Improve cybersecurity, reliability, and plant economics by upgrading your Control System

Is the clock running out on your Control System?

BWSC

Your system won't last forever

Your plant's Control System is the brain behind your operations. But like any technology, it ages over time and will eventually start to underperform and cost more to operate and maintain.

Aging components alone cause trouble, including a greater risk of unplanned downtime and higher maintenance costs.

Interfacing with water treatment, fuel delivery, ash removal and other subsystems also becomes more difficult and costly. And if you've increased your conventional capacity or added renewable energy sources, it can be difficult to maintain the plant-wide overview required to ensure smooth operation and to minimize risks.

Finally, your outdated Control System is unlikely to provide the continuous monitoring needed to meet modern data transparency requirements or comply with emissions monitoring regulations.

And it will have little or no built-in cybersecurity capabilities – which leaves your plant at risk and possibly non-compliant with company policy or government regulations.

Six signs your Control System might need an upgrade

1

Fewer of your operators and engineers understand your existing Control System

2

Vendor support for your hardware and software ended long ago

3

Control problems are causing unplanned outages and increased downtime

Reset the clock with a Control System upgrade

If your Control System is due for an upgrade, BWSC has the knowhow, experience and proven process it takes to do it right.

A Control System upgrade with BWSC gives you not just a thoroughly up-to-date and future-proof system, but one that's tailored to your exact situation and requirements.

Are there disparate systems that need consolidating? Are there upcoming expansions or other changes you'll want to accommodate?

We take time to analyze your setup and understand your needs, before applying our specialist knowhow to specifying just the right system for your plant.

BWSC engineers have been working with distributed control systems for more than 30 years and can draw on experience with many

types of plants around the world. And our proven upgrade process – from needs assessment to training and commissioning – takes the risk out of your project and ensures a successful out-come.

What's in an upgrade

A Control System upgrade can involve the activities listed below.

- **An onsite evaluation and formal needs assessment**
- **Replacing old control desk with modern HMI**
- **Replacing IT hardware, IO modules, control panels/ boxes, sensors, interfaces**
- **Upgrading control network to more reliable technology (e.g. fiber based)**
- **Integrating different control technologies into a single, reliable system**

- **Upgrading server and workstation software to latest version**
- **Adding redundancy, auto-backup, long-term history, high-resolution archiving, remote access**
- **Implementing GPS-based time synchronization**
- **Improving ability to monitor alarms, events and other plant data**

- **Making it faster and easier to export data and produce reports**
- **Ensuring compliance with standards and regulatory requirements**
- **Operator training on the updated platform**
- **Program modifications based on the operator's build experience**

4

Maintenance spends more time repairing components than improving processes

5

Spare parts are becoming obsolete and can no longer be sourced

6

You have only limited remote access capabilities

Reliability you'll see on your bottom line

Upgrading your Control System leads to more reliable plant operation and greater efficiency, enables smoother work processes, and protects against cybersecurity threats. The result is a better performing plant and the peace of mind that goes with it.

On the business side, it will strengthen your bottom line by improving your plant economics, providing faster access to data and reporting, greater data transparency and flexibility, and less risk of non-compliance with government regulations.

For operators, the benefits of an upgrade include:
- Less unplanned downtime
- Lower maintenance costs
- Greater visibility and control
- Faster troubleshooting
- Better data export and reporting
- Protection from cybersecurity threats

Broader business benefits include:
- Improved plant availability
- Lower operating costs
- Better asset utilization over time
- Greater data transparency
- Faster response to changes
- Regulatory compliance

Case:
Sund power plant, SEV, Faroe Islands

Challenge

The Control System at SEV's Sund plant was running on outdated server and workstation hardware. The operating systems – Windows 2003 Server and Windows XP – were also past end of life and no longer supported by Microsoft.

The system's HMI and various object modules had been designed in Visual Basic, which had become obsolete and was not supported by newer versions of Windows. Finally, a number of spare parts were no longer available.

The aging system was starting to cause problems for SEV, costing more to maintain and posing unacceptable risks to availability and plant economics in general.

Solution

The BWSC team upgraded the plant's old control system to state-of-the-art redundant ABB Ability™ 800xA 6.0 system, installed in a virtual WMware environment. They also installed and configured an operator/engineering workstation, a server, and six additional operator workstations with version 800xA 6.0. Three color printers were also installed and configured.

BWSC engineers redesigned the system's graphics, object modules and faceplates, while also upgrading applications. A factory acceptance test (FAT) was conducted in Denmark.

Finally, to help SEV move from reactive to preventative maintenance, the BWSC team provided recommended equipment lifetime figures for the plant.

Outcome

The Control System upgrade at the Sund plant was a major success. BWSC handed over a thoroughly modern system that reduced the risk of downtime, lowered maintenance costs, gave operators a much-improved user interface, and provided the sophisticated reporting and cybersecurity features that go with a latest-version system.
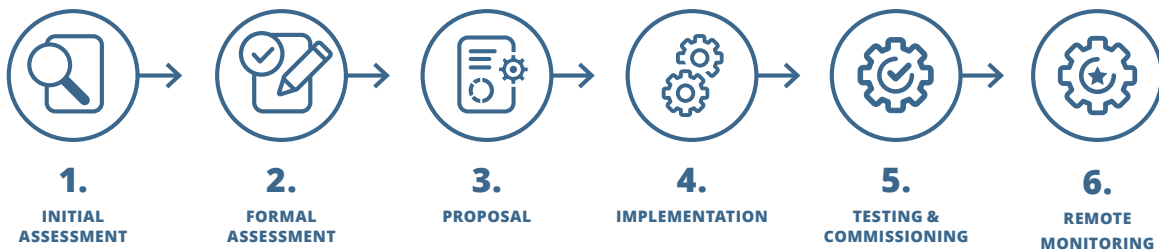
" The new Control System has improved our reliability, given us greater visibility, and made life easier for our operators. BWSC were thoroughly professional and a real pleasure to work with.

— Eirik M Hammer, Project Manager RTU & SCADA, SEV

ABOUT THE PLANT:
The Sund plant is one of three thermal power plants operated by SEV, the largest provider of electricity in the Faroe Islands. Built in 1973, the plant's prime mover comprises ten 2- and 4-stroke engines, providing a total capacity of 82.5 MW.

Taking the risk out of upgrade projects

1.
INITIAL
ASSESSMENT

2.
FORMAL
ASSESSMENT

3.
PROPOSAL

4.
IMPLEMENTATION

5.
TESTING &
COMMISSIONING

6.
REMOTE
MONITORING

Refined over 30 years completing hundreds of projects, our Control System upgrade process is your guarantee of a smooth project with no "ugly surprises" and a successful outcome.

1. Initial assessment

If we're already working with you, we monitor and inform you of issues with spares, compatibility, upcoming requirements, etc. – and alert you when it could be time to upgrade. If we are not yet working together, we can perform a remote assessment based on data you provide.

2. Formal assessment

If it looks like an upgrade is relevant, we visit your site and conduct a comprehensive evaluation of your facility to determine needs. This involves consulting with your technical staff.

3. Proposal

Based on the above, we recommend a solution, produce a budget, and provide you with a detailed migration roadmap that minimizes outage risks and includes a fallback plan in case of unexpected issues.

4. Implementation

We carry out the work in accordance with the final proposal and with minimal disruption to your ongoing production.

5. Testing and commissioning

After thorough testing, we commission the system and hand over for operation. We also provide remote or on-site training for your staff.

6. Remote monitoring

After commissioning, we can track data from your plant remotely, enabling us to provide rapid troubleshooting and recommended remedial actions for fast recovery in case of control issues or failure.

The ideal Control System upgrade partner

BWSC has been working with power plants for 40 years, but our roots in energy go back over a century. We have built power plants in many parts of the world, from our home market in Scandinavia to challenging locations on remote islands.

Over time we have built up knowhow and expertise as well as software libraries that are specific for our industry. And our independence of hardware and software vendors gives us maximum freedom to recommend the best system for your facility.

Why choose BWSC

1. We know power plants and the business of running them.
2. We are independent and will always recommend the best solution.
3. We have 40 years of experience with boiler-based, engine-based and renewable systems, including key electrical/automation and other subsystems.
4. We have a dedicated DControl System department with large store of developed software libraries and modules.
5. We are experts in integrating disparate systems to improve reliability, efficiency and control.
6. We are easy to work with and will help you assess your needs and build your business case.

TALK TO US TODAY!
If you think your Control System could be in need of upgrading, talk to us next time we're on site, call us at Phone +45 4814 0022, or drop us a mail at bwsc@bwsc.dk.

BWSC

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BWSC Headquarters
Gydevang 35, 3450 Allerød, Denmark
P: +45 4814 0022 · bwsc.com

BWSC Panama
La Loceria, Arturo del Valle St,
BWSC Building, N°2, Panama City, Panama
P: +507 388 4478 · bwsc.com

BWSC North America Representation
Houston, Texas, United States
P: +1 832 709 9974 · bwsc.com

BWSC Generation Services UK Ltd.
Unit 3, The Point, Lions Way, Sleaford
Lincolnshire NG34 8GG, United Kingdom
P: +44 (0) 1529 417580 · bwsc.com

About BWSC

Headquartered near Copenhagen, Denmark, BWSC provides specialized consultancy, engineering, installation, operation and maintenance services at power plants and green energy facilities worldwide.

Forty years of experience with energy infrastructure, a diverse staff of seasoned experts, full technology independence and our big-picture approach make us uniquely able to help customers define their ambitions and reach them through expert design and continuous improvement of their facilities.