86d Real Time Optimization of Industrial Gas Networks

Larry Megan and Randy Esposito

This paper describes a closed-loop real time optimization system Praxair has implemented for one of it's industrial gas pipeline networks. Industrial gas facilities operate like utilities in the sense that the customer product demand varies frequently, usually without warning, and must be maintained at all times. The system described in this presentation optimizes the operation of multiple air separation units located across geographically dispersed locations, coordinating their production to best match the variable product demand. The complete system includes a number of tightly integrated technologies applied both at the individual plant and the central pipeline control center levels: real time optimization, model predictive control, primary control, and ethernet networking. The result is a highly automated system applied to the complete network that continuously implements "best practices" for the site operations. The paper will describe the technology along with the key success factors for these projects.