

## Water/steam cycle troubleshooting

Contact centre ensures direct access to dedicated experts

### IMMEDIATE SUPPORT TO QUICKLY TACKLE CHEMISTRY-RELATED ISSUES

In the event of a chemical incident, plant operators want direct contact with an expert. For this reason, Laborelec provides a troubleshooting contact centre service. Based on years of experience with water/steam cycle in power plants worldwide, our multidisciplinary team of experts is able to help plant operators address chemistry-related issues directly over the phone.

### EXPERTISE AND EXPERIENCE SUPPORT EFFICIENT TROUBLESHOOTING

Laborelec's troubleshooting service provides the following benefits:

#### > Efficient problem solving

Our experts have the experience needed to quickly and effectively assess water/steam cycle issues, identify the severity of a problem, understand how it affects plant processes and equipment, and recommend the appropriate corrective actions. If necessary, we can promptly come on site to closely assess the situation.

#### > Increased availability

Our structured problem-solving abilities reduce the time needed to resolve issues and thus decrease the associated periods of unavailability. Our service also enables plants to act rapidly in order to prevent potential further damage and determine whether the water/steam cycle needs to be shut down for repair.

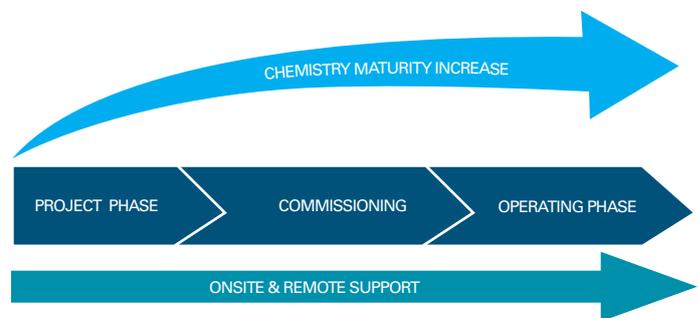
#### > Reduction in operation and maintenance (O&M) costs

When relevant, our experts conclude their troubleshooting services by providing customized preventive recommendations to sustainably improve chemistry-related activities and reduce the plant's O&M costs. We suggest an action plan based on international best practices and our multidisciplinary experience with power plants worldwide.

#### > Water/steam cycle chemistry services

Laborelec is active in every step of the water/steam cycle value chain. This leaflet focuses on our activities during the operating phase, more specifically troubleshooting.

### WATER/STEAM CYCLE CHEMISTRY SERVICES



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### INTERNATIONAL REFERENCES

- > **Italy:** Silica ingress from demin into water-steam cycle. One plant directly shut down and the second preventively shut down later on to prevent important turbine damages.
- > **Belgium:** waste water ingress form demin. Laborelec advised to stop immediately, to drain and rinse the boiler. If the plant was stopped later on, the damages would have been more dramatic (possible complete evaporator replacement).
- > **Belgium:** turbine commissioning at an industrial site was stopped by the manufacturer because of steam contamination. Laborelec found the origin of the impurities and advised the appropriate changes so that the commissioning could go on.
- > **Middle East:** Seawater ingress in a dump condenser was slowly contaminating the complete cycle. Laborelec immediately formulated recommendation for a safe stop of the dump condenser and for minimizing the impact on the HRSG and turbine and assisted with the rinsing of the HRSG and next with the save restart of the unit and the associating steam turbine.

## Structured approach to quickly address chemistry-related issues

In case of water/steam cycle issues, power plant staff can contact a Laborelec chemistry expert for immediate assistance.

### ASSESSING THE SITUATION VIA PHONE OR WHEN POSSIBLE THROUGH REMOTE ACCESS OF DCS DATA

When contacted by a customer, our experts carry out a brief assessment of the situation in order to react appropriately. We check the product or process affected, the nature of the problem, its severity, and its urgency. Our initial advice can solve some simple cases and prevent further damage.

### FURTHER ANALYSIS FOR COMPLEX CASES

When needed, our experts carry out additional analyses on site or via remote monitoring before drawing conclusions. This is the case, for example, for issues with chemicals injection control, or when our experts have to analyze the impact of the cycling mode on chemistry processes.

### RECOMMENDATIONS AND LESSONS LEARNED

After the analysis phase, our experts provide solutions to address the identified issues. We also advise on how to avoid similar problems in the future through specific preventive actions. Some of our long-term recommendations can involve, for instance, blowdown optimization, the upgrade of water/steam cycle monitoring systems, or modifications to certain chemistry practices.

#### FIVE REASONS FOR YOU TO CHOOSE LABORELEC:

- > Wide range of technical competences in Electricity Generation, Grids, and End-Use
- > Increased profitability and sustainability of your energy processes and assets
- > Unique combination of contract research and operational assistance
- > Independent advice based on certified laboratory and field analyses all over the world
- > More than 50 years of experience

#### CONTACT

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*Our troubleshooting service helps you efficiently solve chemistry-related issues and prevent them in the future through customized recommendations.*



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