

ATCO Electric chooses the Versa-Tech[®] Recloser

Got oil?

No, not a drop! And that suits the people at ATCO Electric just fine.

The benefits of the Versa-Tech recloser's oil-free design make the jobs of everyone, from line workers to engineers, easier. Add on the other advantages of the Versa-Tech recloser and you have a perfect replacement for older-style, oil-filled reclosers.

Located in Alberta, Canada, ATCO Electric operates and maintains more than 68,600 kilometers (42,626 miles) of transmission and distribution power lines and operates an additional 12,000 kilometers (7,456 miles) of distribution power lines on behalf of the Rural Electrification Associations. ATCO serves 197,364 customers in 245 communities.

Simplify materials management

Rolf Roch, ATCO's Inventory and Warehousing Operations Supervisor, especially likes the oil-less design. "With anything filled with oil, occasionally something punctures the tank, but the Versa-Tech has eliminated the environmental issue for us." Roch also likes the light weight and small size. "We could only fit four of the old OCRs (Oil-Circuit Recloser) on a pallet, but we can fit probably ten or 15 of the Versa-Techs on a pallet. Since they come in boxes, they are stackable." And the Versa-Tech Recloser weighs only 55 pounds (25 kg.), much lighter than comparable oil filled devices.

From a Stores perspective, the Versa-Tech recloser's programmability is also a big advantage. "We've been able to reduce our catalog numbers. We used to have catalog numbers for 10-Amp, 15-Amp, 25-Amp, 35-Amp, 50-Amp, 70-Amp and 100-Amp OCRs. We've been able to eliminate those different devices and replace them with this one, multifunctional device. We can program it for

whatever amperage we want. That has been very beneficial."

Combine these features and the space savings is significant. "In addition to the same number of units taking up less space, we are also freeing up space because we don't have to carry as many different types." ATCO can replace 200 spare OCRs, from 100-Amp to 10-Amp units, with a handful of programmable Versa-Tech Reclosers.

Far less maintenance

The oil-less design also greatly reduces the amount of maintenance that needs to be performed. Roch explains, "Right now, every three to five years, we pull down each OCR, truck it back to our repair shop, fix it, and put it back into stock. Then we have to ship an OCR back out and put it back up. So, there is a substantial process that we are eliminating."

"With the Versa-Tech, maintenance is just changing the battery and that only needs to be done every eight to ten years. The recloser doesn't even need to be taken down. The battery can be changed, in place, with a hot stick. I am guessing it is about a five minute operation--versus our current maintenance procedure that takes several weeks worth of ongoing, not necessarily continuous, work. As a result, we are going to be making our service people available for other duties," says Roch.





20°C (68°F). That works in some places, but we regularly get temperatures that vary from -20 to plus 40°C (-4 to 104°F). At those extremes, we really don't know what kind of operating characteristics we get with the oil-filled devices," says Ryland.

"And, if we get an outage at -20°C (-4°F), the lineman that goes out to reclose an oil-filled unit has to stand there and hold it closed for about 20 minutes, until it warms up enough to latch. That

Labor-intensive, heavy oil-filled circuit reclosers (OCR) requires considerable effort for ATCO personnel to remove and lower prior to replacement by a lightweight Versa-Tech® single-phase recloser.

is a problem we don't have with the Versa-Tech's. Also, arc flash is not a concern, since the new reclosers don't contain oil," says Ryland.

Improve coordination —from the truck

Jim Schaub, Senior Design Engineer, Distribution, agrees. "With the old oil circuit reclosers, as the temperature dropped, your curves were delayed significantly. If the temperature dropped too far, the OCR's operation would be unreliable. Sometimes the breaker in the substation would pick up before the OCR would operate. So the 'no oil' idea is good. Plus, if one does blow up, it is not going to spew gallons of oil all over the area."

Schaub considers the Versa-Tech recloser's programmability as another big advantage. The software

Ease manpower shortages

Freeing up workers is important, because, like many utilities, ATCO is having trouble finding qualified employees. "Labor is a big problem for us. We can't hire enough linemen or engineers or technicians to do the work we've got, so we are trying to cut down on what they have to do. And, this new recloser means a lot less work," says Garth Ryland, Distribution Engineer.

Alleviate cold weather problems

From an operational standpoint, the new Versa-Tech Recloser beats oil-filled OCRs, hands down. This is especially true for utilities where winters hit hard—like at ATCO. Because of its vacuum interruption technology, the recloser's operating temperature ranges from -40° to 60°C (-40 to 140°F) and it has a proven life span of 2,500 mechanical operations.

"There are all sorts of interesting things about the Versa-Tech. Those old oil-filled units are designed to operate at

is PC-based and easy to use. The following parameters can be set by the user and all are password protected:

- Minimum Trip (50 - 800 Amp)
- Operations to lockout (1 - 4)
- Minimum response time
- Rest time
- Cold load time
- Reclose time
- Standard Time-Current Curves (44 curves available)
- Sequence coordination

“You can program the curves and this makes it easy to re-configure lateral feeds, as needed. The way we used to do it wasn’t very efficient. If we added more load at the end of the line (or mid-line), we had to upgrade all the reclosers because the OCRs had fixed trips. With the programmable Versa-Tech, workers can drive by and reprogram the devices, while they are still on the poles. In an hour or so, we’ve reconfigured the whole line.”

“Our protection engineers like the Versa-Tech too, because they can move the curve. In some places, we have a lot of long radial lines, with multiple reclosing devices in series. In these situations, fixed trip settings can be a problem. Up until now, this meant that the closer the line got to the substation, the higher the trip settings got. With the Versa-Tech reclosers, we can bring the trip curves closer together by programming their currents. We can get multiple units in series—all of them operating and correctly coordinated—and still not have a very high trip setting at the substation,” says Schaub.

“I also really like the fault history feature. We can find out if the recloser operated, when it operated and at what current. It makes it easier to troubleshoot problems and correct coordination issues.” The radio communications makes it all the more convenient, since the technicians can download fault information to their laptops while still in the truck.

Roch also noted that if the battery does die, the recloser still operates.

ATCO’s engineers also like the solid-state design, which means that settings do not change. There is no screw to come loose and change the curve.

Lightning and live tanks

The Versa-Tech recloser has a skirted polymer insulated support that houses the vacuum interrupter. All components are energized to system potential and a polymer post insulator electrically isolates the “live/hot tank” unit from ground.

“Lightning is a real issue in some parts of our territory,



especially on hills where trees aren’t as developed,” Schaub notes. “A grounded OCR, out there on a pole, is a beautiful path to ground for lightning. Every time the line or the OCR is hit, it stresses the insulation ability of the oil and everything within that structure. But, with the ‘hot’ reclosers, the charge just floats through the impulse. So, you are not putting undue stress on the device itself.”

There was some discussion about the live tank design and safety. “It is like any other piece of equipment: Everything is considered energized until effectively grounded. That is already ingrained in our culture. Line workers can see the insulator on the pole and that is a good clue that something is different about this device. It isn’t your everyday, ordinary recloser,” says Schaub.

Smooth transition

Transitioning to the Versa-Tech recloser is going well and ATCO has not experienced any problems to date. The company trained its workers to specify what they want and to program the reclosers. Both are new steps, but neither takes much time.

“We’ve trained the design technologists and engineers on how to specify what they want. They write up a settings sheet and send it over to our warehouse. The warehouse workers


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Versa-Tech® Recloser

EXCLUSIVE FEATURES

- All systems up to 27 kV, 125 kV LIW (BIL)
- User-Settable 50 to 800 Amp Minimum Trip
- Beacon indicates lockout condition
- 400 Amp Continuous & 8,000 Amp Interrupting
- Records fault history for later review
- Password-protected programming
- Self-powered, 8-year minimum battery life
- Light weight, easy to handle and install
- Minimal maintenance & insulation concerns
- Radio-programmable in-service option

U.S. Patents 6,753,493; 6,794,596; 6,852,939; and 6,936,779. Other Patents Pending



Lockout beacon gives a clear indication when the Versa-Tech® Recloser has interrupted service. Digital record of operations count displays in a window next to the beacon. Clearly marked manual operating handle and non-reclosing lever are color coded.

take the unit off the shelf, program it and ship it out to the site. It takes about 30 minutes to program. The longest time is actually unpacking and repacking. So, total time is about an hour,” says Schaub.

The only improvement the people at ATCO suggest is the ability to hook the reclosers up for three-phase, shunt trips. Hubbell is working on this now.

Life cycle consideration

ATCO did not switch to the Versa-Tech recloser without careful consideration. Jay Bushell, Purchasing Supervisor took part in the decision making process. “We looked at a lot of things before making this purchasing decision, like the delivery lead times, long term maintenance costs, can we save money internally and the reduction in repairs.”

While the purchase price of the Versa-Tech recloser is slightly more expensive than lower amperage OCRs, life cycle costs are less. At higher amperages, the Versa-Tech recloser is less expensive.

“Reduced maintenance was a big issue, since our system is in a rural area and we have miles and miles of line with very few customers. We don’t want line workers driving 60 kilometers to repair a recloser. So, yes, overall, life-cycle costs were considered,” says Bushell.

“This device absolutely fits into ATCO’s plans. The reliability is greater and we’ve eliminated some inventory. Then, there is the environment factor which reduces our risk. You don’t have an oil spill with a Versa-Tech recloser.” ■

For more information, contact your Hubbell Power Systems representative, fax 573-682-8714 or e-mail hpsliterature@hps.hubbell.com. Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

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Bulletin 10-1001WB



For details on the Versa-Tech® Recloser, visit www.hubbellpowersystems.com, click on the catalog icon, select construction-switching-protection, and scroll to Catalog Section 10E.

