DEVELOPMENT AND SUBSTANTIATION OF THE STRUCTURE OF A MASONRY DAM HAVING A SOIL CEMENT MEMBRANE AND DESIGNATED FOR THE CLIMATE OF THE FAR NORTH OF RUSSIA

The Far North of Russia has a strong power generation potential. Future hydraulic power engineering projects may include construction of major power generating plants in south Yakutia. The core elements of the proposed projects will comprise dams about 200 meters high.

The authors substantiate construction of a masonry dam in severe climatic conditions of the Far Northern region of Russia. The structural solution represents a masonry dam having an impervious element, or a wide internal membrane, made of soil and cement concrete. This element is to protect the soil-free membrane from any thermal effects. The authors provide their analysis of the deflected mode of the dam, if its height is equal to 226 m. The findings have proven that the membrane made of soil and concrete cement will be in the state of compression. Therefore, the authors believe that the proposed design of the dam structure is reliable enough.

Key words: concrete cement, stress-strain state, dam, Far North, masonry structure.

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