Equipment Enhancement Services

Russelectric
POWER CONTROL PEOPLE YOU CAN RELY ON
Enhance Performance, Extend Life, Increase Capabilities

Upgrade existing critical power equipment to increase reliability, operational control, and ease of maintenance. It is a more cost-effective alternative to replacing equipment.

- Improve performance and enhance capabilities
- Bring your systems up to the latest technology
- Extend the life of your mission critical equipment
- Reduce maintenance and increase serviceability
- Performed by Russelectric Field Engineers
- All work backed by Russelectric warranty
- A fraction of the time and cost of replacing equipment with minimal downtime

Preventive Maintenance

Start with a Russelectric audit of your critical power system.

- Assess overall equipment condition
- Identify areas of risk including equipment and maintenance
- Identify opportunities for performance, safety, and/or communications upgrades
- Recommend upgrades and options to enhance system capabilities
- Suggest maintenance best practices
- Detail all concerns and recommendations

ATS Control Upgrades

Replace automatic transfer switch/bypass isolation switch control systems in one day during a scheduled shutdown.

- Improve switch operating accuracy and functionality
- Update control, monitoring, and communication protocols
- Eliminate concerns about the availability of legacy components

Operator Interface and Communications Upgrades

Upgrade to the latest operator interface technology and communications equipment to dramatically enhance system monitoring capabilities.

- Provide detailed information on current system status through a dynamic one-line graphical interface
- Provide complete, detailed alarm and event history for faster response to problems
- Facilitate optional TJC (The Joint Commission) reporting
- Allow optional remote access to systems
Programmable Logic Controller (PLC) Upgrades

Many existing systems utilize legacy or approaching end-of-life PLC architecture. Upgrade your control system to the newest technology with minimal program changes.

- New technology improves performance and accommodates advanced communications
- Eliminate replacement part availability concerns
- Improve functionality of existing equipment
- Most upgrades can be completed without interruption of critical loads or operational changes
- Drop-in replacements available

Breaker Upgrade Solutions

Replace obsolete/unsupported vintage power breakers and accessories with new OEM-supplied replacements adapted for form, fit, and function.

- Improve overcurrent selectivity
- Updating circuit breakers allows the use of new options and accessories such as arc reduction modes and Zone Selective Interlocking (ZSI)
- Eliminate concerns about the availability of new parts to repair circuit breakers
- Upgrades available for various circuit breaker manufacturers

System Controls Retrofits

A system retrofit involves replacement of all existing controls—while keeping the system operational.

- Update with the most advanced Russelectric controls
- Temporary control package for use during upgrades reduces/eliminates downtime
- New control panels and doors are prewired and tested at the factory to streamline installation
- Lower cost than replacing equipment
- New controls and OIP permit remote real-time monitoring from smart devices
- Available custom SCADA allows control of plant operations remotely
- Optional simulators facilitate operator training and scenario evaluation from the comfort and safety of an office environment
### Equipment Enhancement Solutions vs. Replacing with New Equipment

#### Relative Project Cost and Timetable Comparison

<table>
<thead>
<tr>
<th>Upgrade</th>
<th>Cost</th>
<th>Time to Complete (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive Maintenance</td>
<td>$</td>
<td>3 - 6</td>
</tr>
<tr>
<td>ATS Control Upgrades</td>
<td>$$</td>
<td>6 - 8</td>
</tr>
<tr>
<td>Operator Interface and PLC Upgrades</td>
<td>$$$</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Controls Retrofits and/or Breaker Upgrades</td>
<td>$$$$</td>
<td>16 - 24</td>
</tr>
<tr>
<td>Replace with New Equipment*</td>
<td>$$$$$</td>
<td>40 - 60</td>
</tr>
</tbody>
</table>

*Based on typical project involving the purchase and installation of new equipment.

### Field Service Locations

![Map of field service locations in the USA](Map)

### Markets Served

- Data Centers
- Healthcare
- Telecom
- Banking
- Insurance
- Utilities
- Airport
- Municipalities
- Higher Education
- Water/Wastewater
- Cogeneration
- Alternative Energy

### Products & Services

- Power Control Systems
- Custom SCADA
- Simulators
- Automatic Transfer Switches
- Bypass/Isolation Switches
- DTWG Web Server Communications
- Start-Up Commissioning
- Equipment Enhancement Solutions

### Key Capabilities

- Customer Focused
- Complete In-House Manufacturing Solutions
- Custom Order Engineering
- R&D and Product Design
- Equipment Field Services and Engineering
- National Coverage with Field Service Engineers
- Emergency Response Teams Available 7/24/365