

# DHP Circuit Breaker Refurbishment Program

## Background

Westinghouse has developed a comprehensive refurbishment program for Class 1E and non-Class 1E DHP breakers as a faster and more economical alternative to replacement. Refurbishment is a restorative and maintenance measure that can enhance equipment performance while reducing the potential for malfunction and downtime. Refurbishment can be performed during a planned outage so that there is no disruption in service, making the procedure more economical.

## Description

Westinghouse-refurbished DHP breakers are traceable to their manufacturing origins. After refurbishment, Westinghouse assigns a new serial number and keeps records of that number. It is strongly recommended that DHP breakers be refurbished by Westinghouse, the original equipment manufacturer, since detailed drawings, procedures, trained personnel, equipment and facilities to maintain breaker safety and quality are readily available. Components that need to be replaced are identified during disassembly and inspection. As part of the refurbishment process, Westinghouse will replace components that are not available for purchase, except as part of a next-higher assembly.

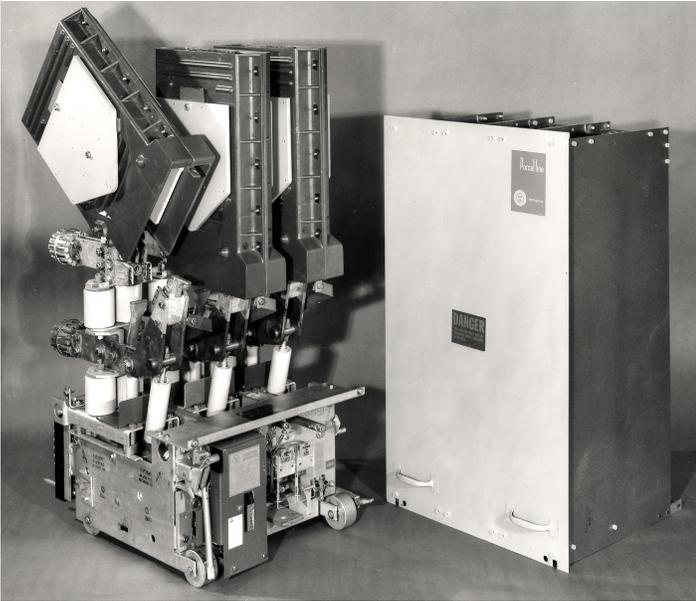
## Scope of Work

Westinghouse has retained the baseline design documentation for Class 1E DHP breakers and components, and although it no longer makes Type DHP switchgear assemblies, it continues to manufacture DHP components due to utility demand. Refurbishment can be performed on DHP breaker models 50DHP250, H50DHP250, 50DHP350, 75DHP500, 150DHP750C and 150DHP1000. Nameplate data will clearly state that the breaker has been refurbished.

Refurbishment includes:

- Incoming inspection and testing.
- Inspection of all wear components to determine the need for replacement.
- Electrical check on all coils, motor, etc.
- Replating of metal structures for added corrosion protection, if applicable.
- Realignment of pole units and mechanisms.
- Cleaning and relubrication of the mechanism.
- Reassembly of breaker, final inspection and testing. The testing will be performed to original proprietary Westinghouse specifications to meet the intent of the applicable portions of American National Standards Institute C.37.09 production tests.
- A refurbishment report that provides a brief description of the breaker's condition when received, any obvious visual anomalies, and any significant out-of-adjustment or out-of-tolerance conditions found during inspection and test. The report identifies the replacement components used in refurbishing the breaker.
- Provision of a standard Certificate of Conformance to the purchase order requirements as well as the standards and requirements of Westinghouse.





DHP circuit breaker

### Qualification and Documentation

All Westinghouse Class 1E breaker refurbishment services and components are supplied in accordance with the Westinghouse Quality Management System. These documents meet the applicable requirements of the U.S. Nuclear Regulatory Commission for quality control and quality assurance, including the requirements set forth in 10CFR50, Appendix B. Westinghouse also complies with 10CFR21 reporting requirements.

If required, Westinghouse will provide a Certificate of Qualification stating that the refurbishment was performed using qualified components and that the refurbished breaker is qualified for use in a safety-related application. A Certificate of Conformance to purchase order requirements and, if applicable, a report of probable cause of malfunction will also be furnished.

### Replacement Components

Standard component replacement during refurbishment includes:

- Arc contact mounting bolts
- Resistor
- Control “Y” relay
- Small spring kit
- Miscellaneous spring kit
- Shunt trip and spring release coils
- Latch check switch
- Bumper pad kits
- Levering mechanism
- Motor cutoff switch
- Wiring harness

Any additional replacement components required will be identified during disassembly and inspection.