

Research report: use of virtual reality for the development of a nuclear waste repository for training

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In Brazil the highest amount of waste generated is low and medium level of radiation [3]. Its management and final destination is important for society and the solution, proposed by the government, involves the construction of a National Repository for Radioactive Waste [1, 2]. Using Virtual Reality (VR), this article aims to develop an interactive virtual model of the repository to assist in the study, evaluation, training of personnel and planning of the installation to be implemented. The method was divided into four steps.

The first, called "Requirements Specification and Survey", aimed at acquiring information about the terrain and future buildings of the installation in the real world (Figure 1).



Figure 1. Topographic images of the L'Aube Repository

The next step, known as "Modeling the Environment" is the construction of the virtual environment itself according to the specifications of the previous method.

The third, called "Functionality Implementation" consists of inserting functionalities into the system, such as performing some tasks present in the repository. Finally, the last step is the interactive virtual model of the national repository for radioactive waste, with this tool users can study,

evaluate and train conditions/situations of the installation (Figure 2).



Figure 2. Virtual Repository for Radioactive Waste with Low and Medium Radiation Levels

In conclusion, the results have shown that the tool presented in this work is a possible application of the VR for dissemination and training in nuclear installations. Using this tool, users can visualize and plan strategies to be carried out in a repository, without interrupting the operation of the installation. It can be used for training and operations simulations, aiming to improve the processes without exposing the operators to the radiation.

References

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