

# EFFICIENT PLANT OPERATIONS & MAINTENANCE

FOR THE CHEMICAL & PROCESS INDUSTRIES

## WITH EXPERT STATEMENTS ON:

- Early detection with predictive maintenance
- Efficiency gains for shutdowns
- Inspection management and operator obligations
- Conventional vs. digital pipe fabrication



**THE FUTURE** CALLS  
**EXPERTS NEEDED**



#### **WHAT ARE YOUR AREAS OF RESPONSIBILITY?**

InfraServ Gendorf Technik is a wholly-owned subsidiary of InfraServ Gendorf and specializes on maintenance and repair of complex industrial plants, including associated equipment and machinery – ranging from pumps to fittings, and including pipes and apparatus.

#### **WHAT IS YOUR ASSESSMENT OF THE CURRENT STATUS OF THE SECTOR?**

Maintenance is gaining in significance and is increasingly transitioning from the “unloved child” into a value-added factor.

#### **WHAT ARE SOME OF THE TOPICS AFFECTING YOUR CUSTOMERS?**

In order to secure competitiveness, plant uptime and reliability are the central challenge for operators. Maintenance is what secures the future in this case.

#### **WHERE DO YOU SEE YOUR STRENGTHS?**

We combine experts from various trades and subject-matter specialties under one roof. We support our customers throughout the entire plant lifecycle. Our customers only need one point of contact, and we serve that purpose.

## **“ WE SEE OURSELVES AS A STRATEGIC PARTNER FOR OUR CUSTOMERS ”**

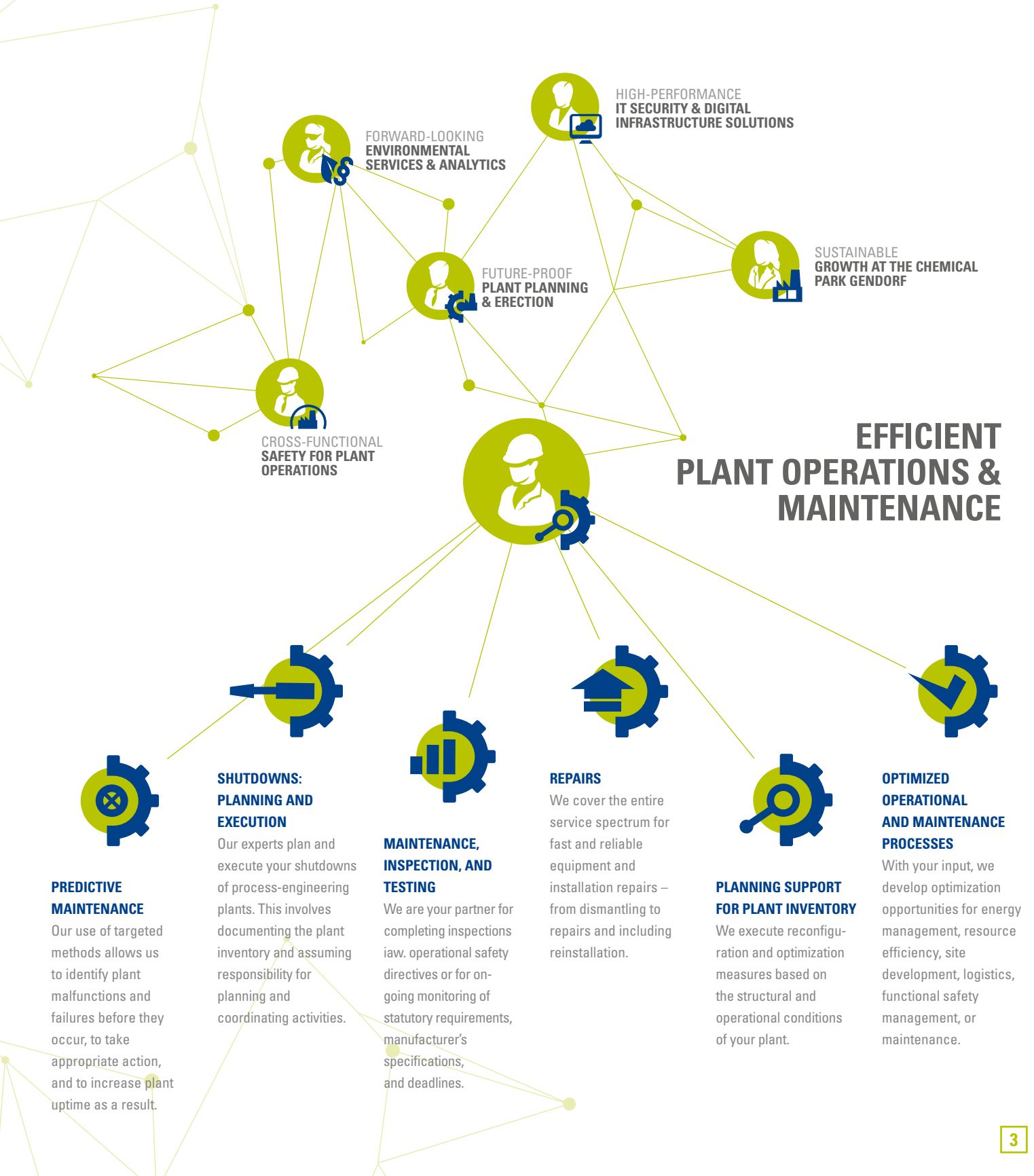
Andreas Lehner, Head of Engineering

#### **HOW DO YOU DIFFER FROM INFRASERV GENDORF?**

Our customers have benefited for years from Industry 4.0. Digital data exchange for instance has been a reality for our pump service for years. We see ourselves as a strategic partner for our customers, study the market and customer requirements, and implement these. With a look to the future and a sense of ownership, we singularly focus on one objective: the best result.

[www.infraserv.gendorf.de/maintenance](http://www.infraserv.gendorf.de/maintenance)

# INTEGRATED SOLUTIONS FOR THE CHEMICAL & PROCESS INDUSTRY



# TROUBLESHOOTING WITH PREDICTIVE MAINTENANCE

## BEFORE THEY OCCUR



### WHAT DOES THE TERM PREDICTIVE MAINTENANCE MEAN?

Predictive maintenance is a forward-looking approach and represents status-driven maintenance. As a result, the condition of machinery and components can be interpreted at any time. Based on this information, the ideal point in time can be determined for maintenance or repairs. This data-driven approach is a shift from reactive or preventive maintenance to schedule-optimized maintenance – making maintenance plannable!

### WHAT ADVANTAGES DOES PREDICTIVE MAINTENANCE BRING WITH IT?

Machinery and plants are maintained proactively, thus minimizing downtime. Plannable maintenance reduces the impact of malfunctions, while increased uptime supports cost-effective operations. Risks also become visible and manageable with

maintenance. Data from monitoring systems are tracked, digitalized, analyzed, and evaluated. In combination with analysis mechanisms from internet-of-things platforms, indications can be extracted for the condition of plants and their service life, including occurrence probabilities for certain events.

### HOW DO YOU AS INFRA SERV GENDORF SUPPORT YOUR CUSTOMERS WITH THE IMPLEMENTATION?

Our experts assist with documenting the plant structure, determining the risk factors, and even with the selection of a suitable condition monitoring system. Customers benefit in these efforts from the know-how of all experts at InfraServ Gendorf.

**„ MAINTENANCE COSTS CAN BE REDUCED AND PLANT RELIABILITY CAN BE INCREASED “**

Markus Meßner, Project Manager Condition Monitoring

proactively initiated maintenance work. Maintenance costs are reduced and plant reliability is increased.

### WHAT IS NEEDED FOR AN EFFECTIVE APPROACH TO PREDICTIVE MAINTENANCE?

A complete plant structure together with its risk factors form the basis for predictive

### TALK TO OUR EXPERTS:

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# EFFICIENCY GAINS FOR SHUTDOWNS

## BY COORDINATING ACROSS TRADES

### WHY IS PLANNING IN PREPARATION FOR A SHUTDOWN SO IMPORTANT?

Securing uptime and production capacity is an important objective for production operations. Professionally planned and executed shutdowns reduce downtime and increase the reliability of a plant. They help to cut costs and to keep safety and quality high. A substantial amount of work needs to be completed in a compressed timeframe. It is necessary to identify and coordinate the effects created by the relationships between plant specifics, resource requirements and availability, and other specifications. On the basis of this, a detailed action plan is determined for each shutdown point, including the scheduling and resource requirements, resulting in an optimized overall plan. Success is measured by meeting quality, cost, schedule, and safety standards.

### WHERE DO YOU SEE THE CHALLENGES IN THIS?

A shutdown bundles a large number of activities, trades, and processing tasks that must be completed in a compressed timeframe. The smooth interaction of various trades – which must work together on the basis of the overall plan – certainly entails potential conflicts. Good implementation priorities, a dynamic schedule with realistic timelines, and end-to-end resource planning need to harmonize in this case.

The overview of all trades also needs to be ensured by the individual functional trades, such as assembly, machinery, valve, testing, and electrical engineering.

### WHAT BENEFITS DO YOU OFFER TO YOUR CUSTOMERS?

Our experts combine the knowledge from execution and planning. They rely on

planning know-how and the experience from executing shutdowns to create a platform for schedule and cost-optimized execution. This permits the planned shutdown measures to be completed within the allocated timeline, quality, and cost parameters, while also complying with the highest safety standards.



**“ WE COMBINE HANDS-ON  
EXECUTION EXPERIENCE WITH  
OUR PLANNING KNOW-HOW  
INTO A COMPLETE PACKAGE FOR  
YOUR SHUTDOWN ”**

Markus Stadlberger, Head of Electrical Engineering

# CHALLENGES FROM OPERATOR OBLIGATIONS

## FOR MONITORING AND EXECUTING INSPECTIONS



### HOW DO YOU ASSESS THE CURRENT COMPLIANCE STATUS WITH INSPECTION REGULATIONS FOR OPERATIONAL EQUIPMENT?

The occupational safety act – as implemented in the operational safety directive (BetrSichV) – requires employers to protect their employees against risks originated by working with process substances and equipment. Operators of buildings and technical plants must adhere to a host of regulations in order to meet compliance requirements. If the employer and/or the operational head fail to comply with their obligations, they are committing an administrative offence.

### WHAT ARE YOUR LATEST OBSERVATIONS FROM THE FIELD?

Operators are confronted with a host of issues since the new operational safety

### WHAT ARE THE IMPLICATIONS FOR YOUR APPROACH?

We give our customers end-to-end support for implementing the relevant regulations. The focus in this case is also on ensuring the proper application of regulations throughout the entire lifecycle of operational equipment. We therefore customize our consultation for each company and can also perform inspections when requested.

### WHAT OPPORTUNITIES DO YOU SEE IN THE DIGITALIZATION OF SYSTEMS?

The use of smart apps on mobile solutions helps to track activities in real time and ensures high quality. Services are rounded out by transparent, audit-proof, and digital documentation. A common data platform allows optimization opportunities to be identified and facilitates global access to maintenance data. This gives operators access to a wide range of data at a glance. Our database-controlled inspection management gives customers legally compliant inspection plans that are updated based on permanent contact to an expert network.

**„WE HELP OUR CUSTOMERS NAVIGATE THE RED TAPE TO LEGALLY COMPLIANT EQUIPMENT OPERATIONS“**

Florian Eggersdorfer, Maintenance Manager

directive went into effect. Various sources are available to answer these questions. Off-the-shelf concepts do not work in these cases. A customized concept needs to be developed to comply with operationally specific regulations.

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# CONVENTIONAL VS. DIGITAL PIPE FABRICATION

## FOR PLANT CONSTRUCTION

### WHAT CHALLENGES DO YOU AND YOUR CUSTOMERS NEED TO CONFRONT?

Scheduling pressures continue to increase for plant construction – for reconfiguration measures in particular. Schedule variances can quickly cause delays and can risk the project or result in cost overruns. Conventional approaches for pipe fabrication are slow and error-prone, for instance because certain plant planning data are redrawn and then transferred to other software. This creates a large number of opportunities for error.

### WHAT BENEFITS DOES DIGITALIZATION PROVIDE FOR PIPE FABRICATION?

By using an end-to-end chain of digital customer data, the error rate and labor effort can be reduced significantly, and the process can be accelerated. Costs are reduced while also increasing quality. In order to pass this competitive advantage on to customers, our mission is to leverage opportunities for digitalization as much as possible.

### WHAT VALUE-ADDED CAN YOU THEN OFFER TO YOUR CUSTOMERS?

Our customers value the transparency of digitalizing process steps because it allows them to review the current status of pipe fabrication on demand. We are more flexible, in particular for schedule changes, and can avoid raw material scrap. Moreover, automated processes allow us to significantly reduce leadtimes for the entire process.

### HOW DOES THIS CHANGE THE DOCUMENTATION?

The documentation also becomes digital – from planning to the bending machine, to accurately fabricated pipe assemblies, the as-built status can be entered as an interference edge model into the 3D model for the plant. This significantly reduces documentation efforts and the propensity for errors. Customers can also at any time refer back to a current 3D model with as-built dimensions.



**„THE ERROR RATE AND LABOR EFFORT CAN BE SIGNIFICANTLY REDUCED, WHILE ALSO ACCELERATING THE PROCESS“**

Werner Bayerl, Head of Plant Engineering



# THE FUTURE CALLS EXPERTS NEEDED



## WHO WE ARE

As specialists for integrated solutions surrounding plant lifecycle and as the operator of the Chemical Park Gendorf, InfraServ Gendorf is among the most experienced expert enterprises in the chemical and process industry. More than 1,100 employees and specialists from six areas of expertise work here across the trades on technologies and solutions for today's and tomorrow's customer challenges.

## WHAT DRIVES US

The people at InfraServ Gendorf are driven by a common bond that is deeply embedded in our DNA: the best result for our customers. We achieve this by allowing room for the professional passions of our employees, by fostering their special expertise while at the same time networking with other disciplines on a routine basis. This ultimately results in integrated solutions that stand up to the test of time because they keep the big picture in mind.

## WHAT WE BELIEVE IN

We know that we have a special responsibility as a company in the chemical industry – both for our own business and employees, but also for our neighbors and the environment and the region we live in. We confront this responsibility on a daily basis with exceptional personal dedication – not only because it is ingrained in our own belief system, but also as an expression of our commitment to corporate social responsibility (CSR).

### CONTACT

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