SIEMENS

Saving Your Company $6 Million Isn't The Only Reason To Choose Retrofit...

But It's A Good Place To Start.

Downtime. Lost time. No matter the cause, downtime means wasted resources - cash down the drain. Thousands of dollars per hour... lost... never to be seen again.

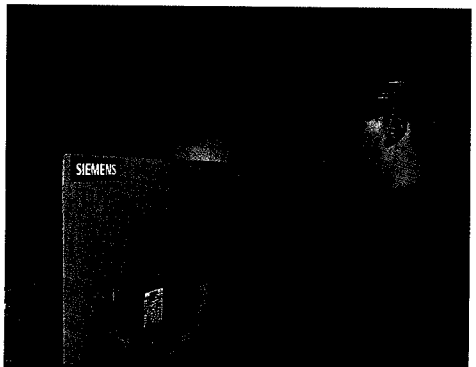
Downtime for any reason is bad. But when downtime occurs because of undependable breakers, nuisance trips, unavailable parts, or routine maintenance that has become tedious and labor intensive – all causes that can be eliminated – unplanned downtime is unforgivable.

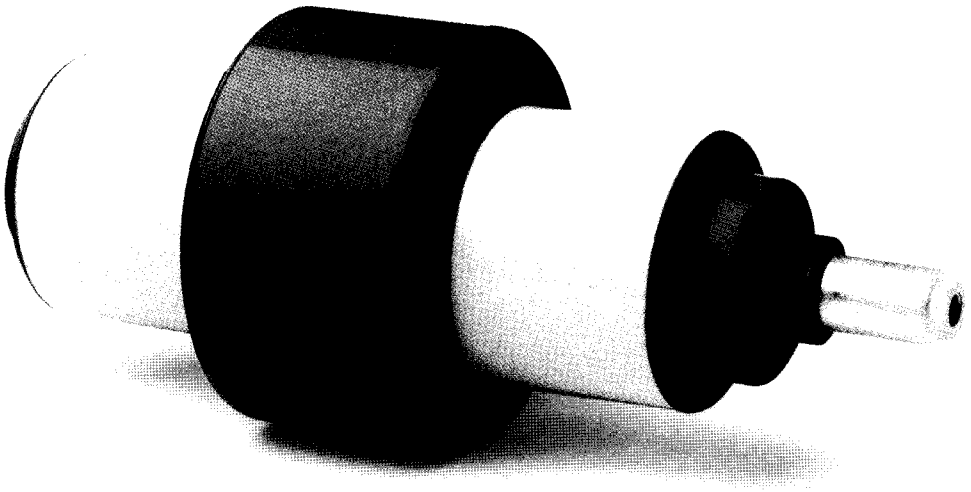
Eliminate Malfunction Downtime

Now you can eliminate preventable nuisance outages with reliable, state-of-the-art Siemens retrofit solutions. Just like these companies did:

- A nuclear power plant had low voltage power circuit breakers that failed to operate reliably. The breaker manufacturer's proposal would require a complete plant shutdown and NRC inspections with costs exceeding $6,000,000. Siemens provided a retrofit/upgrade solution that avoided a shutdown and the NRC red tape.

- To replace motor control equipment at a petrochem research facility would require 16 days of bus outage with downtime costs in excess of $750,000. Siemens provided a retrofit/upgrade solution that eliminated the bus outage and accomplished the upgrade with limited, scheduled circuit outages lasting less than three days.





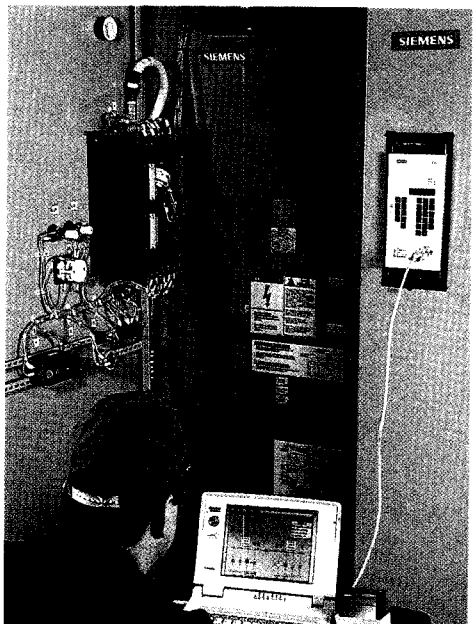
- An IOU's 60+ year old oil breakers required complete rebuild after each fault operation. Estimated cost: $655/operation. Siemens provided a retrofit/upgrade solution using modern vacuum interrupters. Maintenance hassles disappeared and the circa 1930's switchgear now supports contemporary substation automation technologies.

A Solution for Your Specific Needs

A Siemens retrofit solution is unique for your specific needs. Your solution may use today's designs and components in newly manufactured direct replacement units, or may upgrade the primary current path and operator (plus necessary relaying and control) on your existing trucks or carriages.

Retrofit/upgrade designs are available for hundreds of manufacturer/frame/current rating combinations including units manufactured by ABB, Westinghouse, Federal Pacific, GE, ITE, Allis Chalmers, Siemens-Allis and others. Every Siemens retrofit breaker or controller is as good as, or better than, new. Each unit is better than the original equipment and as good as today's new products.

Your Siemens retrofit solution may require reverse engineering of your specific breaker or rating. And that's not a problem for our modern CAD/CAM design and manufacturing group. Many of the available retrofit designs were originally created to meet the needs of a single customer. We'll be glad to do the same for you.



Maximize uptime.

The process demands it.
Employees demand it.

Coordination had failed.
A simple feeder fault was taking out the main. Breakers were difficult to maintain and good quality parts were hard to find.

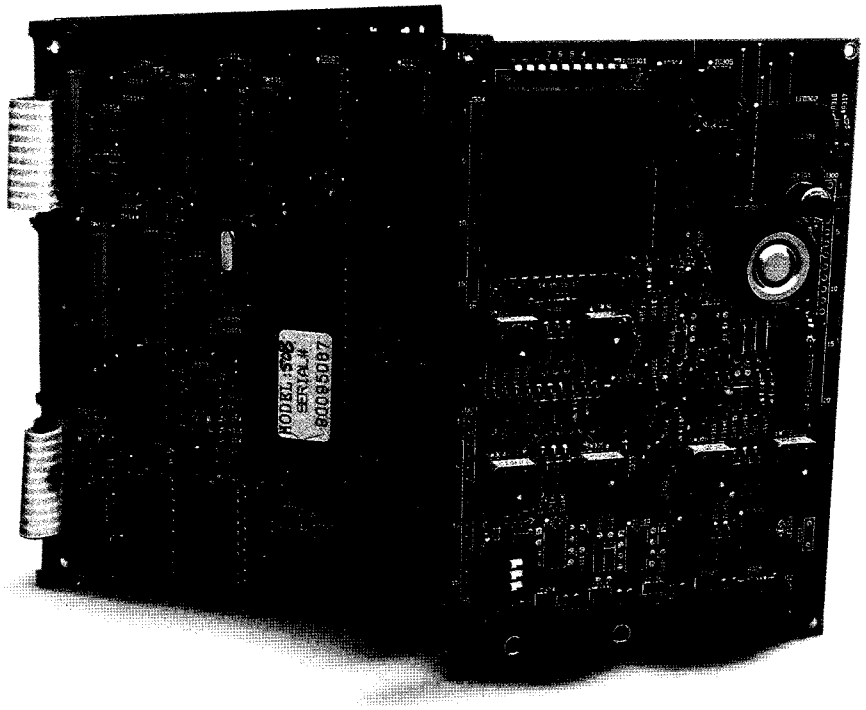
The Westinghouse and Allis-Chalmers switchgear had performed well beyond its 30 year design life, especially when you consider the corrosive magnesium chloride operating environment. When the 5kV and 15kV power circuit breakers became unreliable, MagCorp employees started looking for a high-value, cost-effective remedy. They evaluated new gear, but they chose a Siemens retrofit solution.

"Siemens showed us how their retrofit breakers would be just as good as new gear," said Peter Ngai, senior project engineer for the world's largest supplier of magnesium. "Going retrofit helped us keep the process up because breakers could be installed during circuit [not bus] outages. It was a no brainer for us."

For MagCorp, retrofit saved time and money. And for employees fond of a profit sharing program focused on low operating costs, retrofitting made good business sense.

Proven Performance. Reliable Protection.

When you choose a Siemens retrofit solution, you get proven performance and reliable protection. Each retrofit breaker design uses primary components from Siemens current product designs. These components are proven each day in thousands of installations worldwide and are backed by Siemens new equipment warranty. And parts availability from inventory is guaranteed for a minimum 10 years.



Retrofit Really Means Upgrade

Every Siemens retrofit solution upgrades protection to today's standards. Siemens upgrades MV air magnetic breakers to contemporary vacuum technology for longer life and improved safety. LV retrofit breakers include contemporary trip units that improve coordination and reliability. Motor control upgrades include state of the art components and control technology. Of course, every design meets ANSI standards and is thoroughly tested for electrical and mechanical performance as well as for proper fit in the existing structure.

In every Siemens retrofit solution, you get reliable, contemporary performance. That means that you can upgrade protection and upgrade reliability within your existing structure easily and cost effectively.

Plus, you can choose to add modern power monitoring and control capability to your old gear as part of your Siemens retrofit solution.

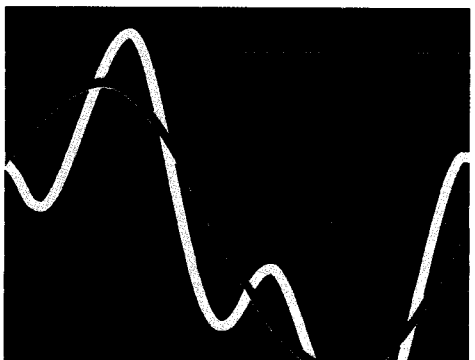
Retrofit/Upgrade Vs. New

The choice is yours. And the facts speak for themselves. If you can afford the physical space a new lineup would require... if you can afford the extended downtime to re-commission your power system... if you can wait six to nine months to fix the problem, then new equipment might be the way to go.

But if you're tired of downtime and want to fix it now, choose a Siemens retrofit solution. If you're tight on space, choose a Siemens retrofit solution. If you want delivery in a reasonable amount of time, choose a Siemens retrofit solution.

Take the First Step Today

Let's start the process. Siemens has the people, experience and financing options to help you plan and implement the best solution for your facility. Call your local Siemens sales engineer, your distributor or the Siemens After Market Switchgear group today.



The Right Solution, Just In Time.

How would you like to drain 240 gallons of arc-quenching oil after every fault interruption? Well, for the maintenance personnel at the 82 breaker Buzzard Point distribution station, it became a regular chore. Until they chose a Siemens retrofit solution.

Buzzard Point was built in the 1930's as a generating station. In 1981, it was converted to an important distribution station in the PEPCO system, supplying four substations as well as government and network customers in the Washington, DC, area.

Replacing the facility would require an enormous capital investment and the construction of three new substations: 230kV breaker and a half; 230/13.8kV station; and 230/34.5kV station.
The Siemens retrofit solution brought new life to Buzzard Point and saved PEPCO more than $12,000,000.

Using current production breaker operators and vacuum interrupters, Siemens reverse engineered new replacement breakers, bus extensions, safety and rating interlocks, cell doors and view ports to fit the concrete cubicles. Each cell was modified and breaker installed in just under three days.
It was a team effort between PEPCO, their contractor and Siemens.

Retrofit/Upgrade Vs. New Cost Worksheet and Template

Use this analysis as your starting place to analyze the pros and cons of a Siemens retrofit solution for your business. Then call your Siemens representative for a quotation.

		RETROFIT/UPGRADE	NEW
Equipment/Parts Cost Analysis To evaluate the retrofit option, consider equipment costs to be equal		Equivalent	Equivalent
Physical Plant Cost Analysis			
Additional space required for new	_____ sf		
Construction cost/sf	$_____ /sf		
Estimated construction costs		$ 0	$
Other facility modifications required		$ 0	$
Lost value of space required for new		$ 0	$
Gained value of space recovered		– $ 0	– $
A. TOTAL PHYSICAL PLANT COSTS		$ 0	$
Labor/Contractor Cost Analysis			
Installation costs		$	$
Removal/disposal of replaced parts		$	$
Training maintenance personnel		$	$
Annual maintenance labor costs	$_____		
% improved use of manpower	x_____%		
Labor cost savings next year		– $	– $
B. TOTAL LABOR/CONTRACTOR COST		$	$
Downtime Cost Analysis			
Estimated hourly cost for complete substation outage	$_____ /hr		
Estimated length of bus outage including inspections		x hrs	x hrs
Bus outage costs		$	$
Estimated hourly cost for individual circuit outage	$_____ /hr		
Estimated length of individual circuit outages		x hrs	x hrs
Circuit outage costs		$	$
C. TOTAL ESTIMATED DOWNTIME COSTS		$	$
TOTAL OF ALL COSTS ABOVE (A + B + C)		$	$
Funds Available			
Maintenance budget		$	$
Capital budget		$	$
Total Funds Available		$	$
Approval Cycle In Months		**months**	**months**

Suggestion: Before starting to calculate the relative value of the Siemens retrofit/upgrade option, make several photocopies of this form or

For more information contact:

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If disk is missing and you would like a replacement, contact the After Market Switchgear Group.

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