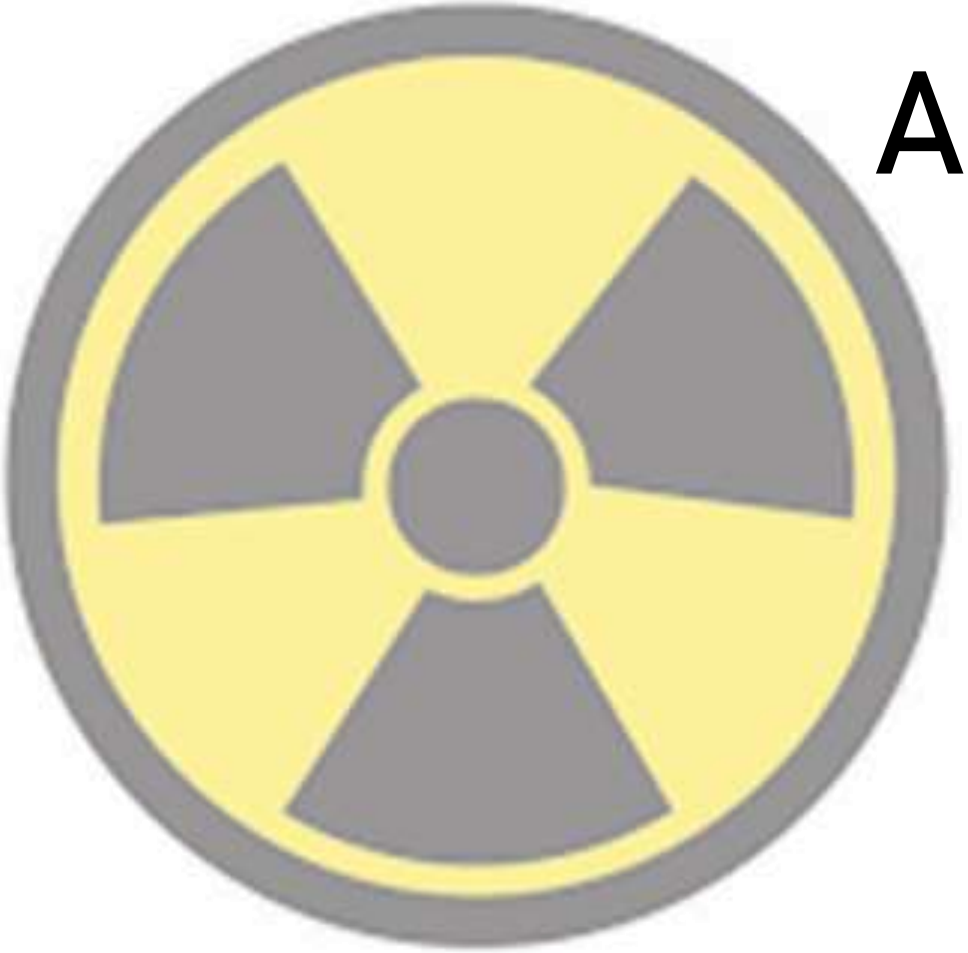
Nuclear Waste –
A problem that stays



Webinar 17/12, 2025
15.00 – 16.30 CET

Program:
- Gunnar Boye Olesen, INFORSE introduction
- Johan Swahn from MKG in Sweden talking about the nuclear waste problems worldwide, in EU, Sweden and Finland
- Radostina Slavkova from Za Zemiata in Bulgaria giving a short overview about the current situation and problems in Bulgaria
- New Report by Gunnar Boye Olesen
- Comments
- Discussion

More information and proceedings:
https://inforse.org/europe/nuclear.htm

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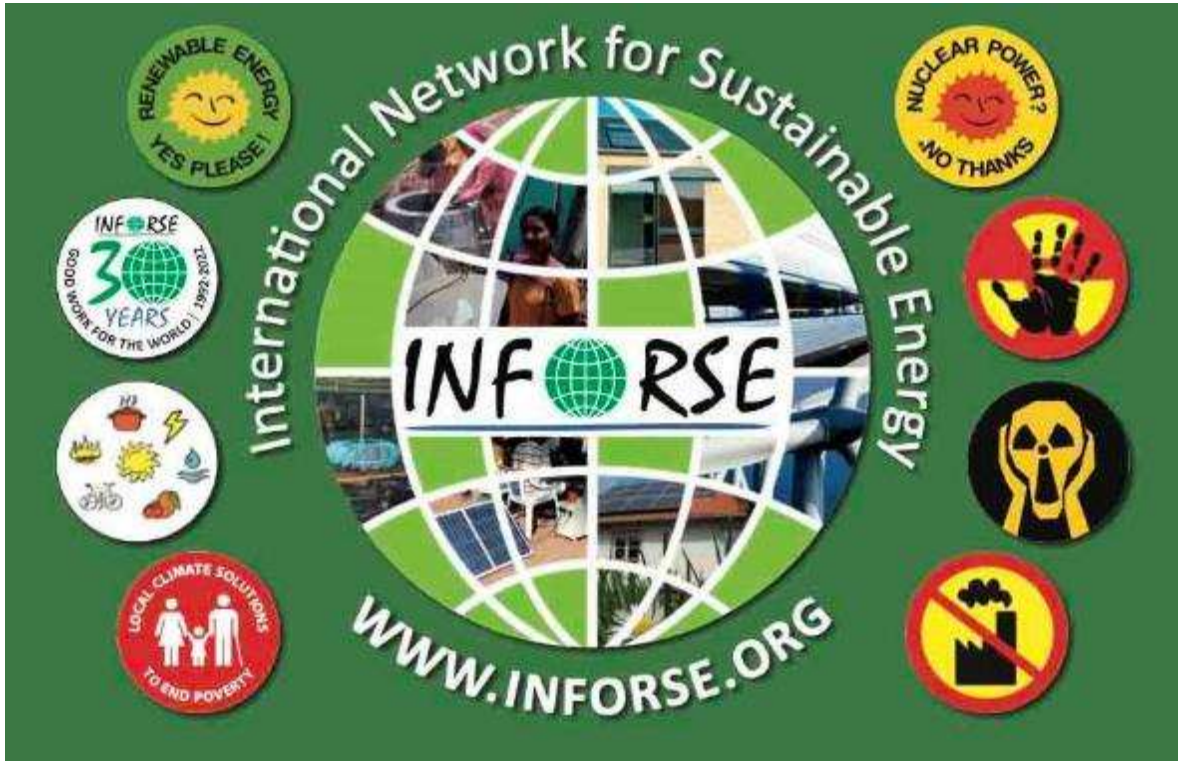

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1992 at Rio "Earth Summit"

An international voice of
NGOs promoting:
renewable energy, energy efficiency,
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protect environment, reduce poverty,
women empowerment, and
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Rock Solid 2.0
A new scientific review of geological disposal of highlevel radioactive waste

Gunnar Boye Olesen, INFORSE,
17.12.2025,
Webinar Nuclear Waste

More information and proceedings:
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Rock Solid? 2.0, some highlights

- No country has yet completed an operational geological disposal repository for high-level radioactive wastes.
- These wastes generate significant quantities of heat and create an uplift of the rock at the ground surface of around 10 cm or more, 1 000 - 2 000 years after burial 500 m beneath the surface and the repositories create major disturbances to the conditions underground.
- Even after 100.000 years, excavation damage will remain and could provide fast routes for radioactive water or gas to leak from the repository. The wastes will remain radioactive for even longer.
- Construction of a repository requires a significant financial commitment and excavation of very large quantities of rock. This is many times the volume of the wastes, due to the need to space canisters widely to prevent the repository temperature rising above 100^{o}C.
- Over time, radioactive substances (radionuclides) will leak from the repository into the surrounding groundwater and/or be released as radioactive gas.
- Many countries have failed repeatedly to identify suitable sites for deep geological disposal, despite numerous attempts, and may never be able to do so. Several countries are now actively investigating alternatives, such as deep borehole disposal (several kilometres underground).

Rock Solid? identifies a number of processes that could compromise the deposits, some are:

- Copper or steel canisters and overpacks containing highlevel radioactive wastes could corrode more quickly than expected.
- The effects of intense heat generated by radioactive decay, and of chemical and physical disturbance due to corrosion, gas generation, could impair the ability of backfill materials to protect the canisters from stresses in the rock and to trap some radionuclides.
- Build-up of gas pressure in the repository could damage the barriers and force fast routes for radionuclide escape through crystalline rock fractures or clay rock pores.
- Poorly understood chemical effects, such as the formation of colloids, could speed up the transport of some of the more radiotoxic elements such as plutonium.
- Unidentified fractures and faults etc.could lead to the release of radionuclides in groundwater.
- Future generations, seeking underground resources or storage facilities, might accidentally dig a shaft into the rock.
- Future glaciation could cause faulting of the rock, rupture of containers and penetration of surface waters to the repository depth.
- Existing geological faults could be re-activated, creating fast routes for radionuclides to escape or leading to earthquakes which could damage the deposit

Rock Solid 2.0, 150 pages English, German summary

- https://www.greenpeace.ch/static/planet4-switzerland-stateless/2025/11/ed8ea7f1-rock-solid-2_bericht-mit-summary_de.pdf
- Link from: https://inforse.org/europe/nuclear.htm