*2021 International Nuclear Atlantic Conference – INAC 2021*
*Virtual meeting, Brazil, November 29 – December 2, 2021*

ISBN: 978-65-594-1256-3

# New Tools of Public Communication on Radioactive Waste Disposal Projects

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## 1. Introduction

Social communication is a phenomenon that follows, evolves and transforms the society throughout time. During the civilization's process, technology enabled the possibility of expanding this communication, culminating in the internet and social media, once they are excellent tools to spread and share information. Nowadays, communication is way more complex than it was in the past [1].

It is definitely necessary to define strategies when talking about a brand, a public person, a product or even an organization. Everything and everyone have a figure that needs to be shown in the best way possible. Communication, both verbal or nonverbal, are the tools responsible for that and an important characteristic is that communication is a channel linking emitter and receptor, therefore, it is necessary that both parties are aligned to achieve good results.

Another important aspect is the stakeholders of an organization. They are the different types of public that we may have to deal, knowing the best tool and way of communicating with. This is extremely important because this can help the institution to have a specific and direct conversation to each one of its publics that, in the case of a radioactive waste disposal project, can be: NGO'S, local population, government, students, the media and many others. Besides that, the tools of communication are very important as well, some of them are radio, television, social media, newspapers and magazines, among others. Once it exists, the best tool for each public, the communication is straight and focused.

Thus, the point that has emerged is exactly about how communication (or absence) can help with all these issues. Nuclear energy has been going through a series of barriers and obstacles, and it can be the result of bad communication [2]. There are many reasons why the information and the specific language cannot get everywhere [3]. A few of them, can be: an inferior connection to access internet; a poor education at schools; [4] a bad motivation in science and technology; unacceptably low investments in the research and development area; fake news; inadequate communication and many others [5].

To deal with this negative view is a hard situation, once population already has this negative impression of nuclear energy. Because of that, improving communication skills get to know all the stakeholders and the best manner of putting it in practice is the best alternative that may end many misunderstandings and wrong information shared [6].

If you research about the nuclear area, what usually shows up is fake news, incomplete information related to the topic or even false data with unknown sources and the communicators are responsible to avoid these

situations. Hence, the society has duties and rights to know about it. They have the right to know not only about how a nuclear institution works, what happens there and all the decisions that are made, but also to check if everything is happening by the laws and governance standards, with responsibility and ethics [7].

Thus, it is possible to notice that communication is not only necessary, but also a regulatory requirement, once the regulation CNEN NN 8.02 [8] says that licensing of radioactive waste disposal facilities needs to happen simultaneously before IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis) through public hearings. These hearings require the society's presence, to follow all procedures.

This requirement happens because of the environmental preservation, the rights of accessing information and also the people to have a significant power in the decisions. The involved society can accept or deny any installation of new radioactive waste disposal facilities.

The purpose of this project is to develop the understanding of and the tools for public communication about nuclear energy and, more specifically, radioactive waste. The goal is to improve the communication with all the different parties and also try to find new tools and technologies for doing it.

The objectives of this paper are to share the findings of the study of new tools of communication, aiming at contributing to the development of the nuclear area in Brazil, improving the debate with the population about the benefits of the area and planning an operation of communication with the society [9].

## 2. Methodology

This paper is a bibliographic research with a descriptive and exploratory purpose, aiming at bringing the topics with the public communication of enterprises that has an environmental impact and, consequently, an impact in the public opinion as well.

One step of the radioactive waste management is the final disposal of the waste somewhere, in a site that is chosen based on technical criteria, such as: geology, weather, ecology, etc.

The disposal site is, necessarily, located in a county, state and region of the country. The facility hosting Community has to agree with the criteria used in the siting process, and with the results of the applications of these criteria to the physical and human's geography of the local.

The acceptance of the hosting Community depends on whether everyone is well informed about all aspects of the Project, especially the safety aspect, so it is possible to evaluate the risks and benefits of this acceptance, not only to their existence and welfare, but also for the next generations.

Besides that, based on the literature and on the nuclear area projects, stakeholders are going to be identified for the communication activities of a research institute like IPEN, in issues related to radioactive waste management.

## 3. Results and Discussion

The collected information and results of this Project, in order to elaborate strategies, will be consolidated in the progress report, and can be used as a base for publishing in the nuclear area's events and specialized science journals.

## 4. Conclusions

Scientific and engineering projects with potential to raise social and environmental concerns are currently subject to an increasing pressure to take into consideration public opinion in their planning and deployment decisions. This issue is a double-edged sword. On the one hand, it is positive because the participation of the public, as a stakeholder in the decisions, confers legitimacy and support to the project's objectives. On the other, it is negative because frequently the public opinion about enterprises that involve difficult scientific matters or ethical issues may be tinted with misconceptions and prejudice. The public opposition based on negative perceptions that are contrary to sound scientific knowledge is a difficulty seldom overcome without a public communication program that foresees hearing the people's claims and speaking to them with clear and honest messages about the project issues. Such a communication program must include the modern concepts, technologies and media to reach the target public. To understand these concepts, to properly use these new technologies and to identify the correct media to convey the messages are a scientific endeavor as complex and as demanding as any other and is receiving more and more attention from those in charge of conducting scientific and engineering projects.

## Acknowledgements

We would like to thank Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPQ), for the resources provided to the development of this project. We also thank Instituto de Pesquisas Energéticas e Nucleares (IPEN) for the financial assistance.

## References

[1] B. V. Lewestein, "Models of Public Communication of Science & Technology" Editor, Public Understanding of Science (2003).

[2] C. L. Koerner, "Media, fear, and nuclear energy: A case study", *The Social Science Journal*, vol. 51. Colorado State University (2013).

[3] B. Moraes, L. Caires, H. Fontes, "Pesquisa revela que brasileiro gosta de ciência, mas sabe pouco sobre ela", Unicamp (2017).

[4] K. P. Abrahão, "O dilema da ciência básica", UNIFESP (2014).

[5] J. T. Arantes, "Fake news na ciência", Agência FAPESP (2019).

[6] D. G. Colombo, "A desigualdade no acesso à pós-graduação stricto sensu brasileira", *Cadernos de estudos e políticas educacionais* (2019).

[7] A. P. S. Veiga, “Comunicação pública e popularização da ciência: o ministério da ciência, tecnologia e inovação e suas unidades de pesquisa” Instituto de estudos da linguagem, UNICAMP (2015).

[8] CNEN, Comissão Nacional de Energia Nacional, “Licenciamento De Depósitos De Rejeitos Radioativos De Baixo E Médio Níveis De Radiação”, Rio de Janeiro (2014).

[9] H. Escobar, “Congresso aprova projeto que pode liberar 9 bilhões para a ciência em 2021”. *Jornal da USP* (2020).