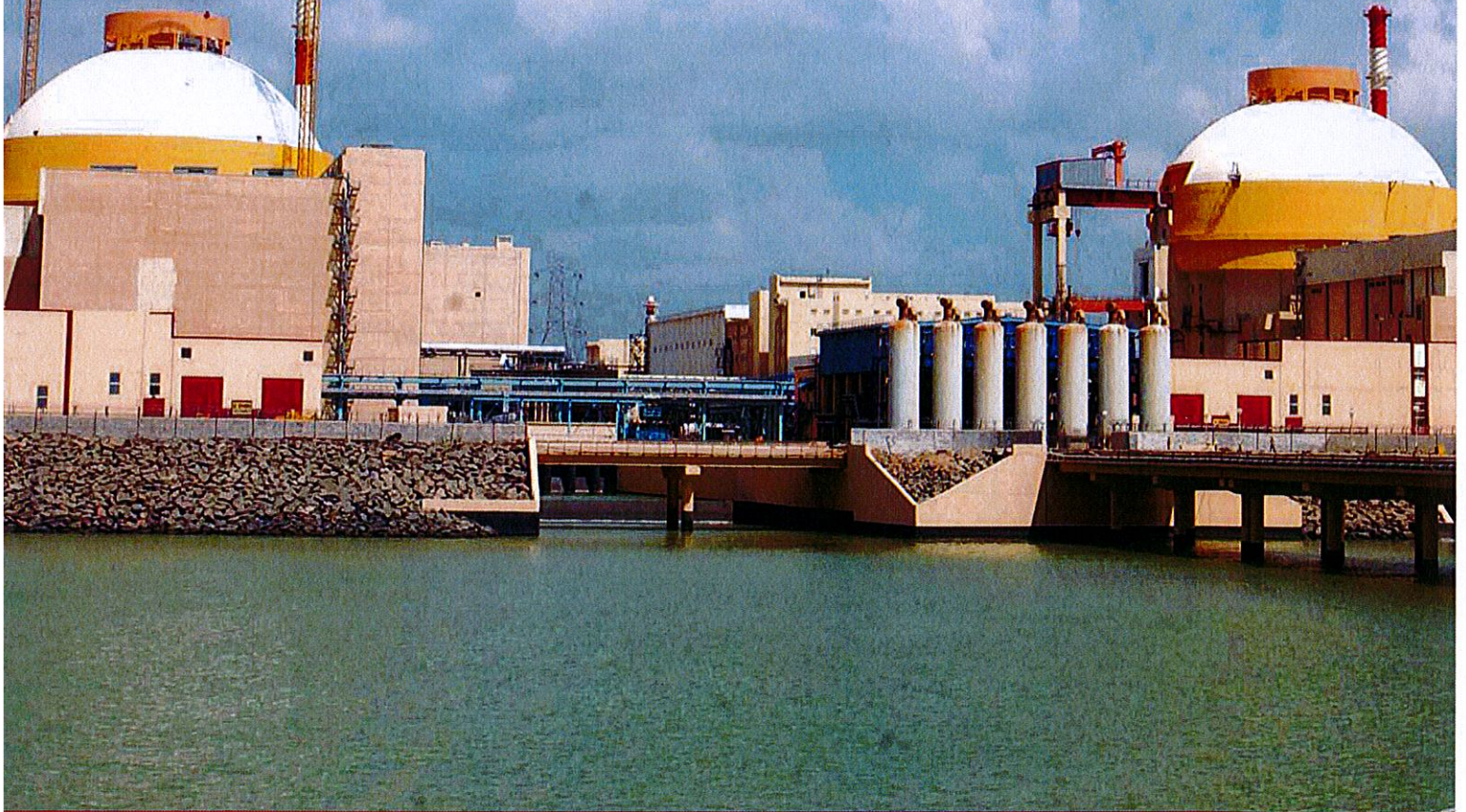


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Instrumentation & Control

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Instrumentation Systems

AREVA has completed the installation of two Spent Fuel Pool Level Instrumentation (SFPLI) systems at the Santa María de Garoña nuclear power plant in Spain. These systems allow operators to ensure that the required level of water is maintained in the used fuel pools, even in adverse conditions.

The installation of AREVA's SFPLI systems meets the post-Fukushima requirements of the Spanish nuclear safety authority, Consejo de Seguridad Nuclear.

AREVA has already supplied more than 37 of these systems to 13 nuclear utilities worldwide. Developed using VEGA's Through-Air Radar technology, the SFPLI system is part of AREVA's Safety Alliance program, which offers nuclear operators the most advanced products and services to ensure the safety of their plants.

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Optimization Solution

Bonitasoft, a provider of business process management (BPM) solutions, announced that AREVA will use its Bonita BPM solution to help deploy and track changes in the construction of next generation nuclear power plants.

To support construction of a nuclear power plant in China, project managers required a solution for tracking engineering changes in real-time during different phases of the project. Specifically, a need to automate the flow of electronic documents among critical project players was necessary to chart real-time changes. Another important aspect of the project was to integrate a BPM engine into a third party application. AREVA chose to use Bonita BPM as its modular solution because it easily met the need to interface with an external application.

A total of 8 processes were modeled, automated and deployed, and are now used by hundreds of people to handle 400-500 simultaneous edits per year. A single change process can take up to a year to complete and the ability to handle such long-duration processes is a key feature of the application.

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AFCR Technology

Candu Energy Inc., a member of the SNC-Lavalin Group (TSX: SNC), welcomes the positive review of the Advanced Fuel CANDU Reactor (AFCR) by an Expert Panel of Chinese nuclear experts. AFCR technology uses both recycled uranium and thorium-based fuels to deliver high-performing reactors with strong environmental benefits.

The China Nuclear Energy Association (CNEA) hosted the Expert Panel review of Candu Energy's AFCR technology, which has been developed in partnership with China National Nuclear Corporation (CNNC). The panel, composed of 22 Chinese nuclear experts from both industry and academia, issued a statement saying that AFCR technology forms a synergy with China's existing pressurized water reactors (PWRs) and that it is positioned to "promote the development of closed fuel cycle technologies and industrial development" which is consistent with the overall strategy of nuclear power development in China.

The panel went on to say that the AFCR "meets the latest nuclear safety requirements and the requirements for a Generation III nuclear power technology and has achieved a good balance of advancement and maturity." It concluded by recommending that the AFCR be further developed and that the proper time should be chosen to "initiate the construction of AFCR to unlock and utilize its various advantages."

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Hydraulic Actuators

Diakont, a high-tech engineering and manufacturing company, has successfully replaced more than 20 legacy hydraulic actuators with Electromechanical Actuators (EMA) for the main steam valve controls at nuclear power plants. The integration of the first EMA units was completed in 2009 and the systems continue to operate successfully. Retrofitting the main steam valve control systems with Diakont EMAs has improved plant performance and yielded greater responsiveness, more precise control, and reduced maintenance challenges.

The original main steam mechanical-hydraulic control systems (HCS) at the power plants presented multiple challenges. As the systems aged, maintenance became increasingly cumbersome as new replacement parts became less readily available. In addition, hydraulic systems lacked system control, were prone to trips, and presented a significant fire hazard from the vast amounts of oil. Replacing aging hydraulic actuators with Diakont's EMAs eliminated these risks while improving overall system performance.

Diakont EMA units provided a significant increase in valve control that reduced backpressure fluctuations in the nuclear steam supply system (NSSS). Diakont's steam valve control system reduced the variance of full-load backpressure from ± 4.25 PSI to ± 0.5 PSI, increasing power output by 2.0 MWe per reactor with no corresponding change in thermal power output. Diakont actuators are able to complete a full linear stroke in less than 50 ms, significantly increasing turbine safety. The EMA dual-redundant design also increased reliability and reduced trips with dual control channels, dual motors, and redundant sensors.

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Buried Pipe Inspection

GE Hitachi Nuclear Energy (GEH) announced that its ultrasonic robot, Surveyor™, successfully inspected a section of underground pipe at the South Texas Project Electric Generating