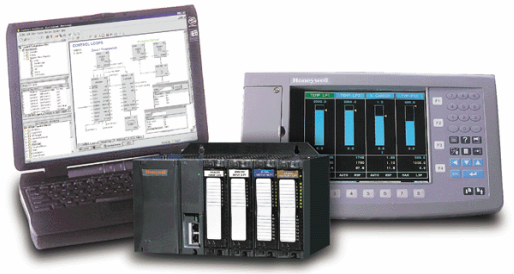
Case Study: **HC900 Hybrid Control System**

Application: **Waste Treatment Processing**
Oil Recovery Processing Plant

Problem	Waste treatment is not a source of profit for the plant, so though an upgrade of the control system was necessary, funds were limited.
User's Former Business Result	The following issues needed to be addressed: 1. **Rising Chemical Cost:** With rising cost of the chemicals used to treat waste poor control creates higher plant operating cost, which reduces the profitability of the plant. 2. **Legacy Issues:** Current control equipment (Moore 353s) was obsolete, and parts were no longer available. 3. **Prohibitive Maintenance Costs:** The cost to maintain the existing system were excessive due to the number of failure points resulting from the large number of discrete devices and the age of the equipment 4. **User Unfriendliness:** The existing control panel filled with single loop controllers, pushbuttons, and warning lights, made it difficult to train new operators. With so many discrete devices, proper execution of shutdown and emergency procedure was operator-intensive and highly subject to human error. 5. **Mistakes Erode Profitability:** Fines by EPA, clean up and lose of production because of equipment failure or operator error have a negative impact on plant profitability. 6. **Information:** Because plant performance was not in a database, access to historical information was non-existent or extremely labor intensive to retrieve.
Concerns Affecting the Decision	Fears before deciding to replace the existing system: 1. We can't shut the plant down to move to a new control system. 2. Advanced control systems can be expensive and difficult to implement. 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, Emerson/Fisher Dual Loop Process Controllers, and Honeywell HC900. 1. Cost is extremely important. 2. Startup and implementation must be minimal. 3. Operator friendless is essential. (Operators must learn new system in a few hours.) 4. Emergency procedures must be easy to do. 5. Local support is essential.

Solution	After evaluating all the options, the user saw that PLC engineering, programming, and startup were the most time-consuming and complex. The cost of loop controllers was prohibitive. The Honeywell HC900 was easy to implement and cost-effective.  The customer implemented the Honeywell HC900 with the operator interface and Specview software for programming and management. Implementation Phase: 1. The ease of use of "drag and drop" programming allowed the plant engineer to program the complete system locally in a less than a day. 2. Operator training was accomplished in less than a day. 3. The equipment's small size kept installation cost to a minimum. 4. The new system was put in place without shutting the plant down.
Business Result After Installation	1. Emergency shutdown is programmed into the system and performed automatically. With the old system, in an emergency shutdown, there was a manual sequence operators had to follow to ensure shutdown in the proper order. 2. Advanced algorithms provide tighter control and reduced chemical usage. 3. With on-screen data and automated sequencing, the user has increased safety and reduced potential for operator error. 4. Routine control system maintenance has been reduced drastically. And, hot-swappable cards will significantly reduce maintenance in the future. 5. Control room is now a show place. 6. After removing the old system, the remaining space was large enough to build a break area for employees.
User Comment	With the EPA requirement for more self-governance, we knew modernization was needed. *The implementation of this system was significantly easier than anything I have ever done using a PLC or DCS. This is an advanced control system made easy. We are going to be able to do some things with the HC900 that we didn't think were possible before.* When someone asks me today about what type of equipment I would use for process control, I would jump to the Honeywell system first. This product is engineered right. *We saved a lot of money by choosing this system.* The Lesman team, our salesman and the product specialist, offered great support, which made this leap a lot easier than we thought it was going to be. The team anticipated our needs so we didn't need any help after startup.