

Shaft ASSE II – a pilot project for nuclear waste storage in a mine shaft / the research mine for nuclear waste storage

- 1964** The salt mining operations become economically unviable and is suspended.
- 1965** The „Gesellschaft für Strahlenforschung (GSF)“ (Society for Radiation Research) buys the Asse saltmine on behalf of the Federal Government, to research and develop safe storage of radioactive waste there.
- 4.4.1967 to 31.12.1978** About 125 000 barrels of weak radioactive waste is stored in the Asse mine, under the banner of research. This is the sum total of all the weak atomic waste that was generated in the Federal Republic during this period. The total radioactivity level was $2,8 * 10^{15}$ Becquerel at the time of storage.
- 1972 to 1977** Around 1 300 barrels of medium radioactive waste is stored. The total radioactivity at the time of storage was $5 * 10^{15}$ Becquerel. This radioactive waste comes mainly from the nuclear fuel reprocessing plant at Karlsruhe.
- April 1973** According to an information brochure from the GSF: „ Flooding as in the case of the shaft Asse 1 is impossible“. „ The mine buildings would remain stable in case of flooding“. “The shaft Asse II is currently completely dry and leakproof. The possibility of flooding through the shaft into the mine buildings is therefore excluded.” This expert statement has lost its validity after only 15 years(1988)! The long term measures should provide 100 000 years of security!
- 1976** The fourth amendment to the nuclear law comes into effect on 31 August.
- 1978** The permission for storage ends. Further storage had to be done in accordance with the nuclear law (Planning with public participation). This procedure was not followed and the storage of nuclear waste in Asse II was suspended.
- 1979** **In his scientific research work, Dipl.-Ing. Hans-Helge Jürgens warns against inadequate stability and describes the possibility of flooding.**
Nordschau Kultur / Kulturspiegel - Document dated 5.3.1979
- Until 1988** Until 1988, only limited cases of salt solution spills apparently occurred and these did not come into contact with the groundwater.
- 1988** The statement changed fundamentally. The seepage now supposedly comes from the mountain above the shaft. The exact source is unknown to this day and the seepage could not be stopped. The seepage initially had an increasing tendency and has stabilised at around 11 500 litres per day from 1997.

When the seepage comes into contact with the Carnallitit areas in the mineshaft, it would dissolve the Carnallitit-salt layers (**1 m³ NaCl-seepage dissolves about 3 m³ of Carnallitit**). Should the shaft Asse II fill up with the seepage, it could lead to a rupture, causing radioactive contamination of the surrounding area.
- 1992** The filling up of the shaft with salt is approved.
- 1994** An assessment of the Lower Saxony department of Land Affairs conducted by the chief mining authority of Clausthal-Zellerfeld and the mining authority of Goslar, ordered by the Lower Saxony department of the Environment, establishes that an uncontrollable water influx (flooding) into the mine-shaft could not be excluded. To improve the stability of the mine-shaft, the experts recommend that the remaining volume (in total around 2,5 million m³) is filled up with salt.
- 1995** The research activities with radioactive material are suspended.
Back-filling with salt from the Ronneberg potash salt mine commences.
- 10.03.2000** **Burial and filling is not sufficient** to keep the stored radioactivity from the environment. Quote: „ We must rid ourselves of the impression that we can hide the radioactivity for once and all by storing it“. H. Wiggering, General Secretary for the Environmental Council of the Federal Government.

2002 On 01.01.2002, the inventory compiled by the GSF contains **102 t Uranium, 87 t Thorium, 11,6 kg Plutonium and Radium**, in addition to other radio active nuclides and significant amounts of toxic chemicals. The total radiation activity at this point in time amounted to **3,1 * 10¹⁵ Becquerel**.

2002 The GSF is working on the concept of flooding the shaft with a watery Magnesiumchloride solution, to prevent the destruction of the Carnalittit salt by the intruding salt seepage. Globally this concept has never been implemented in conjunction with nuclear waste.

Should this flooding concept be applied, the packaging and bindings of the nuclear waste will be destroyed. Radioactive nuclides would go into suspension and will be forced through the rock layers by the pressure of the mountain. Groundwater problems would then be possible!

The danger of radioactive contamination could not be excluded!

Isolation from the environment, as required by the nuclear law, will not be possible with this concept.

With the propagation of salt as a long term and safe storage medium for nuclear waste, it has always been assumed that the waste will remain dry in the salt.

In the 70's this was also a statement of the GSF concerning Asse II.

2004 **Floodguides** (about 60) were to be installed, to guide the watery magnesiumchloride solution.

5.11. **The packaging and bindings of the nuclear waste will be destroyed through contact with the watery magnesiumchloride solution and radioactive nuclides would go into suspension, depending on the packaging type within 10 – 100 years. (GSF-Memo)**
2004

12.05. Observation of an accepted reclamation policy from the point of view of the GSF

2005 This is no comparison of options; these are only assumptions without risk analyses. It is unclear what the cost and duration estimates are based on.

An option comparison study contains all the backfilling and reclamation options with risk analyses and their solutions, to enable the selection of the best concept. This option comparison study has been overdue for nearly 20 years.

2006 The planned closure is moved from 2013 to 2017.

23.4. **A lawsuit is filed to make the nuclear law applicable to Asse II.**

2007 Asse II still falls under the mining law and the authority of the Federal Research Department (BMBF), under Dr Annette Schavan.

If the time is really pressing, then the actions of the GSF and the NMU are not to the benefit of the population. Everybody should then work together to still make the best of this situation. Currently, no documents, including the Leipzig report on the location security, have been made public.

That does not inspire trust in the GSF.

ca. **2016** The planned demolition of the buildings are supposed to commence, only one **brick building** and the **hoist tower** are declared historical monuments.

ca. **2017** Planned closure

Unobserved, unconcerned where to the contaminated magnesium chloride solution (the so-called conservation fluid) ends up?

This mountain will keep on moving for hundreds of years!

Surface deformations of 1,2 cm/year and salt pile deformations of 15cm/year have been measured.

Generational responsibility implies a timeous, scientific and independent options comparison study. All the options for Asse II should be considered and compared, not only the removal of the radioactive waste, but also the method of securing the mine.

Further info on: www.asse2.de

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