



## COGENERATION Control Solution

*We Can Take You There!™*

Frustrated by paying premium expenses to support an outdated Distributed Control System?

Tired of supporting multiple automation platforms across your enterprise?

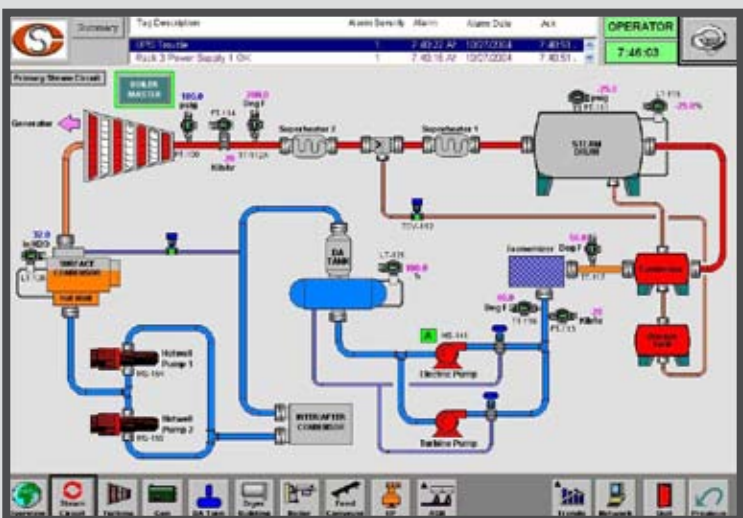
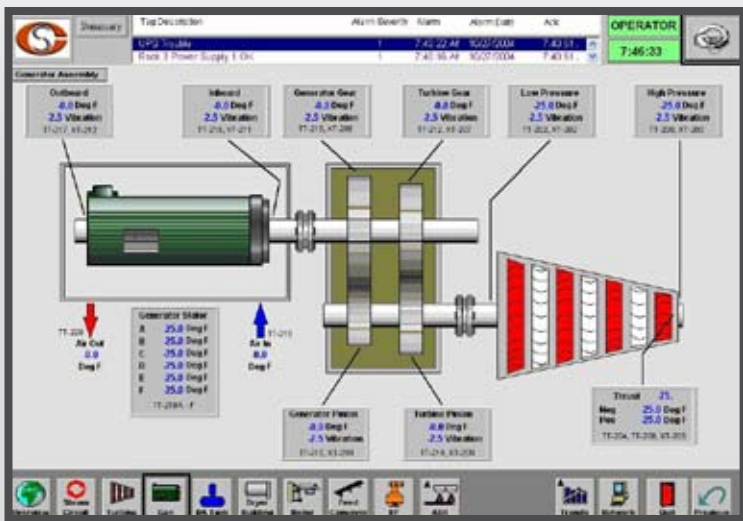
Upgrade your old system with a fresh perspective using the best technology available!

Concept Systems is an award winning, independent systems integrator specializing in process/DCS control system design, development, commissioning, and support services. We are a full service system integrator that will minimize the cost and frustration of supporting multiple control platforms throughout your facility. Whether your needs are in discrete manufacturing, continuous process or a combination of the two. Let us show you how modern automation technologies can be integrated throughout your enterprise.



Concept Systems upgraded this 12 Mega-watt cogeneration facility to Rockwell ControlLogix, replacing a legacy Bailey Infi90 System.

**Concept Systems used the Rockwell RSView Visualization Platform to Provide Clear, Easy-To-Use Controls for Facility Operators.**



## **Concept Systems has demonstrated how new technology can be used effectively across the entire enterprise at the Collins Pine facility in Chester, California.**

Concept Systems Inc implemented the Rockwell ControlLogix platform throughout the Collins Pine lumber manufacturing operations. ControlLogix was used to control each machine center in place of a conventional PLC approach.

Two years later, Concept Systems upgraded the controls in the Collins Pine cogeneration plant located on the same site. The existing Bailey DCS system was converted to a redundant Control-

Logix platform using true distributed IO around the facility. ControlLogix was selected for this upgrade since it had already been applied successfully in the lumber operations and its enhanced process control platform allowed easy migration to the utilities area. Now Collins Pine only has to support a single technology. As a result, overhead maintenance and inventory costs are lowered significantly and the learning curve is shortened.

**Concept Systems completed the entire conversion in 7 days during a 10-Day Shutdown! (See article inside.)**

## Powerhouse Control System Retrofit Cuts Maintenance Costs, Improves Responsiveness to Power Needs

Two years ago, Albany, Oregon system integrator Concept Systems outfitted a sawmill at the Collins Companies' facility in Chester, California with brand new, networked control systems for all of the plant's machines and material handling equipment. The only control system that was not updated at the time was the one that operated the mill's powerhouse. The powerhouse is a "co-gen" facility that provides power to operate the mill and also produces power that Collins sells back to the local power company, Pacific Gas and Electric Co. (PG&E).

In order to meet the requirements of Collins' contract, the powerhouse's 12-Megawatt turbine generator must supply a certain amount of power to PG&E at certain times of the day. Meeting these needs and the electrical needs of the sawmill, plus controlling the supply of steam that is sent to the lumber dryer and used to heat the mill in winter months requires maintaining the pressure and water flow in the boiler with a closed-loop control system.

The powerhouse's old control system was installed in 1985, and had become a maintenance problem. Problems were hard to troubleshoot. When a malfunction occurred, plant maintenance people had to go online to analyze the controller's software to identify the cause of the failure. The wiring was in bad shape; They were using a 24-Volt system that was in need of rewiring. There were flow transmitters that were not working properly. It was very expensive to call the control system manufacturer in for service and it was hard for Collins' own maintenance personnel to service the system.

Furthermore, the existing system required a significant amount of operator intervention for proper operation. Some of the processes had to be run in manual mode all the time. Collins wanted a system that could operate reliably and efficiently in automatic mode.

In addition to providing a more reliable and robust control system and better maintenance information, Collins wanted to update the powerhouse control system to be compatible with the Allen-Bradley controls that were previously installed in the main mill.

Concept Systems replaced the old distributed control system (DCS) with an Allen-Bradley ControlLogix system with redundant power supplies and redundant processors, and added a new operator interface based on Rockwell's RSView32 package. The new system has room for growth: It has the ability to serve three operator stations and capacity to process 5,000 tags (I/O control points and setpoint values). Approx 2500 tags are used in the initial implementation.

Parameters controlled by the new control system include the rate at which the wood chips are fed into the boiler, the dryer temperature, and the water flow into the boiler. The new control system also does temperature and vibration monitoring for the turbine generator and the boiler pressure so as to insure that no water gets into the turbine.

To aid the plant's maintenance people and operators, Concept Systems added alarming (close to 700 new alarm points), and improved the operator inter-



face (added a lot more graphics and help displays). Now, if a conveyor goes down, plant maintenance people can look and see visually what the problem is. If an indicator fails or a plug is tripped, the operator now has the information to tell the electrician what part failed. The new operator interface also provided additional dimensions of operator control; The operator interface supports electronic control of some things that were previously adjusted manually using valves, knobs, etc.

One area where Concept's attention to detail is paying off for Collins is in wiring the control panels. Collins had a lot of downtime with the old system due to wiring problems. Plant maintenance personnel were afraid to open the control cabinets because the wiring was unreliable. Connections were brittle and water would short out the system.

Concept Systems pre-wired the new cabinets at its Albany headquarters and pre-wired the cabinet connections to the devices in the field to minimize downtime

during the switchover from the old control system to the new one. Because of the advance preparation, Concept Systems installation engineers were starting to check devices out on the third day after installation had begun. The entire installation was completed within one week.

The new system has improved response time, enabling the boiler to respond more quickly to the need for increased power generation, and power generation uptime has also been improved. If the power ever went out in the old system, the old computer would need to be completely reloaded. Now, if either PGE's power, the plant's power, or both go down, the operator station will stay up long enough to insure an orderly shutdown of the boiler system should it be required.

Collins has been very happy with the results to date. Work is continuing on the dryer and other areas of the power generation system to make the system even more efficient in converting the raw material wood chips in generating power.

**Concept Systems Inc** is an award winning, leading-edge systems integration Solutions Provider, focusing on automation and information system solutions for industry. **Concept Systems** combines highly skilled engineers and technicians with quality products to meet today's integrations and control challenges.

Call us to tailor a system that fits your needs.

