



HISTORY AND CURRENT STATUS OF SPENT FUEL MANAGEMENT AT DUKOVANY NPP

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NPP DUKOVANY





NPP Dukovany

- 4 reactor units VVER 440/213
- Original electric power: $4 \times 440 = 1760$ MW
- Present electric power: $4 \times 500 = 2000$ MW





Milestones:

- **1985: Unit 1**
- **1986: Unit 2 + Unit 3**
- **1987: Unit 4**
- **1995: Dry Interim Spent Fuel Storage Facility**
- **2005: Efficiency enhancement (460 MWe)**
- **2009-12: Power uprate to 1444 MWt ~ 500 MWe**





Historical overview:

- 1989 – SF shipment to Slovakia
- 1991 – call for tenders for storage
- Dry storage system of Castor DPC (GNS Germany) was chosen
- 1993 – Re-racking of SF ponds
- 1994 – start of dry storage construction – limited capacity
- **5.12.1995** – first cask placed
- 1996 – 97: return of fuel from Slovakia
- **7.3.2006** – last cask placed



SPENT FUEL MANAGEMENT DEVELOPMENT - 2



- 1997 – revocation of restrictive governmental decision
- New decision: additional storage hall for plant operation lifetime
- Capacity: 1340 tHM, 133 casks
- 2003 – start of construction
- 2006 – construction completed
- **22.12.2006** – first cask placed
- 10.9.2008 – final building approval



SPENT FUEL MANAGEMENT DEVELOPMENT - 3



- **Actual situation of ISFS: 29 casks**
- Supplier: Škoda Nuclear Machinery – contract till 2021



FUTURE OF PLANT SF MANAGEMENT



- **LTO:** Effort to operate NPP beyond design lifetime
- ISFS full round 2040, not enough for NPP operation after 2030
- Tender for casks after 2022 for advanced fuel
- Plan to build new unit



COUNTRY'S BACK-END STRATEGY



- **Fuel is not waste until declared as waste**
- **Operator saves money on state's account**
- **Waste will be handed over to RAWRA**
- **RAWRA is looking for place to build final deep geological disposal for SF and HLW**
- **Final disposal facility should be launched in 2065**
- **Other options to close fuel cycle still open**

CONCLUSION



- **Long-term SF storage in casks needed**
- **Limited design lifetime of current casks**
- **Ability of long-term storage shall be proved**
- **International cooperation is desirable**

THANK YOU FOR YOUR ATTENTION



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