

EXPERIENCE



RETROFIT OF VARIAX ID FANS AT ASNAES P.S.

ASNAES POWER STATION UNIT 5, 1 X 640 MW, DENMARK - IMPROVEMENT OF FAN PERFORMANCE IN CONNECTION WITH IMPLEMENTATION OF DNOX

In 2003, Energi E2 decided to upgrade the induced draught fans at Asnaes Power Station (increase the pressure) to make sure that the fans are prepared for the implementation of DNOX.

HISTORY

In 1978, Howden supplied two single-stage induced draught Variax fans ASN-3400/2000S, 990 rpm, 6628 Pa, with a 4200 kW motor (two fans per boiler) to unit 5 at Asnaes Power Station in Denmark.

The original hub were made of spherical cast iron and equipped with forged aluminium blades with erosion shields.

NEW REQUIREMENTS

To meet the additional system resistance the fan performance of the existing ID fans should be increased by approx. 1500 Pa.

The existing induced draught fans did not have enough spare capacity for the increased pressure and therefore alternative solutions should be found.

DECISION & BENEFITS

An upgrade of the existing fans based on the latest technology developed, designed and tested in Howden's centre of excellence for axial flow fans in Naestved, Denmark was the solution.

One of the features of the upgrade was the installation of our specially designed high-pressure blade profile. In addition to obtaining optimum pressure, optimum efficiency was also brought into focus.

The blades were made of nodular cast iron which increases the blade life considerably compared to the original aluminium blades.

The steel hub was equipped with our unique oil-lubricated blade bearings and this design optimizes the service intervals.

In addition to replacement of rotors, the new high-pressure blade profile also required new guide vanes in inlet box and diffuser as well as minor changes of the stator. A new main motor (customer supply) was also installed.

The upgrade did not cause any changes of the duct connection on suction and pressure side and consequently the existing foundation could be re-used, ie the final customers' overall expenses were considerably reduced in comparison to the installation/delivery of new fans. A reduction of the overall outage at the power station was also an advantage.

We can perform a full retrofit on site within 6 weeks

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