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ARRANGEMENT OF THE BN-600 REACTOR CORE REFUELING AT TRANSITION TO THE INCREASED FUEL BURN-UP

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The further fuel burn-up increase in the BN-600 reactor is believed to be connected with transition to a new more radiation-resistant construction material of fuel rod claddings that is steel EK164-ID c.d. The core is planned to be switched to the increased fuel life time of 752 eff. days with the fivefold refueling scheme of base FSA quantity.

To switch the reactor operation mode from the existing fourfold scheme to the fivefold one, a special order of FSA refueling in transient period is needed. The main special feature of the period is that five groups to refuel FSAs are formed differing in their operating time.

To arrange FSA refueling, the following approach is adopted. Each of the four existing FSA groups is divided into two subgroups: the main group and the additional one. FSAs of the four main groups make four groups of a new refueling scheme. Refueling of these FSAs is performed as per usual scheme replacing life-expired FSAs with "fresh" ones.

To form the fifth group, premature unloading of the four additional FSA subgroups is needed which need to operate 1-2 intervals to achieve their design service life. To decrease losses caused by the premature unloading, one of the four additional FSA groups returns to the core for reburning after its temporary conditioning in in-vessel storage.

Country/Int. Organization

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