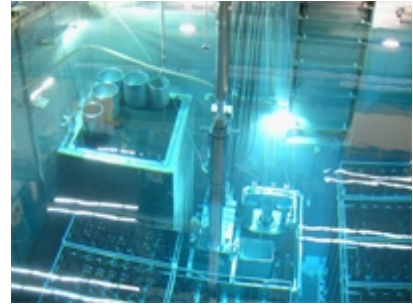




Cutting and Packaging Facility ZVA

During operation and decommissioning of nuclear power plants some of the reactor internals or core components, like control rods or water channels from BWR reactors, which have a limited lifetime due to embrittlement resulting from the neutron flux, have to be disposed of as radioactive waste. The Cutting and Packaging Facility ZVA developed by GNS is a combination of a scrap shear and a compactor. Components are being cut and subsequently compacted in baskets suitable for shielded casks, e. g. MOSAIK® II-15 casks. The facility is operated in the fuel pool.



Process

Core components are being cut under water by means of the ZVA in different consecutive steps. The components are locked into position with a force of 440 kN and sliced with a cutting force of approx. 880 kN. Radioactive particles generated from cutting are extracted from the pool water using an underwater suction cleaning device which is part of the system. The cuttings glide down a chute into a MOSAIK® basket and will subsequently be compacted with a force of approx. 785 kN. This operation is performed repeatedly until the basket is filled up. A second filling station for MOSAIK® baskets at the side of the facility. Filled baskets can be handled with a grabber and put into MOSAIK® II-15 casks. The lid is attached and the cask de-watered. For handling of the ZVA and the MOSAIK® II-15 casks in the fuel pool there is a system of handling equipment available which was designed and manufactured according to the German KTA rules. The casks can be dried using the vacuum drying facility KETRA. After determination of the remaining humidity and leak test the casks are ready for shipment.