

Fyn Power Station

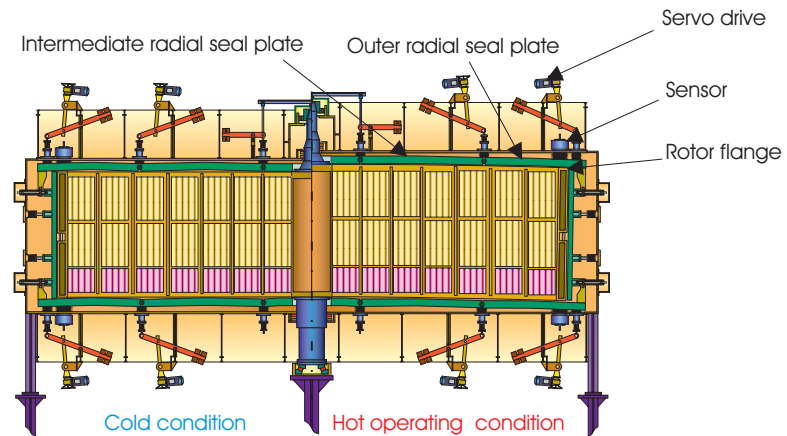
Air Preheater Rehabilitation

Fyn Power Station unit 7 located in Odense, Denmark is a modern 350 MWe combined heat and power plant owned by Vattenfall. The boiler including Low-NO_x burners and a quad sector air preheater was supplied by BWSC (then: BWE) and the plant started operating in 1991. In 2007 an SCR unit for further NO_x reduction was installed and in this connection the air preheater went through a major rehabilitation in order to reduce air leakage and make the heater fit for the SCR operating conditions.

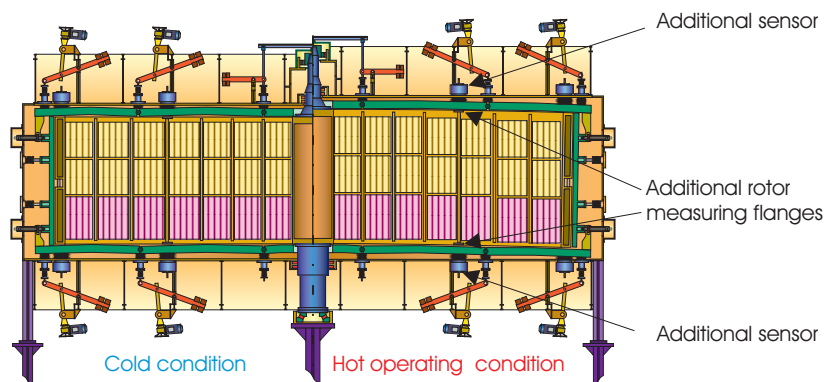
Together with a general rehabilitation and maintenance project of the air preheater the following major modifications were introduced:

- Installation of additional rotor measuring flanges and sensors
- Installation of double radial walls
- New heating surface including a 1,250 mm enamelled cold end layer
- Reduction of speed to 0.8 rpm

The originally installed sensor control system for the radial sector seal plates consisted of sensors measuring the distance from the outer radial seal plate to the rotor flange. This signal was used to control the servo drives for outer radial seal plates. The intermediate radial seal plates were controlled in relation to the position of the outer servo drives (not the actual distance). This system was changed to the present BWSC Active Leakage Control system by the installation of additional rotor measuring flanges and sensors at the



Original design



Improved new design

intersection of the outer and the intermediate radial seal plates.

This new improved design constantly ensures a controlled clearance gap and a minimum air leakage of all the radial sealing plates. In order to reduce the entrained leakage caused by the rotation of the heating matrix the speed was reduced to 0.8 rpm. After the conversion the leakage has been reduced to below 5%.

The total sensor control system was changed from local control panels to the DSC system of the unit in order to have a common control system for the complete equipment and all data in the main system.

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