



## ***Mechanical and Thermomechanical Laboratory***

More than testing services...

***solutions!***



*Whether engineering or testing services are involved, Hydro-Québec's research institute's Mechanical and Thermomechanical Laboratory combines its unique expertise with high-quality facilities to offer you solutions: everything needed to subject a vast array of equipment to a full range of mechanical, electrical, thermomechanical, climatic, cycling and temperature-rise tests. Our engineers and technicians design test programs or propose different testing options in conjunction with the client. The result is technological and business solutions tailor-made for your needs, not to mention specialized and customized testing services.*

### **A unique expertise**

When you use the Laboratory's services, you are benefiting from more than 30 years of experience in the field. By providing high-quality and independent engineering and testing services, our experts know how to combine know-how and talent with flexibility, adaptability, speed of execution, and creativity.

### **High-quality facilities**

High-quality equipment and facilities are at your disposal for carrying out a wide range of tests on a variety of apparatus. Mechanical, climatic and electrical test areas, an experimental line, and a cable test area are all facilities that help diagnose and solve technological problems related to the mechanical and thermomechanical behavior of electrical transmission and distribution systems. These are facilities that also help meet the needs of industrial clients





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### Experimental lines

The Laboratory has two experimental lines used to conduct studies and tests on the mechanical behavior of transmission and distribution lines.

- Eolian vibrations in cables and conductor bundles
- Subspan oscillations
- Static and dynamic loading
- Snaking and galloping
- Line installation and maintenance
- Hardware aging
- Ice shedding
- Spacer and damper certification
- Simulation of failure and breakdown sequence
- Static and dynamic testing on poles and structures

### Test benches

An outstanding range of modular test benches makes it possible to conduct a variety of tests under different conditions.

- Tension tests
- Compression tests
- Bending tests
- Torsion tests
- Breaking tests
- Creep tests
- Vibration tests

### Environmental tests

The Laboratory is equipped with seven test chambers with different technical specifications that are used to test the operation of electrical, mechanical and electronic equipment at extreme temperatures and under a variety of ice, rime and humidity conditions.

- Accelerated-aging tests
- Wet tests and thermal impact tests
- Compression and bending tests at controlled temperatures
- Electrical tests up to 300 kV in all temperature ranges
- Tests under ice conditions

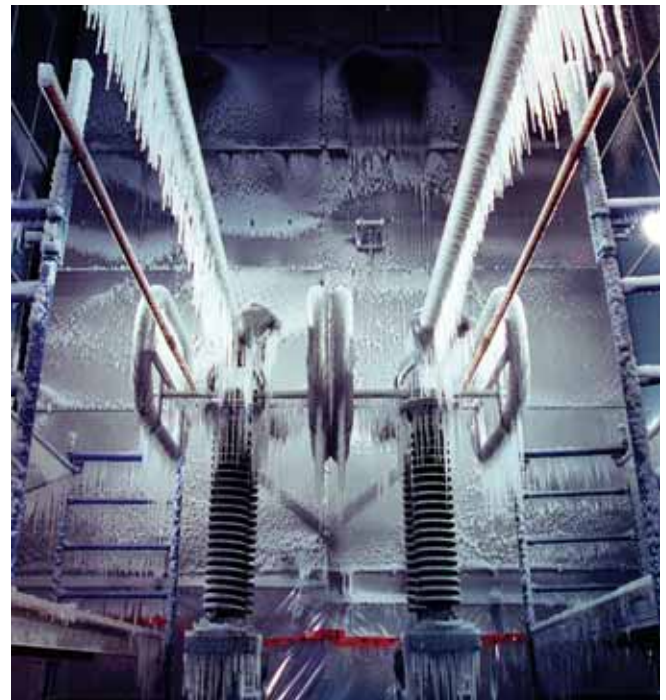
### Endurance, heat-run, and cyclic aging tests

Various cycling, thermal and dielectric test areas are used to conduct a variety of tests.

- Tests on the cyclic aging of cable joints, bushings, etc.
- Heat-run tests on disconnecting switches, cabinets and busbars
- Dielectric tests

### Cable testing

An indoor, temperature-controlled laboratory is used to conduct breaking, stress-strain, creep and fatigue tests on three spans (up to 55 metres). In addition, state-of-the-art equipment is used for OPGW testing, and a cable duct bank is used to test the thermomechanical behavior of high-voltage underground cables.



For more information about our services, please contact:

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