

Abstract

Chernobyl NPP decommissioning efforts. Past, Present and Future.

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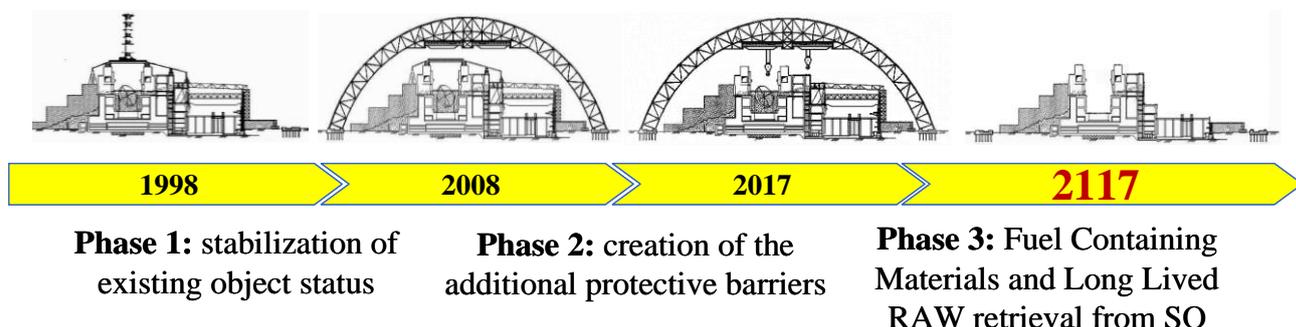
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Two unique large-scale projects are underway at the moment within the Chernobyl Exclusion zone – Shelter object transformation into ecologically safe system and decommissioning of three Chernobyl NPP Units.

As a result of beyond design accident in 1986 the entire territory of the industrial site and facilities located on it was heavily contaminated. Priority measures were carried out at the damaged Unit under very difficult conditions to reduce the accident consequences and works to ensure nuclear and radiation safety are continuous, and the Unit four in 1986 was transformed into the Shelter object. Currently, works at the Shelter object are in progress. Under assistance of the International Community new protective construction was built above the existing Shelter object - New Safe Confinement, which will ensure the SO Safety for the long term – within up to 100 years.

Strategy of Shelter object Transformation into environmentally safe system



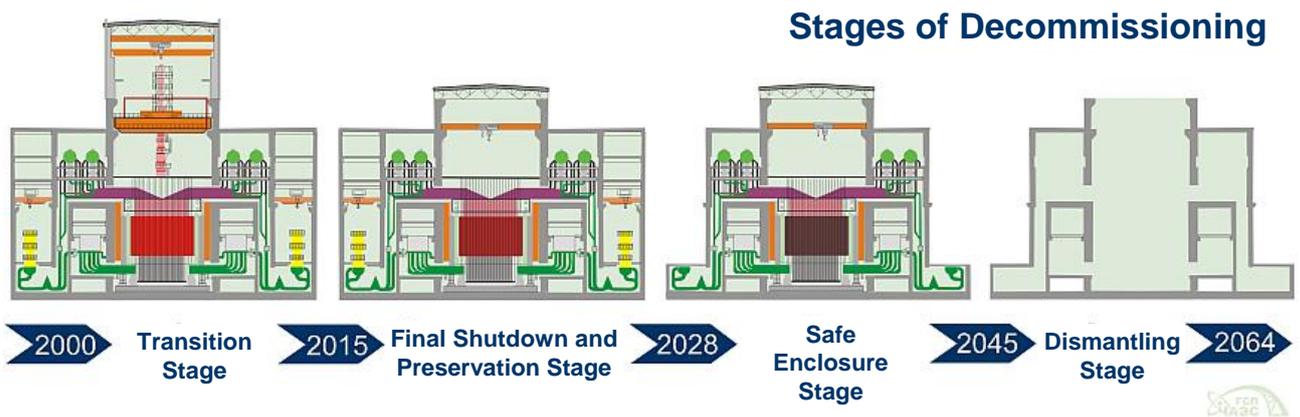
The second major project is the simultaneous decommissioning of Chernobyl NPP Units 1, 2 and 3. Currently existing Chernobyl NPP decommissioning Strategy has been continuously improved starting from the Concept of 1992. Over the years the following was analyzed and taken into account: the results of numerous R&D works, international experience in decommissioning, IAEA recommendations, comments and suggestions from the governmental and regulatory bodies in field of nuclear energy use and Radioactive Waste Management.

In 2008 the final decommissioning strategy option for Chernobyl NPP was approved, that was deferred gradual dismantling – SAFSTOR. In accordance with this strategy, decommissioning will be carried out in three stages (Final Shutdown and Preservation, Safe Enclosure, Dismantling). Deferred gradual dismantling - SAFSTOR stipulates:

Preservation of the reactor, the primary circuit and the reactor compartment equipment;

- Dismantling of the equipment external in relation to the reactor;
- Safe enclosure (under the supervision);
- Gradual dismantling of the primary circuit and reactor (after 50 years);
- Site cleaning up to the established levels.

Decommissioning strategy of Chernobyl NPP Units 1, 2 and 3



At the moment Chernobyl NPP is at the Final Shutdown and Preservation stage. Permission for this stage implementation was obtained in 2015 after Spent Nuclear Fuel complete removal from the Units. The main task of this stage is reactors preparation to the long-term safe enclosure under supervision.

Chernobyl NPP Decommissioning Strategy determines the final state of the Chernobyl NPP industrial site as "**industrially developed site**", integrated in the nuclear industrial complex of Ukraine, used the developed Chernobyl NPP's infrastructure and personnel capabilities. From radiological point of view, taking into account Exclusion zone specificity, the final state was established as "**brown spot**".