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WP5: KBS-3V Emplacement tests in ONKALO (EMP)

DELIVERABLE D5:14
Interim report of project reviews

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Dissemination Level		
PU	Public	PU
RE	Restricted to a group specified by the partners of the LUCOEX	
CO	Confidential, only for partners of the LUCOEX project	

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1 Introduction

This document, “D5.14: Interim report on the project reviews” describes the reviews realised during 2013 in Work Package (WP) 5 ”KBS-3V Emplacement tests in ONKALO (EMP)” of the FP7 EURATOM project LUCOEX - Large Underground Concept Experiments.

This document is connected to the LUCOEX WP5 Task 5.5 Integration and dissemination / Sub-task 5.5.1. Integration. Posiva Oy acts as the WP5 Leader.

The LUCOEX project will be implemented in collaboration with a consortium of international participants:

- Svensk kärnbränslehantering AB (SKB) (Sweden)
- Agence nationale pour la gestion des déchets radioactifs (ANDRA) (France)
- Nationale genossenschaft für die lagerung radioactiver abfälle (Nagra) (Switzerland)

2 Reviews during the year 2013

The WP5 Sub-task 5.5.1. Integration mentions that internal and external experts will be invited to perform reviews on the WP5 project plan, interim results, demonstrations and final report.

The partners have been provided opportunities to provide feedback on the WP5 project during meetings and through email and telephone contacts.

During 2013 the WP5 activities have been presented to the LUCOEX consortium more widely in connection with the Project Progress Meeting 04 October 1 - 2 in Zurich.

3 Activities of WP5 during year 2013

Main task in WP5 has been manufacturing of Buffer Installation Machine, Buffer Transport Device and concept design of buffer installation problem handling tools.

3.1 Manufacturing of Buffer Installation Machine BIM

Manufacturing of BIM has continued in Konepaja Laaksonen Oy in Turku. The work started in July 2012. All steel components have manufactured and painted during 2012.

Assembling of frame and mechanical components started in the end of November and continued until the end of September 2013. Assembling of electrical and automation components started in February 2013 and continues until June 2013.

Assembling of BIM was slower than planned. The work was harder than expected. Also delivery of buffer block hoist winch was slow and transfer of equipments specifications caused inconvenience. During assembling of electrical components carried out mistakes leading to destruction of equipments, which replacements were difficult to obtain.

Finally in middle of October BIM was mechanically ready and transported from konepaja Laaksonen to warehouse to wait completion of Posiva's test facility at Onkalo site.

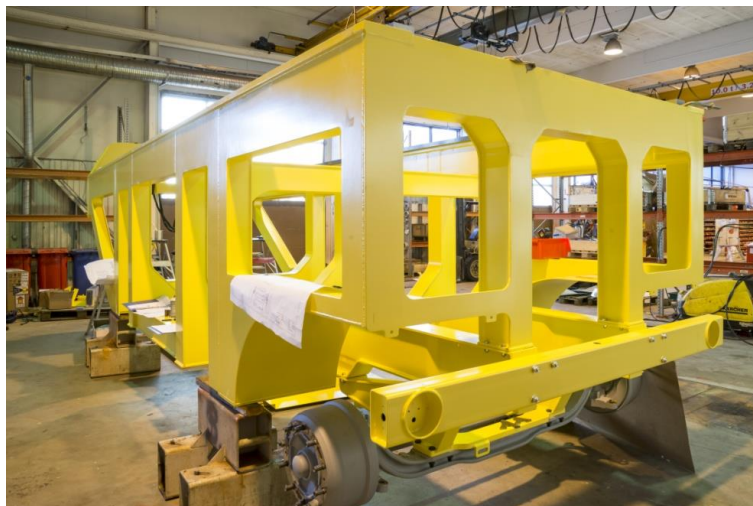


Fig. 1 The frame of BIM in konepaja Laaksonen.

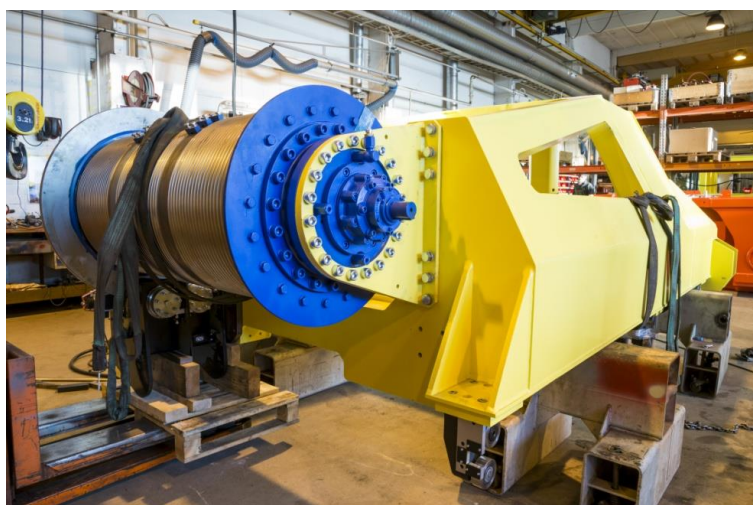


Fig. 2 The buffer block hoist winch.



Fig. 3 Testing of gripper in Konepaja Laaksonen.

3.2 Manufacturing of Buffer Transport Device BTD

Manufacturing of BTD (Fig. 4) started in Lehtosen Konepaja in Kokemäki. The work started in February 2013 and BTD was ready in August.

At first the steering of wheels was designed using hydraulic steering. During the delivery test was found that steering wheels was not working properly. Therefore the steering redesigned and repaired completely.

BTB was tested by artificial load which was equivalent to bentonite buffer blocks and container top during buffer installation (Fig. 5).



Fig. 4 Buffer Transport Device BTB.



Fig. 5 Delivery testing of BTB in Lehtosen Konepaja.

After testing of BTB, it transported to Olkiluoto warehouse to wait for the completion of Posiva's test facility at Onkalo site.

3.3 Development of problem handling tools

Design of water jet cutting concept started in the autumn. Target was design equipments for two situations: before and after canister installation. Before canister installation is possible to use a normal lifting equipment. After canister installation remote working is only way to work. Water jet cutting is one alternative for work remotely without damaging copper canister.

Design of tools for both problem situations started in the end of 2013.

4 Plans for the year 2014

Planned WP5 main activities include the following:

Three phase installation demonstrations of buffer block and pellet with full scale concrete and bentonite blocks will start in the beginning of 2014. The first phase demonstrations will be performed in Olkiluoto test facility. The second and third phase demonstrations will be done in Onkalo URCF in Olkiluoto. The second phase demonstrations will be done with concrete blocks and the third phase with bentonite blocks if bentonite block are available.

The demonstrating of quality control equipments will be done at the same time as the buffer block and pellet installation demonstrations.

The demonstration of problem handling tools will be done in the same test area and the same time as other demonstrations.

Internal and external reviews will be realized as planned and in addition if special needs arise.