# Technical Services

## Technical Consulting Services

GE Multilin offers a wide range of services to assist you with solutions to your Power Protection challenges. Our team of experienced Consulting Services Engineers can help you with end-to-end solutions or specific activities including designing, commissioning and maintaining protective relaying systems and power system protection devices.


## Design of Protection & Automation Solutions

From new power systems to the upgrade of existing systems, trust the experience of GE Multilin to evaluate, design and deliver.

### Performing Protection System Studies

- Arc Flash Studies
- Load Flow & Fault Studies
- System & Relay Coordination Studies
- System Transient & Dynamic Studies
- Harmonic Studies

### Relay Logic & Settings Files

- Creating relay setting files
- Recommending changes to meet IEEE, NERC Standards
- Improving IED Utilization

### Designing Customized Protection & Automation Systems

- Developing Engineering Drawings
- Special Protection Schemes
- Load Shedding Schemes
- Synchrophasor Measurement Systems
- Bus Protection Schemes
- Microgrid Control Systems

### Designing Wide Area Protection Schemes

- High-speed Digital Teleprotection
- Transmission/Distribution Remedial Action Schemes (RAS)
- System-Wide Peer-to-Peer Communications using IEC61850 GSSE/GOOSE

### Creating Automatic Transfer Schemes

- Developing Custom Logic and Settings Files
- In-house Verification Testing

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# Power System Modeling and Protection Performance Testing

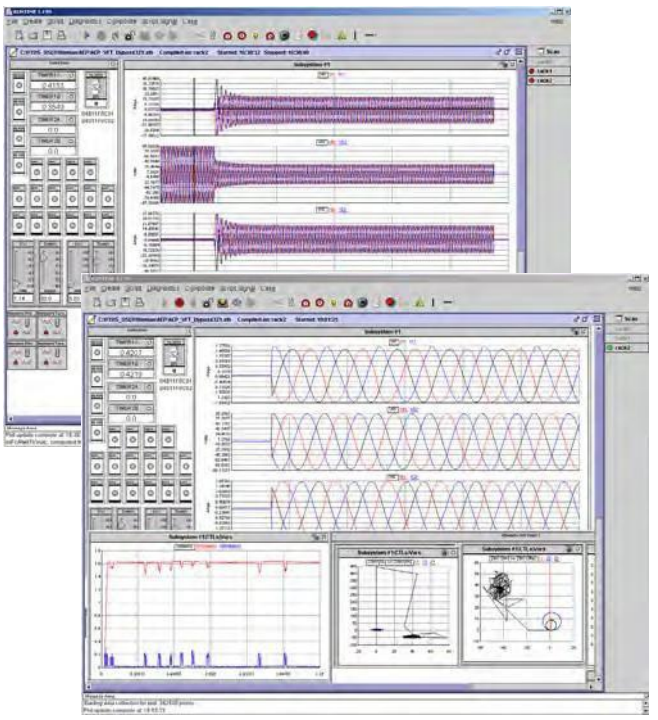
At our in-house RTDS Lab, GE Multilin engineers create highly accurate computer models of your power system and its components (based on EMTP) in order to perform real-time closed loop testing. System behavior can be simulated and analyzed under a variety of fault conditions.

Literally thousands of fault scenarios can be run on your system model using automated test scripts. Our engineers analyze the results and manually step you through any abnormal or unexpected system operations. We then assist with recommendations on alternate protection schemes, equipment selection, and optimizing relay settings and control logic. RTDS test results and our recommendations for system improvement, are provided in a detailed report along with the relay event records and oscillography files.

GE Multilin can help you understand how your power system and its protection and control devices will respond to failure situations. Gain the assurance and peace of mind of knowing that your protection and control functions will operate as required when you need them most.

### Real Time Digital Simulator Testing

- Time-domain (transient) modeling of large power systems
- Playback of large COMTRADE files for protection testing
- Flexible AC Transmission Systems (FACTS), wind generator modeling



### Protection Scheme Performance Verification

- Validate protective relaying schemes against customer power system
- Parallel performance testing of different protection philosophies
- Testing of GE and non-GE protection IEDs
- Scheme testing using IEC61850 GSSE/GOOSE
- Complete test reports and documentation including event sequence and oscillography

## On-Site Field Services

Have the experts who design and build your relays help you evaluate, test and commission your protection and control system. Our team of knowledgeable field engineers can test and verify that your protection devices are connected properly and will operate as designed.

### Site/System Surveys

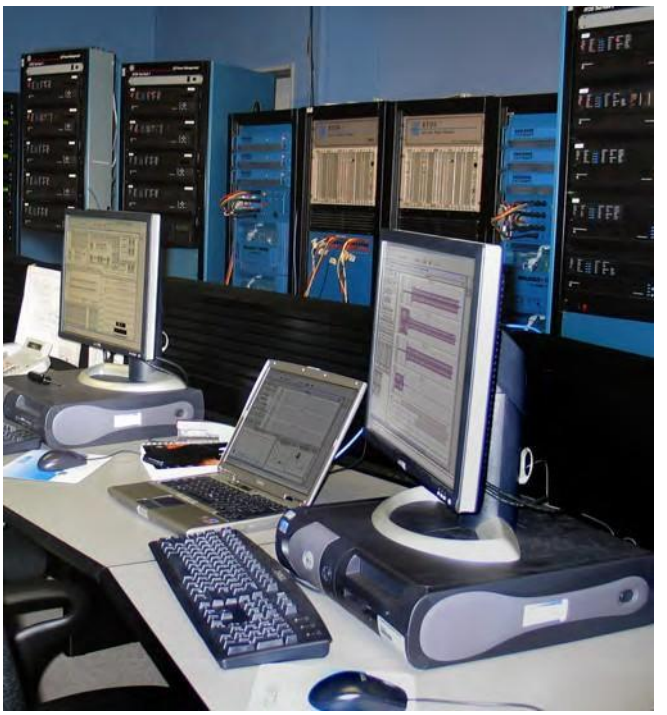
- Document existing Protection and Control Systems
- Recommendations Report

### Protection System Commissioning

- Relay & Panel Testing
- Wiring Verification

### Protection System Field Troubleshooting

- Fault Data Collections & Analysis
- Recommendations & Solutions
- Upgrading Relay Firmware
- Uploading Relay Settings Files



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