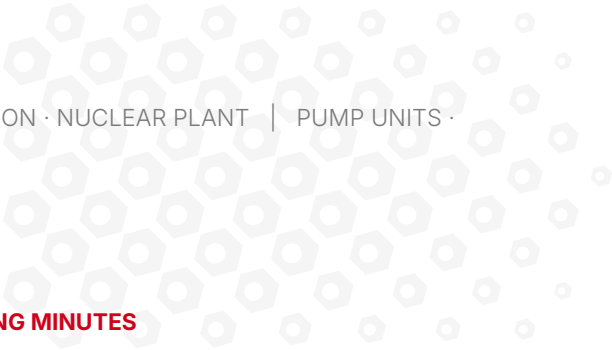




BEARING TEARDOWN INSPECTION REPORTS AND TECHNICAL MEETING MINUTES

VNG-6 pump unit: worn bearings keep running without replacement

Armenian Nuclear Power Plant (AAES) · commission: senior foreman of the central repair shop A. S. Akopyan, repair planning engineer V. S. Oganessian, metal inspection and diagnostics engineer G. A. Alaverdyan · approved by the deputy chief engineer for repairs M. A. Arutyunyan
Metsamor, Armenia · teardown inspection 09.11.2000 → repeat inspection 08.12.2000 · technical meeting minutes 14.12.2000

PRODUCT	TEST OBJECT	DOCUMENT TYPE
XADO restorative grease XADO RVS to TUU 256112000.001.99 · packed into the bearings with no parts replaced	VNG-6 pump unit, type K818 rolling bearings No. 3 and No. 4, type 305	AAES teardown inspection reports and technical meeting minutes

COMPONENT	CONDITION AT THE START OF THE TEST	WHAT WAS MEASURED
Rolling bearing No. 3, type 305	Working surface wear up to 30 %	Radial and axial clearances, working surface wear
Rolling bearing No. 4, type 305	Working surface wear up to 50 %	Radial and axial clearances, working surface wear

The unit was reassembled and put into service in process mode on {{10.11.2000}}; the repeat teardown inspection followed {{200 hours}} of operation.

Key results

↓ 25-58 % radial clearance of bearings No. 3 and No. 4, 0.12-0.2 → 0.05-0.15 mm	↓ 15 pp working surface wear of bearing No. 4, 50 → 35 %
--	---

Bearings No. 3 and No. 4 — inspection before the grease was packed in and after 200 hours of operation

PARAMETER	BEARING No. 3, BEFORE → AFTER	BEARING No. 4, BEFORE → AFTER
Radial clearance	0.12 → 0.05 mm	0.2 → 0.15 mm
Axial clearance	0.07 → 0.06 mm	0.1 → 0.09 mm
Working surface wear	initially up to 30 %	50 → 35 %

Both inspections were performed by the same plant commission: the condition of the bearings before and after was assessed by the same procedure while the unit was disassembled.

Decision following the tests

The unit entered the test already worn: during disassembly on **09.11.2000** the AAES commission recorded working surface wear of bearing No. 3 **up to 30 %** and of bearing No. 4 **up to 50 %**. The bearings were not replaced: XADO restorative grease was packed in and on **10.11.2000** the unit was returned to service. After **200 hours** of operation, the repeat teardown inspection showed reduced radial and axial clearances and lower working surface wear. The minutes of the technical meeting held by the AAES chief engineer dated **14.12.2000** ruled: "considering the positive results of the tests of the RVS grease (see plant chief engineer's order No. 449 of 03.11.00) on the bearing assemblies of the VNG-6 pump units (see the reports of 09.11.2000 and 12.12.2000) and NDB-1B (see the reports of 13.11.2000 and 30.11.2000), to purchase the required quantity of restorative grease manufactured by XADO LLC and to use it for lubricating the rolling bearings of pump units at the AAES".

XADO

© XADO. All rights reserved.

The results relate to type 305 rolling bearings of the VNG-6 (K818) pump unit at the Armenian Nuclear Power Plant after 200 hours of operation in process mode; on other components and duties the figures may differ. RVS is an obsolete XADO designation, the zero-generation compounds; the current product generation is revitalizants. The teardown inspection reports and the technical meeting minutes are published in full and available for download.