
DEVELOPMENT OF METROLOGICAL ASSURANCE SYSTEM FOR MONITORING THE TURBO UNIT SHAFTING

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Abstract

The study analyzed the methods for monitoring the state of the turbine unit shafting. In our research we developed our own method for monitoring the state of the shafting. As the parameters measured, we opted for vibration velocity and vibration displacement. The paper describes in detail the advantage of the chosen scheme with two sensors of vibration velocity and two sensors of vibration displacement. We also calculated the total error of the measuring channel. Finally, we proved the reasonability of applying the method for monitoring, based on the impact of the defect magnitude on the signal amplitude

Keywords

Shafting, vibration velocity, vibration displacement

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References

- [1] Grabatyuk Yu.O. [Vibration monitoring of pump unit xl 32-20-200 v in exploitation process]. *Sb. Vseros. nauch.-tekhn. konf. studentov "Studencheskaya vesna-2015": Mashinostroitel'nye tekhnologii* [Proc. Russ. student sci.-tech. conf. "Student spring-2015": Machine-building technologies]. 2015. URL: http://studvesna.ru/db_files/articles/1370/article.pdf (accessed 14.06.2016) (in Russ.).
- [2] Novitskiy P.V., Zografi I.A. Otsenka pogreshnostey rezul'tatov izmereniy [Measured data accuracy assessment]. Leningrad, Energomashizdat Publ., 1991. 304 p. (in Russ.).
- [3] Ummanova O.V. Chastotnyy metod registratsii obrazovaniya treshchin na valoprovode [Frequency registration method of crack formation in shaft line]. *Sb. Dokl. Vos'm. Vseros. konf. molodykh uchenykh i spetsialistov "Budushchee mashinostroeniya Rossii"* [Proc. 8th Russ. conf. of young scientists and specialists "Future of the Russian machine building"]. 2015, pp. 140–142 (in Russ.).

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