

# **NETA Accredited Electrical Testing and Power Studies**



Maximize your up time and minimize your unexpected downtime. Our NETA Accredited engineers and technicians specialize in electrical acceptance testing, commissioning, maintenance testing, troubleshooting, installation and repair.

We are able to identify potential issues and make recommendations for corrective actions. All of our electrical testing is done in accordance with the NETA/ANSI Certified Standard. Our professional engineers are specialists in proactive and reactive power studies. Quad Plus provides quick and accurate turnarounds on our test reports to ensure no project gets delayed. We will work closely with you and the power companies to streamline your projects and accomplish your goals faster.

# **Acceptance Testing**

Quad Plus can perform a thorough examination of your electrical equipment following installation and wiring into your power system and make sure all equipment, switches, and connections pass the grade for safe installation and operation.

Acceptance Testing ranges up to 345kV.

- ✓ Transformer Testing
- ✓ Cable Testing
- ✓ Protective Relay Testing
- ✓ Generator/Motor Testing
- ✓ Circuit Breaker Testing

  - ✓ Switchgear Testing
- √ Battery Testing
- ✓ Meter Testing

# **Commissioning**

The start-up of your new electrical power system is a unique occurrence and could expose problems with the system. Commissioning by our NETA accredited professionals through whole system functional checks will ensure proper operation, identify installation problems, and assure total power system performance.

Our technicians can provide a wide variety of commissioning support including, but not limited to:

- ✓ Infrared Scans/Surveys
- ✓ Coordination Study Verification
- Utility Phasing
- ✓ Power Quality Analysis
- ✓ Start-up Support

# **Maintenance Testing**

Establishing trends off baseline data is an important part of maintaining a reliable electrical system. Regular maintenance allows users to track the expected lifetime of equipment and make timely replacements or repairs to issues before causing a potentially costly incident. According to the NETA MTS-2019 Appendix B electrical and mechanical maintenance testing is recommended to be performed at regular intervals listed below for equipment with an average requirement.

Maintenance Testing ranges up to 345kV.

- ✓ Transformer Testing
- ✓ Circuit Breaker Testing
- ✓ Battery Testing
- ✓ IR Scans
- ✓ Protective Relay Testing and Replacement
- Cable Testing
- ✓ Incoming Switchgear Testing
- ✓ Generator/Motor Testing
- ✓ Exercise/Cleaning
- ✓ Visual & Mechanical Inspections/Checking





#### Cable Assembly and Testing

Proper cable assembly and testing are critical for the safe, reliable energization and operation of your system. New cables must be tested to ensure they are safe to energize and will hold up during operation. Cables in service must be tested to ensure reliability and gauge their remaining useful life. Quad Plus engineers have the experience to perform the correct tests and interpret the data to deliver accurate reports.



#### **Power Studies and Analysis**

Ouad Plus offers standard and specialized power system studies along with pre- and post-installation power quality audits to precisely target and correct power issues. These studies will help optimize your power systems performance and improve safety.



# Circuit Breaker Repair Shop

The Quad Plus process for circuit breaker repair has set the standard for the industry. We can repair, refurbish and retrofit circuit breakers. Repairs are a significant cost savings compared to purchasing new. Quad Plus is PEARL certified and follows strict reconditioning and refurbishment processes as defined by ANSI/IEEE C37.59.

- ✓ We inspect each circuit breaker for worn or missing parts.
- ✓ We perform electrical and mechanical testing and analysis to determine any issues with the circuit breaker.
- ✓ Upon approval for repair, defective parts are removed and replaced with new parts.
- ✓ A final test and inspection are performed before the circuit breaker is returned.

# **Proactive Analysis**

Quad Plus specializes in low and medium voltage power systems, and provides standard and specialized power system studies plus pre- and post-installation power quality audits to precisely target and correct power issues.

These studies will help optimize your power system's performance and improve safety. Professional engineers conduct the studies in accordance with applicable industry standards from the Institute of Electrical and Electronics Engineers (IEEE), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), and the National Electrical Code (NEC).

- ✓ Arc Flash Hazard Analysis ✓ Coordination Studies
- ✓ Ground Grid Analysis
- ✓ Harmonics and Flicker Analysis
- ✓ Load Flow Studies
- ✓ Power Factor Correction Studies
- ✓ Short Circuit Studies
- ✓ Transient Motor Starting Analysis

# **Reactive Analysis**

Drawing on our vast experience and using the appropriate measuring tools, we will assist you in resolving your electrical power issues. We can perform power studies which will model the control system on the local power grid and show the effect it will have on the electrical system. For most sites, flicker will be the most serious issue, but we can also model other power quality issues such as harmonics and power factor.

