

# Performance from a new perspective.





#### CAPABILITIES & OFFERINGS

- Technical service assistance on new or existing equipment
- Parts support for new and existing equipment
- Installation supervision/assistance on new equipment
- 24/7 call support for all switch, circuit switcher, and other substation equipment issues
- Turn-Key repairs / retrofits / installations





#### **CAPABILITIES & OFFERINGS**

- Supervision services for retrofits/ replacements on disconnect switches, circuit switchers, power fuses, current transformers and other substation equipment
- Training services on Southern States
  product offerings
- Equipment inspection and preventive maintenance of substation equipment
- Thermographic imaging, contact resistance measurements, circuit switcher testing, SF<sub>6</sub> gas leak detection and other services for disconnect switches or SF<sub>6</sub> gas filled equipment







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# SUMMARY OF CASES

Exelon Energy	Nevada Power
Baltimore Electric and Gas	Northern Natural Gas
Con Ed	NRG
Praxair	DynMcDermott
Gallatin Steel	Arnolds AFB

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# Baltimore Gas & Electric



## CHALLENGE

 BG&E had a failed 230 kV group operated disconnect switch



- SSL provided a new 230 kV EV-2 group operated disconnect switch
- To minimize customer cost, our solution re-used the existing ground switch and much of the existing operating mechanism
- SSL Service Division performed all site works as a turnkey solution and completed within agreed timeframe



# **Exelon Nuclear**



## CHALLENGE

• Limerick Nuclear Power plant had a failed 230 kV disconnect switch



- SSL Switch Division designed a switch/ground switch combination to mount on existing structure (with minimal information from the customer)
- SSL Service Division performed all site works as a turnkey solution and completed within agreed timeframe



# **Praxair**



## CHALLENGE

- Utility refused to operate the existing disconnect Switches and fuses
- Praxair main goal was to eliminate fuses



- SSL installed (2) CSH-B circuite switchers with CMD® controlled by Schweitzer relays
- All work performed as a turnkey solution completed both under budget and within required timeframe



# **Nevada Power**



## CHALLENGE

 Customer was replacing the existing oil circuit breakers with new SF<sub>6</sub> breakers which created interference problems



- SSL Switch Division designed and supplied new structures and operating mechanisms for the existing switches
- SSL Service Division performed all site works as a turnkey solution which was performed over multiple outages and coordinated with other substation work



Upgrade of existing, underrated circuit switchers with more capable replacements



#### CHALLENGE

# Project # 1

• Replace (2) existing Joslyn VBU 4 kA power transformer protecting vacuum fault interrupters while reusing the existing structures

#### Project # 2

 Provided (2) Southern States CSV circuit switchers on existing structures, thus increasing site's interrupting rating to 40 kA while also minimizing total cost to upgrade and duration of outage required

- Upgrade interrupting rating of (2) existing Siemens non-blade 10 kA Line Backer circuit switcher
- Simply replacing the interrupter/ driver assemblies on the existing Line Backers with a bolt-for-bolt upgrade increases the interrupting rating to 31.5 kA, thus substantially extending the in-service useful life of these circuit switchers with a minimum of expense and effort



## Disconnect Switch Replacement





#### CHALLENGE

### Project # 1

• Two 1960's vintage 34 kV group operated disconnect switches did not perform correctly in automatic throw-over scheme

#### SOLUTION

• Perform removal and installation of the new switches, conduit and control wiring



# Live Parts Retrofits on Existing Switches



#### CHALLENGE

## Project # 1

- Failed "B" phase on 1960's vintage disconnect switch which customer bridged out by replacing the blade with solid bus between hinge and jaw of switch
- · Utility wanted functional switch with minimum investment
- No previous drawings available
- Ground switches needed on both jaw and hinge side of disconnect switch
- · Line needed to be energized at night

- Installed EV-2 live parts
- Performed field modifications to adapt the existing ground switches to the EV-2 live parts
- Adjust and commission the switch during a three day outage
- Performed site work so that the customer Utility could carry load on that switch each night



# Live Parts Retrofits on Existing Switches



#### CHALLENGE

#### Project # 2

- Replace (3) early to mid 1970's 345 kV double end break disconnect switches with ground switches
- Units are installed on towers of approx 60 feet tall
- · Utility was in need of qualified manpower to work at such heights
- No previous drawings available



- Switches were reviewed to supply parts for insulators, operating mechanism and live parts which retain the original switch base and support insulators
- SS provided a highly qualified and certified crew to perform all site works
- SS assigned a Project Manager in charge of installation



# Operating Part Retrofits on Existing Switches



#### CHALLENGE

#### Project # 1

- Customer had (25) disconnect switches of various designs that were supplied by another company back in 1984
- Switches installed in a coastal, highly corrosive environment
- Most of the operating mechanism had severe corrosion that eventually would hamper any regular operation of the switches
- Customer was unsure where to go as the original manufacturer was out of the disconnect switch business



- SSL surveyed the installation and determined that the live parts and insulators were in satisfactory condition, it was just the operating mechanisms
- As SSL purchased the switch business from this OEM, we have current retrofit designs that will allow us to replace only the operating mechanism on these switches
- SSL used new parts with much higher corrosion resistance to minimize the potential of a similar situation after a short installed timeframe
- SSL to perform all actions as a turn key maintenance service where we supply all parts, manpower and supervision



# Structure Retrofit on Existing Switches



#### CHALLENGE

#### Project # 1

- Customer was replacing existing oil circuit breaker (OCB) with a new gas circuit breaker (GCB). The new GCB layout caused interference of the control cabinet door with the existing 34 kV WAG-A switch structure
- Layout of yard did not allow the existing structure to be moved away from the GCB due to interference with other equipment
- Customer needed engineering manpower capable to design a new structure and to provide the knowledge to modify and existing switch operating mechanism



- SSL redesigned the switch operating mechanism while using all the existing switch parts/pieces
- Removal and stripping of existing structure
- Installation of new structure
- · Mounting of existing switch, operating mechanism and gear operator
- Mounting of existing fuse disconnect switches and PT's
- Connection of HV bus work to disconnect switch as well as fabrication of the connections from HV bus to fused disconnect switches



# Service Division Blanket Contracts

#### OVERVIEW

- Standardized service rates based on a "per day" rate
- Forget about costly and timely consuming reconciliation (e.g. justification of all individual expenses, retention of receipts, etc.) after the work is performed
- Visible and transparent, allowing both parties to make adjustments based on actual costs on an annual or quarterly basis
- Neither the customer nor Southern States are locked into a rate that has the potential to wildly change based on actual costs that are outside of either parties control
- Customer has the option to order service at same time as product so it helps ensure that the proper individuals are available and the schedule is locked well in advance of the outage or service timeframe



#### OUR COMMITMENT

**Southern States Service Division** has enhanced our offerings and expanded our scope of work capabilities to provide YOU, THE CUSTOMER, the same high level of quality and value you have come to expect in our Switch and PSD Product businesses.

