SVENDBORG BRAKES™
A REGAL REXNORD BRAND

Application Success Story

BSFI 200 & 3000 Series Braking Systems

Coal Terminal Conveyors

HIGHLIGHTS

- BSFI 200 Series and BSFI 3000 Series dual-spring, hydraulically-released brakes
- Brakes provide parking and emergency stopping functionality in case of power failure
- Hydraulic power units manufactured in-house

PROBLEM

Conveyor braking solutions were needed for use throughout the Wiggins Island Coal Export Terminal (WICET) in Queensland, Australia. The $2.6 billion, state-of-the-art facility will initially provide 27 million tonnes of coal per year for export. The first stage of the massive complex includes a 920 m (1,006 yds.) long x 240 m (262 yds.) wide stockyard that can accommodate twelve 18 m (19.5 yds.) high stockpiles for total on-ground storage of 1.85 mt. Four reclaim conveyors, with 2,000 mm (78 in.) belts running at 5.9 m/s, each move 6,900 tph. An overhead gantry stacker is also utilized.

The facility's port area features a jetty conveyor that transports coal 2 km (1.24 miles) from shore to the shiploading wharf. Another conveyor moves the coal along the length of the wharf to feed the shiploader that has a maximum loading capacity of 8,500 tph. All elevated conveyors and overwater conveyors are covered with a wall on the windward side and a floor for dust control.

The large shiploader utilizes a series of cable winches that raise and lower the boom, extend and retract the shuttle along the boom, and raise and lower the operator's cabin.

SOLUTION

Svendborg Brakes was chosen as the predominant braking system provider for the facility based on their quality, reliability and proven history of successful coal terminal installations throughout New South Wales and Queensland.

BSFI 200 Series and 3000 Series spring-applied, hydraulically-released brakes provide parking and emergency stopping functionality in case of power failure. The brake spring packs are sized to suit the individual specific braking torque requirements of the specific application. The brakes feature indicators that detect and monitor brake pad wear, brake on/off status and brake lining temperature.

Manufactured in-house, Svendborg Brakes' specialized hydraulic power units are engineered to perform in tough mining applications. The units are equipped to monitor oil level and temperature, motor and pump function, and operational pressure.

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Svendborg Brakes technologies were incorporated on the following WICET applications (2-stage power units were supplied with all braking systems listed):

SHIPLOADER (OFFSHORE BRAKE SPECIFICATION)

Luff & Shuttle Winches: BSFI 3120 brakes are installed directly on the winch drums to hold the position of the *boom* and the *shuttle* on the boom during coal loading onto a ship. The boom can be raised and lowered and the shuttle can be retracted or extended depending on the type of ship being loaded.

Luff Winch & Shuttle Winch Drives: BSFI 212 brakes hold the *luff winch drive* in position when not moving the boom. BSFI 205 brakes hold the *shuttle winch drive* in position when not extending or retracting the shuttle on the boom.

Operator's Cabin: A BSFI 3120 brake is installed directly on the winch to hold the *cabin* in position during operation. The cabin can be raised and lowered for optimal viewing.

WHARF & JETTY (OFFSHORE BRAKE SPECIFICATION)

Wharf & Jetty Conveyor: BSFI 3100 brakes are installed directly on the tail pulleys to dynamically stop both conveyors during an emergency or power failure and function as parking brakes when the conveyors are not in use. A 1200 mm (47.2 in.) x 30 mm (1.18 in.) disc & hub assembly was supplied for each braking system.

STOCKYARD

Yard, Reclaim 1 and Reclaim 2 Conveyors: BSFI 3110 brakes are installed directly on the tail pulleys to dynamically stop all three conveyors during an emergency or power failure and function as parking brakes when the conveyors are not in use. A 1200 mm (47.2 in.) x 30 mm (1.18 in.) disc & hub assembly was supplied for each braking system.

OVERLAND CONVEYOR

Overland Conveyor: BSFI 3120 brakes are installed directly on the tail pulley to dynamically stop the conveyor during an emergency or power failure and function as a parking brake when the conveyor is not in use. A 1200 mm (47.2 in.) x 30 mm (1.18 in.) disc & hub assembly was also supplied.

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