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## Energy management

*Managers find themselves in an area in which they have little understanding, background, or training.*

Approximately three years after the infamous oil embargo brought the topic of energy to the attention of the American public, we saw the following response:

- The United States economy shaken into a state of instability for which it has not yet found a formula for recovery.
- Federal and local governmental energy agencies created to cope with such problems as energy conservation, policy making, fact finding, and development of public awareness.
- Marketing emphasis of energy system devices and components of all types, concentrating on the energy conservation aspects of the product (heat recovery, efficiency, building automation systems, etc.).
- The embryonic development of a science of energy economics born, not of the economic disciplines, but from the areas of engineering and physics.
- Professional-technical societies, whose disciplines included those related to energy conversion, devoting a major portion of their resources, time, and funds to energy conservation measures.

A review of the activities during that time span clearly reveals that if, in fact, any progress had been made in recognizing and coping with the energy dilemma, it was by the engineering and physical science communities. It might also be recognized that these groups had for years, foreseen the pending problem but were totally unsuccessful in gaining the attention of the public or high-level decision

makers in government, commerce, or industry.

The need, then, at this time is to project this progress beyond the engineering disciplines, where the fruits of the efforts will be the tangible accomplishment of the conservation of energy resources. The fact that this has not been achieved should be evident from the observation that all the efforts to date (January 1977) have not resulted in the reduction of national energy resource consumption.

### **Implementation is next step**

The key to the next step is *implementation*. But the engineering community, in the vast majority of institutions in our society, is not in a position to provide this step—the knowledge and techniques must be turned over to managers.

Unfortunately, however, the pressures exerted on management are aimed at success in monetary economic terms. Heretofore, with energy generally representing a minor cost ingredient in most business ventures, the management community had little concern with managing energy. Now, as energy costs become more significant, many managers are recognizing the need for addressing it, but find themselves in an area in which they have little understanding, background, or training. As a result, energy management remains on the back burner.

Personal experience in the development of energy effective building systems for the past 15 years has revealed that the only way to accomplish energy conservation is through

effective management. Yet this needed management is a very rare commodity. A growing recognition of this need has manifested itself in recent months by the increasing use of the term "energy management program" in place of "energy conservation program." It has been revealed that no energy conservation program can be effective unless it is successfully (and continually) managed.

#### **Education needed**

To achieve any degree of success, then, in energy conservation, the management community must be educated in energy management. Utilizing the popular approach of the economists—to simply let the price rise to the point that energy is a more commanding ingredient on the P&L sheet—would have little chance of success in the case of energy for two reasons:

- In most circumstances, energy is a pass-through cost. Competitive enterprises, all subjected to the same rising energy costs, simply increase the consumer's cost of the products (thus inflation).
- Management (in general) does not understand the energy sciences. Their training and

experience historically have been in such areas as monetary economics and personnel (psychology).

Thus, the rising cost approach would result in either an inflationary spiral or business failures (or both).

A second approach, possibly more favored by some political leaders, would be to limit the use for a given task (rationing). This is a more forceful method of commanding management's attention, but considering the lack of management competence in energy disciplines, would lead inevitably to business failure or other institutional difficulties.

The third alternative is education of the management profession (see Chapter 11).

Although possibly an overly ambitious goal, this appears to be the only way in which the knowledge and accomplishments of the engineering professions in the energy conservation area can be brought to fruition. A game plan for this transfer of information and skill should include a concentrated interchange between top-management groups and engineering groups. The promising managers, like our early entrepreneurs, will recognize the need and develop the skills.