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Planning of one-piece removal of BWR reactor pressure vessels at Barsebäck Nuclear Power Plant, Unit 1 & 2

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Abstract

One major part of the decommissioning of a Nuclear Power Plant (NPP) is the dismantling of the Reactor Pressure Vessel (RPV) and its internals. There exist two major optional strategies for dismantling of a RPV and its internals;
- Segmentation and cutup of the RPV and the RPV internals at plant.
- One-piece removal of the whole RPV, with or without the RPV internals.

Scanscot Technology carries out, on the behalf of Barsebäck Kraft AB, a detailed study of a one-piece removal of the RPVs at the decommissioned Barsebäck NPP, as a basis for a future management decision regarding what strategy to apply for the dismantling.

The following three methods for one-piece removal are investigated in detail;
- Lifting with a crane
- Removal in horizontal position using tower gantry
- Lowering inside the reactor containment

The investigations include
- technical lifting aspects
- necessary building modifications and demolition
- radiological consequences
- cost estimations

for each of the three alternatives.