

CITY PUBLIC SERVICE BOARD
145 NAVARRO STREET
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For Release:
Immediate

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SAN ANTONIO, Texas, Sept. 29. . . . An IBM 1800 computer is keeping 24-hour watch over one of the electric generators of San Antonio's City Public Service Board.

This data acquisition and control system monitors the operations of a 230,000 kilowatt generator, part of the 1,053,000 kilowatt electric system which produces electricity for residents and businesses of this city of 719,190 and a service area of 1,555 square miles.

Critical points of the generator are equipped with sensors which are connected by wire to the 1800 system. When a variation in the operation of the generator occurs, the change is detected by one of the 325 sensors, which instantly transmits the data to the computer.

The 1800, situated in the generator's control room, then prints out on a typewriter-like terminal the nature and location of the problem so that remedial action may be taken by operating personnel.

An overheated bearing, for example, could interfere with the operation of the generator. The computer, alerted by the sensors as soon as heat begins building up, prints out a warning message. An operator is then assigned to solve the problem.

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Previously, inspection teams made continual rounds of the generator searching for evidence of potential trouble.

In the event something does go wrong and various units in the generator cease operating in response to the malfunction, the computer provides the control room with the exact sequence of the shutdown immediately so they can pinpoint the cause. The 1800 starts giving them this information less than a second after the problem begins.

The computer also logs the performance of the generator every hour. The performance data is processed by the 1800, analyzed and used to judge the general state of the equipment and to set its optimum operating range. The optimum range differs as requirements vary and needed changes are made automatically by operators through the 1800. When the change is completed, the computer notifies the operator by printing out a statement to this effect.

While the 1800 monitors the generator, it simultaneously is doing a series of complex engineering studies. This is possible because of a multi-programming system labeled TSX which permits the computer to work on separate problems simultaneously.

The City Public Service Board is constructing a larger generator which will be completed next year. It, too, will be monitored by the same 1800.

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PUBLIC SERVICE COMPANY OF COLORADO



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PUBLIC SERVICE COMPANY OF COLORADO'S COMPUTER
TO HELP TAKE CHILL OUT OF COLD WINTER DAYS

DENVER, Jan. 15. . . . Regardless of how cold it becomes here this winter, a computer will be monitoring the gas system along the Front Range of the Rockies to insure adequate gas supplies for consumers in an area extending from Cheyenne, Wyoming, to Pueblo, Colorado.

Public Service Company of Colorado is using an IBM 1800 data acquisition and control system to constantly serve communities in Wyoming and Colorado to respond to their heating requirements.

Weather and temperature variations, particularly in the Denver area where more than half of the gas in the region is used, are important factors in changing consumer demand, a company spokesman said.

Last winter's temperature in Denver ranged from a low of zero to a 70-degree high, for example. These fluctuations obviously increase and lessen the public's need for gas used in heating.

The 1800 will be used this winter to increase and refine Public Service Company's control of supplying gas to consumers along the Front Range of the Rockies.

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The computer will be used to automatically monitor static pressure, temperature, differential pressure, and other values received by the computer from 32 metering stations on the system.

Information on gas temperatures, static pressures, and differential pressures is transmitted to the computer in the company's Denver control center by telephone line, microwave, and radio relay stations.

On an hourly schedule, the computer prepares a report analyzing this information for operators in the control center. It also combines this information with weather forecasts of the region, providing operators with estimates of changing consumer demand due to rising or falling temperatures.

Public Service Company's use of the computer this winter is the first part of a two-phase project aimed at applying the 1800 to both monitor and control gas flow to the public.

Next year it is anticipated that additional regulating stations will begin reporting input values to the computer, making it possible to measure instantaneously consumer consumption. The computer will properly interpret these values and perform the control functions which are now done manually to adjust pressures in the distribution system to proper values of good service.

Even though the computer is being used to monitor thousands of miles of gas system carrying a maximum of 800 million cubic feet of gas a day and is reporting on numerous changing conditions each hour, these demands require only about half of its time and capability.

In its spare time, the 1800 is also being used to solve engineering problems and to help prepare the programs -- sets of computer instructions -- it will apply next year in controlling the delivery of gas to the public.

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