

TSO Activities in Licensing and Supervision Procedure during the Construction, Operation and Dismantling of the Vitrification Facility Karlsruhe

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The Karlsruhe Reprocessing Plant (WAK) was built as a pilot plant for later commercial reprocessing in the 1960s. During the reprocessing phase of the WAK the about 60 m³ of high-level waste solution remained in the storage building of the WAK plant from 1971 to 1990. To condition the high-level waste solution from reprocessing to a waste product for final repository storage, the Vitrification Facility Karlsruhe (VEK) was build near the high-level waste storage building.

For the construction, commissioning and operation of the VEK the regulatory authority commissioned its technical support organization (TSO) TUEV SÜD Energietechnik in the licensing and supervision procedure to assess the safety design and quality control measures to assure that the precaution measures against the damage are sufficient. The aim is to avoid unallowable enhanced releases of radiological substances to the atmosphere during normal and abnormal operation and under accident conditions caused by internal or external events. Various recommendations on safety requirements were provided by the TSO in the expertise to concept, erection and operation of the VEK from December 1997 to July 2007.

After implementation of all these requirements the complete high-level liquid waste was vitrified. 140 canisters with 56 t of waste glass in total were produced. Five Castor containers were filled with 28 canisters each and transported to the interim storage site North. Negative disruptions can be avoided during the operational period of the VEK from September 2009 to November 2010.

The decommissioning and dismantling of the VEK is now ongoing. The TSO is just as well involved in licensing and supervision procedure for dismantling of the VEK and evaluates the planned decommissioning and dismantling steps for safe implementation.

Country or International Organisation

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