

PLANT REPORT ON EQUIPMENT TREATMENT WITH XADO TECHNOLOGY

Reducer R-102S: lower energy consumption with no production shutdown

GPRUP "GPO Azot", Urea-3 shop · approved by chief engineer A. K. Surba · measurements — deputy shop manager M. A. Yanuchok and shop power engineer V. N. Kozich · treatment — GP ODO "VaTT"
Republic of Belarus · measurements 14.03.2002 and 2.04.2002 · report 2002

PRODUCT

XADO gel, 2700 ml
applied in 3 stages, under
normal operating duty

TREATED UNIT

Reducer R-102S
two-stage, type
TO31302-07-1-20x1500 · gear
drives, intermediate shaft
bearings, oil pump

DOCUMENT TYPE

Plant report
with signatures and seal
eight signatories from the
customer and the contractor

EQUIPMENT

Reducer R-102S, two-stage, drive
for Urea-3 shop equipment

DUTY AND RUNNING TIME

Load 70 %; check measurement
after 400 h of running with the
treatment

WHAT WAS MEASURED

Current draw, oil pressure and
temperature; opening of the
housing

Both measurements — 14.03.2002 before treatment and 2.04.2002 after — were taken under the same duty at 70 % load with shop personnel present.

Key result

↓ **5.2 %**

reducer current draw, 230 → 218 A

Measurements before and after treatment, reducer load 70 %

PARAMETER	BEFORE TREATMENT, 14.03.2002	AFTER TREATMENT, 400 H, 2.04.2002
Current draw under normal duty	230 A	218 A
Oil pressure	1 atm	3 atm
Oil temperature	50 °C	48 °C

The report attributes the rise in oil pressure together with the drop in oil temperature to recovery of the reducer oil pump.

Conclusion of the plant commission

After the treatment the reducer cover was removed: in the area of direct tooth contact a "mirror" surface of a metal-ceramic layer had formed on the mating surfaces, and the thermal clearance of the intermediate shaft bearings had decreased. The commission of GPRUP "GPO Azot" recorded: "The positive results obtained demonstrate the effectiveness of applying XADO technology. Equipment recovery is carried out under normal operating duty and requires no special equipment." XADO technology makes it possible to:

1. Reduce energy consumption.
2. Extend the service life of assemblies and parts.
3. Prevent wear and optimise clearances.
4. Reduce noise and vibration. The plant recommended including scheduled preventive treatment of mechanisms by XADO technology in the budget for planned equipment repairs.

XADO

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The results refer to the two-stage reducer R-102S of the Urea-3 shop at GPRUP "GPO Azot" at 70 % load; on other assemblies and operating modes the figures may differ. The original report with signatures and seal is published in full and available for download.