

CONSTRUCTION AND OPERATIONS

Encapsulation plant and Final Disposal Facility for Spent Nuclear Fuel – Case Posiva

September 14, 2020 • Tiina Jalonen

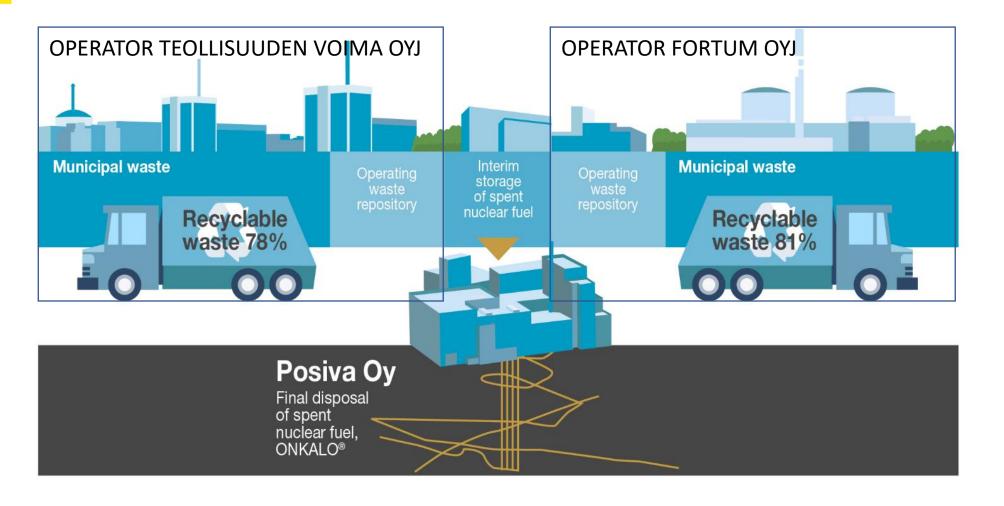


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ROLES IN RADIOACTIVE WASTE MANAGEMENT IN FINLAND

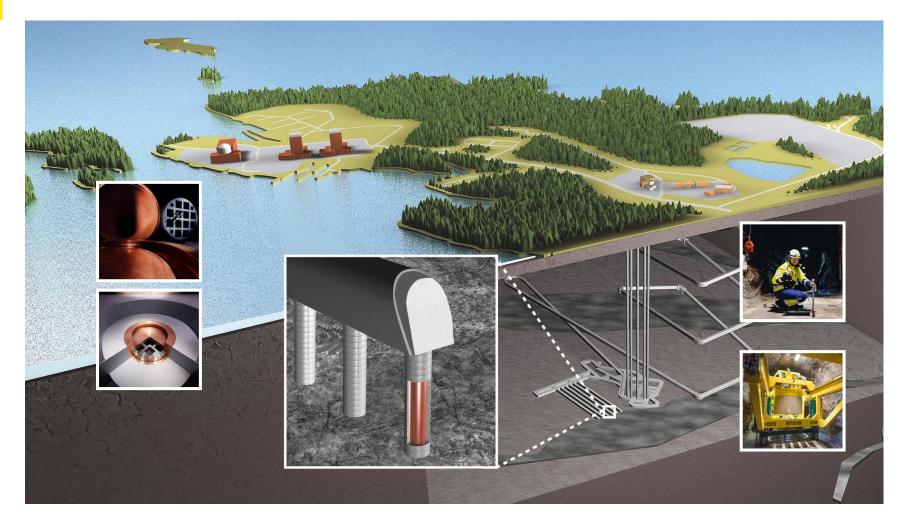


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SAFE AND FEASIBLE FINAL DISPOSAL CONCEPT AT OLKILUOTO



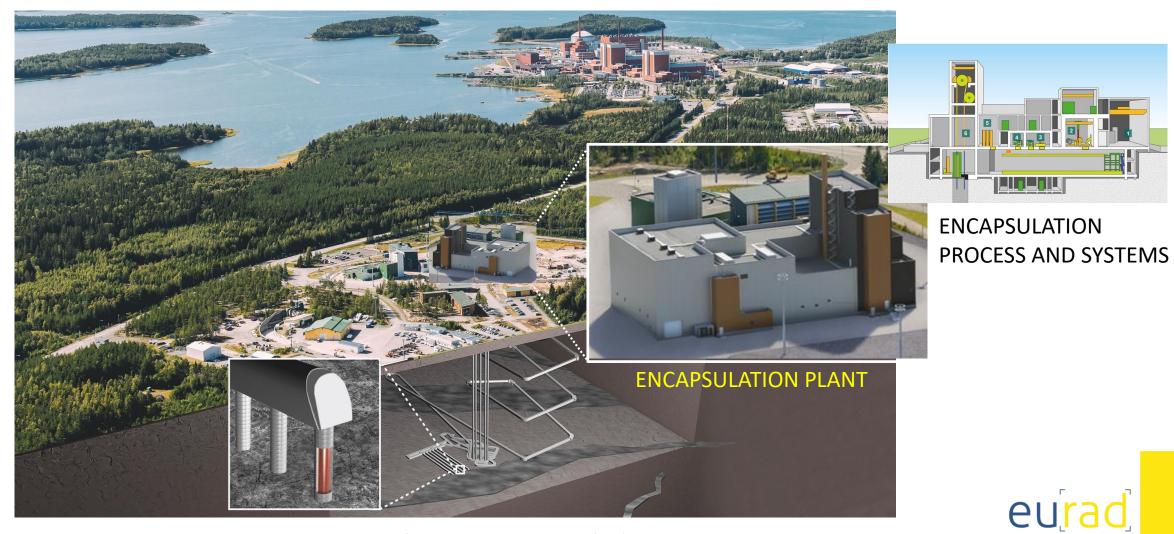


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ONKALO[®] SITE AT OLKILUOTO



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Posiva

ENCAPSULATION PLANT CONSTRUCTION SITE







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5

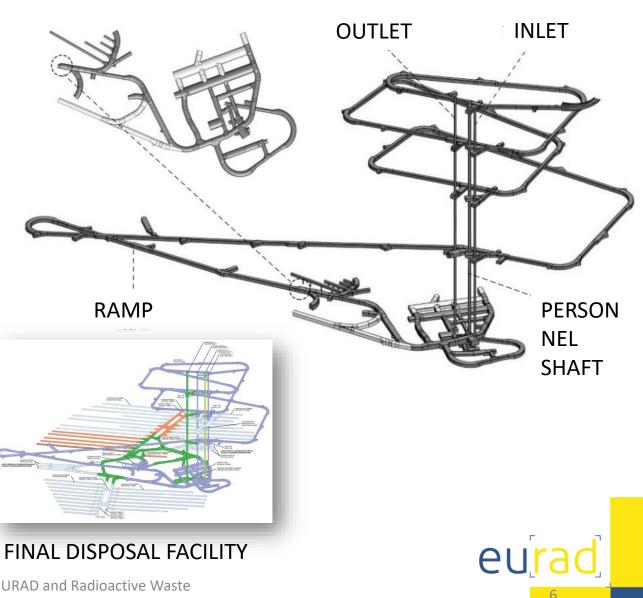
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ONKALO[®]

- Perform site confirming studies after Olkiluoto site selection
- Develop Construction Methods for a DGR
- Carry out demonstrations at the disposal level
- A learning experience for Posiva's own staff and contractors
- Both an underground research facility and a final disposal facility
- Rehearse construction under supervision of a nuclear safety authority

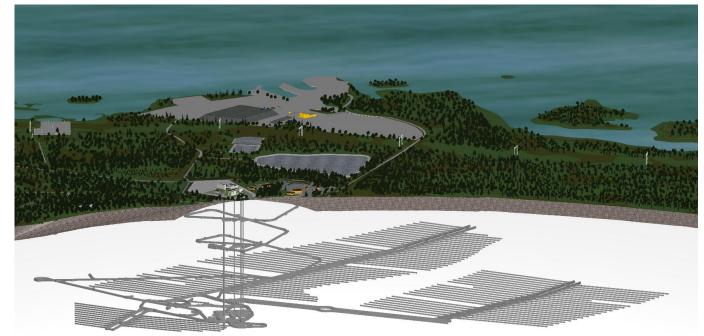


ONKALO

Posiva

CONSTRUCTION OF THE FINAL DISPOSAL FACILITY

- Repository capacity is 6500 tU (about 3250 canisters)
- The repository consists of four shafts, a ramp, central tunnels, deposition tunnels, auxiliary rooms for parking and maintenance, social rooms
- Depth of the tunnel system -400-455 m and the extent is about 2 km²
- The volume of the underground rooms about 2 million m³
- Tunnel length about 60-70 km in total
- Construction and operating time approximately 100 years







LIFE-SPAN OF POSIVA'S FINAL DISPOSAL FACILITY PROJECT – 150 YEARS

Construction of ONKALO Excavations of final disposal facility Construction of encapsu- lation plant Operation starts Stre INVESTIGATIONS, SELECTION OF THE CONCEPT AND FACILITYE AND THE CONCEPT AND FACILITYE AND THE CONCEPT AND FACILITYE AND FINAL DISPOSAL OF FUEL FROM DI 12/23 AND LO1/2 PLANT UNITS FINAL DISPOSAL OF FUEL FROM DI 12/23 AND LO1/2 PLANT UNITS	
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	CLOSURE OF FINAL DISPOSAL FACILITY
<u>1980 1990 2000 2010 2020 2030 2040 2050 2100 2110</u>	2120
Government decision on total schedule Government principle Con- struction licence Application for operating licence	

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8

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PREPARING FOR THE OPERATIONAL PHASE

- A programme launched aiming at gaining an operating license: an operating license application, as-built documentation of the facilities, commissioning test
- Production phases and disposal frequence decided
- Operating organization and outsourced resources defined
- Purchase strategy and processes to support the operations at the site and in the final disposal facility defined
- Supply chain definition and management including logistical solutions

