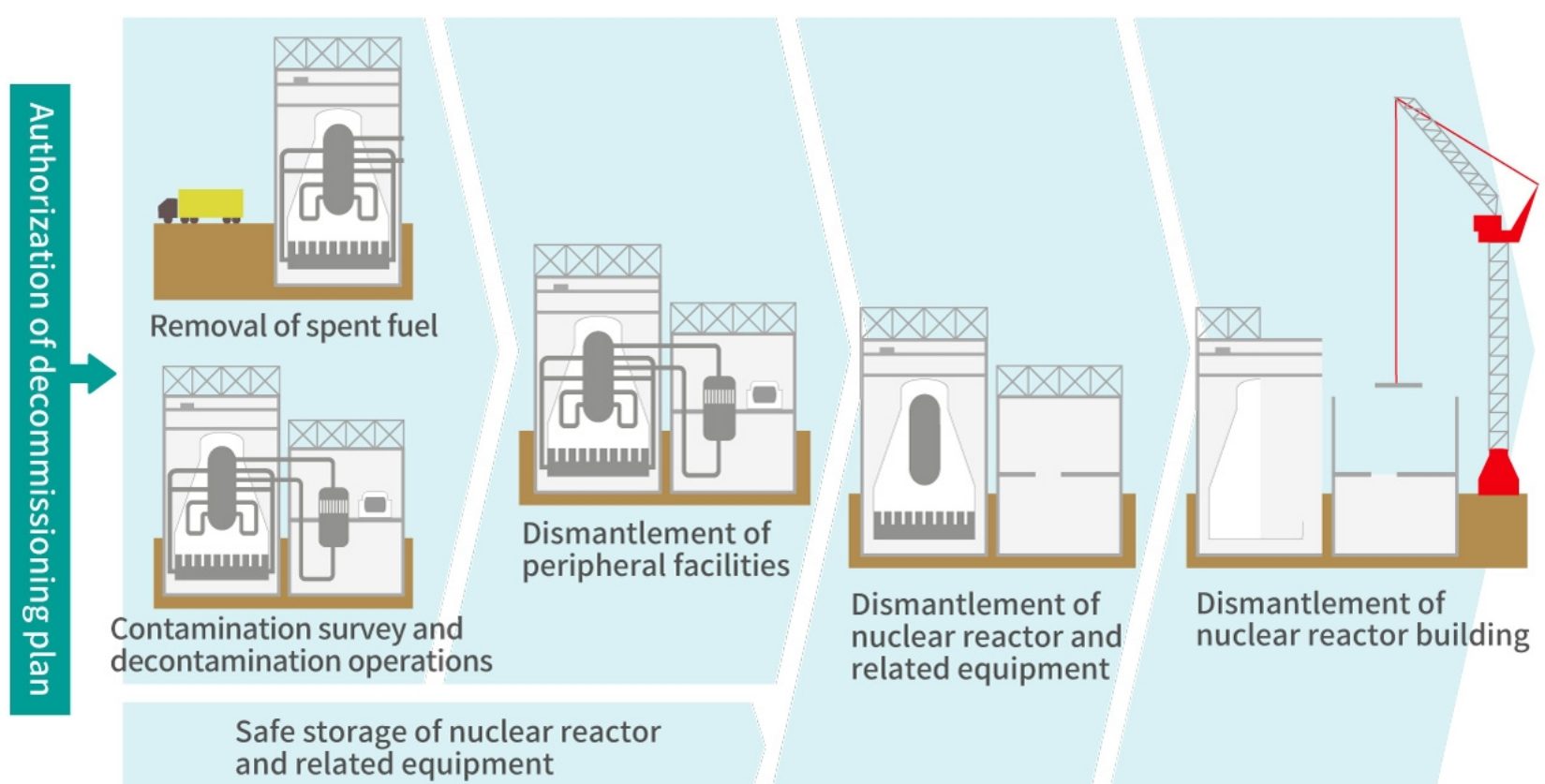


What is plant decommissioning?



Source: Excerpt from “What Happens Once the Decision is Made to Decommission a Nuclear Power Plant?,” Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry

Non-radioactive waste

Approx. 93%

(the majority is concrete waste: approx. 495,000 tons)

○ Building concrete, glass, metal, etc.

Clearance materials

Approx. 5%

(Metal and concrete waste: approx. 28,000 tons)

Low-level radioactive waste

Approx. 2%

(the majority is metal waste: approx. 13,000 tons)

○ Metal, concrete, glass, etc.

○ Materials for dismantlement, etc.

Source: “Nuclear Power & Energy Diagrams,” Japan Atomic Energy Relations Organization

The standard operating life of a nuclear power plant is currently set at 40 years*1. Nuclear power plants that have ceased operation due to aging or other factors need to undergo a process known as decommissioning, which is a series of measures to safely dismantle the facility and reuse the site.

Nuclear power plant decommissioning is carried out in stages. First, the spent fuel is relocated to an appropriate facility, and then decontamination operations are carried out after contamination level is assessed. Next, peripheral equipment such as turbines and piping is removed, and the dismantlement of the main nuclear reactor begins. Once the inside of the reactor has been dismantled and the removal of radioactive material has been confirmed, the entire building is finally demolished. As the decommissioning work progresses, the amount of radioactive material at the site is gradually reduced.

Decommissioning work for a nuclear power plant is a major long-term project that can last more than 30 years. In Japan, 21 reactors*2 have been scheduled for decommissioning, and the number is expected to rise in the future. Therefore, to streamline and improve the safety of decommissioning work, progress is being made to adopt advanced technologies, including measurement technologies that utilize 3D data and dismantlement operations that use remotely controlled robots.

*1. This regulation is based on a law that was amended following the Fukushima Daiichi Nuclear Power Station accident. However, if approval is obtained from Japan’s Nuclear Regulation Authority, the operating life of a nuclear power plant may be granted a one-time extension of a period not exceeding 20 years.

*2. As of April 2025, a total of 24 reactors have been scheduled for decommissioning, including three reactors scheduled to be decommissioned prior to the Fukushima Daiichi Nuclear Power Station accident, and 21 reactors scheduled after the accident. When experimental and demonstration reactors are included, the total number of reactors is 26.

Related Link

[Decommissioning and Radioactive Waste Processing](#)