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PROJECT APPROACH TOWARDS "RADIOACTIVE WASTE PROCESSING AND DECOMMISSIONING AT VINČA SITE, SERBIA/TC PROJECT SRB3004"

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The project "Radioactive Waste Processing and Decommissioning at Vinča Site"is part of the VIND program. The overall objective is to improve the safety of storage of radioactive waste on the Vinča site. This implies to carry out a detailed characterization, sorting, repackaging and rearrangement of the existing radioactive waste (currently stored in the deteriorated H1 and H2 hangars) and to store this waste in the new H3 storage facility on-site, as well as dismantling one of the former storage facilities. In this paper the strategy, organization and status of the project is explained.

INTRODUCTION

In the mid-1950s two research reactors were established on the Vinča site: the RA reactor (research reactor for high power irradiation services of a variety of experiments) and the RB reactor (research reactor to provide criticality research data). In 2004, twenty years after shutting down the RA reactor, the Serbian Government decided to institute the VIND program (Vinča Institute Nuclear Decommissioning) in order to commence decommissioning activities for the RA reactor and associated nuclear facilities.

The VIND program consists of three major projects, of which the first project has been completed:

1. Repackage and repatriate spent nuclear fuel to Russia;
2. Implement radioactive waste processing and storage capabilities on-site;
3. Decommissioning activities.

The on-going project is related to these last two projects. The purpose of this paper is to describe how the Contractor will implement all project tasks in order to fulfill the project aims.

PROJECT ORGANIZATION

The project is defined within a contract between the IAEA (the Client), PC NFS (the Beneficiary) and the Consortium TECNUBEL-IRE ELiT (the Contractor), in which TECNUBEL acts as leader. All project management activities and expert services lie within the responsibility of this Consortium. Through on-the-job trainings and thorough follow-up, the experts of the Contractor train the workers of PC NFS in the correct execution of the project tasks (e.g. source conditioning, waste characterization⋯).

STRATEGY

In order to achieve the most efficient implementation of all project tasks, a methodology was elaborated in which several tasks were enabled to be executed in parallel. In this regard the project began with the refurbishment of the Waste Processing Facility (WPF), after completing the required project documentation. Through the upgrade of the WPF it becomes possible to use its functionalities for the treatment of radioactive waste coming from H1 and H2. In the WPF several zones will be demarcated to perform the main project activities: source conditioning, smoke detector dismantling, segregation and repackaging of drums⋯

Sketch of the project site Pictures of the H1 hangar

During this early stage of the project, focus lies on the licensing activities regarding the permission to start these (nuclear) activities, since these particular licenses influence the starting time of the most crucial project activities.

Following the issuing of the necessary licenses, the Contractor will begin with the removal of waste items out of H2. After taking the necessary measures in accordance with the developed procedures (e.g. contamination measurements), the packages will be transported to the WPF where a pre-characterization will be executed. Subsequently drums will be brought into the ventilated tent, where they will be opened by trained workers and the waste will be sorted according to the waste type and in accordance with the Waste Acceptance Criteria. Sources will be brought into the designated room for source conditioning and smoke detectors will be entered in the designated room for smoke detector dismantling.

Following the segregation/conditioning/dismantling activity, the filled drums and containers will be transported towards the location next to the WPF where a final characterization will be performed. Subsequently the packages will be transported to their storage location in the H3 facility.

When a large part of H2 has been cleared of waste items, an area will be demarcated in this facility which will subsequently be characterized (and if required, decontaminated). This area will be used as a buffer for the waste from H1. The Contractor will thus at this phase in the project empty H1 in parallel with H2.This parallel approach enables a faster emptying of H1, which will thus be able to be characterized, decontaminated and

dismantled at an earlier stage in the project, in accordance with the approved documentation.
When all items have been removed as well out of H2 and it remains completely empty, a characterization campaign of this hangar will be performed. If required, decontamination activities will be performed.
CONCLUSION
The complexity of this project lies within the parallel execution of various tasks, requesting skilled project management and large expertise. At this moment (November 2015), works on-site will start. The Contractor' s proven experience in this type of projects enlarges its confidence to finalize the project tasks within the planned three years.

Country or International Organization

Belgium

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