Fast acting sector gates (ZKSsh) - A new stage in petrochemical equipment development

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Productivity of the intermittently operating equipment considerably depends on duration of opening and closing actions of its closures. At petrochemical facilities to the intermittently operating equipment belong filters, chambers for launching and receiving of cleaning, inspection, batching and displacement pigs, arresters (dust separators), hatches/manholes of different vessels and apparatuses, and many others as well. Fixing to the equipment of closures to be opened/closed repeatedly by means of pins and nuts, applied for long years, has so far became obsolete. It is metal-intensive, labor-consuming, extremely inconvenient in operation, especially in case of big diameter branch pipes and high pressures. So, for example, the mass of an apparatus' DN 1400 flanged coupling for operating pressure 10 MPas makes about 8200 kg. Whereas fixing is done using 32 pieces of M80 pins 22 kg each, and opening or closing, as a matter of experience takes at least one shift work for a crew of highly qualified assembling fitters. Manufacturing of such equipment has significantly declined. In the last decades, in construction and revamping of petrochemical facilities instead of bolted connections of covers and manholes are widely used different types of fast-acting gates/closures. The purpose of this study is to analyze the most used fast acting gates for covers and hatches/manholes of pipelines deadlock sections, chambers and apparatuses, their advantages and shortcomings. It is shown that to strict requirements of reliability, convenience of manufacture and operation fully comply ZKSsh type new generation fast acting sector gates. The executed work stages during development of the given fast acting sector gates and existing difficulties are presented, the tasks on their global widespread implementation are set.

Biography

Ilmer Yu.Hasanov has broad expertise in development of fundamental industry-specific regulatory documents as well as in design of environment protection equipment and technologies for oil production and transport. He has offered and developed an integrated emergency response and prevention system on oil pipelines including identification of regularities at evaporation of the oil spilled on water bodies and a method for minimization of evaporation and fire & explosion hazard; methods and technology for displacement and collection of oil spills on swamps; identification of regularities at relocation of petro polluted soils; development of NGL fractionation methods and technology at oil and gas fields; methods and technology of containment and collection of oil from water surface. He has founded the Scientific and Production Center Sherik LLC for development, design and production of new, upgraded and commercial equipment for oil and gas production and pipeline transport - the only scientific organization in Salavat.

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