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Dismantling of the RPV and Internals at Barsebäck 1 and 2

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Abstract

The Swedish BWRs Barsebäck 1 and 2 have been finally shutdown and will be decommissioned and dismantled starting around the year 2020. There are two main strategies for the handling of the reactor pressure vessels and internals. One strategic option is to remove and store them intact, and the other is to segment them and pack into appropriate waste containers for the coming final disposal.

Westinghouse has performed a study on behalf of Barsebäck Kraft AB, the operator of Barsebäck 1 and 2, regarding the segmentation alternative. The study will give BKAB a base for the strategic decisions regarding the handling of large components such as the RPV and internals, but also give input for the expansion of SFR for receiving decommissioning waste.

The study focuses on the time schedule, waste amounts, staffing and costs for the segmentation programme. The segmentation techniques are only covered briefly; a more comprehensive summary of segmentation techniques is suggested to be presented in a separate paper.

From the weight and dimensions of the RPV and internals as well as previous Westinghouse segmentation and packing experiences, the number and type of containers is calculated. The containers are also divided into different activity categories. Experience data gives input to the time schedule and necessary staffing and personnel category needs for the segmentation programme. This in turn, together with experience data from construction and development costs, gives input to the overall segmentation programme cost estimations.

The study shows that it is fully feasible to segment the internals and the RPV of Barsebäck 1 and 2 with the techniques of today. The paper will provide information on the results concerning the necessary technical arrangements, the time schedule, the number and type of containers and other specifics of the dismantling operation.