Case study

modernizing data processing for EDF Energy at Dungeness

Improving performance and standardizing technology for EDF Energy

EDF Energy tasked Atos Worldgrid with replacing the main Data Processing System at Dungeness-B Advanced Gas-cooled nuclear power station. The resulting Data Processing and Control System (DPCS) is the prime interface to the central control room operators, presenting information about current plant status in addition to critical automatic and sequence control functions. Atos Worldgrid provided a state-of-the-art Monitoring and Control system using the ADACS solution for the main control room.

Atos Worldgrid offered the potential for standardization of technology across EDF Energy's fleet of power stations, meeting stringent British safety licensing.

Together with replacing the DPS, Atos Worldgrid upgraded the training simulator to replicate the new operator interface of the actual control room and provide equivalent behavior. Atos Worldgrid also provided a Maintenance and Test System (M&TS) used by EDF Energy to produce and validate offline DPCS data and control program changes. These modifications are then introduced on the target DPCS which allows plant life extension in the best and most secure conditions.

Smart energy. **Powering progress**

Customized best-of-breed I&C solutions

ADACS-N™

Advanced Data processing And Control System (ADACS-N™) is a customizable technological platform designed to fully manage the Human System Interface (HSI) of nuclear generation unit control systems.

It provides all the features and functions required to assist the operator in analyzing large volumes of information and taking the best decisions according to the process state. The platform meets the nuclear industry technical and safety standards.

Advantages of ADACS-N™:

- Compliance with safety and security standards (integrated with I&C systems designed to meet IEC 61508, IEC 61513)
- Very long-term operation (20 years+)
- Continuity of service, high availability
- Modular and scalable architecture
- Secure and centralized data management
- Open and durable technologies
- Optimized performance.

ADACS-N™ has been deployed in more than 300 industrial systems around the world including France, China, Russia and the UK.

Application key figures

I/O sizing for each unit:

- 8,000 inputs (5,500 digital, 2,500 analog)
- 120 digital outputs for control and interlocks.

Integration test strategy

- 300 test specifications
- 130 test documents.

Atos Worldgrid scope of supply

4 systems:

- DPCS for Reactor R21
- DPCS for Reactor R22
- Full-Scope Simulator
- Maintenance and Test System platform.

Safety parameter display system:

- 140 high integrity alarms
- 50 high integrity analog indications are computed and displayed on a hard-wired alarm panel.

Overall programme management:

- Prime contracting
- I&C procurement
- System design and integration
- Verification and validation
- Onsite commissioning using the parallel-running principle
- Warranty
- Safety case support.

Atos Worldgrid in the nuclear generation industry

With more than 30 years' experience serving the energy and utilities industries, Atos Worldgrid is one of the very few recognized integrators able to provide customized, best-of-breed information solutions across the entire nuclear generation chain.

Our extensive solutions combine the power of real-time control information systems and proven client process knowledge. We have a unique track record in the realization and delivery of systems to worldwide power generating companies.

We have delivered systems in France, China, Russia and the UK for more than 70 nuclear power plants which represent more than 65,000 MW.

For more information, contact: atosworldgrid@atos.net