

UNITROL® P Performance Review

Maximizing your operating time

The UNITROL P system is scheduled to move into the obsolete phase in 2016. As such, there is now limited time available to obtain services and spare parts.



Key elements of the Performance Review

Performance improvement

The Performance Review includes preventive maintenance on all elements of an excitation system that might suffer from ageing effects. In addition, ABB assess a future spare parts strategy to increase the reliability of your system.

Operational efficiency

ABB tests all critical protection devices and system settings under various operating conditions to ensure correct and safe operation.

Lifecycle management

Based on the test results, ABB provides proposals for upgrades- and modernization solutions for hardware and software in order to extend the lifetime of your system.

The Performance Review helps minimize the failure rate of components. This provides a seamless operation thus avoiding loss of revenues. Based on its Product Life Cycle Management ABB evaluates the status of the life cycle of your asset. This enables an optimized operation strategy to be developed for the future, based on the results of the Performance Review.

Benefits

- Increased reliability
- Ensure the correct and safe operation of your system
- Minimized the risk of unexpected downtime
- Ensured correct and safe operation
- Lifetime equipment extension

What a Performance Review provides

A standard UNITROL P Performance Review and an estimation of time includes:

Tests with running machine (full load) before shut down (approx. 4 h*)

1. Check actual values (voltage regulator/U_g/I_g/I_f/U_f)
2. Check follow-up control
3. Excitation transformer (check for abnormal noise)
4. Converter (current sharing)
5. Check of shunt supply (converter supply)
6. Check of light and signal lamps

Tests with standing machine (approx. 2,5 days*)

1. Cleaning of all cubicles
2. Isolation test of AC- and DC-circuit (Megger-test)
3. Visual check of all components (boards, relays, MCBs, converters, heat sinks, etc.) for corrosion, damages and overheating
4. Check control relays for operation and contact resistance (replace if needed)
5. Visual check of terminals
6. Mechanical check/cleaning of field breaker and field flashing breaker
7. Check external auxiliary supplies AC and DC
8. Functional check of control
 - Control of field breaker, field flashing contactor, etc.
 - Control from local panel
 - Interface digital I/O signals
 - Fieldbus (if available)
 - Programming of transducers
 - Interface analogue I/O signals
 - Protection and trip circuits
9. Check spare parts (if available)
10. Check of cooling fans
 - Clearance, noise level
 - Compare slow-down time
 - Change of cooling fans when needed
11. Measuring of field resistance
12. Characteristic $U_e = f(U_c)$ (optional)
13. Transformer temperature monitoring
14. Ground fault relay UNS3020 or Bender (if available)
15. Other protection relays (if available)

Tests with machine and excitation in operation

* Time estimation varies depending on size/complexity of system and on availability of machine and surrounding systems. It can be reduced when service is provided on more than one system.



(approx. 1 day*)

1. Machine no-load
 - Field flashing and excitation start
 - De-excitation
 - Set point range
 - Reference value step
 - Follow-up control
 - Change over between channel 1 and 2 and between auto and manual mode
 - Ground fault relay
2. Pro memoria: synchronization
3. Machine on-load
 - Field current limiter
 - P/Q limiter
 - Stator current limiter (over-excited and under-excited)
 - Follow-up control
 - Channel changeover
 - Imposed regulator (Cos ϕ or Q-regulator if implemented)
 - Ground fault relay (if used)
 - Diverse measuring and project specific functions

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