

IMI STI's actuators suited for minus 52°C

Client: CJSC Sibur Holding

Project: ZapSib-2

Location: Tobolsk Petrochemical Complex in Russia.

Details: CJSC Sibur's ZapSib 2 Project is being carried out inside the boundaries of the Tobolsk Petrochemical Complex. The complex will integrate a steam cracker for production of ethylene, propylene and butane-butylene fraction (BBF) and will include polyethylene units and a polypropylene unit. It will be the biggest integrated complex for the production of polymers in Russia when it comes online following a construction period of five to five-and-a-half years. More than 320 companies from 23 countries were involved, providing services and materials to the project, which is considered to be the biggest in industry history.



IMI STI's heated cabinets ensure safe actuator operation at minus 52 degrees C.

Items supplied: IMI STI has supplied actuators for antisurge valves. The actuators have various sizes and strokes, ranging from ND 200 (requested thrust to seat 12153N) with a stroke of 70mm to ND 500 (requested thrust to seat 102265N) with a stroke 300mm.

Challenges: The actuators had to be able to withstand a corrosive atmosphere and very low ambient temperatures (down to minus 52°C) and also to offer a fast stroke time.

Solutions: IMI STI developed a special cabinet (completely in 316 stainless steel) to house the actuators. This cabinet is fitted with heater cables so that the inside temperature is raised. All ten actuators have the same main features: vent ports are in facing to avoid water entry or ice build-up/formation, all accessories are in 316 stainless steel as is the FasTrak® positioner which is TR CU certified for minus 55°C. Further, the actuators have been designed to move within two seconds in opening and within three seconds in closing without overshoots whilst guaranteeing the high dynamic performance required by the anti-surge application. Actuator performance has been verified using in-house testing and a purpose-built test sequence that simulates performance. Ten additional actuator units are currently being prepared.