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Application Case Study: Engineered Solution for Cold Reheat Isolation Valve at a Large Power Plant

A large power plant asked Genesis Systems to find a suitable valve to isolate the reheat section of the boiler from the turbine, for the purpose of pressure testing the reheat tubes.

The previous method of isolation was to install a blind flange in the piping below the turbine, which was very time consuming and required considerable manpower. The goal was to reduce the time between the completion of the testing and lighting of the boiler. All common production valves were scrutinized, including ball, butterfly, gate, and globe valves. All were found to have shortcomings. We met with plant personnel, including management, engineering, and maintenance working together to develop a concept for a fully bonneted high pressure knife gate valve with an electric motor operator. Genesis Systems took this concept to our knife gate valve manufacturer and worked closely with them over a six month period to fully realize the design on paper. After multiple customer reviews and the addition of safety features, the first order was placed in 2005. Our manufacturer utilized their worldwide facilities to fabricate this custom 34" valve. After several design modifications during assembly of the valve, the first unit was delivered in December of 2006. The delivered valve weighed 24,000 lbs and stood 14 ft tall. The new valve reduced the time to isolate the boiler from 16 hours to 30 minutes. The customer ordered three more valves, two of which are already installed and working properly. A fourth valve will be installed in 2009.

Genesis Systems worked closely with our manufacturers to custom engineer a valve solution that saved our customer considerable time and money while reducing plant downtime.

If you would like additional information on this application or any of our other specialty valve or valve automation packages, please contact us at (972) 578-5105 or at sales@callgenesis.com.