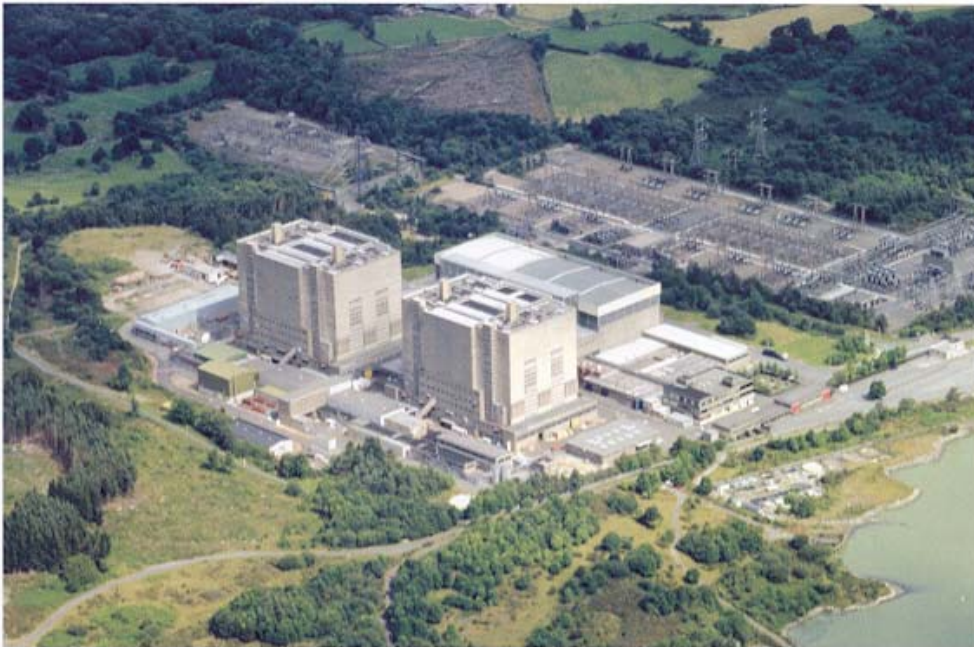


Reactor decommissioning: Trawsfynydd



World winning solutions

< Trawsfynydd nuclear power station.

Key project data

Reactor type	390 MWe twin magnox station.
Initial operation	1965.
Decommissioning strategy	Safestore.
Timescales: 1991	Reactor shutdown.
1993	Start of decommissioning.
1993-1995	60,000 fuel elements removed.
1995-1998	Primary hazardous materials cleared.
1996-2000	Fuel handling machines dismantled.
1998	Disposal of fuel skips.
1999	Cooling ponds cleaned and drained.
2000-2004	Partial deplanting and building demolition. Preparation for care and maintenance phase. Recovery and processing of all intermediate-level waste (LLW) and on-site storage.
2005/2006	Enters Care and Maintenance phase.

Trawsfynydd power station is located in North Wales, in the UK. Commissioned in 1963, the station is a twin magnox reactor which had combined power output of 390 MWe. The station was closed in 1991 after 26 years of successful operation.

Decommissioning at Trawsfynydd commenced in 1993. Defuelling of the reactors completed in 21 months, four months ahead of schedule and under budget.

The decommissioning strategy at Trawsfynydd has been strongly influenced by the fact that the station is located in the Snowdonia National Park. To reduce the visual impact of the structure, the reactor buildings are being lowered to near pilecap level.

Decommissioning strategy

The preferred decommissioning strategy for this site is Safestore, which essentially comprises three phases.

The first phase involves removal of the fuel from the site. This takes place within a few years of shutdown.

The second phase prepares the site for an extended period of Care and Maintenance. Preparations include retrieval and packaging of operational wastes, decontamination and dismantling of the fuel pond and construction of the Safestore. Most non-radioactive plant, including the turbine hall, is removed during these preparations. The Care and Maintenance phase takes advantage of radioactive decay.

At the end of the Care and Maintenance phase, the third phase, Site Clearance will take place. During Site Clearance, everything left on-site, including the reactors, will be dismantled.

Performance highlights

Milestones completed to date:

- spent fuel removed and sent for reprocessing. Fuel ponds desludged and emptied;
- majority of the conventional plant and charge face machinery removed;
- the boiler ancillary plant and pipe work has been removed;
- detailed design of 'Safestore' completed;
- intermediate-level waste¹ (ILW) packaging treatment plant being commissioned;
- the removal of the fuel elements took 99.9% of radioactivity away from the site.



^A Decommissioning Trawsfynydd cooling ponds.

Future activities

- Temporary waste store to be built for intermediate-level waste¹ on site.
- Decontamination and demolition of the cooling ponds.
- Lowering the height of the reactor buildings to near pilecap level.
- Complete conventional plant dismantling and demolition, including the turbine hall and cooling water pump house.

¹ UK Waste categories:

- High-level wastes (heat generating): Fission product concentrates
- Intermediate-level wastes: Fuel cladding, Low and medium active liquors, Slurries, Sludges, Flocs
Low alpha technical wastes, High alpha technical wastes.
- Low-level wastes: <12GBq/t beta gamma, <4GBq/t alpha.

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