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Case Study: **HC900 Hybrid Control System**

Application: **Process Control of Bell Annealing Furnace Annealing and Slitting Processing Plant**

Problem	Needs a control system that helps control costs as well as the process. (Our existing system was a great controller in its day. But technology today is far better than it was a few years back.)
User's Former Business Result	In the metals market, thin margins and the rising cost of energy and raw materials makes it difficult to compete profitably. The following issues needed to be addressed: 1. **Rising Fuel Cost:** With rising fuel costs, sloppy control raises natural gas usage levels and adds to the cost of manufacturing. 2. **Legacy Issues:** Current control equipment (Micromax) was obsolete, and parts were no longer available. 3. **User Unfriendliness:** It is difficult to learn how to use the current system, remember all the functions and setup procedures needed to perform a process. 4. **Lack of Functionality:** The legacy controller didn't allow storage of time/temperature profiles in the system. 5. **Mistakes Erode Profitability:** Because of industry-wide thin margins, mistakes often mean that jobs are processed at a loss just to fill the order. If the legacy system malfunctions or an operator error occurs, it can require complete re-treating of product to ensure that the product met customer expectations. 6. **Costly Gases Need Tight Control:** Due to the high cost of hydrogen, nitrogen, and specialty gases, they require tighter control than the existing system can provide.
Concerns Affecting the Decision	Fears before deciding to replace the existing system: 1. Advanced control systems can be expensive and difficult to implement. 2. Trial runs on a new system require loss of process for a number of days. Lost production time during the trial is expensive. 3. Engineering time to define, design, build and implement is considerable. 4. What if the investment is made and it doesn't work?
Evaluation and Decision Criteria	Evaluated Allan-Bradley PLC, Ajax, and Honeywell HC900. 1. Cost is important, but confidence is even more important. 2. Configuration, startup and implementation time must be minimal. 3. Operator friendless is essential. (Operators must learn new system in a few hours.)

Solution	After evaluating all the options, the user saw that PLC engineering, programming, and startup were the most time-consuming and complex. Operators liked Honeywell's pre-formatted "ready-to-use" displays. And, because Honeywell is known for process control, they had confidence in the brand and the system. Plus, the Honeywell HC900 was easy to implement and cost-effective. Implementation Phase: 1. Development and integration time was unbelievably fast. The software was intuitive, and the engineer's fears that programming would take a long time were eliminated after he got into the simple "drag and drop" programming. He estimated that the HC900 cost about an eighth of the development costs of other systems. 2. Seamless startup completely eliminated downtime. The customer didn't lose ANY production time switching to the HC900 system. 3. Installation time was quick. Universal inputs and the system's small platform size saved setup, mounting, and connection time. 4. The simple programming language cut engineering time and costs, and enabled the in-house engineers to complete the programming without outside help. Costs for future engineering tasks will be reduced as well, since it can all be done locally. 5. The user-friendly operator interface reduced the learning curve. All operators were trained and comfortable with the system in a couple of hours.
Business Result After Installation	1. Process runtimes have been reduced by an hour without jeopardizing product quality, thanks to the HC900's advanced algorithms and soak programs. 2. Tighter control on the process is increasing product quality, and reducing gas usage and operating costs. 3. Simple operator interface eliminates process errors. 4. Hot-swappable electronic boards will significantly reduce maintenance in the future. And, they eliminate the "loss of production" fears. Routine control system maintenance has been reduced drastically.
User Comment	We are [among] the most satisfied Honeywell customers in the U.S. This product is outstanding! *When someone asks us today about what type of equipment to use for process control, only one name comes to mind: Honeywell.* In this thin-margin industry, every second is costly. This system reduced our process time by hours. Huge savings! *This technology will push us past our competitors.* In our business, we can't afford to make mistakes. [The HC900] was certainly the right decision. *Our vendor, Lesman Instruments, offered outstanding support through the whole process, making this leap easy. They thought through all of our needs. There was no need for technical interface after startup.*

Now, with the help of this new Honeywell hybrid technology, we are confident that we can provide our customers with more value than ever before. And, our customer is the one who pays us. We owe it to them to provide the best possible quality.

I have been able to shorten the process time, because the system knows exactly when to start the soak and maintain the soak process. Many people who shortcut this time sacrifice significant quality. [The HC900's] system performance enables us to shorten the time while still improving the quality.

This was, by far, the smoothest startup I have ever witnessed in my career.

During the startup, we never lost a single minute of production time.

Interested? Want to learn more about Lesman's hybrid control solutions? Visit *www.lesman.com*, call 800-9LESMAN (800-953-7626), or send an e-mail to sales@lesman.com.