
RECENT DEVELOPMENTS IN GERMANY IN RADIOACTIVE WASTE DISPOSAL

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Historical Outline

Repository Development

- Morsleben: Operational Waste (1980's until 1998)
- Konrad: Non heat-generating waste, under construction
- Gorleben: Heat-generating waste, underground survey starts 1990's
- Asse mine used only as URL since 1978, currently under decommissioning



— Agreement on Lifetime Extension —

In 2009 energy supply and climate protection concerns prompt NPP service life extension discussions

- **After controversial debates the Federal Government grants NPP lifetime extensions between 8 to 12 years**
- **But after phase out of the plants there was no intention to replace them with new built nuclear**
- ***Nuclear power is declared only a transitional technology***
- ***The final goal is electricity supply based on renewables***
- ***Rapid wind, solar, and bio-gas build-up highly subsidized (paid by electricity consumers)***

Effect of the TEPCO Fukushima Daichi Incident

The TEPCO Fukushima Daichi NPP incident changed completely the view of nuclear power in Germany

- The incident received *very high* coverage in all media
- Media usually refer not to the *Great Easter Japan Earthquake and Tsunami* but to the ***Fukushima Catastrophe***
- Thereafter **ALL PARTIES** vowed to abandon nuclear power
 - *Eight NPPs were immediately ordered to stop*
 - *For the remaining 9 NPPs fixed phase out dates were ordered (the 3 last ones in 2022)*

Repository Projects in Germany

- 1. Morsleben deep LILW repository, awaiting the license for decommissioning**
- 2. Konrad deep repository for non-heat-generating waste, fully licensed, under construction**
- 3. Gorleben exploration mine and prospective repository for heat-generating waste**
- 4. Asse experimental mine, under decommissioning**

== Morsleben Repository ==



- 1970** **Bartensleben mine selected as repository**
- 1971** **Start of trial disposal (LLW)**
- 1974** **Approval of repository construction**
- 1981 / 1986** **1st and 2nd permanent operation licenses**
- 10 / 1990** **Morsleben repository a Federal Facility under BfS, operated by DBE**
- 1991** **Disposal stop, refurbishment**
- 1994** **Disposal restarted**
- 09 / 1998** **Waste acceptance interrupted**
- 05 / 1999** **Waste disposal terminated**
Licensing procedure only for closure
- 11 / 2000** **Advanced backfilling - repository closure to follow**
- 2011** **Public hearing**
- 2014** **License for closure**

Konrad Repository



1965 – 1976	Iron ore production approx. 7 mil. t; Deposit: ~ 1.4 billion t
1975	Preliminary survey as candidate site
1982	Site Suitability statement and License Application submitted
09/92 - 03/93	Public hearing (75 hearing days)
14.06.00 / 17.07.01	Consensus Agreement - <i>Finishing licensing procedure</i> - <i>Withdrawal immediate enforcement</i>
01.08.01	Radiation Protection Ordinance amendment License application amendment
05.06.02	LICENSE GRANTED
2002-2008	Litigation
2008-2010	Start of Repository Construction
2013/2014	First Planned DISPOSAL START
2019	Currently Likely Disposal Start

— Gorleben Exploration Mine —



- 22.02.1977** Site designation Gorleben
(Nukleares Entsorgungszentrum/NEZ)
- April 1979** Start of surface site characterization
- 1980/1981** Four deep boreholes (1002 / 1003 / 1004 / 1005)
- Mai 1983** Comprehensive suitability statement (PTB)
- Sept. 1986** Ground-breaking for Shaft 1
- Oct. 1996** Communication between Shaft Gorleben 1
and Gorleben 2 (840-m-Sohle) established:
Thereafter excavation of infrastructure area
and characterization of Exploration Area 1
- 01.10.2000** Site characterization interrupted. Thereafter
stand-by operation only
- 03.03.2010** Germany announces to the IAEA Board of
Governors that site exploration will continue
- 01.10.2010** Politically motivated Moratorium to the
exploration of the Gorleben site ends

Gorleben Site

