СЕКЦІЯ 4. ФУНДАМЕНТАЛЬНІ ТА ПРИКЛАДНІ ПРОБЛЕМИ ТРАНСПОРТНОГО МАШИНОБУДУВАННЯ

DPF IPMASH ON ENGINE TEST BENCH AS A SOURCE OF TECHNOGENIC DANGER

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The Laboratory of Department of Piston Power Plants (DPPP) of Podgorny Institute for Mechanical Engineering Problems of National Academy of Science of Ukraine (IPMash NASU) equipped by Engine Test Bench (ETB) with autotractor diesel engine 2Ch10.5/12 (D21A1).

Features of construction of ETB and modular diesel particulate matter filter (DPF), which was designed in DPPP, described in papers [1, 2].

It contain a parts, which manufactured of follow non harmful materials: stainless steel rolling sheet, stainless steel woven mesh, bulk natural zeolite of middle size fraction, and do not contain catalytic covering. But it consists of minimal required number of modules and therefore contains compaction elements of asbestos sheet.

At the operation conditions DPF modules filled with particulate matters (PM) and therefore in their dismantling process and in other manipulations with them (their parts connected by separable) should prevent sedimentation of PM from them and their place of installation on exposed skin and inhalation because of high toxic effect. Also working DPF filled the exhaust gas flow temperature and therefore in their dismantling process and in other manipulations with them (measuring of its operational parameters) it should be cooled before till range of temperature, which allowing protective gloves. However themselves demolition works must be carried out only by a diesel engine stopped.

The above relates to the purpose, tasks and results of development of the ecological safety management system of power plants with a piston internal combustion engine exploitation process [3].

References:

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3. Vambol’ S.O., Strokov O.P., Vambol’ V.V., Kondratenko O.M. (2015), “Modern methods for improving the ecological safety of power plants exploitation” [Suchasni sposoby pidvyschenn’a ekologichnoi’ bezpeky ekspluatacii’ energetychnyh ustanovok], Kharkiv, Publ. “Stil’-Izdat”, 212 p., Print, In Ukrainian.