

Power on a knife's edge

This summer will be a summer of ifs for United States power systems. If fossil fuel supplies hold up, if there are no unusual hot spells and if there are no mechanical breakdowns, then major electric power disruptions can be avoided.

The situation is at best precarious. Reports filed with the Federal Power Commission by the nation's electric utilities indicate, says FPC, that "Some sections of the country may experience tight electric power supply situations this summer with potential system-wide and company-wide problems in every region."

The problem is one of electricity reserves, a reserve being the difference between capacity and peak load. The FPC considers a 15 to 20 percent reserve acceptable and is concerned that many places are below that level already with the hot summer months still to come.

The situation is not uniform across the country; the potential trouble areas are in the east and southeast with the exception of New England and Florida, and in the cities of Chicago, St. Louis, Minneapolis and St. Paul. In general, there are no serious worries about the central and western regions of the country.

New York state has reserves of 18 percent, but the New York City area is down to a 14.5 percent reserve. New York City's Consolidated Edison expects to go as high as 17 percent, which, says one official, "is not comfortable but is better than last year." New York City's Achilles' heel is a 1,000-megawatt unit at Ravenswood. If that generator fails for any reason, all reserves would be wiped out.

The states of Pennsylvania, New Jersey, Maryland and Delaware, plus Washington, D.C., have another problem. They are part of a single power pool whose reserves are down to 9.3 percent. Three of its large units have had either start-up or operating troubles. Should these three fail, the area would have no reserves.

The tight reserve story is repeated in the power pool that feeds the Carolinas and Virginia. That pool's reserves are down to 6.5 percent, with one unit accounting for half of those reserves.

Although the central United States is in reasonably good condition, Chicago is a potentially critical spot, with reserves scraping the 5.5 percent mark. That city is counting heavily on its Dresden 2 nuclear power plant to go into operation in time to beat the peak load periods in July and August. Commonwealth Edison is shooting for com-

mercial operation in June, but the first few months of operation will be a period of adolescence, and confidence is not high.

St. Louis, Minneapolis and St. Paul are living the most dangerously; they have no reserves at all although St. Louis could have some reserves if its Labadie fossil fuel unit goes on-line in June as scheduled. The Twin Cities of Minneapolis and St. Paul were counting on the Monticello nuclear plant (SN: 4/25, p. 406) but it has had legal troubles and is not yet completed. Monticello's earliest start-up date would be late summer, and full power is some time farther off.

The reason for this tightrope situation is lack of planning for the high peak loads. "The utilities didn't anticipate the growth," says Stewart P. Crum, chief of the FPC's division of electric resources and requirements. "Peak load had been growing about nine percent during the past summers. It takes four or five years to get a fossil-fired generating station on line, and when planning, they didn't anticipate this."

One of the chief culprits is air conditioning. Before it became so popular, the peak load time occurred in the winter, when night falls earlier and people turn lights on sooner. With the advent of air conditioning, peak load time shifted to the summer.

Whatever the reason, the big question now is what can be done to stave off power failures this summer. Of primary importance is supplying enough coal to the utilities, since it is used for most thermal electric production. The coal shortage developed because of the more stringent mining regulations of the 1969 Federal Coal Mine Health and Safety Act (SN: 12/27, p. 592), a labor shortage, insufficient railroad coal cars and exports of coal abroad.

The Government will undertake various corrective steps. For example, the Interior Department will concentrate on technical assistance programs to mines so they can meet Federal requirements with minimal disruption of coal production; the Interstate Commerce Commission will streamline procedures so hopper cars can be moved across state lines as priorities dictate; civilian installations will conserve electricity where possible and the Atomic Energy Commission will curtail the enriched uranium production of its gaseous diffusion plants, which use coal. (Ironically, some uranium is destined for future use in nuclear power plants.) In addition, for oil-fired plants, Washington is exploring the relaxation of oil import restrictions.

On a regional level, utilities that are part of a grid system have arrangements to purchase electricity from neighboring systems. If that fails, they will cut the power load in their own facilities. After that, they will be forced

to go to three to five percent voltage reductions, which most appliances should be able to survive.

"These steps . . . should be successful in reducing or eliminating brownouts during the coming months," says George A. Lincoln, director of the Office of Emergency Preparedness.

He is seconded by Crum, who says, "I don't see any real serious situation this summer. I don't think it's a critical situation." The hope is that they are not just whistling in the dark.

Apparently, the situation this summer will be repeated well into the 1970's. By the end of 1973, 33 fossil-fuel and 28 nuclear plants are scheduled to go on-line, which should meet expected power demands. But based on past experience, the schedule probably will not be met. Construction lags and stiffening opposition from environmentalists will cause the utilities to fall short of their goals. In fact, a study by the Federal Power Commission on Consolidated Edison operations in New York foresees this summer's tight supply situation repeated in 1974 and 1977. □

OIL ASHORE

Mystery in the Gulf

Two weeks ago, coagulated balls of oily substances began washing up on the Gulf Coast all the way from Florida to Texas. Ranging in size from two inches to a foot across, the tar balls continued to wash ashore this week as a search for their source got under way.

Estimates so far indicate 43 to 300 pounds of the balls—sometimes associated with a thick brown scum—per mile of shoreline. Near Beaumont, Tex., there are 3,800 pounds per mile for a ten-mile stretch.

The sources of the tar balls can only be guessed at. Preliminary analyses indicate a variety of unrefined and refined products, depending on the location. Some of the balls harden on exposure to air; others soften. Barnacles and algae were reported growing on some found near Rockport, Tex., indicating some time spent in the sea, and all of them appear to be fairly extensively weathered.

There has been none of the gross damage to wildlife that occurs when fresh oil sweeps ashore. Texas and Louisiana state officials have therefore reported there will be no long-term or short-term ecological damage. But scientists are skeptical of oil-state evaluations. "Oil talks down there," comments Dr. Richard H. Backus, marine biologist at Woods Hole Oceanographic Institution. "There could be all sorts of nonapparent effects."

The subtle ecological effects are still