

ASSESSMENT OF WWER-TYPE REACTOR VESSELS RADIATION LIFETIME OF UKRAINIAN NPPS

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The Ni content in the welds of 9 energetic units of WWER-1000 type NPPs operating in Ukraine now exceeds the standard value. The increase of the Nickel concentration beyond the regulated one is known to lead to the increase of the irradiation embrittlement rate. The highest content of Nickel is in the weld metal of Khmelnytsky NPP-1 and it is equal to 1,88 %. Therefore, the paper considers just this case as the most complicated. In the paper the performed analysis of the dependence of the brittle critical temperature of the weld metal on the accumulated neutron fluence has shown the critical temperature not to exceed (with the confidence probability 95%) the regulated dependence. Thus, the state of the weld metal does not limit the design lifetime of the given reactor vessel.