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## A new generation steel for heat exchangers tubes of reactors design with lead coolant

### Abstract

This paper deals with the concept of improvement of a new generation steel grade (ЭП302-III), which have better resistance to local corrosion in chloride-containing environments and maintaining high corrosion resistance in the flow of liquid lead. The main attention was paid to improve resistance to local damage like pitting corrosion, stress corrosion cracking and crevice corrosion. In order to improve the stability of austenite during thermal exposures and to maintain the high corrosion resistance both in lead flow and in chlorinated water, the main alloying elements including chromium and nickel were adjusted.

As a result of laboratory experiments that confirm high level of corrosion resistance, the newly developed steel ЭП302М-III grade were recommended to use it in heat exchange tubes of pilot project of nuclear reactor BREST-OD-300.

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