

New DS Circuit Breaker Replacement

Background

As nuclear power plants approach aging milestones, replacement of circuit breakers for safety and non-safety-related functions becomes unavoidable. While a DS circuit breaker might be approaching 40 years in service life, Westinghouse has stayed on top of obsolescence challenges in order to offer replacements upgraded with the latest technology.

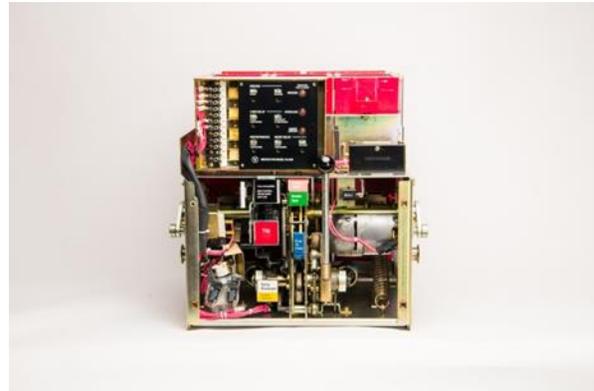
Moreover, Westinghouse, as the Original Equipment Manufacturer (OEM), is the only supplier with the ability to build each new DS circuit breaker identical to the original design specifications qualified to the plant. A like-for-like replacement, a new Westinghouse DS circuit breaker does not require costly design change packages or additional engineering time to install.

Built on nearly 50 years of operating experience, Westinghouse DS circuit breakers are upgraded with the latest industry-leading enhancements required to keep nuclear plants running reliably. Westinghouse customers will receive a drop-in replacement upgraded with the latest improvements in levering-in guide, motor cutoff switch and pole shaft.

The only supplier still manufacturing the original auxiliary switch and the original overcurrent protection system, Westinghouse offers improvement in reliability and performance with each new DS circuit breaker.

Description

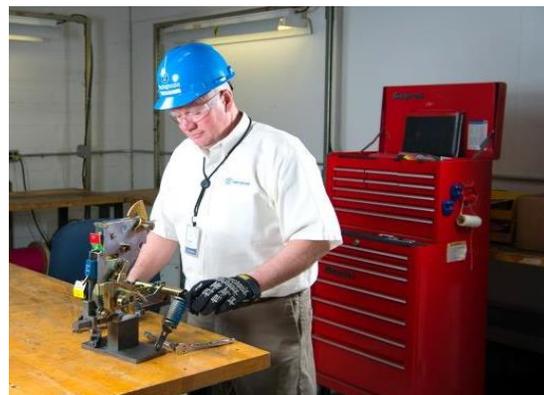
Westinghouse DS circuit breakers are designed specifically for use in metal enclosed low-voltage switchgear assemblies used at system voltages up to 600 VAC. Westinghouse provides new DS circuit breakers built to the customer's original shop order specifications for both Class 1E safety-related and non-safety-related applications.



New Westinghouse DS circuit breaker

At their New Stanton, Pennsylvania facility where first-hand witnessing is offered, Westinghouse manufactures and provides:

- DS-206
- DS-416
- DS-532
- DS-632
- DS-206S
- **Westector®** Over-Current Trip System
- Enhanced Maintenance Kit
- Replacement components
- Customized training programs



Operating mechanism within new DS circuit breaker

Benefits

Each new Westinghouse DS circuit breaker is a drop-in replacement that does not require costly design change packages or engineering time in order to install.

Westinghouse DS circuit breakers are upgraded with improved components that meet or exceed the quality of the original design and operating requirements. These enhanced components include: motor cut-off switches, direct trip actuators (DTAs), under-voltage trip attachments (UVTAs), pole shafts, several operating mechanism components and springs.

Relevant components undergo environmental, life-cycle and seismic testing conducted at the Westinghouse manufacturing facility so that parts will perform intended function.

New Westinghouse DS circuit breakers are supplied with the Westinghouse redesigned **Westector** over-current trip system, which is the only like for like qualified overcurrent trip system supplied with new DS circuit breakers in the industry. Westinghouse redesigned the now-obsolete Amptector over-current trip system with the **Westector** trip system to be an adjustable protection device configurable to specific applications.

In addition to the upgraded over-current trip system, the **Westector** test kit features advanced power electronics and the latest interface technology.

Deliverables

Westinghouse customers will receive a like for like new DS circuit breaker with performance and test data upon final delivery. Test and performance data include a certified factory acceptance test report as well as Failure Mode and Effect Analysis (FMEA) and other reporting.

New DS circuit breakers built on the Westinghouse name are delivered with no additional engineering and design costs.

Experience

Westinghouse maintains the original design and qualification baseline documentation for circuit breakers, parts and assemblies. All new circuit breakers are tested through Westinghouse's rigorous 10CFR21 Appendix B commercial dedication process.

Utilizing the original design basis documentation, Westinghouse certifies to the original qualification reports so that costly reengineering is not necessary.

- New Westinghouse circuit breakers include enhancements and upgrades developed over more than 40 years of manufacturing experience.
- Westinghouse engineers and technicians have more than 50 years of experience in providing electrical equipment for safety-related applications in the nuclear industry.
- As the OEM, Westinghouse is the owner of qualified drawings and associated intellectual property.



New Westinghouse DS circuit breaker

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