GE Grid Solutions

FK

Spring Drives for circuit-breakers up to 800 kV and driving energies up to 12 000 J

GE makes the most of 80 years of experience in design, material selection, development, engineering, manufacturing and servicing of circuit-breaker drives.

Safety First
• Pure-spring design, without pressurized oil

Utmost Experience
• First drives implemented in 1934
• Over 250 000 drives in use

Highest reliability
• Confirmed by IEC / CIGRE
• Field-proven under all operating conditions

Longest Life Duration
• Negligible maintenance costs
• Life-cycle up to 60 years

Outstanding Features
• Energy stability over decades
• Energy independent of temperature, from -50 to +50 °C
• Minimum time scattering

Key Benefits
• Maximum safety
• Field-proven reliability
• First-class availability
• Low total cost of ownership

Imagination at work
Applications

550 kV live-tank CB

Generator CB

550 kV dead-tank CB

170 kV live-tank CB

170 kV live-tank CB with single-pole operation
CIGRE Promotes Spring Mechanisms

CIGRE, general report for high-voltage equipment, table IX, provides reliability data for different types of operating mechanism for SF₆ high-voltage and generator circuit-breakers.

Such data are summarised in the here-below table:

<table>
<thead>
<tr>
<th>Type of operating mechanism</th>
<th>Major failure rate per 100 CB.years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic / Hydro-mechanical spring</td>
<td>0.19</td>
</tr>
<tr>
<td>Pneumatic</td>
<td>0.13</td>
</tr>
<tr>
<td>Spring</td>
<td>0.11 0.04</td>
</tr>
</tbody>
</table>

GE's spring mechanisms are approximately five times more reliable than hydraulic and hydro-mechanical spring mechanisms and three times more reliable than spring drives from others.

Quality

Eight decades of experience are continuously supporting the implementation of total quality throughout the entire spring drive process, from engineering to operation, then after-sales.

For more information please contact GE Power Grid Solutions

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