

## RENEW™ Program for Low-Voltage Breakers

### Background

As nuclear power plants reach 50-year milestones, it is critical to assess the aging of components, including the operating condition of circuit breakers. When a circuit breaker fails to meet the requirements of the maintenance program manual, it should be evaluated immediately in order to avoid complete replacement.

Westinghouse now offers a new approach to go beyond refurbishment by resetting the operating life of a circuit breaker—our **RENEW™** program. Since an individual plant might have hundreds of circuit breakers installed, a reset represents cost savings of up to 50 percent compared to complete replacement.

Westinghouse offers the **RENEW** program as an economic alternative to circuit breaker replacement while improving performance and reliability.



*Original DB circuit breaker in reassembly*



*Original DS circuit breaker being reassembled*

### Description

The **RENEW** program provides the benefits of complete replacement in an economic manner with minimal risk. Key attributes of the **RENEW** program include:

- Disassembly, inspection, evaluation, cleaning and testing of all parts.
- Replacement of all wear and/or end-of-life components to ensure operation and seismic performance.
- Inspection and verification of all electrical components.
- Alignment of all critical components including pole units, contacts and mechanisms.
- Manufacturing, upgrade and replacement of obsolete parts or parts that do not meet Westinghouse standards.
- Final inspection and testing of breaker reassembly.

### Benefits

As the Original Equipment Manufacturer (OEM), Westinghouse is the only supplier capable of resetting the operating clock to zero life cycles. Utilizing the original design basis, Westinghouse certifies circuit breakers to original qualifications—saving our customers costly engineering time.

No additional customer site modifications are required because the **RENEW** program includes

components designed and inspected to the original drawings.

Westinghouse employs procedures, ANSI-certified technicians, calibrated equipment, and facilities dedicated to nuclear safety and quality standards.

Finally, Westinghouse provides to its customers around-the-clock technical and licensing support.



*Original DB circuit breaker being reassembled*

## Deliverables

Westinghouse **RENEW** program is intended to meet or exceed the original equipment requirements.

Westinghouse circuit breaker services and components are supplied in accordance with the Westinghouse Quality Management System, which meets the applicable U.S. Nuclear Regulatory Commission requirements for quality control and quality assurance. Westinghouse also complies with 10CFR21 Appendix B reporting requirements.

Also supplied is a Certificate of Conformance to the purchase order requirements and, if needed, a Certificate of Qualification stating that the new circuit breaker satisfies the original Westinghouse qualification.



*Inspecting disassembled DS circuit breaker*

Circuit breakers reset by Westinghouse are traceable to their manufacturing origins. After going through the **RENEW** program, Westinghouse assigns a new serial number indicating maintenance, repair or refurbishment history.

Aging and obsolete components that will be replaced are identified during disassembly and inspection. A list of these components is provided before replacement.

## Experience

Westinghouse maintains the original design and qualification baseline documentation for circuit breakers, parts and assemblies.

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

- **RENEW** program includes Westinghouse 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.

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