The primary goal of recommended maintenance is to prevent failures and to extend the switchgear lifetime. The result is a major improvement in reliability, safety and performance – an outstanding way to optimize costs for operation.

Main advantages of planned maintenance
- prevent failures
- extend lifetime significantly
- reduce failure risk
- minimize and plan outage time
- maintain the value of the circuit-breaker
- maximize switchgear performance
- identify problems at an early stage, prior to escalation
- acquire background information for tailored maintenance activities through pilot overhaul

The type and frequency of maintenance is affected by several factors. Depending on specific criteria, we recommend the following options:

**Dynamic Sealing Kit**
- if the dynamic sealings have reached their maximum lifetime based on local environmental conditions and years in operation

**Overhaul**
- if the circuit-breaker has reached its maximum number of operations and/or short-circuit interruptions
- if recommended in the diagnosis report

**Pilot Overhaul**
- if no information is available about the number of operations and short-circuit interruptions

The knowledge of how to balance time-based and condition-based overhaul criteria is a key factor for successful maintenance, mastered and executed with excellence by ABB service engineers.

*ELK SP2 and SP3 delivered until 2003*
Dynamic Sealing Kit – scope of work
- De-commissioning of circuit-breaker includes gas quality check, gas leakage check, travel curve and dynamic resistance measurement
- Replacement of the dynamic seals of the linear movement bushing (1)
- Overhaul of the operating-rod, insulators and current connections (2, 3, 4, 5, 7)
- Replacement of the filter/adsorber (6)
- Re-commissioning of circuit-breaker includes gas quality check, gas leakage check, travel curve and dynamic resistance measurement

Overhaul – scope of work
- De-commissioning of circuit-breaker includes gas quality check, gas leakage check, travel curve and dynamic resistance measurement
- Replacement of the dynamic seals of the linear movement bushing (1)
- Overhaul of the operating-rod, insulators and current connections (2, 3, 4, 5, 7)
- Replacement of the filter/adsorber (6)
- Replacement of the puffing cylinder (8)
- Replacement of the diaphragm (9)
- Replacement of the erosion finger, cylinder base, auxiliary nozzle and contact ring (10)
- Replacement of the nozzle (11)
- Replacement of the contact finger and finger retainer (12)
- Replacement of the fixed contact pin (13)

Pilot Overhaul – scope of work
- De-commissioning of circuit-breaker includes gas quality check, gas leakage check, travel curve and dynamic resistance measurement
- Replacement of the dynamic seals of the linear movement bushing (1)
- Overhaul of the operating-rod, insulators and current connections (2, 3, 4, 5, 7)
- Replacement of the filter/adsorber (6)
- Replacement of the puffing cylinder (8)
- Replacement of the diaphragm (9)
- Replacement of the erosion finger, cylinder base, auxiliary nozzle and contact ring (10)
- Replacement of the nozzle (11)
- Replacement of the contact finger and finger retainer (12)
- Replacement of the fixed contact pin (13)
- Replacement of the erosion finger, cylinder base, auxiliary nozzle and contact ring (10)
- Replacement of the nozzle (11)
- Replacement of the contact finger and finger retainer (12)
- Replacement of the fixed contact pin (13)
- Re-commissioning of circuit-breaker includes gas quality check, gas leakage check, travel curve and dynamic resistance measurement
- Laboratory investigation of contacts
- Detailed laboratory report
- Maintenance recommendation for the rest of the circuit-breakers within the GIS

Fig. 1: Section view of circuit-breaker (exemplary illustration)

The above data are not limiting values. Additional data will be provided on request. We reserve the right to alter data and technical details without notice.