

## DECOMMISSIONING OF A SHUTDOWN SWEDISH URANIUM FACILITY – THE RANSTAD EXTRACTION SITE

Based on our long experience as a nuclear licensee, Studsvik is a leading supplier of nuclear decommissioning services. We utilize our unmatched decommissioning planning expertise and our extensive experience to ensure that decommissioning projects are completed safely, efficiently, reliably, and in a cost-effective manner. In many cases Studsvik’s services cover the entire process from planning to site clearance. We combine our deep knowledge in project management and strategy, radiological services, waste treatment technologies and licensing and safety assessments to reach the overall project goals.

The process of decommissioning is long and complicated, especially when dealing with old facilities. Old facilities often lack documentation and has poor or no background information. Knowledge about the background, including documentation on parts and items in the facility is necessary for efficient definition of the potential contamination fingerprint. The more you know about a facility and its history, the more efficient the decommissioning work will be, the less you know, the more investigations and work-arounds will be needed.

The decommissioning of the Ranstad facility took place during several years. The speed and activity level in the project varied over time, since unclari- ties relating to the facility background information led to challenges. Studsvik has been involved throughout the project, continuously working to es- tablish robust solutions that satisfy regulations for clearance, waste management and radiation protec- tion.

The Ranstad site is located in the south-west of Sweden. The site was built in the early sixties and extracted uranium from alum shale by acid leaching in the second half of the decade. During the seven- ties and eighties, the site hosted R&D activities. The Ranstad site has been under decommissioning for more than a decade, the last building was dismantled 2017.





**Studsvik has been involved in the decom project for many years and has had responsibility for important parts. This includes:**

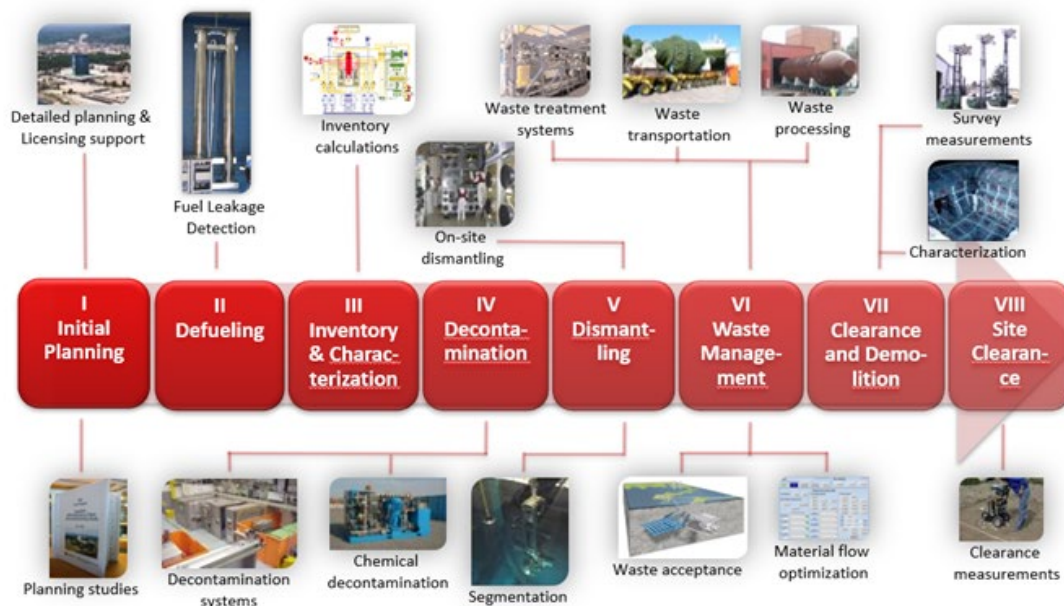
Throughout the project:

- Management team support throughout the decommissioning
- Radiation protection set-up and management
- Project management

Further areas of responsibility:

- Overall radiological characterization and clearance
- Formulating characterization and clearance program
- Free release measurements
- Activity inventory report – databases, waste plans and specifications, etc
- Free release instructions for different materials, etc
- Providing authority approved radiation protection staff
- Handling of authority contacts for e.g. transports, clearance applications, radiation protection, annual reporting, safeguard

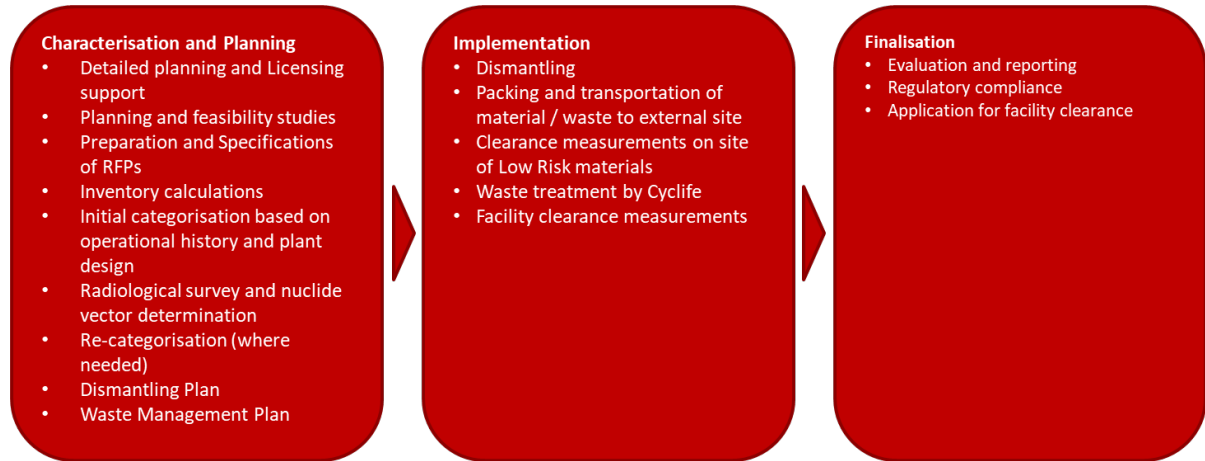
## The Decommissioning Process\*



\*As presented by Studsvik and Westinghouse during the annual Waste Management Symposium, 2016, Phoenix, Arizona



Besides our long experience, our main advantage is the ability to offer fully integrated turn-key project concepts. Together with our partners we cover all necessary services to perform complete decommissioning projects. Studsvik offers services in the entire range of a decommissioning project.



As a nuclear licensee since many years, Studsvik has been heavily involved in the decommissioning of some of its own facilities (the Active Central Laboratory, the Active culvert and Laboratory 1, the R2/R2-0 reactors and the U/Pu and general alpha laboratory). Besides these experiences at the Studsvik, Studsvik has several other decommissioning project references. Our range of clients in decommissioning includes nuclear power plants, nuclear fuel and research facilities as well as industrial companies.

#### Examples of Studsvik's decom projects:

- Ranstad Uranium extraction site
- Ågesta Heavy Water Reactor
- M/S Sigyn (SKB former SNF ship)
- MAX-lab at Lund University
- IFE Halden and Kjeller
- VTT OK3