

MONITORING OF TECHNICAL AND NATURAL PROCESSES AT EXISTING HYDROPOWER DEVELOPMENTS AS A MAINSTAY OF SAFE OPERATING OF THE STRUCTURES AND PRESERVATION OF THE ENVIRONMENT

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This paper deals with principles of the creation of systems of monitoring unfavourable technical and natural processes developing in the zone of interaction between the structures and the geological environment during and after construction of hydropower schemes. Two main aspects (geotechnical and ecological) of implications of these processes for hydrodevelopments and environment in accordance with peculiarities of the structural designs and natural conditions are given. In particular, it shows that the influence of the structural units (dams, underground machine halls, power tunnels, etc.) on the changing of the ecological situation is not considerable under normal operating conditions. At the same time the safe execution of the works depends in large measure on features of changing of the geological environment. On the other hand the second important part of complex hydroschemes - reservoirs may cause an essential negative effect on the environment with hard ecological and social consequences. Therefore specific goals of the geomonitoring at the power developments and reservoirs will be different.

The ultimate purpose of creation of the systems for comprehensive long-term surveillance of the behaviour of interacting components of the technico-natural systems is to identify common regularities in inception and further development of negative processes, induced by construction and operation of hydropower schemes. Reliable methods must be elaborated for prediction of peculiarities of these processes on the bases of analysis of obtained results.