis of existing initiatives for the education sector, media and information within institutions to identify potential multipliers that can, in a didactic way, share his knowledge about the benefits of the use of nuclear energy;
- conducting training courses for the training of human resources, specific to the educator in the field of public information for the nuclear area;
- wide dissemination of technical and scientific articles in specialized editorial motivating spaces, including guidelines on nuclear energy issues with all segments of the press;
- conducting internal events for dissemination of technical-scientific works that are being developed and, where possible, it is emphasized that there is a direct application of this work to society;
- integration between the different institutions of the Brazilian nuclear sector through regular technical visits, given the widest possible range of servers, including the support activities, to know all activities involving nuclear energy.

This internal work should be permanent, so there is the involvement of steadily servers, as that will provide your update with respect to each new activity that the industry develop and will provide reassurance and confidence to the server "wear the shirt".

3.1.1. Case - Servers children of error in denounce examination of national issue

Corroborating what has been explained above, in December 2014 the Brazilian Association of Nuclear Energy / ABEN - non-profit organization that brings together over 1,000 associates in over 30 years of experience - began receiving complaints about a formulated question in exam entrance exam. Many professionals began to hear of his own children who were offended with a question of evidence. The question said, erroneously, that nuclear plants cause thermal pollution in lakes, rivers and mares[3].

The issue came to ABEN children through servers of the Brazilian nuclear sector, who were offended with how nuclear energy was treated in question. They complained to the parents, who in turn complained to the association.

The ABEN sent a note of repudiation to the competent bodies responsible for testing, explaining the process of nuclear power generation and complaining that the issue was prejudiced and biased and emphasizing that the mistake took the wrong information to millions of young people, causing irreparable damage to image of nuclear power in the country.

The servers in the industry felt as villains of nature and that's the kind of thing that leads society to a false idea about nuclear power, and that can cause a huge damage to the credibility of the Brazilian nuclear sector.

The attitude of the children of servers reinforces the fact that the family environment is the first step to reach the goal of informing the population about what really is nuclear energy.

3.1.2. Proposal for external public to nuclear area: external vision - a direct consequence

A second step could be aimed at raising awareness and motivation of public opinion on the use of nuclear energy, which can be initially achieved through a labor-intensive wide dissemination of the benefits that this brings energy cleanly. A starting point are the medical applications that benefit millions of people daily, considering diagnostic with radiation and radiotherapy, or attract public attention to social applications.

This image shows to society that the social cost is lower than it would be if there was no access to this technology and helps to clarify the process and reducing prejudices surrounding nuclear energy and people working in the area.

Consolidated this step, the following purpose is to promote the use of nuclear energy in industry, agriculture, the environment, combining information on investment that the Brazilian company is performing in the development of human and material resources for important technological achievements in the development of the nation .

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The external view of change can only be achieved if the information is passed transparently on the current state of nuclear power in the country, clarifying what is nuclear power, how it is produced and what the strategic role it plays as an energy alternative to a developed country.

A change of mentality and public attitude depends directly on how the nuclear industry will transmit this information to the various segments of society, to educate and motivate the public about the use of nuclear techniques, emphasizing the benefits, especially social applications and environmental, the results of research and development in the nuclear field.

4. FINAL CONSIDERATIONS

For the purpose of disseminating nuclear energy and its many benefits to society succeeds, it is important to have awareness of the institutions that form the Brazilian nuclear sector, the main attitude is the internal change of activity in relation to your servers.

The biggest concern is that its workforce is prepared and informed about the activities developed in each institution so that they can, with strong arguments to defend the work of industry criticism of this form of energy. It creates an important process of change of mentality and attitude among people who relate to the servers in the industry, expanding the debate on the subject, so that society, clearly and free of prejudices, can understand the benefits of use of nuclear energy.

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