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# **The Strategy of Site Selection for the Spent Nuclear Fuel Repository in Finland**

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Deliberation – Way to the Deep Geological Repository

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# Introduction

- Why the Olkiluoto area was chosen?
  - 1) Nuclear waste policy
  - 2) The site selection strategy
  - 3) Local decision-making

# Content

1. Finnish nuclear waste policy
2. Pragmatic siting strategy
3. Local decision-making
  - 3.1 Arm-wrestling in Eurajoki
  - 3.2 Cooperation with the nuclear industry
  - 3.3 Compensation negotiations
4. Conclusions



# Main actors at the national level

Actor	Duty
Parliament and Government	Political decisions (e.g. DiP)
Ministry of the Economics and Employment	Preparation of decision-making, supervision
Radiation and Nuclear Safety Authority (STUK)	Safety regulation
the licensees under waste management - Teollisuuden Voima (TVO) - Fortum Power and Heat (FPH)	- Execution of the preparations of nwm - Also responsible for the costs

# Main actors at the local level

- Posiva
  - nuclear waste management company
  - owned by two power companies
- Teollisuuden Voima (TVO)
  - operates two NPP units located in Eurajoki
- the municipality of Eurajoki/local politicians
  - a nuclear community since 1970s

# Finnish nuclear waste policy

- 1970s based on reprocessing
- 1978 obligation to carry out research and planning
- 1983 Governmental decision:
  - the primary alternative the storage of reprocessed high-level waste or SNF abroad
  - demanded that the licence holders should be prepared for final disposal in Finland if necessary
  - timetable of final disposal of SNF in Finland
- 1987 Nuclear Energy Act (incl. local veto right)
- 1994 Amendment of the Act; the ban on export and import
- 1995 Posiva established
- 1997-9 Implementation of the EIA procedure
- 2000 and 2001 the Decision-in-Principle

# Timetable for SNF final disposal

- 1980–1982 Suitability study with safety analyses
- 1983–1985 Preparation for the preliminary site characterisation
- 1986–1992 Preliminary site characterisation in chosen areas (5-10 sites)
- 1993–2000 Additional siting studies (2-3 sites)
- 2001–2010 Detailed studies of chosen disposal site and preplanning of the siting and the encapsulation plant
- 2011–2020 Planning and construction of the disposal site and the encapsulation plant
- 2021–2050 Final disposal facility is operational

# Pragmatic siting strategy

- 1985: 101+1 rock blocks as a result of the systematic selection and elimination
- 1987: five sites selected represented different geological environments
- 1992: two sites excluded because of complicated bedrock structure
- 1997: a new site due to its special position as location of a NPP → four sites
- 1999: Olkiluoto chosen

## **Phases of stakeholder involvement in the site selection process in 1984–99**

- 1984-86, With permission of the landowner
- 1986-87, Negotiations with the local authorities
- 1987-92, Remediating the information deficit of the local public
- 1993-96, Engaging in two-way communication with local people
- 1996-99, The two main arenas of interaction: the EIA procedure and the Vuojoki working group

# The arm-wrestling in Eurajoki

- nuclear waste discussed already in the early 1970s when the construction of NPP was approved by the municipality
- prerequisite that nuclear waste should not be buried in Eurajoki
- a written undertaking by TVO in 1980

# The arm-wrestling in Eurajoki

- In 1987 Olkiluoto chosen as one of the five sites for preliminary characterization
- In 1992 the municipal report of Eurajoki:  
*”the council must act so that no final disposal of high-level nuclear fuel will take place in Eurajoki municipality”*

# Co-operation with the nuclear industry

- In 1994 the negative statement removed from the municipal report after a vote in local council
- In 1995 a cooperation agreement, goals:
  - the Municipality: to ensure real estate tax revenue
  - TVO: to ensure its preconditions for operating the NPP, incl. nuclear waste management
- Since 1996-7 discussion on the location of the SNF repository

# Co-operation with the nuclear industry

- In 1998 and 1999
  - The municipality strategy: the Olkiluoto Vision (incl. a positive view of additional nuclear energy and the SNF repository)
  - The Vuojoki working party task to consider utilisation of the Vuojoki Mansion, further preparatory tasks
    - negotiations on the compensation

# Phases of the compensation negotiations in Eurajoki

- 1) Setting the targets for the Vuojoki working party
- 2) The initiative of the Municipality of Eurajoki
- 3) Compensation for the decreasing tax revenue
- 4) Compensation for covering the loss due to the new appeal of TVO

# Compensation package

The Municipality leased the Vuojoki Mansion estate to Posiva

- Posiva's loan to the Municipality 6.9 M €
- TVO's loan to the Municipality 2.35 M €
- The Municipality sold some water areas to TVO 0.84 M €
- TVO's loan for construction of the ice stadium 0.5 M €
- TVO and Posiva paid into the Business
- Development Fund of Eurajoki in 2000-2004 0.25 M €

# Conclusions

- The aim: to analyse the site selection process for an SNF repository
- the three subtasks:
  1. the formation of Finnish nuclear waste policy
  2. the changes in the site selection strategy
  3. the local decision-making and the negotiations on compensation

# 1. The formation of Finnish nuclear waste policy

- from reprocessing to final disposal of SNF
- direct final disposal as an alternative since the early 1980s
- became only in the mid-1990s the joint aim of the power companies
- establishing Posiva in 1995 helped the industry to focus resources

## 2. The changes in the site selection process

- geology as a site selection principle given less emphasis after the early 1990s
- aspects of the implementation, incl. local acceptance
- decisive criteria non-geological in nature
- competition between the candidate municipalities

## **3. The local decision making and the negotiations on compensation**

- the economic situation of the municipality of Eurajoki - dependency
- activity of local politicians in negotiations
- enough trust in safety
- the vision of the municipality: a nuclear community

**Thank you!**