



The Industrial Solutions Group

Providing World Class, Innovative Solutions

Ethylene Glycol Recovery Process

- **Process Consulting**
- **Process Controls Consulting and HMI**
- **Building MEP Design**

The Challenge: Our client had a huge problem. De-icing planes resulted in millions of gallons of dilute, glycol solution being discarded each year. Historically, this fluid was collected at pads and was treated at the municipal sewer district (MSD). When the MSD served notice that this effluent stream was pushing their plant beyond its limits — another approach was clearly needed.

ISG's Innovative Solution

ISG helped the Airport and their environmental engineers work through a variety of options. These options ranged from investing capital to expand the MSD's capacity to installing a digestion system to remediate the problem on-site to recycling. Recycling turned out to be the most economical (and sustainable) approach. This has been accomplished with the following key scope items:

- The client selected a 'green,' sustainable option — re-concentrating the fluid and sell it to a recycler.
- A 700 HP, 65 gpm mechanical-vapor recompression evaporator that uses less than 1/10th the energy of a single effect evaporator.
- The process facility is designed to operate round-the-clock with operators present only a fraction of the time.
- The SCADA/HMI control system coordinates the collection of data and operation of 5 different PLC systems. The unique control system provides remote access to all operating data via the Internet or via operator's cell phones.
- 'Expert' operator system provides advance notification of surpar heat transfer, pump performance and compressor performance to facilitate proactive maintenance .

Benefits to Client

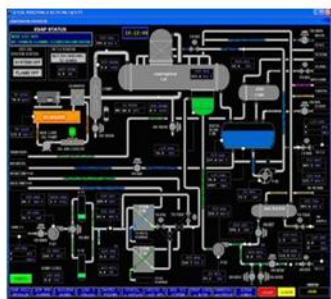
- The client saves more than **\$1,000,000** per year in sewer charges.
- Ethylene Glycol is reclaimed — resulting in a greener environment.
- MSD has additional capacity available to expand the local residential base.



Evaporator heat exchanger being moved into the building



Evaporator set in place



Control screen shot of System