



ITT

Reliability, Energy, and
Maintenance Solutions

Pump Professor Teaches Organizations How To Lower Maintenance Costs

Knowledge is power that keeps processes running efficiently for one 15-time customer

According to the U.S. Department of Labor, more than 13 million people work in the manufacturing, natural resources and mining industries in the United States. Workers in thousands of factories, mills and refineries oversee millions of pumps driving the production of everything from candy to paper to gasoline.

No matter how well engineered the machines are, a human touch is essential to making sure these processes run efficiently. After a pump leaves the factory, it's up to the engineers, mechanics and millwrights on site to make sure it performs as designed to maintain productivity and avoid downtime.

CUSTOMER PROBLEM:

Improper Installation and Maintenance Lead to Failures to Capture Wasted Water Energy

The most common pump mistake throughout all industries is improper installation of the pump base plate. Poor leveling and support of the base leads to pipe strain and other problems, which then eventually place undue stress on mechanical seals and bearings.

"Mechanical seals are the immediate culprit in roughly 80 percent of all pump failures," said Joe James, ITT Product Training Manager, who has more than 35 years experience in pump design, service and training. "But when you trace the problem back to root causes, nearly all of these failures would have been avoided with proper installation and better maintenance."

James said that ITT Goulds Pumps designs its pumps to provide superior lubrication and cooling to the parts that carry the stress of nonstop operation in hot, high-pressure processes. With proper on-site attention, neither the seals nor the bearings – involved in about 10 percent of pump failures – are likely to break down. "Very few bearings die of old age," James explained. "When bearings fail it's almost always because they've been killed – either by neglect or by the kindness of excessive lubrication."

Turnover in maintenance, repair and operations organizations makes it harder for plants to boost efficiency even as pump designs improve. When experienced millwrights and plant engineers retire, it's critical that their replacements are schooled in the installation and maintenance practices that increase uptime and lower costs.

Engineered for life



CASE STUDY

LEARNING AND DEVELOPMENT

www.ITTPS.com

ITT SOLUTION: “College of Pump Knowledge” Turns Factory into Classroom

ITT Plant Performance Learning Services helps organizations to end their pump system failures and score an A for operational efficiency. They offer a variety of general and specialized courses online and in classrooms at various locations throughout the country or on-site at customer locations.

e-Learning (online computer-based training) offerings:

- Pump Fundamentals
- ANSI Products
- Basic Hydraulics for Centrifugal Pump Systems (Coming soon!)
- Intermediate Hydraulics for Centrifugal Pump Systems (Coming soon!)

Instructor-Led offerings:

- Fundamentals of Reliable Pump Operation
- Pump System Maintenance for Reliability
- Fundamentals of Reliable Pump System Design
- Plant Optimization for Managers - powered by Rx

A hands-on training approach encourages students to tear down and rebuild products under the guidance of James, the lead ITT “pump professor,” or another instructor. Although ITT Goulds products are featured, the training extends to pumps from other manufacturers and other types of rotating equipment.

“Our business model is to sell service and installation support along with the pump,” said Darren Moscato, Director of Plant Performance Services. “Sometimes the support entails one of our engineers helping the customer to install a new pump and review maintenance procedures. If many products are involved or the customer wants a group refresher course on machine maintenance, Joe James and his team offer the best hands-on training we think customers will find anywhere.”

One customer, a global agricultural services company, values the training so much that it has asked James to come back 15 times over five years to educate hundreds of employees on pump operator training, ANSI products, and maintenance. “By making workers more knowledgeable about the machinery they’re in charge of, we’ve helped this customer to save a lot in maintenance and downtime costs by investing a little in upfront training.”

The on-site training option is a great opportunity to make classroom instruction come to life. During a training session at an alumina factory in Jamaica for example, a student asked about an old slurry pump that had failed that day. James oversaw an impromptu tear-down of the failed pump, and helped the class diagnose the problem. They produced a new shaft overnight, and James came back in the morning to teach the class how to put the pump back together and reinstall it. The pump is working years later without a problem since.



THE BOTTOM LINE:

Learning and development costs a fraction of the potential savings in reduced downtime, equipment failures and maintenance costs. Since the program began in 1997, ITT Goulds and Plant Performance Learning Services has trained more than 2,000 individuals at 150 customer organizations. These customers have saved millions of dollars through improved maintenance and repair knowledge.

