COMMISSION REPORT OF ROSAVA JV JSC, 2004

K-250 turbocompressor: lower power draw and vibration with no shutdown for repair

Rosava JV JSC, compressor station · commission: deputy chief power engineer N. I. Shvets, head of the compressor section A. A. Vygranenko, electrical testing laboratory engineers V. I. Bondarenko and S. V. Mallyar, representatives of APTF STARK and XADO LLC

Bila Tserkva, Kyiv region, Ukraine · treatment 08.12.2003 – 02.02.2004 · control measurements after 960 h of running time

PRODUCT

XADO revitalizants

Treatment by XADO technology during normal operation, without disassembling the unit

TREATED OBJECT

K-250 turbocompressor No. 6

Synchronous drive motor · 8 bearing supports

DOCUMENT TYPE

Commission report of Rosava JV JSC

Six signatures, approved by the technical director, company stamps

ASSEMBLY	RUNNING TIME AFTER TREATMENT	WHAT WAS MEASURED
Synchronous drive motor	**960 h**	Power consumption, stator current, rotor current
Turbocompressor bearing supports, 8 pcs.	**960 h**	Vibration displacement in two directions at each support

The treatment was carried out without stopping or disassembling the unit; the before and after measurements were taken at the same time of day at a similar air temperature.

Key results

↓ 5.3 %

power consumed by the motor at no load, 743.04 → 703.4 kW

↓ 27-56 %

vibration displacement of the bearing supports, 0.5-1.9 → 0.05-1.6 µm

Synchronous drive motor — no-load run, air pressure 1.2 atm, capacity 7100 m³/h

PARAMETER	BEFORE, 08.12.2003	AFTER, 02.02.2004	CHANGE
Power consumption	**743.04 kW**	**703.4 kW**	**−5.3 %**
Stator current	**85 A**	**85 A**	No change
Rotor current (excitation)	**250 A**	**250 A**	No change

Power — from the MODB52as electricity meter with transformation ratios Ki = 60 and Ku = 60; currents — from the station's standard instruments.

Turbocompressor bearing supports — vibration displacement, μm

SUPPORT	VERTICAL, BEFORE → AFTER	TRANSVERSE, BEFORE → AFTER
Support No. 1	**0.75 → 0.5**	**0.75 → 0.55**
Support No. 2	**1.6 → 1.5**	**1.9 → 1.6**
Support No. 3	**1.3 → 0.5**	**1.4 → 0.6**
Support No. 4	**0.8 → 0.35**	**0.7 → 0.05**
Support No. 5	**0.7 → 0.43**	**1.1 → 1.0**
Support No. 6	**0.5 → 0.5**	**0.5 → 0.3**
Support No. 7	**0.7 → 0.45**	**1.0 → 0.5**
Support No. 8	**0.7 → 0.35**	**0.7 → 0.45**

Measured with a VIP-2 instrument in two directions at each of the eight supports: vibration displacement decreased at 15 points out of 16.

Commission's conclusion

The commission of Rosava JV JSC — the deputy chief power engineer, the head of the compressor section and the engineers of the company's electrical testing laboratory — recorded: «As a result of treating the turbocompressor by XADO technology, the power consumed by the motor at no load decreased by **5.3 %**, and the vibration level fell by **35 %** on average». The treatment was performed with XADO revitalizants directly in service: the unit was neither stopped nor disassembled, and the control measurements were taken after **960 hours** of total running time with the same standard instruments of the station. A reduction in vibration displacement was recorded at all eight bearing supports — that means service life for the bearing line and fewer reasons to open the machine outside the schedule.

XADO

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The results refer to the K-250 turbocompressor with a synchronous drive motor at the compressor station of Rosava JV JSC; on other units and operating modes the figures may differ. The original report with the commission's signatures and stamps is published in full and available for download.