

Custom pumps deliver **50% cost saving** to Korean power plant

CUSTOMER

Major combined cycle power plant

LOCATION

Ansan City, South Korea

INDUSTRY

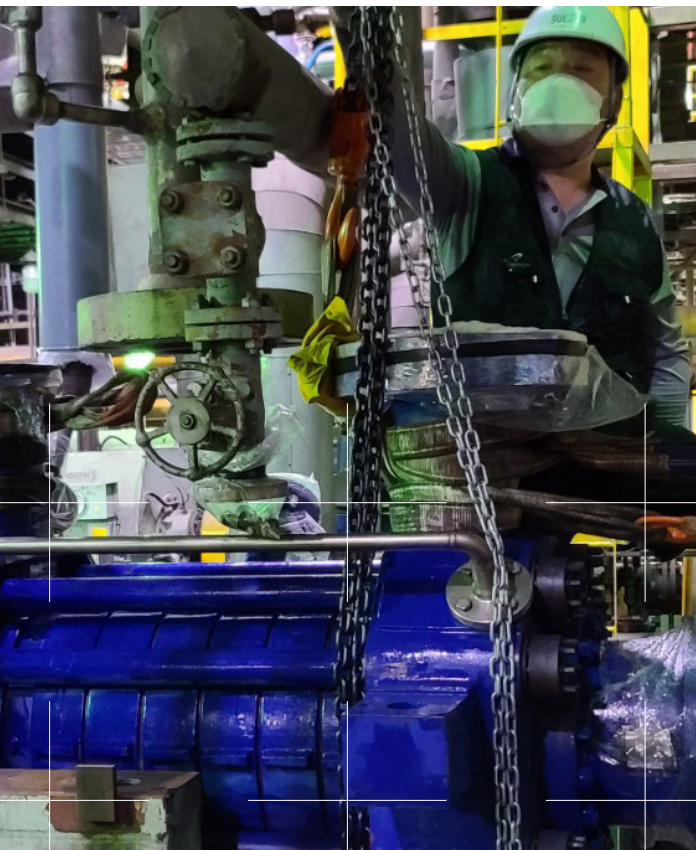
Power generation

KEY SERVICES

1. Inspection & Analysis

2. Retrofit

3. Pumps Training



THE CHALLENGE

Korean OEM pumps proved costly as maintenance interventions increased



1. The original pump

The project

After 28 years in service, a drop in performance and intense vibration at 8 mm/s was detected by power plant operators on four ring-section boiler feed pumps. The increased frequency of interventions and lack of support from the local Korean pump OEM meant that the power plant needed an alternate pump repair specialist to provide a solution. Due to positive experiences operating its pumps across multiple facilities, site managers contacted Sulzer.

- The pumps required more frequent maintenance than the typical three-year service interval
- Any pump failure risked power generation uptime, energy supply and penalties from the regulatory body
- Site managers needed expert insight in how to approach the pump issues
- Any pump maintenance needed to take place within a planned shutdown
- Little support was available from the pump OEM

2. On-site root-cause analysis by Sulzer's experts

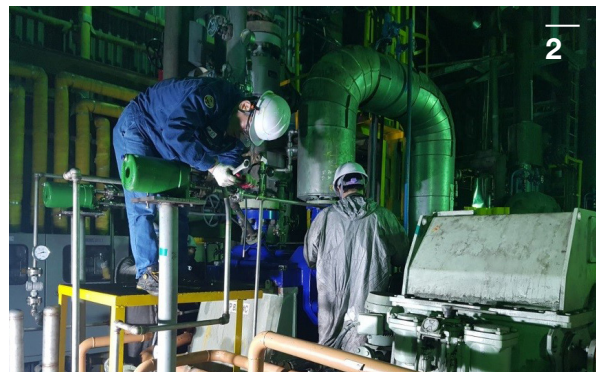
THE SOLUTION

Bespoke turn-key drop-in solution with training

Our approach

Sulzer's team of specialist pump and mechanical engineers, offering decades of power generation experience, conducted a comprehensive technical study of the existing installation. Evaluating the pump's condition, they determined that the pumps had reached the end of their service life. Leveraging its engineering expertise as a leading global pump OEM, Sulzer proposed a drop-in, custom pump design.

- A fully customized, plug-and-play pump was provided with a hydraulic design based on the MD series
- Optimized pump delivered the same performance with improved efficiency
- Pumps were designed, manufactured and tested ahead of planned shutdown
- The supply of automatic recirculation (ARC) valves, drive couplings, seals and lube oil pipework ensured a turnkey solution
- A training package was included for plant operators to support future pump maintenance



1. The new 'drop-in' custom pump

2. Engineers at work

3. Training and technical sharing with plant's maintenance team

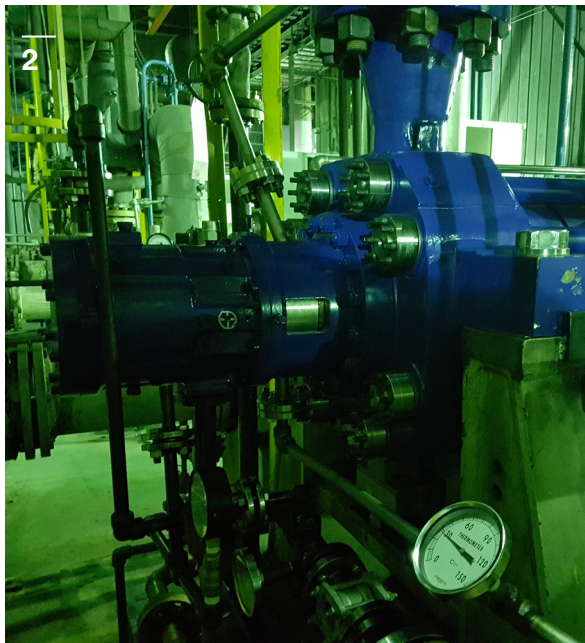
Superior cost savings and life-time support for revitalized pumps



Drop-in replacement

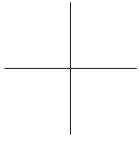
The custom pump solution provided the power plant with time and value advantages compared to other options. Furthermore, the plant received a turnkey, drop-in pump replacement that required minimal modifications to existing facility infrastructure. Pump changeover was completed within the planned shutdown, securing power generation uptime.

- Plug-and-play design ensured that Sulzer field service teams could complete pump changeover in two weeks
- The custom pump solution delivered a 50% cost saving compared to an OEM replacement
- Sulzer avoided the expensive base plate, suction and discharge pipework changes proposed by local Korean OEM
- After more than two years of reliable operation, the Sulzer pumps have delivered improved efficiency and vibrations of only 2 mm/s
- Full product lifecycle support is available, including just in time (JIT) spares supply



1. Close collaboration between Sulzer and customer team

2. New pumps installed and commissioned



PROJECT KEY FACTS

PUMPS RETROFITTED:

28 year old

COST SAVINGS:

50%

RETROFITTED FLOW RATE:

**260 m³/h
132 bar G**

ENERGY EFFICIENCY:

**3'490 rpm /
1'235 kW**

REDUCED VIBRATION:

2 mm/s

THE IMPACT

The pumps delivered a sizeable reduction in capital expenditure and a swift, optimal replacement for the power plant.