A worldwide novelty with respect to on-site high-voltage testing of power transformers is a high-performance mobile impulse generator. This equipment enables ABB to perform on-site impulse tests on transformers and reactors with rated voltages up to 750 kV.

**Impulse testing**
The equipment generates a load-voltage up to two million volts, simulating the impact of a lightning bolt on a power transformer. This method easily verifies the condition of the transformer’s insulation system at the customer’s site. It applies after receiving new or repaired units, when checking a transformer’s condition and for failure localization. The equipment has also set new standards in manageability. All components have been installed in a modified 40-foot standard container. The tower can be erected with the help of hydraulic jacks so installing, commissioning and testing take no longer than one day.

**Lightning and switching**
The lightning and switching impulse test is routine for power transformers with rated voltages greater than 300 kV. The purpose of the test is to verify the insulation integrity for transient voltages caused by atmospheric phenomena (lightning), network disturbances or switching operations.

**Testing and results evaluation**
Testing will be carried out according to DIN 60 060. The impulse generator’s modular design enables testing a variety of transformer designs. The test results get assessed and evaluated by knowledgeable repair experts.
Capabilities
- Lightning impulse test up to 1800 kV
- Switching impulse test up to 1300 kV
- Failure localization during LI / SI test

Applications
- After shipment and erection of repaired or new transformers
- After TrafoSiteRepair™
- High value, important and critical units during maintenance shutdowns for condition assessment
- Before commissioning a spare transformer
- After failure for diagnosis and fault detection

Preparations needed for impulse testing
- Fully erected
- Completely disconnected
- Switched off
- Grounded
- Located at a place with sufficient clearance (i.e. transformer foundation) and equipped with HV-bushings with measurement taps

Dimensions and storage of the mobile test system
- The impulse test unit is installed in a modified 40-foot container with the following standard dimensions:
  - Length: 12.19 m (24 m during testing)
  - Width: 2.44 m
  - Height: 2.59 m (10 m during testing)
  - Total weight: 27 tons

ABB’s AC testing system is also part of the TrafoSiteTesting™ family, enabling applied voltage testing and induced voltage testing.