Decommissioning Business at Fortum – Past, Current Market and Future

Open Business Day

23 November 2022, Paasitorni Ville Oinonen Otso Manninen



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Fortum's Nuclear History

- Mid-sized European energy company
- Loviisa NPP and co-owned nuclear fleet in the Nordics
- 700+ nuclear professionals

2015 2010 2011

• Decommissioning planning started in Loviisa in 1980s

2020

2018 ,019













Start of External Decommissioning Business

- Combination of competences
- Interesting market situation











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The journey so far
FORTUM IN DECOMMISSIONING

Decommissioning Market in Europe

- Only few ongoing decommissionig projects
- Decommissioning in Sweden most hectic in early 2020s
- Lithuania has RBMK decomissionig project ongoing
- Many countries entering decommissioning in mid 2020s
 - Belgium
 - Spain
 - Switzerland
- Germany & France about half of total number of units
- Temporary cool down on the market due to the energy crisis and following lifetime extensions. However, most of the plants are still approaching the end of technical lifetime.

Sweden

- Oskarsham 1&2 decomissiong is ongoing
- Barcebäck 1&2 decomissiong is ongoing
- Ringhals 1&2 decomissiong projects will start soon

Lithuania

- Ingalina NPP decommissioning project is ongoing
- RBMK reactor type
- 2 units
- Interesting challenges due to different design

Many countries entering decommissioning in mid 2020s

- Belgium
 - Doel 1, 2, 3 & 4 and Tihange 1, 2 & 3
 - 7 units decommissioning scheduled 2023-2025
 - Delays during current energy crisis
- Spain
 - Almaraz 1 & 2, Asco, Confrentes
 - Decommissioning scheduled 2027-2030
- Switzerland
 - Muhleber (starting), Beznau 1&2 (2029-2030)

Germany & France

- Germany 7 units will be dismantled at mid 2020s
 - All projects are contracted
 - Final disposal solutions still needed
- France has about 20 decommissioning project starting at 2020s
 - Most projects are contracted
 - Projects are dominated by French companies
 - Lots of R&D

Finland

• FiR1

- Planning phase done
- Dismantling starts 2023
- Loviisa 1&2
 - Lifetime extension 2027&2030 -> 2050
- Olkiluoto 1&2
 - 2038
- Olkiluoto 3
 - 2080-2120

Future possibilities

- Lots of European projects -> Lots of resources needed
- Decommissioning needs expertise from various fields
 - Dismantling
 - Waste management
 - Radiation protection
 - Manufacturing
 - Civil engineering
 - Radiochemistry
 - Transportation
 - Regulations
 - Geology
 -
- Partners and sub-contractors are necessary part of Project implementation

Future possibilities

- Strong co-operation with Uniper
 - Over 3 years experience
 - Implementation projects at Sweden and Finland
 - External services for Europe
- Partners & sub-contractors
 - Blue collar resources for exmp. dismantling, radiation protection, waste packing
 - White collar recourse for exmp. Civil engineering, Radiation safety, Waste management
- R&D
 - We see lots of possibilities to utilize for example robotics in decommissioning
 - New design tools for more complicated projects (optimization)
 - Manufacturing nuclear quality components

Thank you!

