Workshop
“Experience of Reactors dismantling”

Ignalina NPP Decommissioning Programme
Ignalina NPP operation and closure

- **Type:** Twin RBMK-1500 water-cooled, graphite-moderated, channel-type power reactors
- **Design life:** 30 years
- **Years in service:**
  - Unit 1: Dec 1983 to Dec 2004
  - Unit 2: Aug 1987 to Dec 2009
- **Capacity:** Intended to supply NW region of former USSR (not Lithuania). One unit could produce 80% of Lithuanian electricity needs
- **Location:** Far north-east corner of Lithuania. Immediately bordering Latvia and Belarus. Approx. 2½ hours drive from Vilnius
- **Staffing:** Designed and staffed for fully autonomous operation. Initial 5000+ staff reduced to 4600 by early 2000s. Currently is about 2000

**Early closure:** Required to facilitate EU accession due to EU’s nuclear power plant efficiency standards
Decommissioning Plan

Operation

Unit 1: 1983-2004
Unit 2: 1987-2009

Preparation for decommissioning

- Opening Waste Routes (Projects B1, 2, 3/4, 10, 19, 25)
- Plan and design for dismantling and decontamination
- Engineering inventory / Radiological characterization

Post-closure operation

Dismantling & Decontamination

Defuelling of Unit 2 Core
Complete defuelling of Units

Demolition & Site Remediation

Operating Licence

Decommissioning Licence

Decommissioning of Ignalina NPP is co-financed by the European Union
R3 reactor core dismantling
Schedule

|-----------|-----------|-----------|-----------|
| **Operation**

- Unit 1: 1983-2004
- Unit 2: 1987-2009

**Preparation for decommissioning**

- D&D R3 U1,2 RWS Optioneering and EIAR development
- R3 licensing documents development (TD, SAR, GDS...)
- R3 General Data Set development and approval
- RWS Commissioning

**Post-operation**

- U1 D&D implementation in R3 zone
- U1 graphite stack retrieval
- U2 D&D implementation in R3 zone

**Dismantling & Decontamination**

- Reactors defuelled 25th February 2018
- Pools defuelled July 2022

- 2022-09
- 2026-02
- 2027-02
- 2028-02
- 2029-04

- 2027-02 - 2034-05
- 2029-04 - 2035-01

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Opening waste routes

OPERATIONAL WASTES

- BITUMINISED LRW REPOSITORY (B20)
- CEMENTED LRW STORAGE
- SRW STORAGE
- RETRIEVAL (B2)
- SRW PROCESSING FACILITY (B3)
- NEAR SURFACE REPOSITORY (B25)
- VLLW LANDFILL FACILITY (B19-2)
- BUFFER STORAGE (B19-1)
- EX-UNIT DECONTAM FACILITY
- IN-UNIT DECONTAM FACILITY
- INTERIM SPENT FUEL STORAGE (B1)
- MEASURING FACILITY (B10)
- FREE RELEASE

DECOMMISSIONING WASTES

- SRW STORAGE FACILITY (B4)
- SRW STORING FACILITY (B2)
- MEASURING FACILITY (B10)
- IN-UNIT DECONTAM FACILITY
- BUFFER STORAGE (B19-1)
- INTERIM SPENT FUEL STORAGE (B1)
- FREE RELEASE

New facilities

- Remaining after decommissioning
- For purposes of decommissioning
- Under establishment
- Under hot trial
- In operation

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SRW = Solid Radioactive Waste
LRW = Liquid Radioactive Waste
New waste facilities

New Interim Spent Fuel Storage Facility (B1)
• Storage Facility (place for 201 casks)
• Storage casks CONSTOR RBMK-1500/M2 (91 FA)
• Loading and handling technology/equipment
• Operational since September 2016

New Solid Waste Management & Storage Facility (B234):
• treatment of solid operational and from dismantling radioactive wastes, comprising:
  • Retrieval Facility (B2)
  • Processing Facility (B3)
  • Storage Facility (B4, for long and short lived waste)
• Operational since October 2017 – Hot Trial
New waste facilities

New Very Low Level Short Lived Waste Storage Facility (B19)

- Disposal of 60,000 m³ of retrieved operational wastes and dismantling Class A wastes, comprising:
- B19-1 Buffer Storage/Characterisation – in operation since 2013
- B19-2 Disposal Facility – under construction, completion – December 2019

Near Surface Repository for 100 000 m³ Low and Intermediate Level Short-lived Radioactive Waste (B25)

- After its closure the surveillance of the repository will be carried out for at least 300 years
- Technical Design and PSAR completed and agreed with state institutions
- Construction permit - May 2017
- VATESI construction licence - Nov. 2017
- Tender preparation – to be started – November 2018
New waste facilities

All new waste interim-storage or disposal facilities to be created on, adjacent to, Ignalina NPP site (radius ≈ 1.5m km)

- Simplifies permissions
- Reduces new infrastructure
- Reduces transport
- Facilitates physical protection
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Thank you for attention!