Heat wave may stress nation's power system

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Increasing demands on an aging U.S. power infrastructure are likely to make headlines this week as temperatures in the Midwest and South approach 100 degrees. The nation's economic growth since the 1950s has "outstripped the growth of the power system," says Dr. Mariesa Crow, the Fred W. Finley Distinguished Professor of Electrical and Computer Engineering at the University of Missouri-Rolla.

Crow, who conducts research on the behavior of large and complex power systems, says high demands for electricity during heat waves create the potential for widespread outages.

"The problem we have is trying to ship power from one place to another over long distances" explains Crow, who also directs UMR's Energy Research and Development Center. "Most major power plants are located in remote areas away from large cities."

Some solutions, according to Crow, are building smaller power stations closer to population centers in order to generate electricity during critical times or even to plan rotating blackouts to alleviate stress on the system as a whole.

One of Crow's colleagues, Dr. Badrul Chowdhury, is investigating how wind farms, fuel cells and other distributed sources of energy could help stabilize the system by remaining online even when major power lines and generating plants are lost.

An additional advantage of these distributed energy sources is that they

are environmentally cleaner and therefore provide an attractive option for use within city limits, says Chowdhury, a professor of electrical and computer engineering at UMR.

Source: University of Missouri-Rolla

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