Steel corporation automates coke process

Computers, designed for almost any function in today’s technologically oriented world, have found their way into operations at Bethlehem Steel’s Sparrows Point Plant as part of the firm’s new coke oven battery. For the first time, the quenching of hot coke with water is being controlled by computer.

Other computer roles in the process are scheduling the pushing of hot coke from A battery’s 80 ovens, operating coke conveyor belts, and monitoring the battery’s gas flows, pressures, and temperatures.

In about a year, the company expects to have enough information about oven operations to allow the computer to control the temperature in each oven by regulating the gas underfiring system. Underfiring control by computer should help to achieve consistent coke quality and could save energy. Eventually, this automatic and continuous temperature measurement and control will result in optimization of combustion under a wide range of operating conditions. Temperature sensors that will allow the computer to control the underfiring system are already in place within the battery’s oven walls, along with other electronic devices needed to implement the system.

Besides handling functions that actually assist in the production process, the computers on A battery have more traditional functions like gathering and recording information. The computers in the monitoring station located high above the battery are the heart of the new operation, but they are also being used to report on the oven heating in the plant’s eight other batteries.

For A battery, in addition to producing a more elaborate heating report, the computers are providing a production report every eight hours that contains detailed information on how much coke was produced and the amount of gas, water, and steam used to produce it. The supervisor and monitor operator staff the station during each shift are also able to review eight-hour coal charging and coke pushing reports.

Notification alarms connected with the monitored equipment help keep operations moving smoothly. For example, if a coke conveyor belt stops unexpectedly or an oven temperature suddenly rises above standards, monitoring station personnel are immediately notified so that they can react before a severe disruption occurs.

Helping to guide the operation from the monitoring station are two computers, each with 32K words of memory and sharing 38K additional words. Operators can review any of the approximately 75 diagrams and other information on one of the six CRT color viewing screens, and a video copier provides hard copy. Four regular printers provide reports and alarm information, while another printer is used to program the computer. Two magnetic tape drives are available for a programmer’s use and for backup storage.

Connected to the computers by primary and backup data “highways,” or cables, are nine I/O field stations. The primary highway is scanned continually for incoming data, while operating instructions and information flow out to the stations.

According to the company, the new $160 million battery complex, with its new computer operation, should save fuel and improve both quality and yield.

Boston bank provides push-button bill paying

Shawmut Bank of Boston is offering a new financial service that will allow customers to bank from their homes using personal computers. A pilot program will be offered initially to a limited group of Shawmut customers in the Boston area who own personal computers. Bank services obtained through the program will be free.

Selected customers will simply dial a Boston area number and be connected with CompuServe Information Services, a national information provider. They can then select the Shawmut electronic banking feature through the keyboard on the personal computer.

According to bank personnel, the video display units on customers personal computers will allow a choice of services. By keying the appropriate function, customers will receive financial and bank rate and product information. They can also verify the current status of their checking, savings, line-of-credit, and other accounts.

An additional service is the ability to authorize Shawmut to transfer funds from one account to another or to make outstanding bill payments at the mere push of a button on a personal computer’s keyboard.
Mercantile exchange expands transaction-handling system

The Chicago Mercantile Exchange has a daily trading volume of about 130,000 contracts. To handle these transactions, CME needed a dual-role computer system: one that could process routine volume and one that could handle the dramatic growth that has been characteristic of recent years, and that market observers say will continue.

For instance, for the first eight months of this year, total CME volume increased 37 percent over the comparable period in 1981. Last year was the exchange's fifth consecutive record-breaking year; and with the planned introduction of new commodities contracts, such as options on stock index futures and stock subindexes, the quantity of daily information needed to keep the order processing, or clearing function, running smoothly had to be expanded.

Two years ago the CME Board of Governors approved a plan to redesign and reprogram the entire exchange clearing system. After conducting extensive design studies, the CME's Information Systems Department undertook the project and for the past 11 months has been replacing entire elements of the software and hardware. The cost of updating the system is $3.5 million, and all new installations have been made without disrupting daily trading.

Because of the project's scope, CME staff had to consider the nature of the exchange's activities in addition to hardware and software concerns. For example, each trader must record any daily commodity activity, with certain key pieces of information, such as price, date, commodity, time, and symbols for each firm involved.

A key element of the redesigned system is the installation of two IBM 4341 computers, which replaced the single IBM 370/135 that previously handled the clearing function. One of the 4341s will act as a backup while also handling testing and administrative functions. The size and speed of all peripheral computer equipment have also been increased.

Software programs used in the clearing system were also changed to take advantage of improvements in technology. Diskettes, tapes, and the previously standard 80-column input cards can now all be used with the redesigned system. The exchange will also provide its member firms with CRT data entry terminals or direct computer-to-computer lines to further expedite the matching of all daily buy and sell transactions.

Because the CME operates on a no-debt clearing system, no credit is extended to commodities traders or their member firms for more than 24 hours. This feature puts pressure on the clearing house to process all trades by the start of trading the next day. With the new technology, two reconciliations (or computer runs, that match each buy and sell transaction) can be conducted after the close of trading.

Another feature of the new system allows specific trade data for both buys and sells to be run at any time during the day to accommodate certain market conditions. Also, because out-trades (trades that fail to match from the previous day) can pose a problem for commodities traders, a streamlined error correction procedure is also provided.

By the end of 1983, the 40,000-square-foot trading floor in the new CME center will be complete. Along with the new floor, reportedly the largest in the world, will be a computerized clearing system able to handle commodities activity from around the world.

The Squared Quarter, a collector's coin made of pure silver, is being privately minted to satirize the impact of current US fiscal policies. Issued by Square Deal Productions of New York, it is the first coin designed with the aid of a computer and the first square coin minted with a serrated edge. Plotted by computer as a circle-to-square projection of the US 25c piece, the coin reveals the effects of a circle-squaring program on George Washington's head and the American eagle. The 1984 date on the coin has a triple meaning, according to its creator: it is the year of the next presidential election, the year in which President Reagan promised to balance the budget, and the title of Orwell's famous political satire. Minted by the Medallic Art Company of Danbury, Connecticut, the Squared Quarter is available in two sizes: 0.25-oz pure silver for $37 and 0.5 oz for $47 from Square Deal Productions, PO Box 462, New York, NY 10013.