ON THE COVER
You’ve probably heard your power company say something like, “We’ll keep the lights on for you!” Today, digital technology is a big part of that process. In this issue, POWER focuses on some of the ways in which intelligent power systems are enhancing plant operations and making units more reliable and efficient. Source: Thinkstock

COVER FOCUS: CONNECTED PLANT
Making the Connection: Digitization Ramps Up Optimization
The future of power generation is evolving, with digital technology taking a lead role. Power producers are utilizing data to improve the operation of their facilities, their equipment in the field, and their connections to both the grid and their customers. It’s a seismic shift in the energy landscape.

Planning for the Future of Intelligent Power Generation
The Electric Power Research Institute is leading a project that looks at new technologies for digitization in power plants. The Insight through the Integration of Information for Intelligent Generation (I4Gen) project is a collaboration of utilities, studying how connecting a facility’s assets enables optimization of plant operations and maintenance.

Digitization and Analytics in Power Plants
The future of power generation is digital, and value creation will increasingly be defined by insights enabled by software. That’s one view of the evolving energy landscape, backed by the belief that companies must embrace a new digital platform to operate efficiently and successfully.

FEATURES:

CYBERSECURITY
A Grim Gap: Cybersecurity of Level 1 Field Devices
Cybersecurity of industrial control networks is today largely focused on securing operational technology. But owing to a number of reasons, security efforts largely ignore instrumentation, actuators, drives, analyzers, and controllers—Level 1 legacy devices and their communication protocols—leaving them woefully vulnerable. An expert offers insight into why this is so dangerous.
HYDROPOWER
Hydro: An Old Generating Dog Can Offer New Tricks
Hydropower, an original source of renewable energy, is usually in the background when debate centers on the merits of thermal power versus newer technologies such as wind and solar. But hydro is still a large source of generation worldwide, and new projects show it remains a viable option to produce electricity.

BOILERS & HEAT RECOVERY STEAM GENERATORS
How to Alleviate Waterside Issues In Boilers and HRSGs
Power plant operators need to implement a combination of several strategies to minimize tube failures in boilers and heat recovery steam generators (HRSGs). Focusing on waterside issues, in addition to fireside issues, is important to avoid potential catastrophic failures, and to increase a plant’s reliability and availability.

HEAT RECOVERY STEAM GENERATORS
Using Thermohydraulic Simulations to Assess HRSG Performance
Three case studies show the benefits of thermodynamic simulations with heat recovery steam generators (HRSGs), as the tests are used to help determine the cause of failures, predict wear of various components, and assess overall thermal efficiency of the boilers.

SHOW PREVIEW
Connected Plant Conference
The Connected Plant Conference is a forum designed for professionals in the power generation industry who are leading digital adoption at all stages. The conference will be held February 19–21, 2019, in Charlotte, North Carolina. A sampling of the exhibitors is highlighted in this preview.

COMMENTARY
Powering the Dragon: How China’s Power Sector Is Evolving
By Christian Rønig, Pöyry

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