

KSB Mammoth Butterfly valves for Drax Power Station



Drax Power Station Project

Beaudrey

Since 1912, Beaudrey has specialised in the engineering, manufacturing and installation of fully customizable water screening and condenser protection equipment.

Beaudrey stop gates, trash rakes, traveling band screens, drum screens, microstrainers, pressure-line strainers, debris filters and continuous condenser tube cleaning systems have been supplied to over 80 countries worldwide. Designed to minimize operational costs, maintenance needs and environmental impact, Beaudrey offers a complete range of high quality, efficient and economical solutions to all water screening equipment needs.

Beaudrey UK specialise in the manufacturing and installation of water screening and condenser protection equipment. They were subsequently tasked with developing and delivering to Drax Power Ltd a new pre filtration for their closed loop cooling system at Drax Power Station in North Yorkshire, to eliminate the fouling of the condensers and increase the efficiency of the generating units. The project involved the supply of two KSB 96" (2.4meter) butterfly valves from KSB's Spanish manufacturing facility in Burgos. The two KSB Mammoth DN 2400 centred disc butterfly valves, complete with Ebonite coated discs and fitted with anti-flutter devices were delivered within the allotted time frame for the planned installation outage.

Since upgrading almost half of the power station to run on compressed wood pellets (biomass) instead of coal, Drax has become Europe's largest decarbonisation project. It typically supplies around 8% of the UK's electricity and the transition to a reliable, renewable fuel is providing over 80% carbon savings compared with coal.

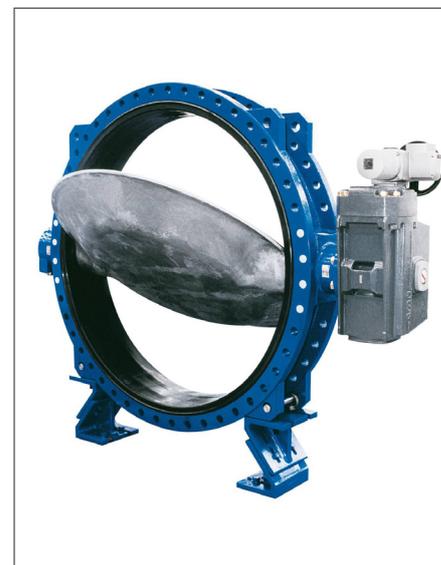
Because the system at Drax Power Station is closed loop and therefore reuses cooling water during a second cycle, the top-up water is taken from the river Ouse in North Yorkshire, and contains silt and other debris, which would pass through the CW system, fouling the condenser tube plate. The second cycle reused cooling water comes from the cooling tower ponds which may contain anything from stones, tower packing, plastic bags and other such items. This fouling affects the condenser vacuum / back pressure, which in turn affects the efficiency of the turbine cycle. The installation of Beaudrey's pre filtration system has the ability to 'back wash' which allows the complete removal of any debris from the system, thus preventing the condenser tube plate fouling, maximising the efficiency and reducing the running costs.

In the design of this new filtration project, Beaudrey UK required a valve manufacturer to work alongside, who has the experience to deliver European manufactured valves with a range of diameters from 50mm to 2.4 meters. The contract to supply the valves was awarded to KSB, who have over 140 years of experience in manufacturing both Valves and Pumps. KSB is renowned for its high quality Butterfly, Gate, Globe, Diaphragm and Check valves that supply market sectors such as Nuclear & Energy, Oil & Gas, Water, Food and Beverage and Pharmaceutical markets. KSB has more than 170 service centres worldwide, enabling the group to provide expertise in the specification and application of fluid technology.

The elastomer liner is the core sealing element of a centred disc butterfly valve and KSB/Amri are the only

Valve manufacturer to manufacture their own liners using the patented AMRING sealing system. KSB believes that producing liners used for different processes, is a complex task and therefore manufacture their own liners in their La Roche-Chalais factory in France.

Site visits were made by both Drax and Beaudrey representatives to our UK service and sales office and to witness test the valves in Burgos, Spain. KSB UK representatives also attended the installation and commissioning of the Valves at Drax Power Station to provide knowledge and expert service engineers, to oversee the smooth operation and system testing was completed with no issues.



KSB has the capability to supply sizes from DN 1050 to DN 4000 within the Mammoth valve range

Scope of supply

- 2 x 96" Mammoth Butterfly Valve
- 3 x DN50 Isoria 10 Butterfly Valve
- 1 x DN400
- 3 x DN450
- 2 X DN150

Application: Drax Power Station

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KSB Ltd
 2 Cotton Way
 Loughborough, LE11 5TF
 www.ksb.co.uk