Enhancement of Operational Reliability of Elements in the Diesel Engine Cooling System of Locomotives

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Abstract. Operating experience of diesel locomotives on railways shows that the use of insufficiently purified water results in the destruction of water cooling systems. This problem is especially acute for areas with increased hardness and mineralization of natural waters.
The impact of the water demineralization degree on the corrosion rate of elements in diesel engine cooling systems of locomotives has been researched.
The dependence of the corrosion rate for various metals on the degree and depth of desalination and the cooling liquid temperature is proved.
Recommendations on optimizing the technology of cation treatment for cooling liquids ensuring the efficiency and durability in the operation of diesel engines of locomotives were developed.
KEY WORDS: *diesel, corrosion, cooling system, demineralization, ion exchange*

Підвищення експлуатаційної надійності елементів системи охолодження дизелей тепловозів

Анотація. Досвід експлуатації тепловозів на залізницях показує, що використання недостатньо очищеної води призводить до руйнування систем водяного охолодження. Ця проблема особливо гостра для районів із підвищеною жорсткістю та мінералізацією природних вод.
Досліджено вплив ступеня демінералізації води на швидкість корозії елементів у системах охолодження дизелей тепловозів.
Доведено залежність швидкості корозії різних металів від ступеня та глибини обезсолення та температури охолоджуючої рідини.
Розроблено рекомендації щодо оптимізації технології катіонітної обробки охолоджувальних рідин, що забезпечують економічність та довговічність роботі дизелей тепловозів.
Ключові слова: *дизель, корозія, система охолодження, демінералізація, іонний обмін*

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