

# MODERNIZATION AND RETROFITS



UPGRADING AGING EQUIPMENT AND POWER SYSTEMS  
FOR FUTURE READY PERFORMANCE ACROSS NORTH AMERICA



**OUTAGE-PLANNED  
RETROFITS**  
MINIMAL DOWNTIME

**PROTECTION  
MODERNIZATION**  
RELAYS AND SCADA

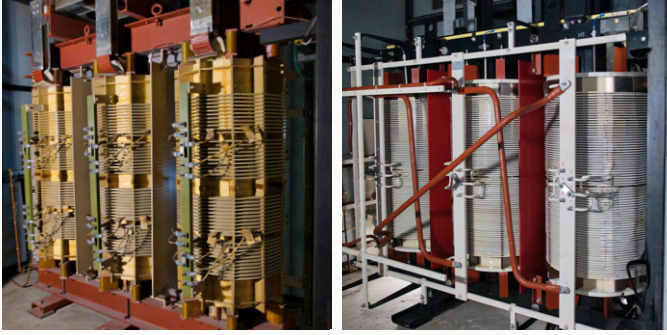
**VAULT REPLACEMENTS**  
ON-SITE INSTALLATION  
AND TESTING

**CAPACITY EXPANSION**  
BUS AND FEEDER  
UPGRADES

## CORE FIELD CAPABILITIES

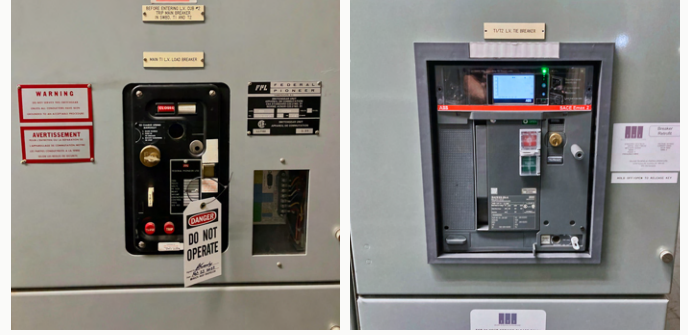
- Equipment condition assessment and retrofit planning
- Integration engineering for existing lineups and controls
- Temporary power and staged cutovers to keep operations online during upgrades
- Code-compliant installation and verification
- Transformer diagnostics with DGA and oil treatment
- Primary injection and functional verification of retrofitted devices
- Turnover package training and as-left documentation
- Rigging and vault access for confined spaces





## EQUIPMENT MODERNIZATION AND RETROFITS

- **Targeted replacements** – aging transformers and switchgear swapped in place
- **On-site execution** – rigging plans and confined-space controls
- **System compatibility** – fit-up adapter buswork and wiring alignment
- **Minimal outages** – staged cutovers and temporary power
- **Verified performance** – primary injection and functional checks



## POWER SYSTEM UPGRADES FOR CAPACITY AND CONTROL

- **Capacity expansion** – increased system load with higher bus and feeder ampacity
- **Protection upgrades** – coordinated settings with verified operation
- **Efficiency gains** – optimized load flow and reduced harmonics
- **Control modernization** – SCADA integration and sequence validation
- **Future scalability** – design ready for added feeders and sources

## SERVICE CONTINUITY

- **24/7 emergency response** – rapid mobilization and fault recovery
- **Maintenance programs** – scheduled testing with lifecycle tracking and reminders
- **Acceptance readiness** – site acceptance test plans and punch-list closure
- **Obsolescence management** – direct replacements and parts sourcing strategy
- **Asset data and labeling updates** – digital records for studies and audits

## RETROFIT ADVANTAGES

- **Lower cost, higher ROI** - 30–60% less than full replacement with comparable performance
- **Minimal downtime** - phased during scheduled outages, avoiding demolition and re-cabling
- **Approvals preserved** - existing CSA/UL and site approvals remain, fewer new permits
- **Sustainable choice** - reuses enclosures, bus, hardware to cut waste and embodied carbon
- **Targeted, scalable** - upgrade breakers, relays, and controls, staged to budget and schedule

### GENERAL INQUIRIES

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### TECHNICAL QUESTIONS

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