

IIT-I develops tech for live monitoring of power grids

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Indore: In a groundbreaking development for power grid management, Indian Institute of Technology (IIT) Indore has engineered a cost-effective technology that furnishes real-time data and monitoring of power grids. This measure aids in promptly identifying potential predicaments and initiating remedial actions.

The software-based technology can be seamlessly integrated with the load dispatch centres, enabling instantaneous access to pivotal stability information directly on their displays.

The patented technology, pioneered by Professor Trapti Jain from the electrical engineering department of IIT-I, is anticipated to enhance real-time visibility and operational efficiency of power grids without necessitating supplementary hardware, the institute stated in a communiqué on Tuesday.

Professor Suhas Joshi, director of IIT Indore, said, "This software technology exemplifies the future of power grid management. By offering a cost-effective, ea-

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sy-to-implement solution that delivers real-time stability information, this technology not only enhances operational efficiency but also contributes to the overall safety and reliability of power grid systems. Once adopted by Load Dispatch Centres, it promises to have a profound impact on how power grids are monitored and managed, paving the way for a more resilient and responsive energy infrastructure."

The technology is designed to quantify the angular stability of a power grid and pinpoint out-of-step generators utilizing positive sequence voltage phasor measurements. The software-based system employs a phasor measurement unit, signal sending unit, fibre-

optics/TCP/IP connection, phasor data concentrator (PDC), and a database to exhibit the grid's stability in real-time.

Professor Jain said, "By continuously monitoring and analysing the stability status of the power grid, the system enables operators to quickly identify potential issues and take corrective actions before they escalate into more serious problems. This proactive approach enhances the reliability and safety of power supply networks, ultimately benefiting both industrial operations and end consumers."

"It not only addresses a critical need in power grid management but also sets a new standard for software solutions in the field. The ability to provide detailed and accurate stability information in real-time, without the need for additional equipment, positions this technology as a game-changer in the industry. It represents a significant step forward in the ongoing effort to improve grid stability and reliability, making it an invaluable tool for load dispatch centres worldwide."