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Utilization of External Capacities as an Integral Component of Concepts for Residues and Dismantling Using the Example of the CARLA Plant

National and International Experiences in Recycling

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ABSTRACT

In Germany, nuclear industry has impressively demonstrated that decommissioning and dismantling of nuclear installations are technologically feasible tasks. From numerous projects, already concluded as well as still in process, substantial experiences could be gained which shall find their way into future strategies for decommissioning and dismantling. The overhasty and uncoordinated change in national energy policy, willingly called “energy turnaround”, will inevitably lead to a real wave of decommissioning projects. Mastering these will only be possible by consistently implementing the available pool of experiences.

Future dismantling strategies will have to design the interaction between dismantling and treatment of residues in a much more flexible way in order to perform the whole dismantling process more efficiently. The more intensive utilization of external capacities for the treatment of residues can make a relevant essential contribution.

By the CARLA plant Siempelkamp offers such a safe and reliable component for every dismantling project, based on a proven and tested past while continuously developing for the future. Until today, more than 28,000 tons of radioactive metals could be processed in the CARLA plant and subsequently could be harmlessly recycled to a large extent. Over the time, the offered scope of service has constantly been expanded. In the separation and cutting area components with dimensions of up to the size of a 40' container can be treated by thermal as well as mechanical separation methods.

The outside storage area for containers with a capacity of approx. 150 pieces of 20' containers along with the authorized storage period for delivered material of 3 years enables us to react very flexibly to all project situations and by buffer storage customer specific campaigns of sufficient size can be arranged. In April 2012, the decontamination capacity could be clearly extended by commissioning of a new decont-room. Here, a suspension track blasting equipment was installed along with an inside tube blasting equipment. With this equipment, all tubes starting from a diameter of 20 mm can be decontaminated. Further steps of upgrading are in planning stage. For metals having been processed by melting and for nearly all process wastes licensed release procedures according to § 29 StrlSchV (radiation protection ordinance) are available including established disposal paths. Taking into account several marginal conditions, a decay storage of up to 20 years can be effected for metal ingots at our premises at Krefeld. This, too, is an important contribution to more flexibility and higher efficiency.

The CARLA plant fulfills all requirements which are indispensable for a good concept to treat residues. It avoids waste, reduces the waste volume and provides for subsequent recycling of the residues. The licensed capacity of the plant is sufficient to make up for any peak of demand resulting from the present situation. Thus the operators are able to design their dismantling strategies in the plants much more freely.

Disassembly works, for example, can be predated into the post-closure phase. Different project steps can be processed parallelly and the whole material logistics in the plant can be optimized.

By increased involvement of external capacities like CARLA the challenges of the national dismantling activities over the coming years can be mastered successfully to a large extent.

The same applies to the international sector where, however, the sometimes strongly differing framework requirements regarding the situation of the final repository or release options may lead to different key aspects for involving CARLA into the individual projects.

In international technological comparison, German dismantling projects doubtlessly take a leading position, however, regarding efficiency there is still room for optimization. An early involvement of qualified service suppliers can help to push this optimization.

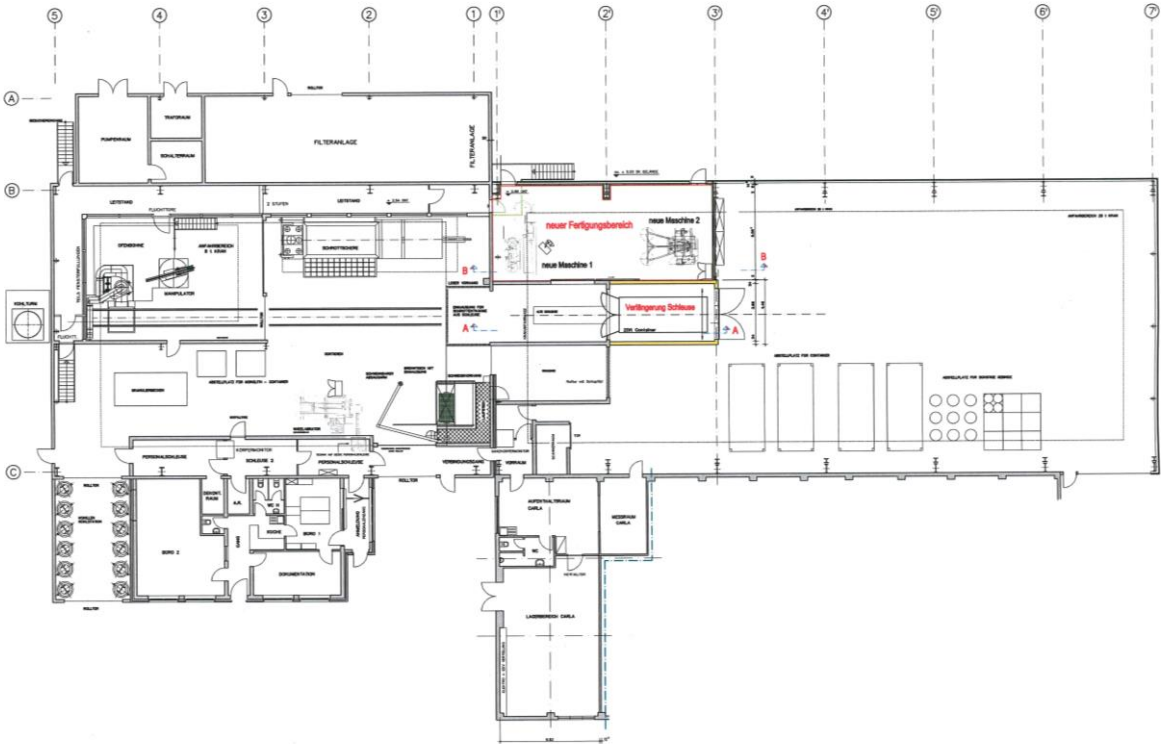


Fig.1:

Layout of the CARLA Plant