Approach to optimize work of water desalting devices and technology of their creation

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There are many papers that research in depth the work of water desalting devices at some limitations on possible character of processes in them (for example / 1, 2 /). Nevertheless, at creation of a concrete desalting device there is always the necessity to have a rather flexible phenomenological approach which is not connected with strict limitations on character of processes that go in the device and simultaneously allows us to optimize technical characteristics of the device and technology of its creation.

We can use for this goal a set of equivalent electric circuits that characterizes work of the device, one of such circuits is suggested in / 1 /.

From an experiment with a current pilot model of the required device, we can determine starting parameters of these equivalent circuits for the existing technology of the model creation. Then we can optimize parameters of the selected electrical circuits for given requirements for the required device using a computer program or additionally using equivalent electric circuits themselves for this goal. Difference of the optimal parameters from the starting parameters can be used for estimation of possible ways to change the current technology to get the optimal solution of the physical device. Repeated experiments for device pilot samples created on new changed technologies can allow us to verify our choice for optimization and give us some estimation of suitability of selected equivalent circuits.

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References

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