

## Decommissioning Glossary

**Citizen Advisory Boards:** Active public participation, with effective input and citizen oversight and independent inspections should be part of decommissioning planning and monitoring to ensure accountability and to advocate for public health and safety. The NRC rules allow for Citizen Advisory Boards, but do not require them.

**Consolidated Interim Storage (CIS) vs. Permanent Repository:** Two currently proposed options for offsite storage, which require transporting highly radioactive waste, are Consolidated Interim Storage, currently proposed for Texas and New Mexico, and a permanent repository at Yucca Mountain in Nevada, which has been deemed unsuitable, but is currently being considered again.

**Decommissioning Funds:** The total cost of decommissioning a reactor facility depends on many factors, including the timing and sequence of the various stages of the program, type of reactor or facility, location of the facility, radioactive waste burial costs, and plans for spent fuel storage. The NRC estimates costs for decommissioning a nuclear power plant range from \$280-\$612 million. The NRC requires nuclear power plant licensees to report to the agency the status of their decommissioning funds at least once every two years, annually within five years of a planned shutdown, and annually once the plant ceases operation.

### Decommissioning Options

- DECON: Immediate dismantling and clean-up of contaminated plant systems and structures and removal of radioactive fuel.
- SAFSTOR: Safe Storage or delayed DECON – maintenance and monitoring to allow radioactivity to decay and/or decommissioning funds to grow.
- ENTOMB: Entombment is permanent encasing, with ongoing maintenance and monitoring, as was done in Chernobyl.
- PD&SR: Planned Decommissioning and Site Restoration, combines the best features of immediate decommissioning (DECON) for portions of the facility, with deferred decommissioning (SAFSTOR), to maximize benefits and avoid liabilities of the first two options. Can be done for economic reasons, to promote public health and safety, or both.

Under Nuclear Regulatory Commission regulations, the decommissioning process must be complete within 60 years after the end of operations, unless an extension is required to protect public health and safety.

**Decommissioning Rule** – NRC is currently seeking comment on the basis for rulemaking and will be seeking comment on decommissioning rulemaking in 2018; also see Nuclear Waste Policy Act (NWPA) of 1982: a federal law which established a national program to address the permanent disposal of highly radioactive wastes resulting from using nuclear fuel to produce electricity.

**Deregulation:** In the 1990s some states, including New York, required utilities to sell their power-generating facilities and focus on transmission and distribution, and added additional Energy Service Companies (ESCOs) to promote competition. At that time Con Ed and NYPA sold Indian Point Units 2 and 3 to Entergy. Instead of utility ownership these reactors became merchant plants and the NYS Public Service Commission lost its jurisdiction to regulate these facilities, which is now reserved for the NRC. In other states, such as California, their Public Utility Commission retained regulatory jurisdiction over utility-owned reactors.

**Dry Cask Storage:** Fuel assemblies are removed from spent fuel pools and set into metal canisters then placed into concrete casks.

**Hardened On-Site Storage (HOSS)** is typically a system of dry cask storage, in which the casks are distributed and often earthen-bermed to ensure greater safety and security – as compared with the current configuration of casks clustered like bowling pins on a concrete pad, which could provide a vulnerable target for terrorism.

**High burnup fuel:** Nuclear fuel is encased in metal cladding. In the reactor, this cladding reacts with cooling water. The reaction forms oxide on the outside (similar to rust) and releases hydrogen. These processes begin slowly, and then start to accelerate as the fuel reaches burnup of 45 GWd/MTU. Anything higher is considered high burnup. High burnup fuel must be kept in fuel pools longer. When spent fuel is placed into dry cask storage, the temperature of the fuel increases and the fuel cladding can becoming less “ductile,” or pliable, as it cools, presenting unique challenges for storage and/or transportation.

**High level nuclear waste:** The highly radioactive materials produced as a byproduct of the reactions that occur inside nuclear reactors. Spent (used) – but still highly radioactive – reactor fuel is first stored in fuel pools, then after some of the radioactivity has cooled, transferred to dry cask storage.

**Just Transition:** Just Transition is a framework that has been developed by the trade union movement to encompass a range of interventions needed to secure workers' jobs and livelihoods when economies are shifting to more sustainable means of production.



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