ELECTRICAL ROTATING MACHINES
Assessing high-voltage motors and generators at different stages of their life cycles

> Profitability increase
> Damage prevention
> Maintenance optimization
Electrical rotating machines, such as motors and generators, are vital assets for any power plant or large industrial company. Laborelec can help ensure the proper functioning of your machinery. We provide a complete condition assessment service that covers every aspect of your equipment.

**ONE-STOP SHOP FOR A COMPLETE CONDITION ASSESSMENT**

What is the exact condition of your motor or generator? Laborelec has the multidisciplinary expertise needed to investigate every aspect that can affect the state of your machinery:

- Electrical phenomena
- Material integrity
- Mechanical behaviour

Based on on-site measurements, analyses in our state-of-the-art laboratories, and/or offline or online condition monitoring, we offer you expert advice to ensure the proper functioning of your electrical rotating machines.

**QUICK RESPONSE OF AN EXPERT**

Do you have a question concerning your motor or generator? At Laborelec you can immediately contact the most appropriate expert. In this way, we offer you a quick response to your request.

**EXPERTISE BASED ON YEARS OF RESEARCH AND EXPERIENCE IN THE FIELD**

Laborelec has experts in every domain of electrical power, from material specialists to electrotechnicians. They are very active in the field, as well as in standardization committees and international research projects. In this way, they keep up-to-date on:

- New designs and materials used in electrical rotating machines
- New condition assessment techniques

**ASSISTING POWER PLANTS AND INDUSTRIES WORLDWIDE**

Laborelec's service offering is available for all electrical rotating equipment with a rated voltage higher than 6 kV: from small to large electrical motors, from hydro to turbo-generators.

Our activities cover a wide variety of industrial sectors worldwide, including metallurgy, chemistry, and electrical power generation.
ENSURING AVAILABILITY THROUGHOUT THE LIFE CYCLE

Motors and generators can encounter problems at any given moment, even before commissioning. Laborelec offers a complete service that involves assessing the machine’s condition at all stages of its life cycle.

MANUFACTURING / REFURBISHMENT

> **Defining specifications.** Do you need a new machine or want to refurbish an existing one? Our experts help you review the specifications (e.g. the type of insulation material) and the design to ensure that the new equipment fits your specific context.

> **Quality assurance.** We monitor the manufacturer’s construction process and carry out the necessary analyses to verify that they are meeting the appropriate quality standards. We can also assist in the witnessing of specific tests.

> **Reference measurements.** We can install monitoring sensors and carry out reference measurements, which are crucial for the quick and correct interpretation of future monitoring data.

OPERATION

> **Condition monitoring.** During the commissioning and further operation, we closely monitor the machine’s behaviour through online, remote monitoring or periodic, offline measurements.

OVERHAUL

> **Planning maintenance**

  Monitoring enables us to identify problems and recommend actions that need to be conducted during each overhaul (e.g. determining which spare parts need to be ordered in advance).

> **Monitoring / Conducting inspections.**

  Laborelec can monitor the inspections carried out by the manufacturer or contractor. We also have the tools and the expertise to conduct the inspections ourselves, using visual, electrical, material, and chemical tests, for example.

PREVENTIVE APPROACH

Through measurements and/or monitoring, our experts can quickly detect potential issues and advise on the appropriate preventive maintenance actions.

CONDITION MONITORING MAXIMIZES EQUIPMENT AVAILABILITY
activities. Permanent monitoring enables us to quickly identify potential problems and conduct the inspections that need to be performed during overhaul. Thanks to this monitoring, we are able to help you prepare for each overhaul (e.g., determining which spare parts need to be ordered in advance).

> **Monitoring inspections.** Laborelec can monitor the inspections carried out by the manufacturer or contractor. We also have the tools and expertise needed to conduct additional inspections: visual, electrical, material, and chemical tests, for example.

### OPERATION

> **Overhaul quality check.** After the overhaul, we check the results of the interventions carried out during the overhaul.

> **Condition monitoring.** We continue to monitor the condition of the machine and expand our historical database.

### FAILURE

> **Root cause analysis.** We can perform a wide range of analyses to identify the root cause of a problem. We have the multidisciplinary expertise required to effectively evaluate various possible causes.

> **Overhaul.** We always provide a detailed report of our analyses, which you can use in discussions with the manufacturer or the insurance company. Our independence from manufacturers guarantees the objectivity of our conclusions.

### QUICK RESPONSE TO ALARMS

If our monitoring department picks up an alarm signal concerning one of your machines, we immediately offer you the appropriate advice to minimize any damage and identify the cause of the problem.

### LIFETIME EXTENSION

Periodic condition monitoring makes it possible to follow the ageing process of your motor or generator. Based on this insight, our experts can provide the recommendations that can help you maximize the lifetime of your rotating machinery.
Laborelec’s service offering for electrical rotating machines aims to enhance the reliability of your motor or generator. We help you increase your profitability, prevent damage, and optimize maintenance.

INCREASED PROFITABILITY
The profitability of your business depends upon the availability of your production process. Our condition assessment service helps ensure the proper functioning of your motors and generators, thus maximizing production capacity.

COSTLY DAMAGE AVOIDED
A damaged motor or generator can have serious financial consequences. Our services enable you to prevent such damage. Checking machine quality before commissioning, for instance, ensures that the machine will operate safely and efficiently upon installation. In addition, our monitoring, measurement, and analysis activities throughout the machine’s operating life enable us to identify potential problems in a timely manner and recommend preventive actions before damage occurs.

OPTIMIZED MAINTENANCE
Our services enable you to optimize your maintenance interventions. We provide the information that can help you meticulously plan overhauls, so that the inspections can be conducted as efficiently as possible.
Five reasons for you to choose Laborelec

> One-stop centre for all of your energy-related needs
> 50 years of experience
> Increased profitability of your installations
> Independent and confidential advice
> Internationally recognized and certified laboratory

The Technical Competence Centre
In energy processes and energy use
From innovation to operational assistance

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