Performance MATTERS™

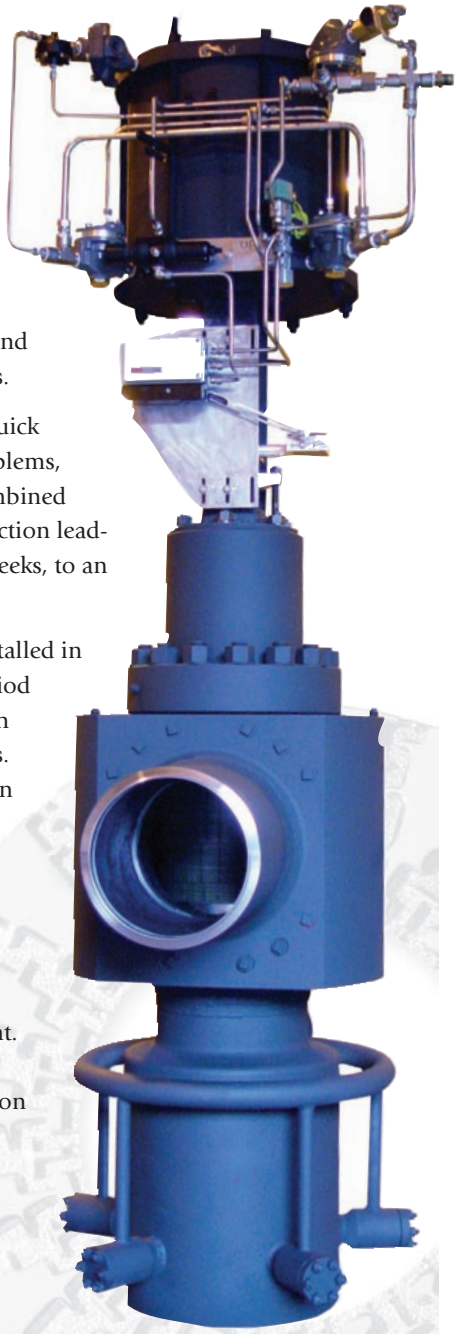
CCI Gets Cogen Plant up and Running in Record Time

A major cogeneration facility recently awarded CCI a project solving a critical valve failure. The plant's essential function is to provide process steam to an iron making plant and deliver the balance to the adjacent automobile manufacturing facility. For over a year the steam process facility observed continual valve failures with the originally installed competitors' components:

- Valves sticking in position during steam operation – could not be reliably opened and closed.
- Unexpected steam energy releases and uneven de-superheating finish temperatures
- Severe Vibration – control accessories breaking and falling off.
- Excessive Noise – 100 dbA.
- Repeated service efforts failed to correct the problems.
- Plant lost confidence in safe, reliable, operation of the bypass valves.
- Loss of reliability by depending on a single compromised valve.

CCI Valve Doctors reviewed the plant operation, plant performance, piping, piping layout and operating conditions and quickly began to work out a solution. The CCI team concluded that the three main steam delivery systems; HP to Process, HP to condenser and HP turbine extraction to process valves were improperly designed to perform at the demanding process conditions. The CCI Valve Doctors proposed that a multi-stage DRAG trim with CCI design rules were required to deliver the performance and reliability necessary for successful and reliable plant operation focusing on:

- Velocity Control – Original design used one throttling and two fixed stages of pressure reduction. The new CCI design used 16 throttling and one fixed pressure reducing stages, reducing the outlet energy by 10 times, eliminating noise and vibration problems and ensuring safe and reliable operation.
- Improved shut off and control – larger actuator with higher seating force eliminated problems with valve performance by dramatically increasing resolution and providing a higher shut off force.
- Trim components were upgraded to high alloy Inconel materials that corrected for thermal expansion and provided improved strength.
- CCI provided valves that fit the existing piping configuration and horizontal stem orientation with no piping modifications.
- CCI provided valves with a "cartridge" trim design thus eliminating multiple/ separable trim components, and improving horizontal installation and maintenance procedures.



The customer demanded a quick resolution to their plant problems, and the whole CCI team combined together to reduce the production lead-time from the standard 26 weeks, to an amazing 10 week delivery.

The first set of valves was installed in early May to be run for a period of one month in parallel with the originally installed valves. The day following installation of the first valve, the system experienced a system trip and went into full bypass. The CCI valve opened upon demand and carried the full load, resulting in no loss of production steam to the plant. The reduced noise, reduced vibration and overall operation of the CCI valves prompted the facility to authorize the immediate installation of all the remaining CCI valves.

