Expertný systém pre podporu dispečerského riadenia Sústavy vodných diel Gabčíkovo - Nagymaros

Expert system for a dispatching control of Waterwork Gabčíkovo – Nagymaros

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Abstract

Aim of the work was to create essential elements of an expert system (ES) that provide effective support for a dispatching control of Waterwork Gabčíkovo - Nagymaros (SVD-GN). Work was focused on reaching maximal operation safety of SVD-GN during flood discharges while maintaining operation of Gabčíkovo hydroelectric power plant. The work resulted in the parts of an expert system that consists of an inference engine, database and knowledge base during flood discharges for supporting the dispatching control of the Waterwork Gabčíkovo - Nagymaros (SVD-GN). The operation parameters of SVD-GN are a part of the external database including structure operation and prepared manipulation with discharge through SVD-GN. From steering matrix which was generated before, it is possible to provide the dispatcher with aggregate information from database and knowledge base. Dispatcher is also provided with information about expected impact of intended manipulation on operation parameters of SVD-GN along with information about possibilities and its real feasibility on structures of SVD-GN. The work also include proposal of an electronic version of the operation manual with the "watch dog" function.

Key words:

Expert system, Waterwork Gabčíkovo – Nagymaros, dispatching control support