

FULL SYSTEM DECONTAMINATION AT THE OBRIGHEIM NUCLEAR POWER PLANT

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In May 2005 the first German commercial pressurized reactor was shut down on account of political reasons after 36 years of operation. The nuclear power plant in Obrigheim is situated on the site at the river Neckar near the city of Heidelberg.

AREVA NP was contracted for the planning and performance of the full system decontamination, including the primary system (two loops), the two steam generators, the pressurizer, the reactor pressure vessel with internals, but no fuels, as well as part of the residual heat removal system, volume control system and emergency injection system. AREVA NP GmbH used the HP / CORD UV decontamination technology (HP stands for permanganic acid, CORD for chemical oxidation reduction decontamination, UV represents the in-situ decomposition of the decontamination chemical with an ultraviolet light source).

A total of four HP / CORD UV cycles were performed. The overall average decontamination factor (DF) exceeded 600. In the primary system the DF is 736, for the steam generators tubing more than 1400 were reached and in the auxiliary systems the average DF is 29. The gamma/alpha nuclide ratio increased about the factor of 10. This ratio was inquired by measurements of test pieces, which were included in the circuit during the first 3 decontamination cycles.

The total mandosis for all the people involved in the decontamination ran to 46 mSv.