Moisture Separator Reheaters

Always one step ahead

nem

BALCKE DÜRR

Industry Leading Technology

For many decades NEM Balcke-Dürr **Moisture Separator Reheaters (MSRs)** have been setting benchmarks in terms of efficiency, reliability and quality workmanship.

Over the years we have developed several MSR designs. Among others the World's largest MSR for EPR. Our MSRs are equipped with the most advanced separation technology: **Powervanes**, which significantly increase the efficiency of MSRs. In addition, the **Powersep** technology ensures optimum protection of the components in the MSRs through additional moisture separation.

NEM Balcke-Dürr specializes in **modernization and replacement** solutions to extend plant life time and increase efficiency. We provide turn-key solutions from design concepts to installation and commissioning, independent of the original MSRs manufacturer. We are particularly skilled in implementing MSR exchange projects under challenging conditions.

3D model of a vertical MSR

Benefits

- Perfected MSR technology based on decades of experience
- Proven designs for vertical and horizontal MSR configurations
- Modernization by optimizing and replacing fine separators and reheater bundles
- Maximum component protection and power gain thanks to Powerseps
- Increased efficiency through Powervanes separation technology

Transport of new MSR: Nuclear Power Plant Temelin / Czech Republic

Technology & Features

MSR design is critical in view of its direct effect on plant availability. MSRs are also subject to very complex operating conditions due to a corrosive two-phase flow on the shell and pipe side, as well as considerable load fluctuations.

In order to comply with such complex operating conditions our design combines optimum thermohydraulic and mechanical properties:

Installation of a new MSR

- Powervanes ensure top separating rates with low pressure loss and high reliability **against water carryover**. Independent studies have demonstrated that this high-performance fine separator is by far the **most efficient** one on the market.
- **Powersep** is a centrifugal preseperator that can also be added into existing systems. This coarse separator provides significant MW of power gain.
- Stainless steel or stainless steel cladded components ensuring full **protection against erosion and corrosion**.
- Flexible connection systems guarantee **compensation of the different thermal expansions** between vessel shell and reheater bundle as well as between reheater tubes and bundle structure, under all loads.
- A high degree of **vibration resistance** is achieved by numerous support plates arranged in the reheater bundle.

Application

MSR in the manufacturing process

Crane moving MSR at construction site in Finland

Heat Exchanger Solutions
NEM Balcke-Dürr GmbH - part of NEM Energy Group
Theodorstraße 182 | 40472 Düsseldorf | Germany
+49 (0)211 58671-0 | info@nem-energy.com

www.nem-energy.com