

Stacking, Blending and Reclaiming of Coal

P. Kajakoski, Finland

Lagern, Mischen und Rückladen von Kohle
Stockage, mélange et récupération du charbon
Apilado, mezcla y recogida de carbón

石炭の備蓄、混合、リクレーミング

煤的堆放、混合和输送

تخزين وتوليف واستعادة الفحم

In many parts of the world, partly due to hard weather conditions, development has in many cases led to stockpiling and reclaiming methods in which more conventional boom stackers and bucket wheel reclaimers have been replaced by stacking conveyors and underground feeders and conveyors.

Incoming coal can first be screened in a combined roller screen/crusher to break the clodded part of the coal and to separate the stones and wood from the coal. This operation can also be carried out after reclaiming, especially if there are regularly freezing weather conditions.

Figs. 1 and 2 illustrate a coal storage system with either a fixed slewing stacker or a travelling cross conveyor for stockpiling. This system is characterized by extensive use of bulldozers for spreading and compacting the coal in both buffer storage and reserve storage. The fixed stacker or the cross conveyor does not need permanent operating personnel, so the greater use of bulldozers does not increase the total number of personnel.

Reclaiming is carried out by underground feeders, either reciprocating plate type or belt feeders, and by underground conveyors to the power station or a reloading station. The coal is pushed onto and above the low concrete hoppers by a bulldozer. As the feeder reclaiming system does not need permanent operating personnel either, this reduces the total manpower. By piling large amounts of coal above the feeders, this reclaiming system can work automatically, e.g. during weekends.

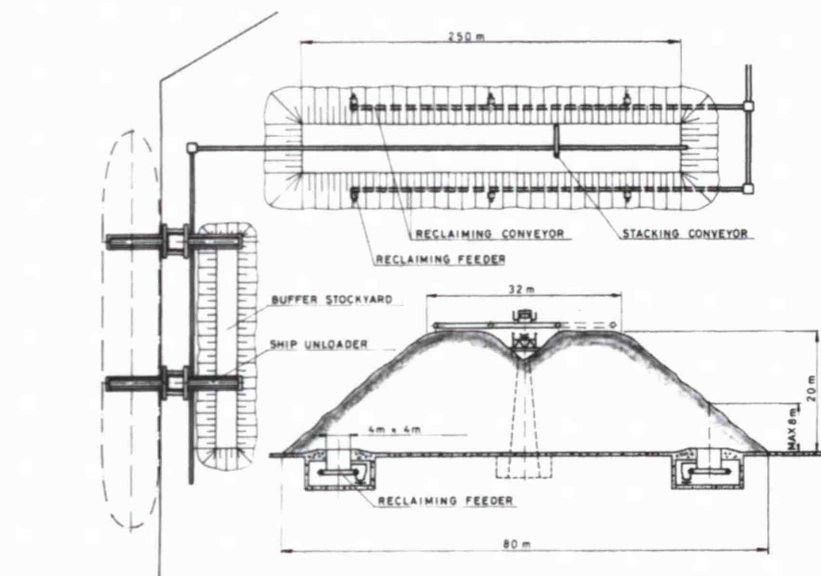


Fig. 1: Travelling cross conveyor stacker and belt feeder / underground conveyor type storage system

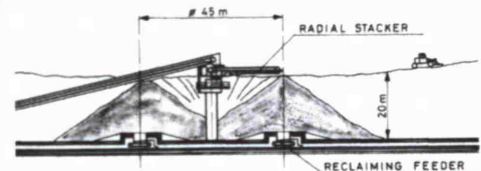


Fig. 2: Radial boom stacker and belt feeder / underground reclaiming conveyor type coal storage system

The blending of material can be easily arranged by stockpiling different coal qualities in separate piles. As there is normally more than one reclaiming hopper and feeder in the system, coal can be reclaimed from one or several piles simultaneously. The capacities of the feeders can be remotely controlled to meet the blending ratios needed and the required total capacity.

Total investments for this feeder reclaiming system are on a similar level as for the bucket wheel reclaiming concept, but the major part of the feeder system is civil engineering work needing very little maintenance. The feeders and conveyors are of simple,

standard construction and thus very easy to maintain and operate. As a bulldozer is needed anyway in nearly all coal stockyards, their extensive use does not mean extra investment in the feeder type reclaiming system.

These underground feeder type stockpiling and reclaiming systems delivered by KONE Corporation to many Nordic coal power stations have proved successful and are meeting the set capacity and operational requirements. In the future this stockpiling/reclaiming concept can be seen as one significant alternative in coal handling, when reliable operation and low maintenance costs are considered as one of the most important features.

P. Kajakoski, Marketing Manager, Bulk Handling Systems, Kone Corporation, Engineering Division, 15870 Salpakangas, Finland